
COMMUNITY AQUATIC FACILITY

Brunswick, Maine

Feasibility Study



Prepared for:

Town of Brunswick
Parks & Recreation Department

Prepared by:

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December 16, 2016 Revised

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1. Executive Summary

GENERAL

The Recreation Commission of the Town of Brunswick, Maine engaged Bargmann Hendrie + Archetype Inc. and Ballard King Associates, Ltd. to determine the need and support for a new outdoor community aquatic facility. Specifically, The report was to identify the scope of an outdoor swimming facility including various desirable features and water elements which would meet the needs of the community; the approximate cost to build such a facility; the projected net cost of running such a facility; and the interest of the community in supporting such a project

SITE ANALYSIS

The Commission identified two possible locations for a new outdoor aquatic facility on land currently or soon to be owned by the Town. One is on the Jordan Acres School Site. The other is open space adjacent to the Brunswick Recreation Center. This parcel is on property to be conveyed to the Town as part of a public benefit conveyance process associated with the closing of the former Brunswick Naval Air Station.

TASKS

The Design Team was tasked with the following:

1. Needs Assessment Tasks
 - 1.1 Develop a Demographic Characteristics/Community Profile
 - 1.2 Review Existing Town Facilities/Programs/Services
 - 1.3 Perform a Competitive Market Analysis
 - 1.4 Compare Proposed Facility with National, Regional and Local Participation Statistics and Trends
 - 1.5 Conduct a Random Statistically Valid Survey of Potential Users
 - 1.6 Conduct Stakeholder Interviews
2. Facility and Program Content Tasks
 - 2.1 Develop a Project Program
 - 2.2 Develop a Preliminary Operations Budget
3. Preliminary Design Tasks
 - 3.1 Determine Site
 - 3.2 Design Pool and Support Building Designs
4. Feasibility Study Tasks
 - 4.1 Estimate of Probable Construction Costs
 - 4.2 Investigate Viability of Raising Funds for Capital Construction
 - 4.3 Establish a Final Operations Budget
 - 4.4 Analyze Possible Funding Streams

SURVEY

The first item performed was the statistically Valid Survey performed on the Town's behalf by ETC/Leisure Vision. ETC/Leisure Vision worked extensively with Brunswick Parks and Recreation Department and Commission in the development of the survey questionnaire. This work allowed the survey to be tailored to issues of strategic importance to effectively plan the outdoor aquatic facility.

A six-page survey was mailed to a random sample of 1500 households within the Town of Brunswick boundaries. Approximately three days after the surveys were mailed each household that received a survey also received an

automated voice message encouraging them to complete the survey. In addition, about two weeks after the surveys were mailed ETC/Leisure Vision began contacting households by phone. Those who had indicated they had not returned the survey were given the option of completing it by phone.

The goal was to obtain a total of at least 300 completed surveys. ETC/Leisure Vision reached that goal with a total of 313 surveys completed. The results of the random sample of 313 households have a 95% level of confidence with a precision rate of at least +/-5%. The return rate was 21%.

PROGRAMMING

The survey results guided the development of the following basic program for a swimming pool.

- 8 Lanes of lap swimming
- Zero depth entry
- Large shallow recreational area from zero to 3 feet in depth
- Two slides; one for smaller children, a second larger slide for pre-teens and teens
- Diving board
- Large entry steps
- Simple spray features
- Lazy River

DESIGN PROCESS

The design process required the design team to take the stated program desires from the survey, meetings with Town, and meetings with various stakeholders, and then develop design options that address the program, site conditions, technical parameters of a pool complex, and the budget.

In the early stages of design and during public meetings various images of aquatic facilities were presented to illustrate program options and solicit comments from the Town.

Early Concepts November 2014: The first designs begin to identify the size and shape of the pool, building designs, and the complex's location on the site.

Revised Concepts February 2015: The desire to incorporate a "lazy river" ranked very high in the Town-wide survey. A lazy river is defined water course within a pool that allows you to float on a raft/flotation device through slow moving water. An additional drain, pump and return water outlets return water at a high flow rate to create a current through the water course. The lazy river is typically 3 feet to 3 feet 6 inches deep. When not used for flotation, bathers can walk or swim against the current for water exercise.

Vortex Option October 2015: A vortex area was incorporated into the options as an alternative to the lazy river. A Vortex is a semi-enclosed area within the pool that utilizes high velocity return water jets to create radial flow of water that allows bathers to float with the current, or walk or swim against it. The idea is based on the recreational pool at University of Maine Orono's Student Recreation and Fitness Center shown in Section 6, page 7 of this report.

USE OF EXISTING RECREATION CENTER

A key difference in the design studies included the use of the toilet and shower facilities in the adjacent Brunswick Recreation Center

Stand Alone: One set of designs create a "free standing" complex and does not rely on the existing recreation building for toilet and shower facilities. A 2,300 SF support building houses a lifeguard space, filtration equipment, a concession area, and storage. The toilet shower facility contains separate women's and men's facilities and two family "unisex" shower/toilet rooms. The fixture count provides the required quantity for the pool bather load.

Supported by Recreation Center: These design options provide smaller buildings and take advantage of the toilets and showers in the existing recreation building. . Two smaller buildings totaling just over 900 SF house the required program for staff, filtration, and accessible toilets and showers at the pool. .

CONCEPTUAL DESIGN

BH+A prepared design options and reviewed them with Town Staff. Based on comments and feedback, Option 6, presented in October 2015 was considered the "preferred option" to develop. This design includes the following:

1. Pool complex adjacent to the existing recreation building, utilizing the existing toilet and shower facilities to reduce the size and plumbing fixtures required in the new construction.
2. Two unisex toilet and shower facilities at the new complex for convenience and provide ADA accessible facilities.
3. A separate staff toilet in the lifeguard building. It is recommended that a separate facility be provided to allow separation between staff and the public.
4. An ADA accessible ramp into the west door of the existing building for access to existing bathroom and changing room facilities in the Recreation Center.
5. A small outdoor eating area will provided outside of the pool area for eating and as a waiting area for pick-up. If vending is desired it can be accommodated by the existing facilities in the Recreation Center.
6. Water and power would be extended from the existing building. Size of the existing service for this formal naval facility has adequate capacity to support the new facility. Sewer connection would be directed into the existing sanitary system.
7. The gunite (spray applied dry-mix concrete) swimming pool would have an approximate surface area of 6,500 SF and feature a plaster finish with tile markings. The proposed pool would have a zero depth beach entry area sloping toward a shallow splashdown area for the slide. This connects to 8 lap lanes, with depths from 3 ft. 6 inches to 12 feet at a diving board. Add alternate design options have been incorporated into the design. The alternate features would be included if additional funding is available.
8. Pre-fabricated shade structures located around the pool deck.

Advantages

- Utilizes existing facility to maximum extent possible.
- Reduced auxiliary building footprint to allows increase in available funds for pool construction
- Meets program requirements, per the survey results and stakeholder meetings.

Design Alternate- Large Slide

The Town requested that an option for a potential large scale slide be studied. This option is based on slide installed at the Beth Pancoe Pool in Bangor, Maine. The original pool design and contract for the Pancoe Pool included the infrastructure for the slide, but not the slide itself, as it was outside of the City's budget. Prior to the start of construction, a large donation was made by a local Bangor celebrity to fund the slide. The slide has been a tremendous attraction for the pool.

Design Alternate -Lazy River

The final conceptual design allocates additional pool area toward two additional lap lanes and larger recreational area in the shallow end of the pool. The lap lanes allow for lap lane swimming when the slide and diving board are in use, provides additional surface area for recreational swimming, water exercise and swimming lessons. The final

conceptual design allows for a lazy river to be included as an add alternate to the base pool design or a future addition to the pool.

Design Alternate- Larger Slide and Lazy River

A third alternate was prepared that combines the base pool with a larger slide and lazy river.

Heating the Pool

The report discusses heating the swimming pool and its associated costs. The climate, average temperatures in Brunswick and preferred water temperatures are identified and recommendations for implementing a passive and active heating system are discussed. Passive is a simple solar cover; active is a gas-fired pool heater.

ESTIMATES OF PROBABLE CONSTRUCTION COSTS

A conceptual estimate has been prepared for the outdoor pool. At this early stage of design, we have used square foot unit costs for certain components of the building and swimming pool.

The following assumptions have been made:

- The project will be competitively bid with at least four General Contractor's submitting bids.
- Unit Prices are based on current construction costs in Maine.

Total Project Costs

Total project cost sheets have been included for both indoor and outdoor options. Total project costs include Architectural/Engineering fees, expenses, and testing, fixtures furnishings and equipment.

A 20% design contingency is included in both the construction and soft cost estimates.

Cost of Outdoor Pool Option- Construction	\$2,670,000
Cost of Outdoor Pool with Soft Costs:	\$2,987,520

Additional Costs- Larger Slide and Lazy River

The base does not include installation of the larger slide or the lazy river element. The cost of the larger slide would be approximately \$175,000 including mark-ups. The cost of a lazy river including mark-ups would be approximately \$120,000 including mark-ups.

Additional Costs for Heating the Pool

A solar heat cover providing a passive approach to controlling water temperature is \$32,000. A gas fired pool heater, enclosed inside of an enlarged filter room would add roughly \$120,000 to the project

Funding Sources

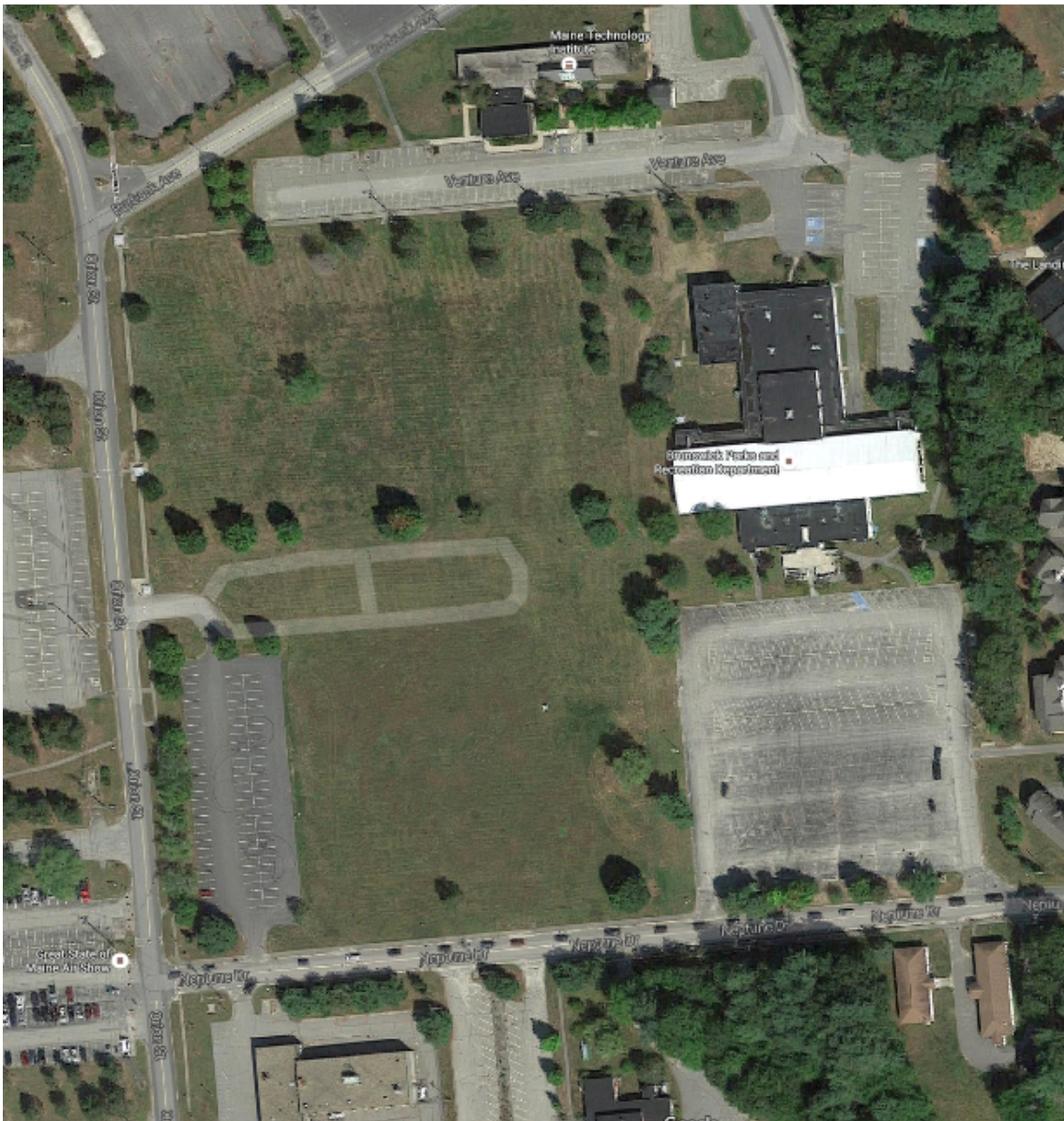
The final report identifies funding streams available for a proposed aquatic facility. The report discusses the following:

- Potential outside grants supporting municipal recreation and aquatic programs
- Typical sponsorship opportunities
- Creation of "Friends' Group" that can provide additional support for amenities, programs, and operations
- Energy and utility based programs that provided incentives on project components

2. Site Analysis

Description

The site is located at Brunswick Landing adjacent to the Brunswick Recreation Center. The Recreation Center is located in the Navy's former Field House facility. The facility contains the Brunswick Parks and Recreation Department offices, a large gymnasium space, toilets and showers, an indoor track, and childcare space.



Site Access

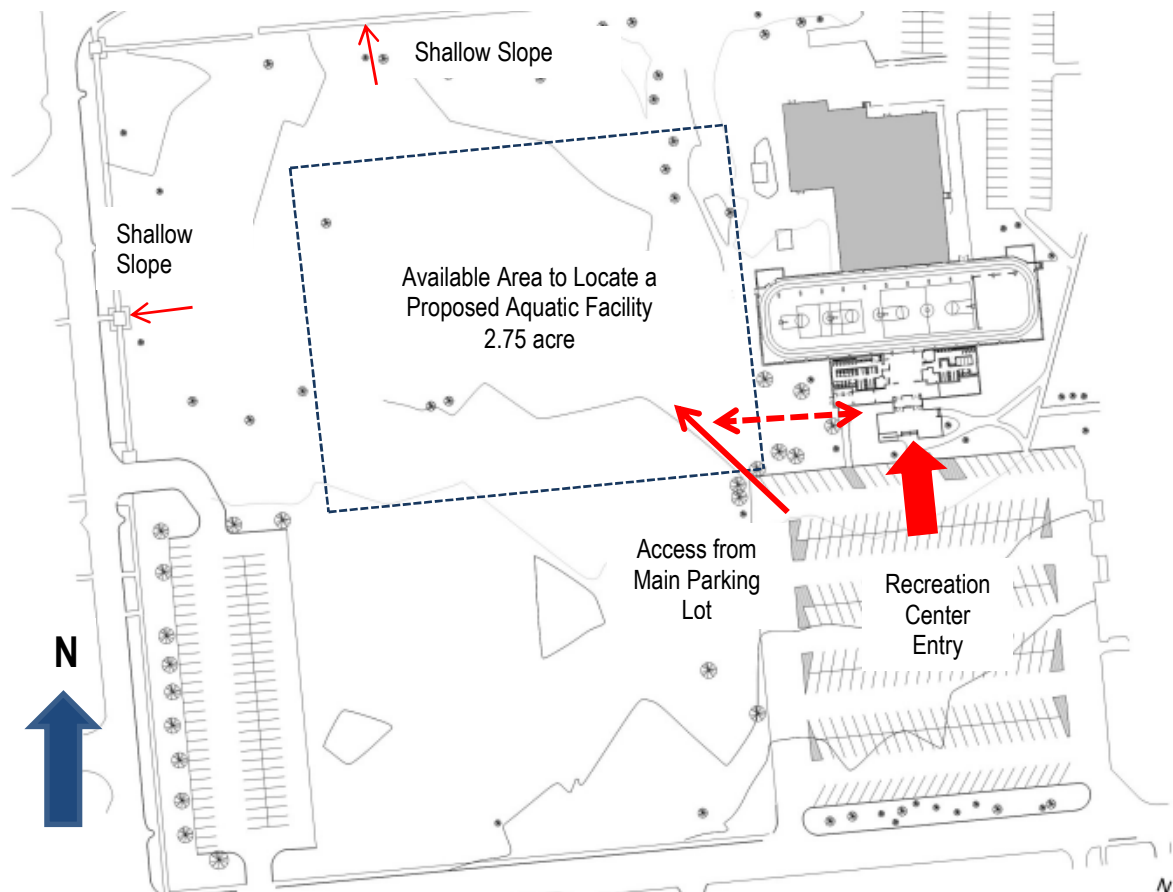
The majority of pool users will arrive by car and park in Recreation Center Parking lot. The lot can accommodate approximately 200 cars with direct access from Neptune Drive. An additional lot at the southwest corner of the Recreation Center Parcel, at the corner of Neptune Drive and Orion Street contains spaces for 90 cars. Bike access is also available via Pine Street and the Perimeter Trail

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Topography

A 2.75 acre area to the west of the Recreation Center is relatively flat. The area of the proposed aquatic facility is elevated slightly above the parking lot and adjacent lawn areas. The large lawn areas slope down along Orion Drive and Venture Avenue at the northern edge of the parcel. The proposed pool program requires approximately 1 acre of the buildable area.



Vegetation

The site is generally an open grass lawn. Deciduous trees are clustered at the corner of the parking lot. A few large evergreens are located within the area of the proposed pool. A number of mature shrubs and bushes are located along the western edge of the Recreation Center.



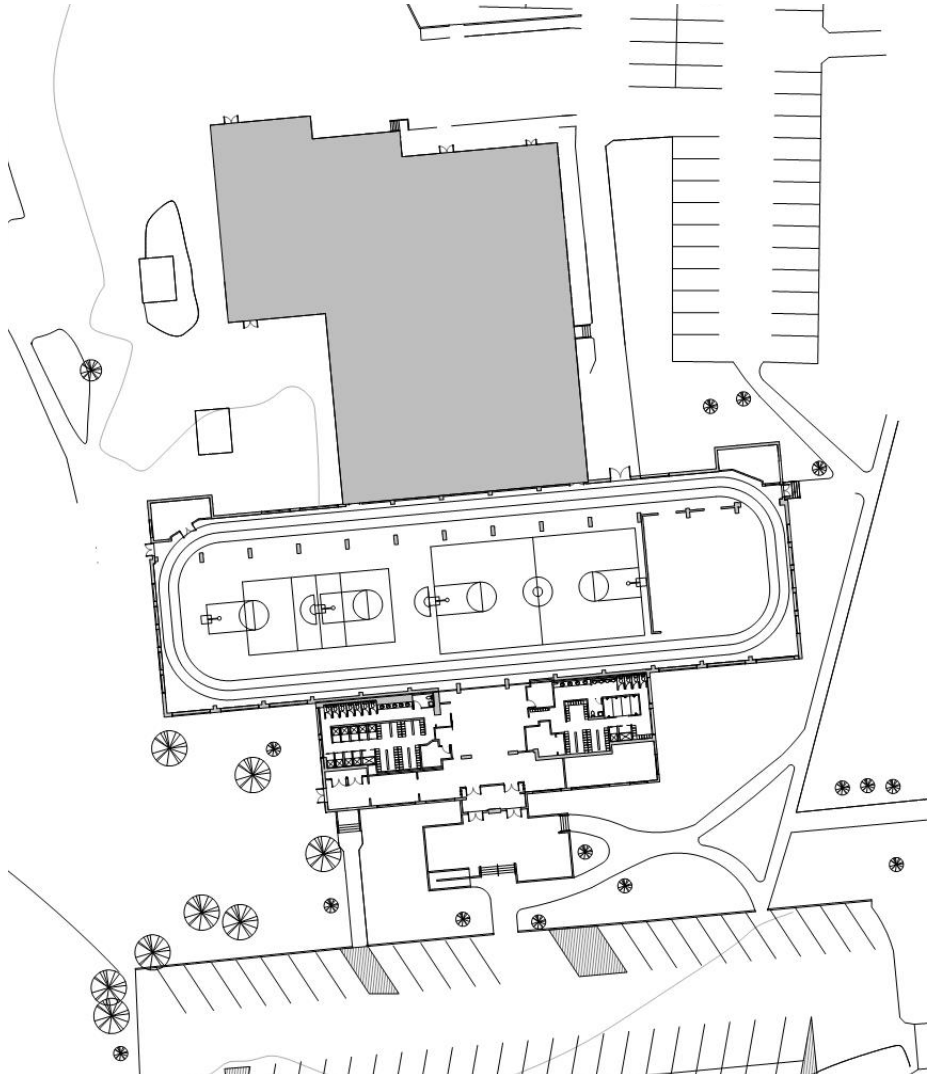


Site View from Main Parking Lot



Site from Orion Street

Recreation Center



The former Navy Fieldhouse was designed to accommodate a large number of personnel. The building's main entrance is on the south side of the building. The front section of the building houses office space, locker rooms, and a concession vending area. The main space within the Recreation Center is the large gymnasium space which includes 2 basketball courts, a fitness area, and a 2 lane walking track. The rear of the building houses additional office space, storage, the Brunswick Parks and Recreation Preschool and mechanical spaces.

- The main floor of Recreation Center is approximately 30 inches above the exterior grade. Steps and a ramp are provided at the main entry.
- Locker and shower rooms are located off of the main lobby.
- A corridor along the southwest corner of the front building leads to stairs and the general direction of the proposed aquatic facility.
- If the aquatic facility utilizes the locker rooms in the existing building, direct access along this corridor can be provided to avoid having bathers walking through the building main entry

- Egress doors on the west end of the main gymnasium space must be maintained. The proposed aquatic facility cannot enclose or block the egress path.
- It appears that the existing electric service has adequate capacity to support a new subpanel located in an adjacent aquatic facility.
- Hot water is provided by dual gas fired hot water heaters. Capacity is sized for the existing building. Hot water requirements for an adjacent aquatic facility will need to be part of the aquatic facility.

Site Considerations

- Existing Parking will be utilized
- Provide an accessible, paved path from the parking lot to the swimming pool.
- Provide an ADA accessible paved path from the pool directly to the Recreation Center including an ADA ramp
- Locate new pool development to the west of the Recreation Center on the relatively flat section of the site
- Power and water may be drawn from the existing building.
- Sanitary connections will be made into existing independent of the Recreation Center
- Assume use of the locker rooms, showers and toilets to minimize construction of restroom facilities in the new aquatic complex.



Main Entry to Recreation Center



Composite View of Recreation Center from the West

Alternate Site

The Jordan Acres School was also reviewed as a possible location for a new aquatic facility. The suggested location was the open field/playground to the east of the school.



Jordan Acre School Site

The following was noted:

- The site is open and flat; ideal for an aquatic facility.
- The site is large enough to support the proposed aquatic program.
- The aquatic facility would leave very little open field space at the site for school use.
- A drop-off and possibly a couple of accessible parking spots could be located on the site; bathers would use existing school lot for parking.
- Soil conditions are not known
- New utilities would need to be brought to the site. The utilities might need to be brought from Jordan Avenue if the existing to the school building cannot support a new aquatic facility.
- The aquatic facility would require a bathhouse sized to accommodate the full bather load.
- It is assumed that the school will not be used to support the aquatic facility bathhouse requirements or utilities.
- A construction budget for this site will require costs associated with a larger bathhouse building, support buildings, and site utility costs.

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3. Applicable Codes

Applicable Codes

Building Code

The State of Maine adopted the **Maine Uniform Building and Energy Codes** on January 1, 2010. This code is based on the *International Building Code (IBC) 2009*, *International Existing Building Code (IEBC) 2009*, *International and the International Energy Conservation Code (IECC) 2009*. For the purpose of this report, we have assumed the IBC as the basis of design.

ASHRAE Standard A62.1-2007, Standard for Acceptable Indoor Air Quality apply

The State of Maine may adopt the 2015 version of the International Energy Conservation Code. Upon adoption, the proposed pool complex will be required to comply.

State Fire Marshal

The **Maine State Fire Prevention Codes 25 M.R.S. §§ 2452 and 2465** apply to places of assembly will require review by the State Fire Marshal. **NFPA 101, Life Safety Code** shall be followed as well as the National Fire Protection Codes referenced in the IBC.

Accessibility Code

The Federal 2010 Americans with Disabilities Act Standards for Accessible Design apply to this project. ADA approval is provided by the State Fire Marshal's Office.

Pool Code

The State Department of Human Services, Bureau of Health, **10-144, Chapter 202, Rules Relating to Public Swimming Pools and Spas**, dated September 1, 2010, apply to this project. This code stipulates permitting, maintenance and operations, water clarity standards, and life safety requirements.

While the above code affects aspects of the pool complex design, the Division of Environmental Health has adopted **ANSI/APSP/ICC-1 2014 American National Standard for Public Swimming Pools**. This code defines requirements for pool depth, slopes, and special features.

Project Classification

An outdoor swimming pool complex is classified as assembly occupancies. Under the IBC, the proposed pool is a recreational use Classified as an A-3 Assembly. Although "swimming pools" are references in type A-4, the proposed pool complex does not have assembly seating.

Area and construction type limitations do not apply to the proposed bathhouse and mechanical building designs. These buildings will be wood framed, Type 5 B unprotected wood construction.

The buildings are less than 12,000 SF therefore sprinklers are not required.

Mechanical Energy Code:

The bathhouse and mechanical buildings do not utilize mechanical heating or cooling, meeting thermal performance is a non-factor. However, the Energy Conservation Codes do apply to the selection of pump motors, light fixtures, and lighting controls.

ASHRAE Standard A62: Determine the ventilation requirement for the indoor toilet facilities, staff areas, and filtration space.

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4. Programming

General

The basic programming of the proposed aquatic facility is based on the results of stakeholder meetings and on the results of the survey performed on the Town's behalf by ETC/Leisure Vision. ETC/Leisure Vision worked extensively with Brunswick Parks and Recreation Department and Commission in the development of the survey questionnaire. This work allowed the survey to be tailored to issues of strategic importance to effectively plan the outdoor aquatic facility.

A six-page survey was mailed to a random sample of 1500 households within the Town of Brunswick boundaries. Approximately three days after the surveys were mailed each household that received a survey also received an automated voice message encouraging them to complete the survey. In addition, about two weeks after the surveys were mailed Leisure Vision began contacting households by phone. Those who had indicated they had not returned the survey were given the option of completing it by phone.

The goal was to obtain a total of at least 300 completed surveys. ETC/Leisure Vision reached that goal with a total of 313 surveys completed. The results of the random sample of 313 households have a 95% level of confidence with a precision rate of at least $\pm 5\%$. The return rate was 21%. The following survey results, in particular, informed the design team's direction with this proposed project.

Potential Outdoor Aquatic Features Respondents Would Use: Sixty-one percent (61%) of respondents would use lap lanes for exercise, lessons and lap swimming if developed at an outdoor aquatic center. Other outdoor aquatic features that respondent households would use if developed include: A lazy river (60%), a leisure pool with gentle slope entry for walking (59%), concession area (57%) and water slides (55%).

Potential Aquatic Features Respondent Households Would Use Most Often: Based on the sum of respondent top three choices (from most important to third most important), (39%) of respondents would use lap lanes for exercise, lessons and lap swimming. Other outdoor aquatic features respondents would use the most often include: A lazy river (36%), a leisure pool with gentle slope entry for walking (34%) and water slides (33%).

Primary Reasons Why Respondents Would Use an Outdoor Aquatic Center in the Town of Brunswick: Seventy-six percent (76%) of respondents would use an outdoor aquatic center in the Town of Brunswick for recreational swimming purposes. Other reasons why respondents would use an outdoor aquatic center in the Town of Brunswick include: Exercise (61%), instructional classes (36%), sunbathing (24%) and therapeutic purposes (20%).

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Q6. Listed below are some potential features that the Town of Brunswick could incorporate into the development of a new OUTDOOR AQUATIC CENTER. Please check ALL of the aquatic features that you and members of your household would use.

Q6. Please check ALL of the aquatic features that you and members of your household would use.	Number	Percent
Water slides	172	55.0 %
A leisure pool with gentle slope entry for walking into the water	183	58.5 %
A lazy river that allows you to float on a raft/flotation device through slow moving water	187	59.7 %
Concession area	177	56.5 %
A shallow pool for infants or toddlers	138	44.1 %
Water sprays with interactive play features for small children	136	43.5 %
Sand play area	121	38.7 %
Lap lanes for exercise, lessons, and lap swimming	192	61.3 %
An area with deep water for diving, water polo, and scuba	111	35.5 %
Hot tub or Jacuzzi	106	33.9 %
50-meter lap lanes that can be used for competitive swimming	85	27.2 %
Lily pads	30	9.6 %
1m diving board	102	32.6 %
3m diving board	60	19.2 %
Other	26	8.3 %
None Chosen	41	13.1 %
Total	1867	

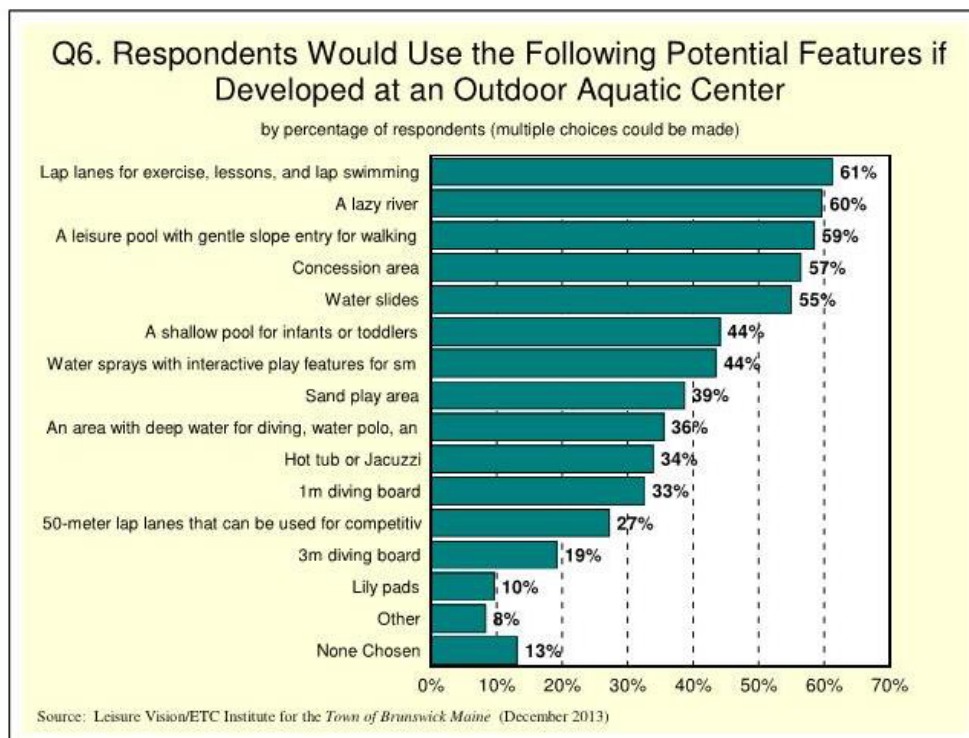
Number of Cases = 313

Number of Responses = 1867

Average Number Of Responses Per Case = 6.0

Number Of Cases With At Least One Response = 313

Response Percent = 100.0 %



Q7. Which THREE of the above FEATURES would you and members of your household USE MOST OFTEN if they were included in a NEW OUTDOOR AQUATIC CENTER for the Town of Brunswick?

<u>Q7. Most Often</u>	<u>Number</u>	<u>Percent</u>
Water slides	50	16.0 %
A leisure pool with gentle slope entry for walking into the water	48	15.3 %
A lazy river that allows you to float on a raft/flotation device through slow moving water	30	9.6 %
Concession area	3	1.0 %
A shallow pool for infants or toddlers	17	5.4 %
Water sprays with interactive play features for small children	10	3.2 %
Sand play area	8	2.6 %
Lap lanes for exercise, lessons, and lap swimming	64	20.4 %
An area with deep water for diving, water polo, and scuba	6	1.9 %
Hot tub or Jacuzzi	9	2.9 %
50-meter lap lanes that can be used for competitive swimming	8	2.6 %
1m diving board	2	0.6 %
Other	5	1.6 %
<u>None Chosen</u>	<u>53</u>	<u>16.9 %</u>
Total	313	100.0 %

Missing Cases = 0

Response Percent = 100.0 %

<u>Q7. 2nd Often</u>	<u>Number</u>	<u>Percent</u>
Water slides	30	9.6 %
A leisure pool with gentle slope entry for walking into the water	39	12.5 %
A lazy river that allows you to float on a raft/flotation device through slow moving water	43	13.7 %
Concession area	11	3.5 %
A shallow pool for infants or toddlers	20	6.4 %
Water sprays with interactive play features for small children	20	6.4 %
Sand play area	10	3.2 %
Lap lanes for exercise, lessons, and lap swimming	29	9.3 %
An area with deep water for diving, water polo, and scuba	19	6.1 %
Hot tub or Jacuzzi	19	6.1 %
50-meter lap lanes that can be used for competitive swimming	5	1.6 %
Lily pads	1	0.3 %
1m diving board	7	2.2 %
<u>None Chosen</u>	<u>60</u>	<u>19.2 %</u>
Total	313	100.0 %

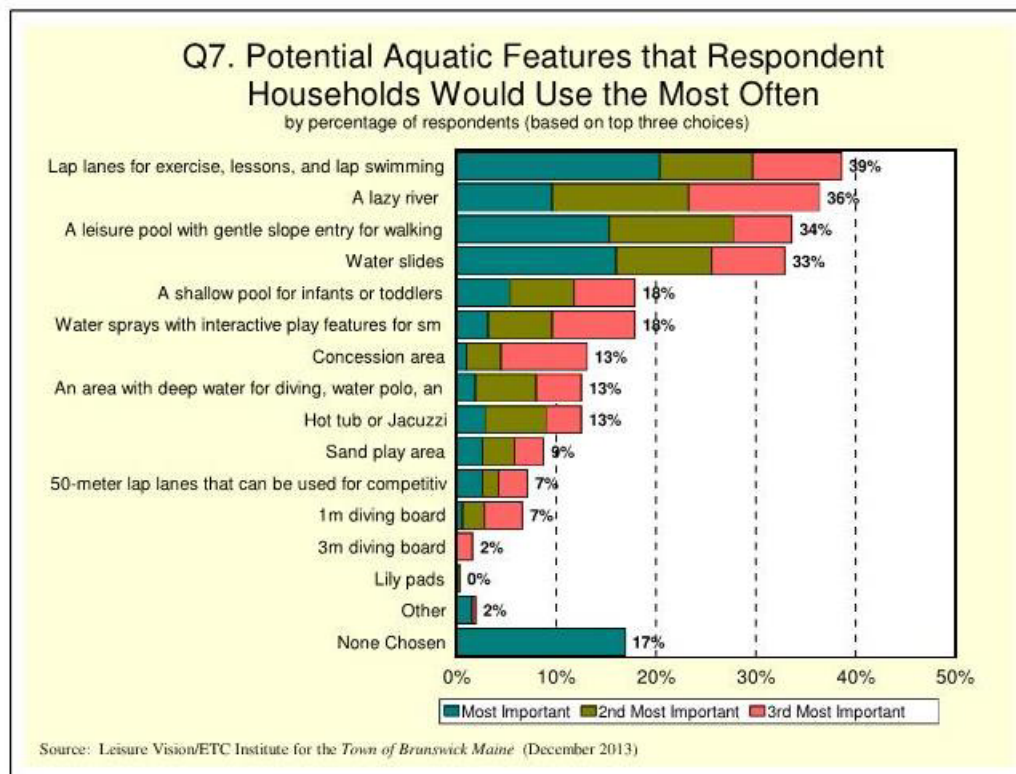
Missing Cases = 0

Response Percent = 100.0 %

Q7. 3rd Often	Number	Percent
Water slides	23	7.3 %
A leisure pool with gentle slope entry for walking into the water	18	5.8 %
A lazy river that allows you to float on a raft/flotation device through slow moving water	41	13.1 %
Concession area	27	8.6 %
A shallow pool for infants or toddlers	19	6.1 %
Water sprays with interactive play features for small children	26	8.3 %
Sand play area	9	2.9 %
Lap lanes for exercise, lessons, and lap swimming	28	8.9 %
An area with deep water for diving, water polo, and scuba	14	4.5 %
Hot tub or Jacuzzi	11	3.5 %
50-meter lap lanes that can be used for competitive swimming	9	2.9 %
1m diving board	12	3.8 %
3m diving board	5	1.6 %
Other	1	0.3 %
None Chosen	70	22.4 %
Total	313	100.0 %

Missing Cases = 0

Response Percent = 100.0 %



Q8. Please check the *THREE* primary reasons you would use a new *OUTDOOR* aquatic center in the Town of Brunswick.

Q8. Please check the *THREE* primary reasons you would use a new *OUTDOOR* aquatic center in the Town of Brunswick .

	Number	Percent
recreational swimming	237	75.7 %
instructional classes	112	35.8 %
competitive swimming	17	5.4 %
sunbathing	74	23.6 %
exercise	192	61.3 %
therapeutic purposes	61	19.5 %
camps	29	9.3 %
Other	32	10.2 %
None Chosen	36	11.5 %
Total	790	

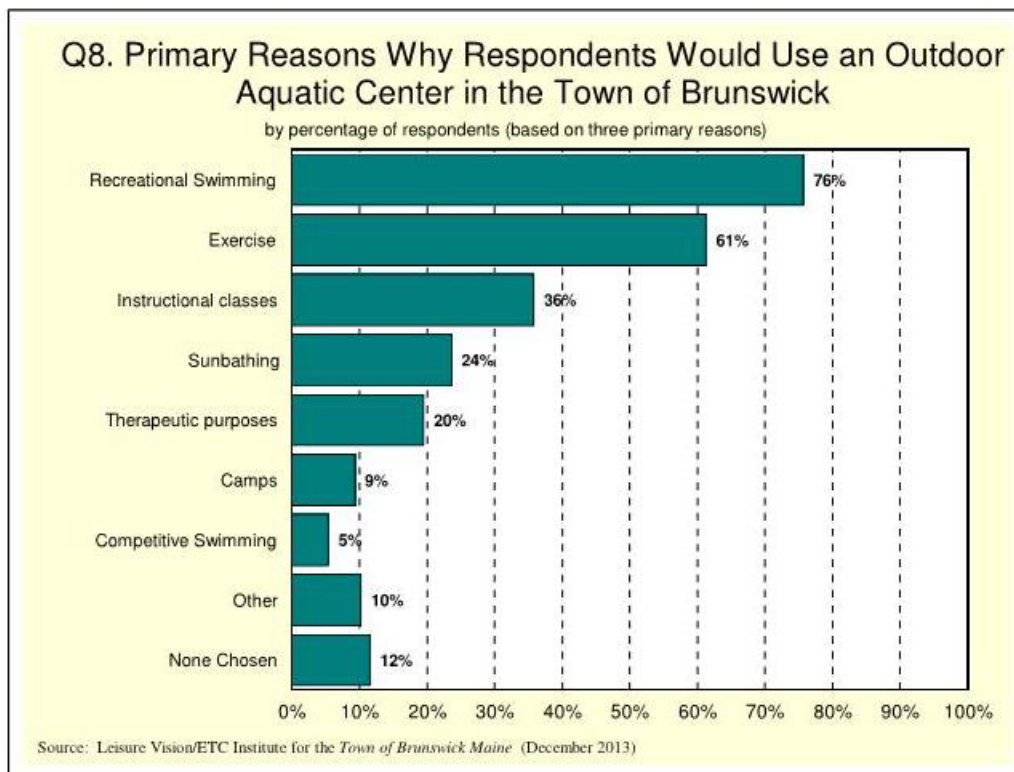
Number of Cases = 313

Number of Responses = 790

Average Number Of Responses Per Case = 2.5

Number Of Cases With At Least One Response = 313

Response Percent = 100.0 %



Programming Summary

Pool: The final pool program includes the following elements:

- 8 Lanes of lap swimming
- Zero depth entry
- Large shallow recreational area from zero to 3 feet in depth
- Two slides; one for smaller children, a second larger slide for pre-teens and teens
- Diving board
- Large entry steps
- Simple spray features

Entry and Staff Building

Entry Control and Lifeguards	204 SF
Staff Toilet	62 SF
Storage	132 SF
Total	503 SF

Toilets and Filter Building

2- ADA Accessible Toilet/Showers	85 SF Each
Filter Room	191 SF
Total	458 SF

Plumbing Fixture Count

The pool design establishes a bather load of 390 bathers; 195 men and 195 women. Maine regulations for public swimming pools allow use of shower and toilet facilities within 500 feet of the swimming pool. Two accessible toilets/showers are being provided at the pool. The remaining fixtures are located in the existing Recreation Center locker rooms.

We strongly recommend, and have included an outdoor shower tower (rinse station). Although this cannot be used for a "cleansing shower", it is effective because pool staff can observe bathers showering off.

Code Required Fixture Counts

Fixture	Female	Male	Combined
Water Closets	5	3	
Urinals	NA	2	
Lavatories	3	3	
Shower	5	5	

Proposed Fixture Count for Option 3

Fixture	Female Interior	Male Interior	Combined Outdoor
Water Closets	3	3	
Urinals	NA	2	
Lavatories	3	3	2
Shower	5	5	2

RECOMMENDED BATHER LOAD & FIXTURE QUANTITIES COMPUTATIONS

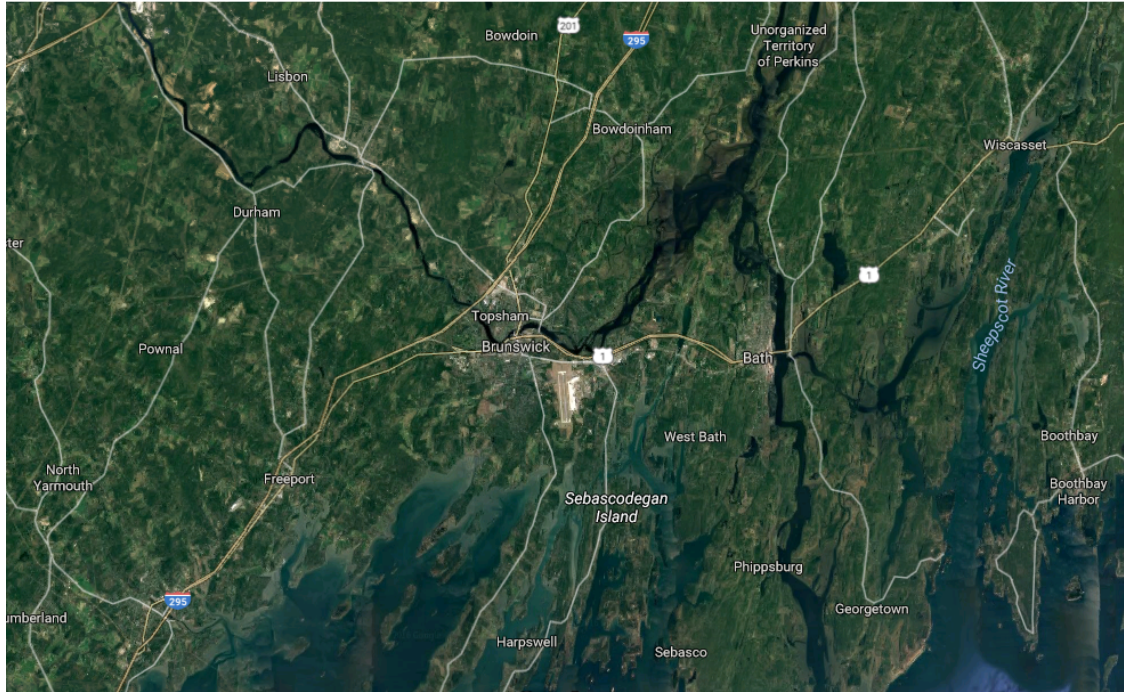
PROPOSED AQUATIC FACILITY

Existing Pool

Calculations are Based on American National Standards for Public Swimming Pools

Bather Load			
	Non Swimmer Area (<5'-0" depth)	Swimmer Area (>5'-0" depth)	
Area of Pool	3,980sqft	2,485sqft	
Total pool surface area	3,980sqft	2,485sqft	
One bather/user per (pool surface area)	15sqft	20sqft	
Number of Bathers/users	266	125	391
Number of Male Bathers/Users	133	63	196
Number of Female Bathers/Users	133	63	196
Plumbing Fixture Quantities Based on Maximum Bather Load			
	Men	Women	
One Water Closet Per	40 bathers	40 bathers	
One Wash Basin Per	60 bathers	60 bathers	
One Shower Per	40 bathers	40 bathers	
	Men	Women	
Number of Water Closet's	5	5	
Number of Wash Basin's	3	3	
Number of Shower's	5	5	

5. Market Analysis



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MARKET ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Section I – Market Analysis

Ballard*King & Associates as part of a larger project team, has been tasked with the development of a market analysis for a proposed new community aquatic facility for the Town of Brunswick, Maine.

The following is a summary of the basic demographic characteristics of the identified service areas along with recreation and leisure participation standards as produced by the National Sporting Goods. B*K utilizes the following sources in the development of the market analysis section of the report: ESRI (Environmental Systems Research Institute) for demographics and Market Potential Index (MPI), and NSGA (National Sporting Goods Association) for sports participation.

Service Areas: The goal of a new aquatic facility would be to serve the residents of Brunswick, Maine. However, the Primary Service Area includes the communities of Brunswick, Topsham, West Bath and Harpswell. The Secondary Service Area is larger and includes Bath, Durham, Lisbon, Freeport, Wiscasset and Bowdoinham.

Primary Service Areas are usually defined by the distance people will travel on a regular basis (a minimum of once a week) to utilize an aquatic facility or its programs. The Secondary Service Area defines the maximum distance people will likely travel for the use of an aquatic center for fitness, recreation and programmatic uses in a somewhat consistent manner (4-5 times a month or more). It is recognized that people from beyond the Secondary Service Area as well as visitors may utilize the aquatic center as well but this would be on a much more occasional basis.

Service areas can vary in size with the types of components that are included in an aquatic facility. A center with a strong recreational orientation (interactive play features, zero depth entry, slides, etc.) will attract users from a larger market than a conventional 6-8 lane lap pool. Service areas can also be based upon a facility's proximity to major thoroughfares. Other factors impacting the use as it relates to driving distance are the presence of alternative service providers in the Primary and Secondary Service Areas. Alternative service providers can have an impact upon membership, daily admissions and the associated penetration rates for programs and services.

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Table A – Service Area Comparison Chart:

	Primary Service Area	Secondary Service Area
Population:		
2010 Census	29,132 ¹	69,755
2016 Estimate	29,564	71,323
2021 Estimate	30,088	72,778
Households:		
2010 Census	12,583	29,768
2016 Estimate	12,906	30,741
2021 Estimate	13,208	31,536
Families:		
2010 Census	7,471	18,845
2016 Estimate	7,536	19,206
2021 Estimate	7,648	19,573
Average Household Size:		
2010 Census	2.17	2.27
2016 Estimate	2.15	2.25
2021 Estimate	2.14	2.23
Ethnicity:		
Hispanic	2.9%	2.2%
White	93.3%	94.5%
Black	1.5%	1.1%
American Indian	0.3%	0.3%
Asian	2.0%	1.6%
Pacific Islander	0.01%	0.01%
Other	0.5%	0.4%
Multiple	2.4%	2.1%
Median Age:		
2010 Census	44.7	44.0
2016 Estimate	46.3	45.7
2021 Estimate	47.3	46.9
Median Income:		
2016 Estimate	\$56,720	\$56,322
2021 Estimate	\$61,558	\$61,262
Household Budget Expenditures²:		
Housing	98	95
Entertainment & Recreation	100	98

¹ From the 2000 to the 2010 Census, the Primary Service Area experienced a 6.9% decrease in population

² This information is placed on an index with a reference point being the National average of 100.

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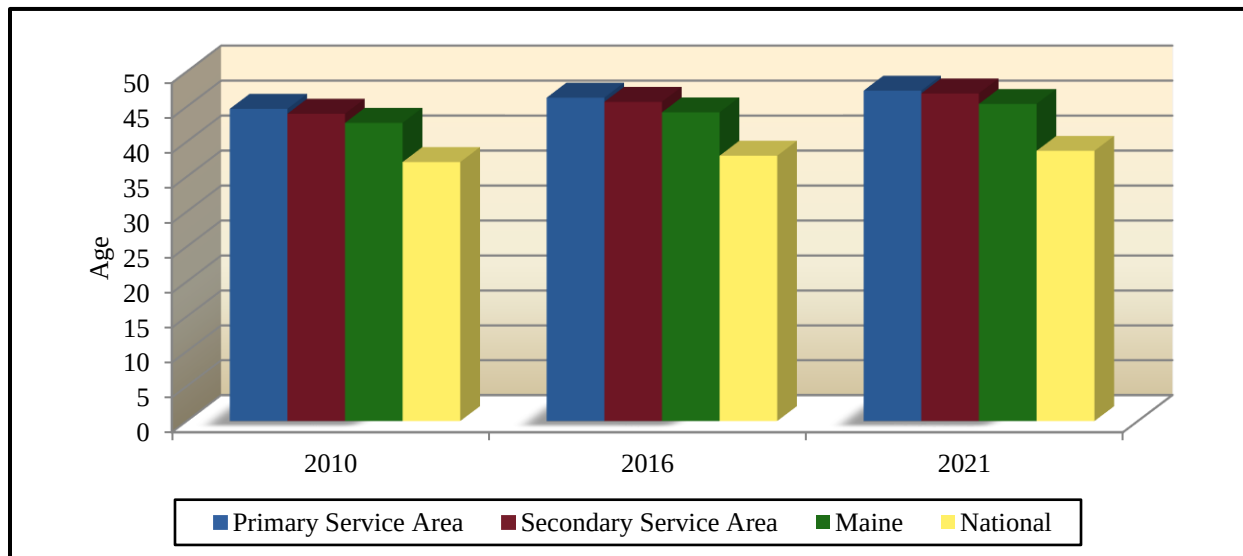


Age and Income: The median age and household income levels are compared with the national number as both of these factors are primary determiners of participation in recreation and aquatic activities. The lower the median age, the higher the participation rates are for most activities. The level of participation also increases as the median income level goes up.

Table B – Median Age:

	2010 Census	2016 Projection	2021 Projection
Primary Service Area	44.7	46.3	47.3
Secondary Service Area	44.0	45.7	46.9
State of Maine	42.7	44.2	45.4
Nationally	37.1	38.0	38.7

Chart A – Median Age:



The median age of the Primary Service Area, the Secondary Service Area and the State of Maine are all higher than the National number, with the Primary Service Area being the highest. In the Primary Service Area proper, the median age would reflect a population with more Baby Boomers and Senior Citizens, along with families but with older children.

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Households with Children: The following chart provides the number of households and percentage of households in the Primary Service Area and the Secondary Service Area with children.

Table C – Households w/ Children

	Number of Households w/ Children	Percentage of Households w/ Children
Primary Service Areas	3,068	24.4%
Secondary Service Area	8,123	27.3%

The information contained in Table-C helps further outline the presence of families with children. As a point of comparison in the 2010 Census, 27.8% of households in the State of Maine and 33.4% of households in the U.S. had children present.

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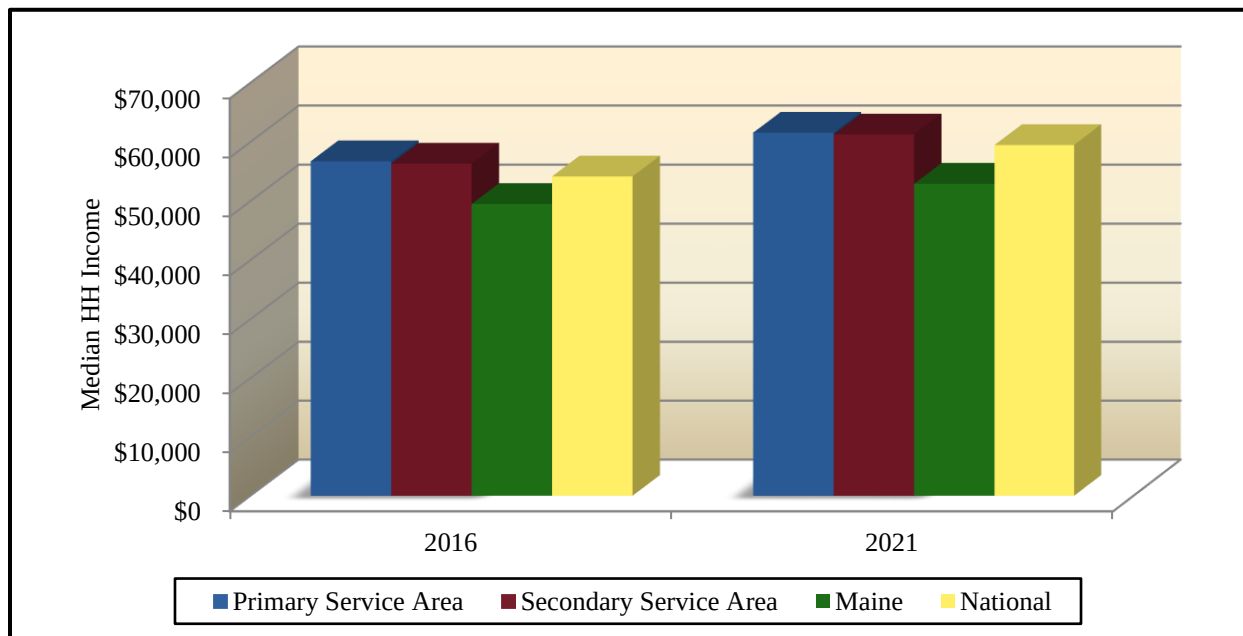
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Table D – Median Household Income:

	2016 Estimate	2021 Projection
Primary Service Area	\$56,720	\$61,558
Secondary Service Area	\$56,322	\$61,262
State of Maine	\$49,492	\$52,918
Nationally	\$54,149	\$59,476

Chart B – Median Household Income:



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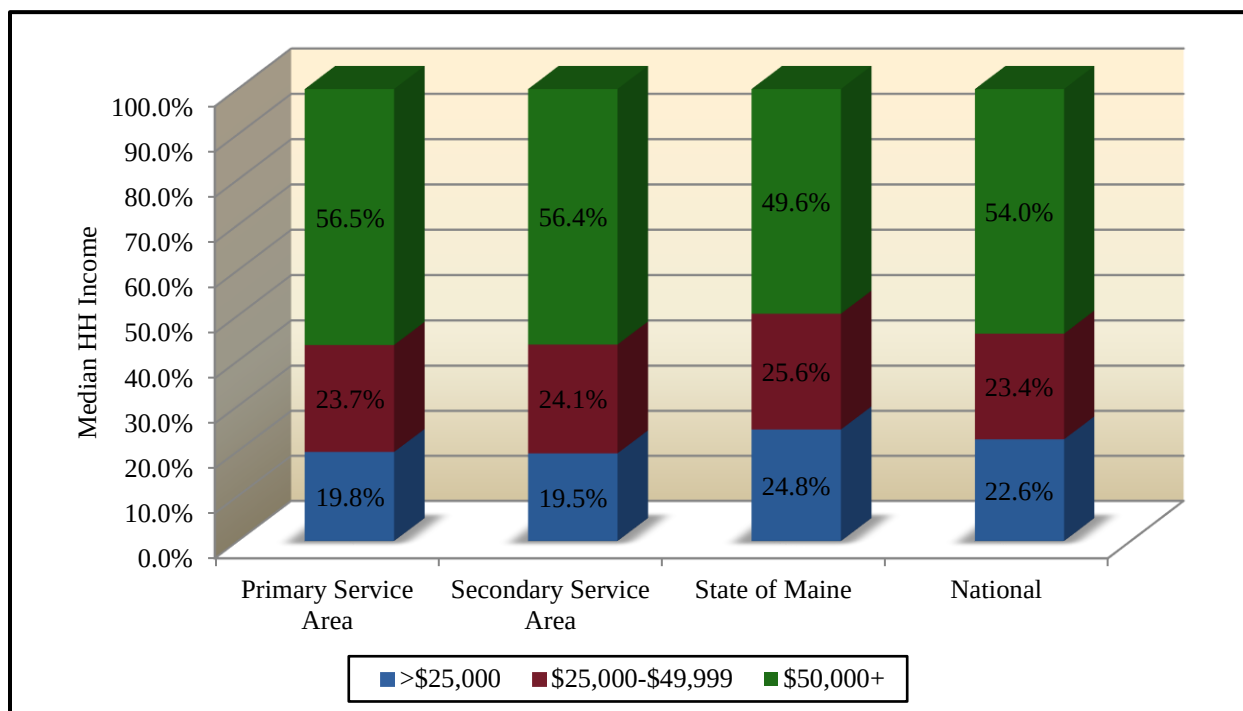
Based upon 2016 projections the following narrative can be provided the service areas:

In the Primary Service Area, the percentage of households with median income over \$50,000 per year is 56.5% compared to 50.1% on a national level. Furthermore, the percentage of the households in the service area with median income less than \$25,000 per year is 19.8% compared to a level of 24.7% nationally.

In the Secondary Service Area, the percentage of households with median income over \$50,000 per year is 56.4% compared to 50.1% on a national level. Furthermore, the percentage of the households in the service area with median income less than \$25,000 per year is 19.5% compared to a level of 24.7% nationally.

The median household income for the State of Maine is slightly lower than the National number while both the Primary & Secondary Service Area are slightly higher than the National number. It will be important to keep this information in mind when looking at the cost recovery philosophy for the proposed facility.

Chart C – Median Household Income Distribution



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Household Budget Expenditures: In addition to taking a look at Median Age and Median Income, it is important to examine Household Budget Expenditures. In particular looking at housing information; shelter, utilities, fuel and public services along with entertainment & recreation can provide a snap shot into the cost of living and spending patterns in the services areas. The table below looks at that information and compares the service areas.

Table E – Household Budget Expenditures³:

Primary Service Area	SPI	Average Amount Spent	Percent
Housing	98	\$20,070.89	30.4%
Shelter	97	\$15,068.10	22.9%
Utilities, Fuel, Public Service	103	\$5,002.79	7.6%
Entertainment & Recreation	100	\$2,922.21	4.4%

Secondary Service Area	SPI	Average Amount Spent	Percent
Housing	95	\$19,468.19	30.2%
Shelter	94	\$14,569.27	22.6%
Utilities, Fuel, Public Service	100	\$4,898.92	7.6%
Entertainment & Recreation	98	\$2,869.38	4.5%

State of Maine	SPI	Average Amount Spent	Percent
Housing	85	\$17,374.39	30.2%
Shelter	83	\$12,980.62	22.6%
Utilities, Fuel, Public Service	90	\$4,393.77	7.6%
Entertainment & Recreation	88	\$2,568.04	4.5%

SPI: Spending Potential Index as compared to the National number of 100.

Average Amount Spent: The average amount spent per household.

Percent: Percent of the total 100% of household expenditures.

18,

Note: Shelter along with Utilities, Fuel, Public Service are a portion of the Housing percentage.

³ Consumer Spending data are derived from the 2004 and 2005 Consumer Expenditure Surveys, Bureau of Labor Statistics. ESRI forecasts for 2012 and 2021.

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Chart D – Household Budget Expenditures Spending Potential Index:

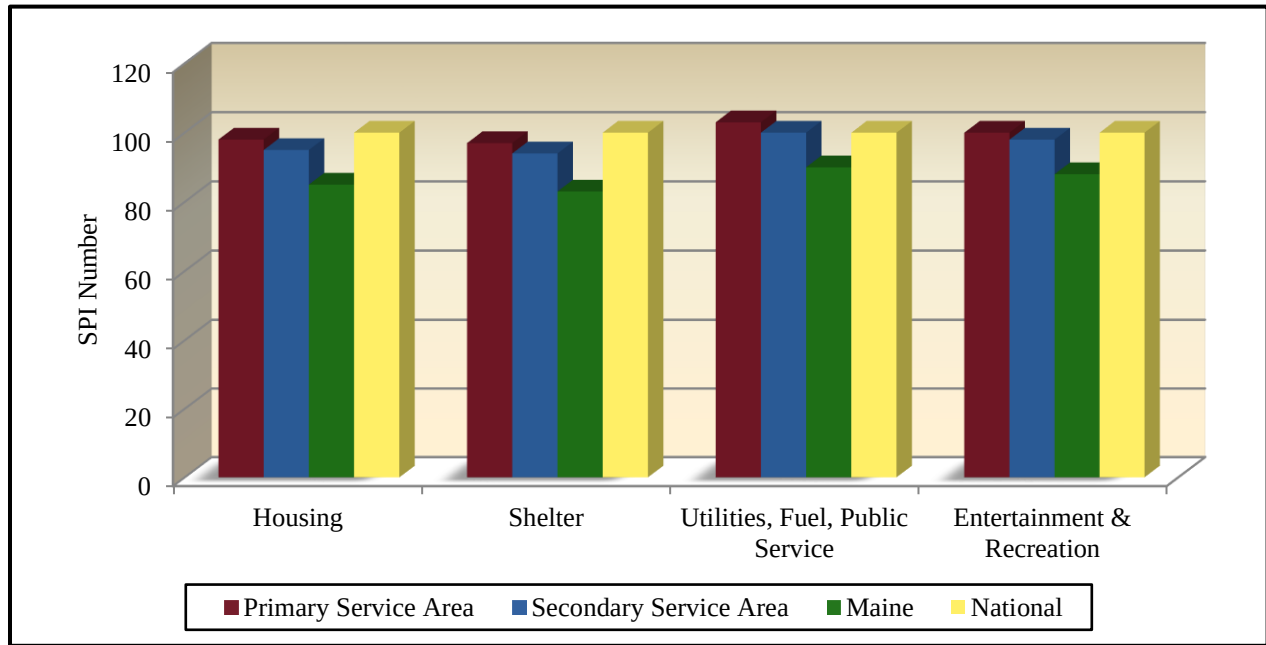


Chart D, illustrates the Household Budget Expenditures Spending Potential Index in the service areas. While the index in the State of Maine is significantly below the National Number the numbers in both the Primary & Secondary Service Area are more in line with the National number. This would indicate the overall cost of living in the Primary & Secondary Service Area is more in line with the Nation.

It will be important to keep this information in mind when developing a fee structure and looking at an appropriate cost recovery philosophy for the aquatic center.

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Recreation Expenditures Spending Potential Index: Finally, through the demographic provider that B*K utilizes for the market analysis portion of the report, we are able to examine the overall propensity for households to spend dollars on recreation activities. The following comparisons are possible.

Table F – Recreation Expenditures Spending Potential Index⁴:

Primary Service Area	SPI	Average Spent
Fees for Participant Sports	93	\$82.84
Fees for Recreational Lessons	88	\$108.10
Social, Recreation, Club Membership	94	\$179.65
Exercise Equipment/Game Tables	101	\$55.06
Other Sports Equipment	105	\$10.04

Secondary Service Area	SPI	Average Spent
Fees for Participant Sports	90	\$80.75
Fees for Recreational Lessons	86	\$105.84
Social, Recreation, Club Membership	91	\$173.93
Exercise Equipment/Game Tables	101	\$55.33
Other Sports Equipment	104	\$9.94

State of Maine	SPI	Average Spent
Fees for Participant Sports	80	\$71.27
Fees for Recreational Lessons	76	\$93.84
Social, Recreation, Club Membership	80	\$154.01
Exercise Equipment/Game Tables	93	\$50.69
Other Sports Equipment	95	\$9.04

Average Amount Spent: The average amount spent for the service or item in a year.

SPI: Spending potential index as compared to the national number of 100.

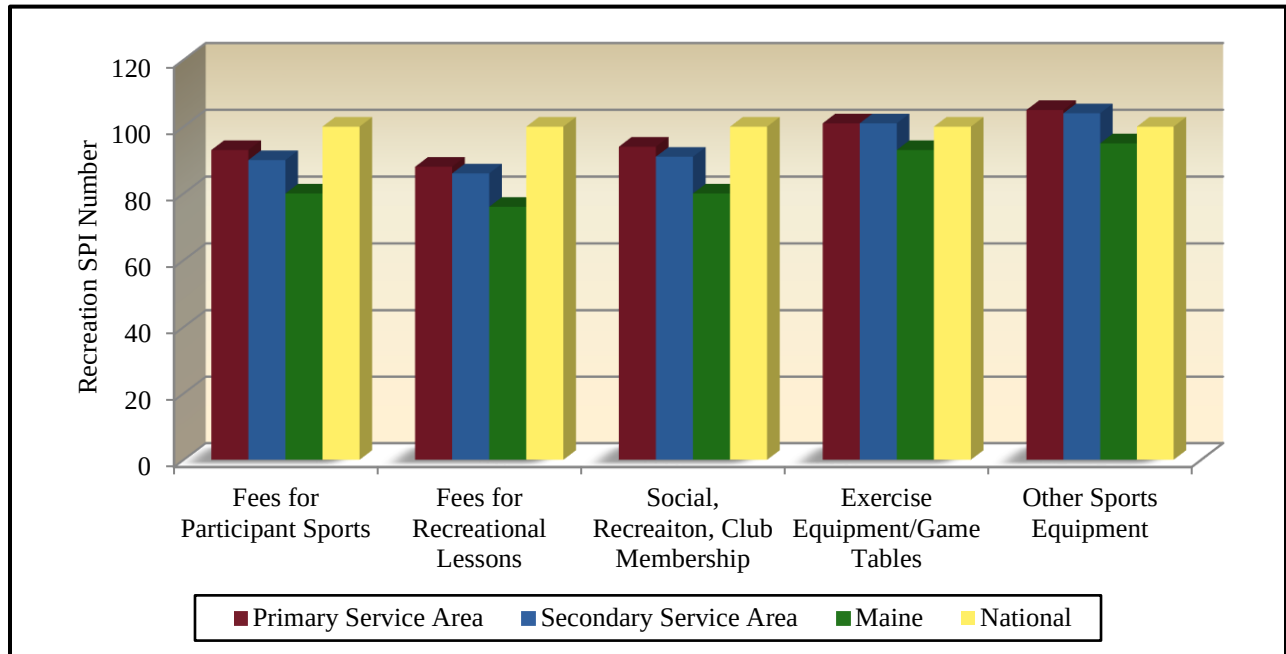
⁴ Consumer Spending data are derived from the 2006 and 2007 Consumer Expenditure Surveys, Bureau of Labor Statistics.

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Chart E – Recreation Spending Potential Index:



The Spending Potential Index for Recreation is very comparable to the numbers in the Household Budget Index as they follow the same pattern. The State number is significantly lower than the National Number while the Primary & Secondary Service Area Numbers are closer to the National number.

It is also important to note that these dollars are currently being spent, so the identification of alternative service providers and the ability of another facility to capture a portion of these dollars will be important.

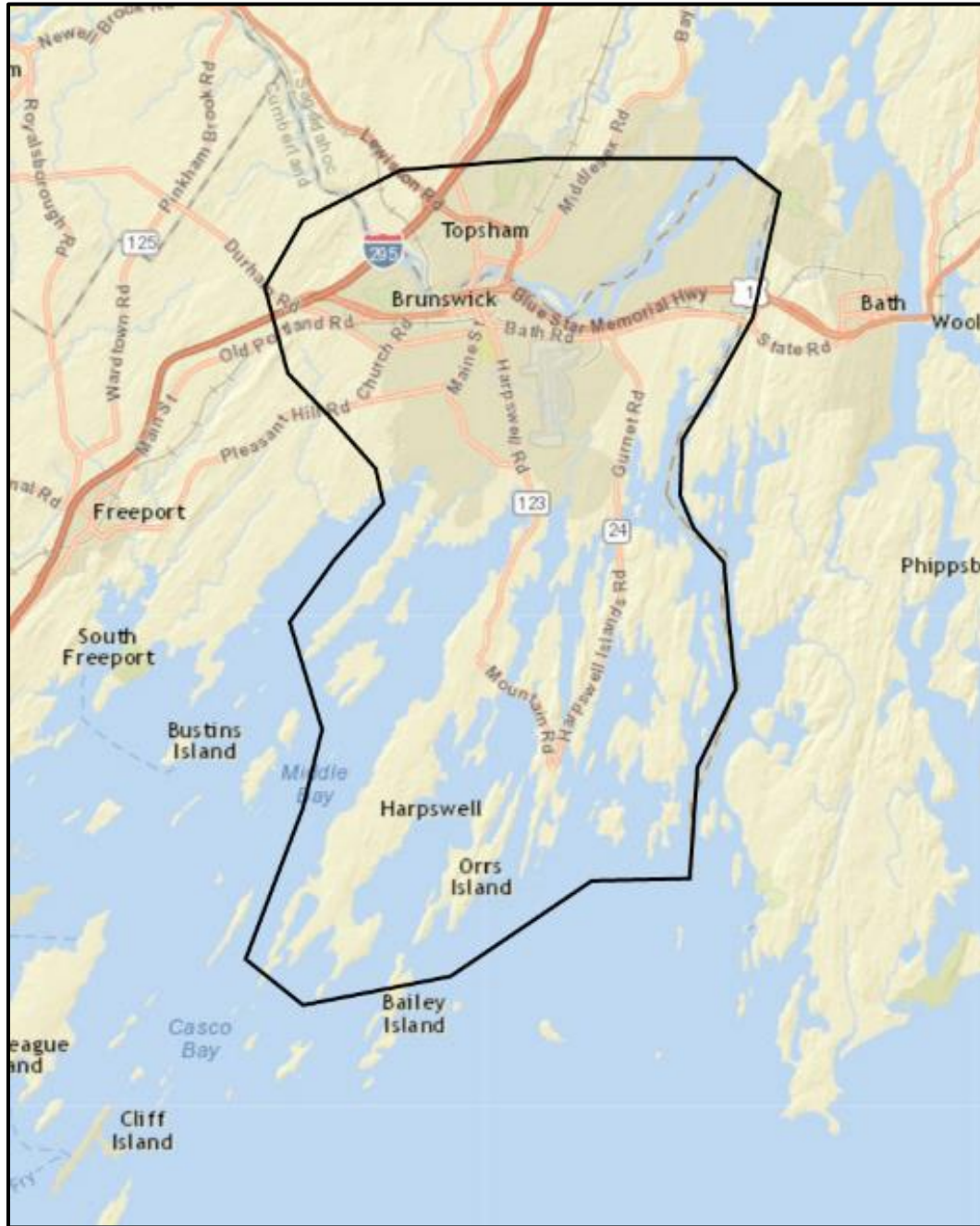
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Map A – Primary Service Area Map:

Primary Service Area – Includes Brunswick, Topsham, West Bath and Harpswell



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Population Distribution by Age: Utilizing census information for the Primary Service Area, the following comparisons are possible.

Table G – 2016 Primary Service Area Age Distribution

(ESRI estimates)

Ages	Population	% of Total	Nat. Population	Difference
-5	1,246	4.2%	6.2%	-2.0%
5-17	3,754	12.7%	16.5%	-3.8%
18-24	2,191	11.5%	9.9%	+1.6%
25-44	1,669	20.1%	26.3%	-6.2%
45-54	2,227	13.3%	13.3%	+0.0%
55-64	4,640	15.7%	12.8%	+2.9%
65-74	3,559	12.0%	8.8%	+3.2%
75+	3,105	10.5%	6.3%	+4.2%

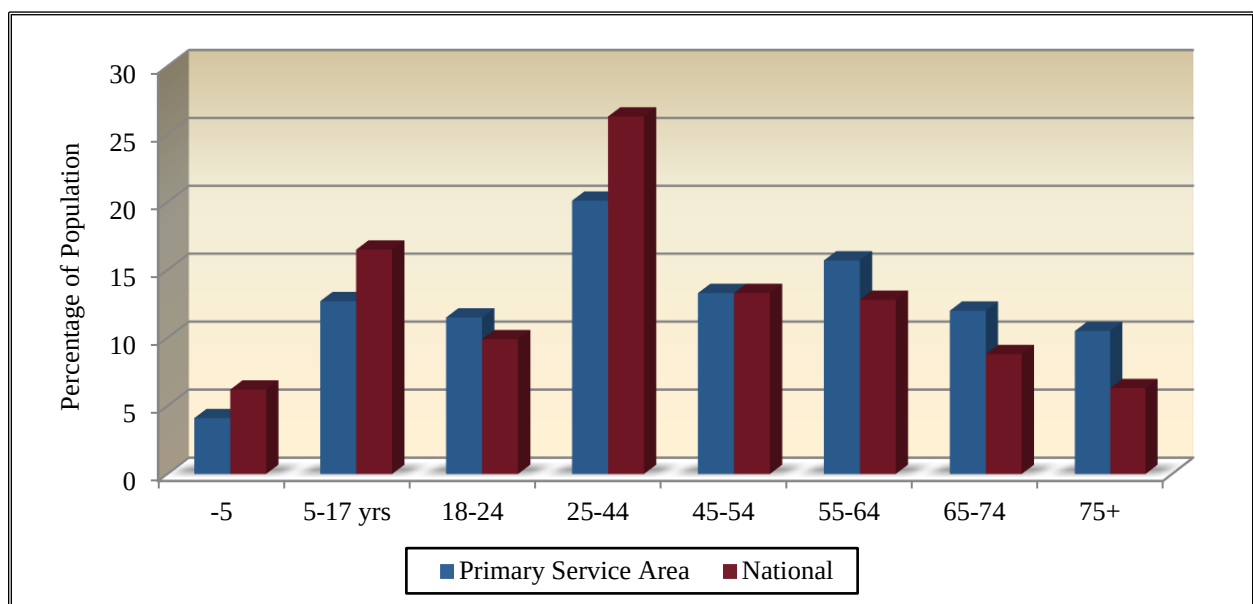
Population: 2016 census estimates in the different age groups in the Primary Service Area.

% of Total: Percentage of the Primary Service Area/population in the age group.

National Population: Percentage of the national population in the age group.

Difference: Percentage difference between the Primary Service Area population and the national population.

Chart F – 2016 Primary Service Area Age Group Distribution



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The demographic makeup of the Primary Service Area, when compared to the characteristics of the national population, indicates that there are some differences with an equal or larger population in the 18-24, 45-54, 55-64, 65-74 and 75+ age groups and a smaller population in the -5, 5-17 and 25-44 age groups. The largest positive variance is in the 75+ age group with +4.2%, while the greatest negative variance is in the 25-44 age group with -6.2%. This indicates a population that does not have a strong family with school aged children demographic and one that is influenced by the presence of students at Bowdoin College.

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Population Distribution Comparison by Age: Utilizing census information from the Primary Service Area, the following comparisons are possible.

Table H – 2016 Primary Service Area Population Estimates

(U.S. Census Information and ESRI)

Ages	2010 Census	2016 Projection	2021 Projection	Percent Change	Percent Change Nat'l
-5	1,047	1,246	1,236	+18.1%	+1.9%
5-17	4,034	3,754	3,639	-9.8%	+0.5%
18-24	3,319	3,403	3,340	+0.6%	+0.4%
25-44	5,985	5,931	6,070	+1.4%	+9.6%
45-54	4,395	3,924	3,489	-20.6%	-8.8%
55-64	4,250	4,640	4,686	+10.2%	+18.2%
65-74	2,882	3,559	4,170	+44.7%	+56.2%
75+	2,932	3,105	3,456	+17.9%	+27.1%

Chart G – Primary Service Area Population Growth

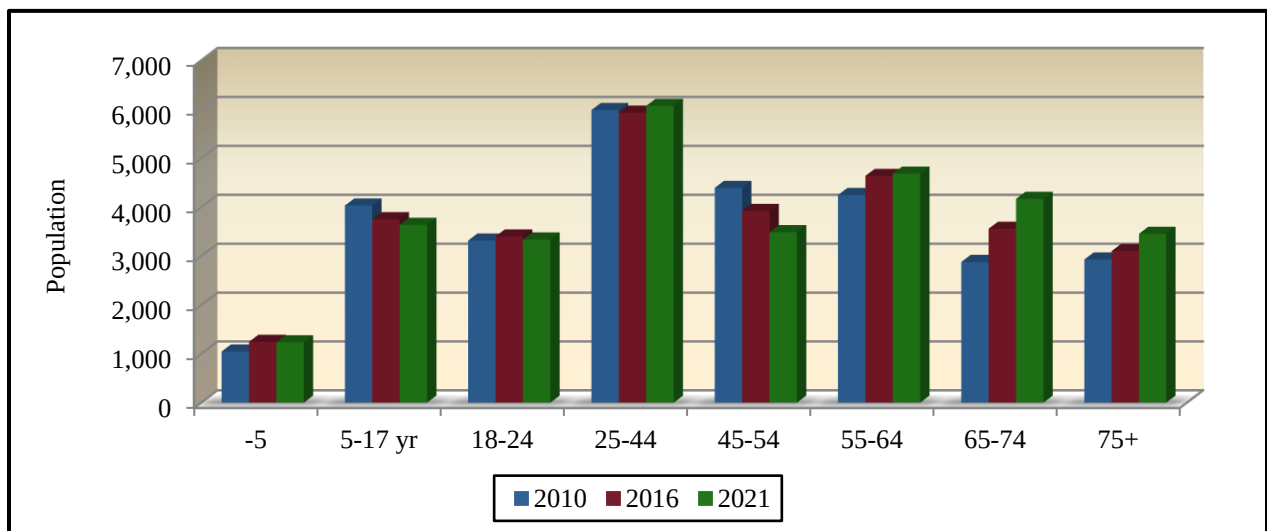


Table-H, illustrates the growth or decline in age group numbers from the 2010 census until the year 2021. It is projected that all of the age categories, except two 5-17 and 45-54, will see an increase in population. It must be remembered that the population of the United States as a whole is aging and it is not unusual to find negative growth numbers in the younger age groups and significant net gains in the 45 plus age groupings in communities which are relatively stable in their population numbers.

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Ethnicity and Race: Below is listed the distribution of the population by race and ethnicity for the Primary Service Area for 2016 population projections. Those numbers were developed from 2010 Census Data.

Table I – Primary Service Area Ethnic Population and Median Age

(Source – U.S. Census Bureau and ESRI)

Ethnicity	Total Population	Median Age	% of Population	% of ME Population
Hispanic	847	22.2	2.9%	1.7%

Table J – Primary Service Area Population by Race and Median Age

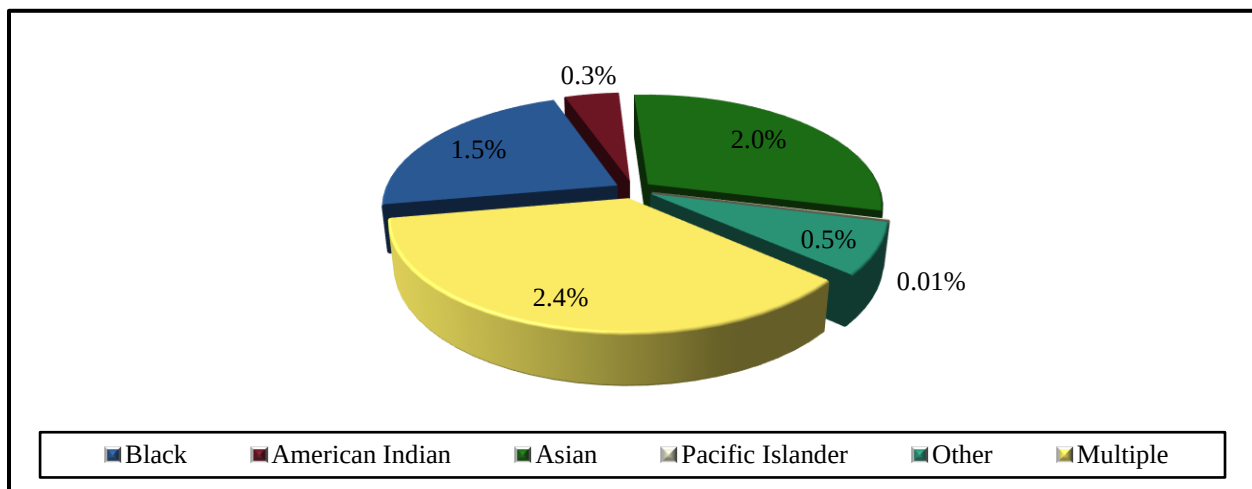
(Source – U.S. Census Bureau and ESRI)

Race	Total Population	Median Age	% of Population	% of ME Population
White	27,595	47.9	93.3%	94.4%
Black	430	24.1	1.5%	1.4%
American Indian	89	30.8	0.3%	0.7%
Asian	603	25.4	2.0%	1.2%
Pacific Islander	4	27.5	0.01%	0.04%
Other	141	22.6	0.5%	0.4%
Multiple	702	20.9	2.4%	1.9%

2016 Primary Service Area Total Population:

29,564 Residents

Chart H – Primary Service Area Non-White Population by Race



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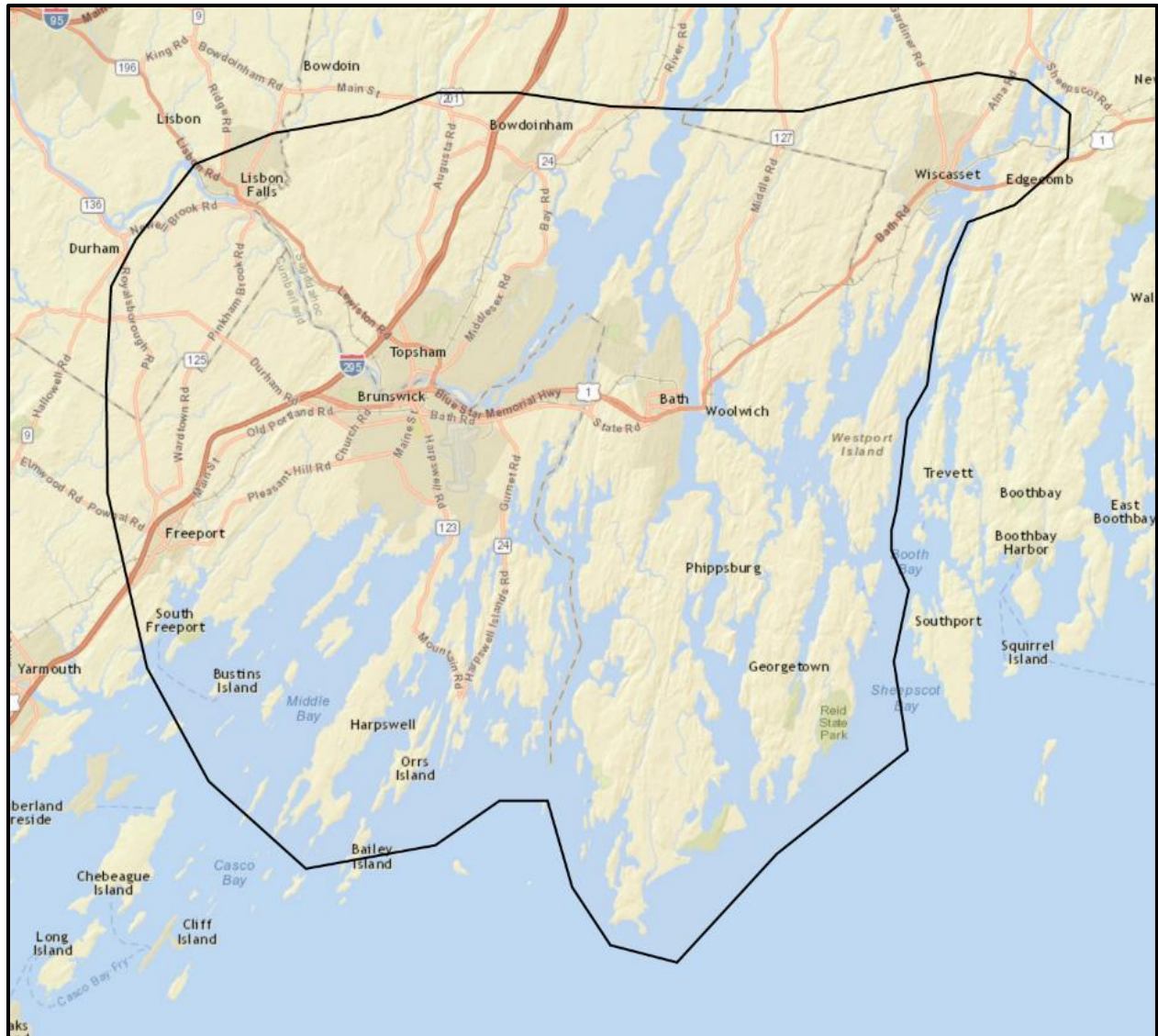
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Map B – Secondary Service Area Map:

Secondary Service Area – Includes all of the communities above plus; Bath, Durham, Lisbon, Freeport, Wiscasset and Bowdoinham



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Population Distribution by Age: Utilizing census information for the Secondary Service Area, the following comparisons are possible.

Table K – 2016 Secondary Service Area Age Distribution

(ESRI estimates)

Ages	Population	% of Total	Nat. Population	Difference
-5	3,425	4.8%	6.2%	-1.4%
5-17	9,982	14.0%	16.5%	-2.5%
18-24	4,046	8.8%	9.9%	-1.1%
25-44	4,628	21.5%	26.3%	-4.8%
45-54	5,755	14.5%	13.3%	+1.2%
55-64	11,464	16.1%	12.8%	+3.3%
65-74	8,501	11.9%	8.8%	+3.1%
75+	5,993	8.4%	6.3%	+2.1%

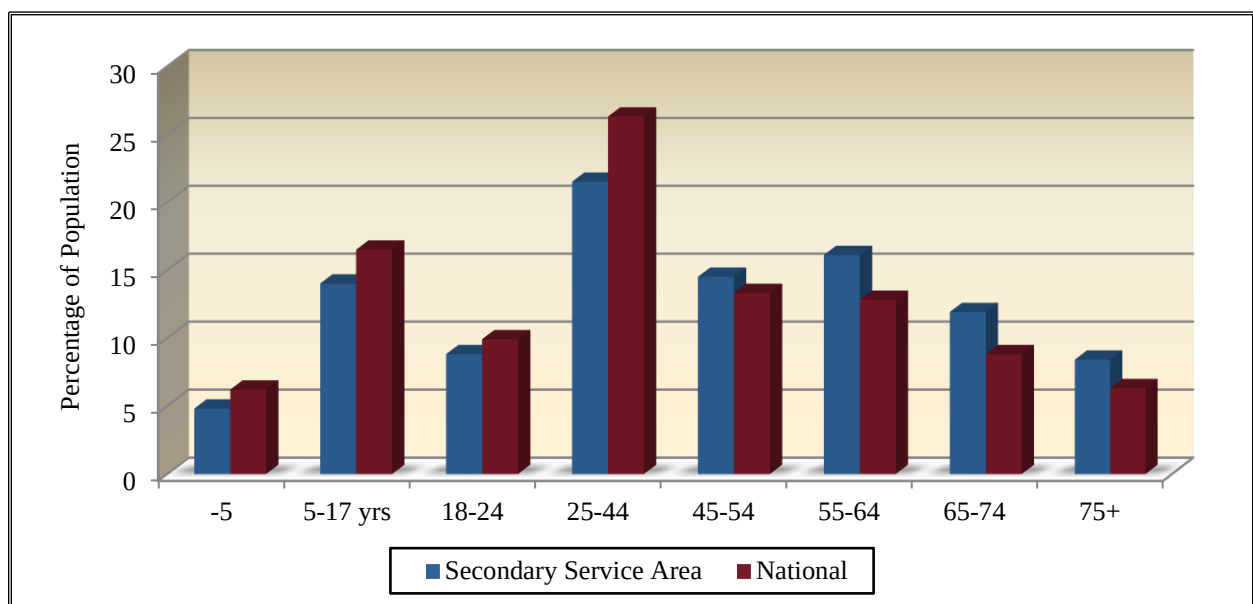
Population: 2016 census estimates in the different age groups in the Secondary Service Area.

% of Total: Percentage of the Secondary Service Area population in the age group.

National Population: Percentage of the national population in the age group.

Difference: Percentage difference between the Secondary Service Area population and the national population.

Chart I – 2016 Secondary Service Area Age Group Distribution



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The demographic makeup of the Secondary Service Area, when compared to the characteristics of the national population, indicates that there are some differences with an equal or larger population in the 45-54, 55-64, 65-74 and 75+ age groups and a smaller population in the -5, 5-17, 18-24 and 25-44 age groups. The largest positive variance is in the 55-64 age group with +3.3%, while the greatest negative variance is in the 25-44 age group with -4.8%. This is an older population with fewer families with school aged children.

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Population Distribution Comparison by Age: Utilizing census information from the Secondary Service Area, the following comparisons are possible.

Table L – 2016 Secondary Service Area Population Estimates

(U.S. Census Information and ESRI)

Ages	2010 Census	2016 Projection	2021 Projection	Percent Change	Percent Change Nat'l
-5	2,879	3,425	3,366	+16.9%	+1.9%
5-17	10,428	9,982	9,846	-5.6%	+0.5%
18-24	6,014	6,266	6,083	+1.1%	+0.4%
25-44	15,671	15,333	15,460	-1.3%	+9.6%
45-54	11,366	10,356	9,356	-17.7%	-8.8%
55-64	10,404	11,464	11,674	+12.2%	+18.2%
65-74	6,694	8,501	10,063	+50.3%	+56.2%
75+	5,523	5,993	6,930	+25.5%	+27.1%

Chart J – Secondary Service Area Population Growth

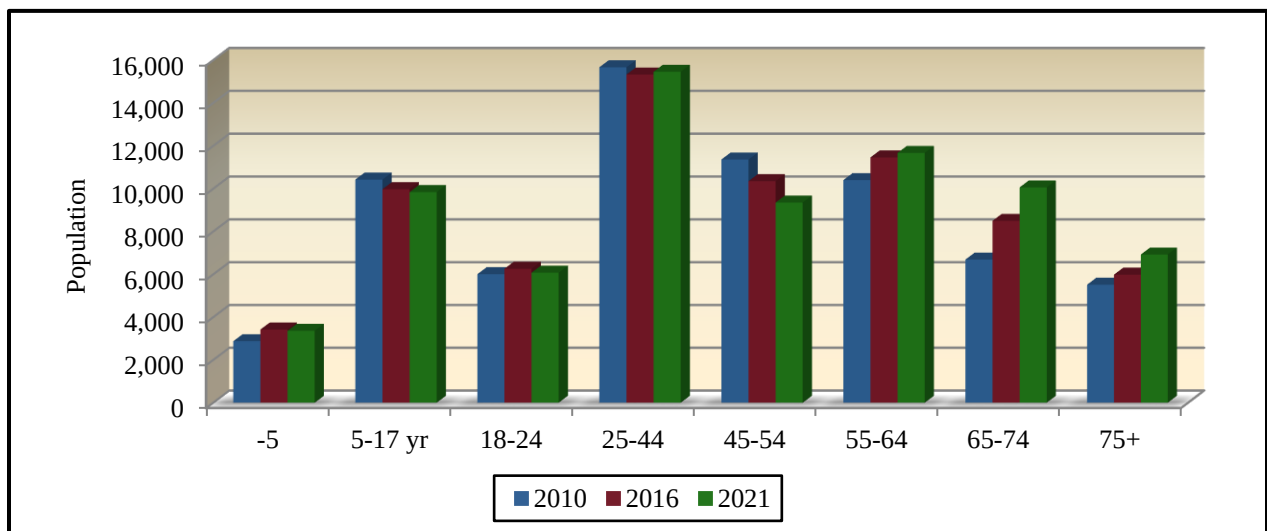


Table-L, illustrates the growth or decline in age group numbers from the 2010 census until the year 2021. It is projected that all of the age categories, except three 5-17, 25-44 and 45-54, will see an increase in population. It must be remembered that the population of the United States as a whole is aging and it is not unusual to find negative growth numbers in the younger age groups and significant net gains in the 45 plus age groupings in communities which are relatively stable in their population numbers.

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Ethnicity and Race: Below is listed the distribution of the population by race and ethnicity for the Secondary Service Area for 2016 population projections. Those numbers were developed from 2010 Census Data.

Table M – Secondary Service Area Ethnic Population and Median Age

(Source – U.S. Census Bureau and ESRI)

Ethnicity	Total Population	Median Age	% of Population	% of ME Population
Hispanic	1,552	23.0	2.2%	1.7%

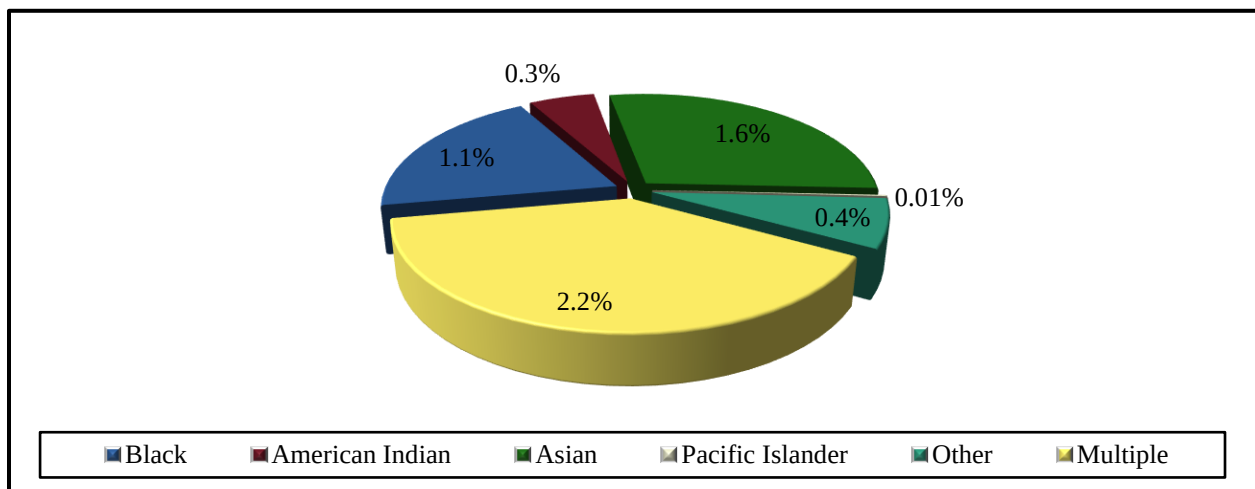
Table N – Secondary Service Area Population by Race and Median Age

(Source – U.S. Census Bureau and ESRI)

Race	Total Population	Median Age	% of Population	% of ME Population
White	67,402	46.7	94.5%	94.4%
Black	777	27.5	1.1%	1.4%
American Indian	238	36.3	0.3%	0.7%
Asian	1,128	31.0	1.6%	1.2%
Pacific Islander	9	37.5	0.01%	0.04%
Other	272	23.5	0.4%	0.4%
Multiple	1,496	20.8	2.2%	1.9%

2016 Secondary Service Area Total Population: 71,323 Residents

Chart K – Secondary Service Area Non-White Population by Race



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Tapestry Segmentation

Tapestry segmentation represents the 4th generation of market segmentation systems that began 30 years ago. The 65-segment Tapestry Segmentation system classifies U.S. neighborhoods based on their socioeconomic and demographic compositions. While the demographic landscape of the U.S. has changed significantly since the 2000 Census, the tapestry segmentation has remained stable as neighborhoods have evolved.

The value of including this information for the Service Areas is that it allows the organization to understand better the consumers/constituents in their service areas and supply them with the right products and services.

The Tapestry segmentation system classifies U.S. neighborhoods into 65 individual market segments. More than 60 attributes including; income, employment, home value, housing types, education, household composition, age and other key determinates of consumer behavior are used to identify neighborhoods.

The following pages and tables outline the top 5 tapestry segments in each of the service areas and provides a brief description of each. This information combined with the key indicators and demographic analysis of each service area help further describe the markets that the Primary and Secondary Service Areas looks to serve with programs, services, and special events.

For comparison purposes, the following are the top 10 Tapestry segments, along with percentage in the United States. The Primary and Secondary Services may or may not reflect these segments:

1. Green Acres (6A)	3.2%
2. Southern Satellites (10A)	3.2%
3. Savvy Suburbanites (1D)	3.0%
4. Salt of the Earth (6B)	2.9%
5. Soccer Moms (4A)	<u>2.8%</u>
	15.1%
6. Middleburg (4C)	2.8%
7. Midlife Constants (5E)	2.5%
8. Comfortable Empty Nesters (5A)	2.5%
9. Heartland Communities (6F)	2.4%
10. Old and Newcomers (8F)	<u>2.3%</u>
	12.5%

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Table O – Primary Service Area Tapestry Segment Comparison

(ESRI estimates)

	Primary Service Area		Demographics	
	Percent	Cumulative Percent	Median Age	Median HH Income
Rural Resort Dwellers (6E)	17.4%	17.4%	52.4	\$46,000
Midlife Constants (5E)	11.5%	28.9%	45.9	\$48,000
Parks & Rec (5C)	10.8%	39.7%	40.3	\$55,000
Set to Impress (11D)	9.0%	48.7%	33.1	\$29,000
Down the Road (10D)	7.2%	55.9%	34.3	\$36,000

Rural Resort Dwellers (6E) – These communities are centered in resort areas, many in the Midwest, where the change in seasons supports a variety of outdoor activities. Retirement looms for many of these blue collar, older householders, but workers are postponing retirement or returning to work to maintain their current lifestyles. They are passionate about their hobbies, like freshwater fishing and hunting. There is not a significant amount of diversity in this segment.

Midlife Constants (5E) – These residents are seniors, at or approaching retirement, with below average labor force participation and above average net worth. Although located in predominately metropolitan areas, they live outside the central cities, in smaller communities. Their lifestyle is more country than urban. There is not a significant amount of diversity in this segment. Leisure activities include reading, fishing and golf.

Parks & Rec (5C) – Many of these families are two-income married couples approaching retirement age; they are comfortable in their jobs and their homes, budget wisely, but do not plan on retiring anytime soon or moving. Neighborhoods are well established, as are the amenities and programs that supported their now independent children through school and college. The appeal of these kid friendly neighborhoods is attracting a new generation of families. There is a significant Hispanic (11.3%) population in this segment. Participation in parks and recreation programs along with exercise is a priority.

Set to Impress (11D) – This segment is depicted by medium to large multiunit apartments with lower than average rents. These apartments are often nestled into neighborhoods with other businesses or single-family housing. Nearly one in three residents in 20-34 years old, and over half of the homes are non-family households. Although many residents live alone, they preserve close connections with their family. Income levels are low; many work in food service while they are attending college. There is a significant Hispanic (15.7%) and Black (18.0%) population in this segment.

Down the Road (10D) – This is a mix of low-density, semirural neighborhoods in large metropolitan areas. These are younger, diverse communities, with the highest proportion of American Indians of any segment. These family-oriented consumers value their traditions. This market has higher unemployment, much lower median household income and home value and a fifth of households with income below poverty level.

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Table P – Secondary Service Area Tapestry Segment Comparison

(ESRI estimates)

	Primary Service Area		Demographics	
	Percent	Cumulative Percent	Median Age	Median HH Income
Rural Resort Dwellers (6E)	13.8%	13.8%	52.4	\$46,000
The Great Outdoors (6C)	12.3%	26.1%	46.3	\$53,000
Green Acres (6A)	10.6%	36.7%	43.0	\$72,000
Midlife Constants (5E)	9.2%	45.9%	45.9	\$48,000
Rustbelt Traditions (5D)	9.1%	55.0%	38.4	\$49,000

Rural Resort Dwellers (6E) – These communities are centered in resort areas, many in the Midwest, where the change in seasons supports a variety of outdoor activities. Retirement looms for many of these blue collar, older householders, but workers are postponing retirement or returning to work to maintain their current lifestyles. They are passionate about their hobbies, like freshwater fishing and hunting. There is not a significant amount of diversity in this segment.

The Great Outdoors (6C) – These neighborhoods are found in pastoral settings throughout the U.S. Consumers are educated empty nesters living an active but modest lifestyle. Although retirement beckons, most of these residents still work, with incomes slightly above the U.S. level. Over 55% of households are married-couple families; 36% are couples with no children living at home.

Rustbelt Traditions (5D) – These residents are a mix of married-couple families and singles living in older developments of single-family homes. This segment represents a large market of stable, hard-working consumers with modest incomes but above average net worth. Family oriented, they value time spent at home. Almost ½ of the households are married-couple families. There is a significant Hispanic (10.7%) population.

Green Acres (6A) – These resident's lifestyle features country living and self-reliance. They are avid do-it-yourselfers, maintaining and remodeling their homes, with all the necessary power tools to accomplish the job. Outdoor living also features a variety of sports; hunting and fishing, motorcycling, hiking and camping, even golf. This is an older market, primarily married couples, most with no children. There is not a significant amount of diversity in this segment.

Rustbelt Traditions (5D) – These residents are a mix of married-couple families and singles living in older developments of single-family homes. The work force is primarily white collar, with a higher concentration of skilled workers in manufacturing, retail trade and health care. This segment represents a large market of stable, hard-working consumers with modest incomes but above average net worth. Almost ½ of the households are married-couple families, most without children. There is a significant Hispanic (10.7%) population in this segment.

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Economic Growth at Brunswick Landing: Since the Brunswick Naval Air Station closed a little over 5 years ago, the area has been redeveloped as Brunswick Landing by the Midcoast Regional Redevelopment Authority. The 2015 annual report and June 2016 data indicated the following:

- The rate of business development at Brunswick Landing has exceeded original projections by a significant margin.
- Over 90 entities are doing business at Brunswick Landing.
- 350 acres and 35 buildings that have sold by MRRA to private developers for future redevelopment.
- There has been the creation of 1,200 new jobs.
- There are 900 students enrolled at Southern Maine Community College Midcoast Campus.
- Other important new businesses at Brunswick Landing include a new senior living facility, Firehouse Tumbling and a Bath YMCA facility. These entities could provide potential users for the aquatic center.
- There is a current payroll of between \$70-\$80 million dollars annually which is already half or more of the \$140 million that the BNAS was generating at the time of the announced closure.
- There are expectations for continued strong development and job growth in the future at Brunswick Landing.

For the new Community Aquatic Center in Brunswick Landing, the addition of jobs and new residents to the Brunswick area provides an expanded market for the new facility. The fact that this growth is expected to continue at a high rate for the next 10-12 years will ensure the economic vitality of the area and the financial success of the new aquatic center.

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Demographic Summary

The following summarizes the demographic characteristics of the service areas.

- The Primary Service Area is a smaller area but is adequate to support an outdoor aquatic facility with those population numbers.
- The Secondary Service Area is larger and will add a significant population base to support a community aquatic center, but it will need to contain some diverse, non-traditional flat-water elements to attract that population.
- The Primary Service Area is expected to see an increase in population over the next five years and the Secondary Service Area will also see an increase.
- The population of the two service areas are very comparable to one another in age distribution, growth patterns, ethnicity and racial composition. The main difference is the presence of college students in the Primary Service Area.
- The tapestry segments of both service area is comparable, indicating active older adults, but with a noticeable lack of families with younger children.
- The cost of living in the State of Maine is significantly lower than the National level, however the cost of living in both the Primary and Secondary Service Areas is comparable to the National level.
- The median household income level is consistent with the cost of living.
- The Midcoast Regional Redevelopment Authority has indicated very strong economic impact from redevelopment over the last five years as well as strong job growth. This is expected to continue for the next 10 plus years.
- It is important to recognize that there can also a number of Navy sailors that may be present in the area for short periods of time when their ships are being updated at Bath Ironworks.

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Swimming Participation Numbers:

In addition to analyzing the demographic realities of the service areas, it is possible to project possible participation in swimming.

On an annual basis, the National Sporting Goods Association (NSGA) conducts an in-depth study and survey of how Americans spend their leisure time. This information provides the data necessary to overlay rate of participation onto the Primary & Secondary Service Area to determine market potential.

B*K takes the national average and combines that with participation percentages of the service area based upon age distribution, median income and region. Those four percentages are then averaged together to create a unique participation percentage for the service area. This participation percentage when applied to the population of the Primary & Secondary Service Area then provides an idea of the market potential for swimming.

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Swimming Participation: The following are the projections on the rate of participation in swimming in the service areas.

Table Q – Swimming Participation Rates for the Primary Service Area

Activity	Age	Income	Region	Nation	Average
Swimming	14.7%	17.6%	17.1%	15.9%	16.3%

	Age	Income	Region	Nation	Average
Did Not Participate	23.3%	21.6%	18.7%	22.1%	21.4%

Table R – Recreation Activity Participation Rates for the Secondary Service Area

Activity	Age	Income	Region	Nation	Average
Swimming	15.1%	17.6%	17.1%	15.9%	16.4%

	Age	Income	Region	Nation	Average
Did Not Participate	23.0%	21.6%	18.7%	22.1%	21.4%

Age: Participation based on individuals ages 7 & Up of the Service Areas.

Income: Participation based on the 2016 estimated median household income in the Service Areas.

Region: Participation based on regional statistics (New England).

National: Participation based on national statistics.

Average: Average of the four columns.

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Anticipated Participation Numbers by Activity: Utilizing the average percentage from Table-Q and R above plus the 2010 census information and census estimates for 2016 and 2021 (over age 7) the following comparisons can be made.

Table S – Participation Rates Primary Service Area

Activity	Average	2010 Part.	2016 Part.	2021 Part.	Difference
Swimming	16.3%	4,446	4,532	4,623	+177

	Average	2010 Part.	2016 Part.	2021 Part.	Difference
Did Not Participate	21.4%	5,839	5,952	6,071	+232

Table T – Participation Rates Secondary Service Area

Activity	Average	2010 Part.	2016 Part.	2021 Part.	Difference
Swimming	16.4%	10,604	10,906	11,165	+561

	Average	2010 Part.	2016 Part.	2021 Part.	Difference
Did Not Participate	21.4%	13,795	14,189	14,524	+729

Note: The estimated participation numbers indicated above are for swimming and do not translate into attendance figures for a new facility that is being proposed for Primary Service Area. It should also be noted that the “Did Not Participate” statistics refers to all 55 activities outlined in the NSGA 2015 Survey Instrument.

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In addition to developing a unique participation percentage for the Primary Service Area and looking at the number of swimmer days, B*K also examines the frequency of participation in swimming according to the 2015 NSGA Survey. The chart below outlines that data.

Table U – Participation Frequency

	Frequent	Occasional	Infrequent
Swimming Frequency	110+	25-109	6-24
Swimming Percentage of Population	6.4%	45.0%	48.6%

In the chart above one can look at each activity and how it is defined with respect to visits being Frequent, Occasional or Infrequent and then the percentage of population that participates.

Table V – Participation Numbers in Primary Service Area

	Frequent	Occasional	Infrequent	Total
Swimming	112	67	15	
Population	290	2,039	2,203	
Visits	32,480	136,613	33,045	

The table above takes the frequency information one step further and identifies the number of times an individual may participate in the activity, applies the percentage from Table-U to the population in Table-S and then gives a total number of aquatic facility visits. Those visits are not specific to one facility, but rather specific to the Primary Service Area population. In other words, those visits are already taking place at the facilities within the service area.

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Table W – Participation Frequency

	Frequent	Occasional	Infrequent
Swimming Frequency	110+	25-109	6-24
Swimming Percentage of Population	6.4%	45.0%	48.6%

In the chart above one can look at each activity and how it is defined with respect to visits being Frequent, Occasional or Infrequent and then the percentage of population that participates.

Table X – Participation Numbers in Secondary Service Area

	Frequent	Occasional	Infrequent	Total
Swimming	112	67	15	
Population	698	4,908	5,300	
Visits	78,176	328,836	79,500	486,512

The table above takes the frequency information one step further and identifies the number of times an individual may participate in the activity, applies the percentage from Table-W to the population in Table-T and then gives a total number of aquatic facility visits. Those visits are not specific to one facility, but rather specific to the Secondary Service Area population. In other words, those visits are already taking place at the facilities within the service area.

Frequent Swimmers – Those individuals that participate in swimming for significant exercise, competitive swimmers, divers, water polo players and multi-sport athletes.

Occasional Swimmers – Those individuals that participate in swimming for exercise, in particular low impact, but also participate in swimming for the social aspect as well.

Infrequent Swimmers – Those individuals that participate in swimming strictly from an entertainment and socialization aspect.

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Participation by Ethnicity and Race: Participation in sports activities is also tracked by ethnicity and race. The table below compares the overall rate of participation nationally with the rate for Hispanics and African Americans. Utilizing information provided by the National Sporting Goods Association's 2015 survey, the following comparisons are possible.

Table Y – Comparison of National, African American and Hispanic Participation Rates

	Primary Service Area	National Participation	African American Participation	Hispanic Participation
Swimming	16.3%	15.9%	5.9%	12.0%
Did Not Participate	21.4%	22.1%	28.0%	24.3%

Table Z – Comparison of National, African American and Hispanic Participation Rates

	Secondary Service Area	National Participation	African American Participation	Hispanic Participation
Swimming	16.4%	15.9%	5.9%	12.0%
Did Not Participate	21.4%	22.1%	28.0%	24.3%

Primary Service Part: The unique participation percentage developed for the Secondary Service Area.

National Rate: The national percentage of individuals who participate in the given activity.

African American Rate: The percentage of African Americans who participate in the given activity.

Hispanic Rate: The percentage of Hispanics who participate in the given activity.

Based on the fact that there is not a significant African American or Hispanic population in both service areas, those participation rates become more relevant to the impact on overall participation percentages. It should be noted that no participation rates are available for Asian or other minority populations.

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Market Potential Index: In addition to examining the participation numbers for various indoor activities through the NSGA 2015 Survey and the Spending Potential Index for Entertainment & Recreation, B*K can access information about Sports & Leisure Market Potential.

Table AA – Market Potential Index for Adult Participation in Swimming in the Primary Service Area

Adults participated in:	Expected Number of Adults	Percent of Population	MPI
Swimming	3,613	14.7%	95

Table AB – Market Potential Index for Adult Participation in Swimming in the Secondary Service Area

Adults participated in:	Expected Number of Adults	Percent of Population	MPI
Swimming	9,135	15.8%	102

Expected # of Adults: Number of adults, 18 years of age and older, participating in the activity in the Secondary Service Area.

Percent of Population: Percent of the service area that participates in the activity.

MPI: Market potential index as compared to the national number of 100.

This table indicates that the overall propensity for adults to participate in swimming is slightly higher (for the Secondary Service Area) than the national number. This can be attributed to a number of factors; with access to facilities and ability to pay being two of the most common.

Note: Information is only available for adult sports participation from this source.

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Comparison of State Statistics with National Statistics: Utilizing information from the National Sporting Goods Association, the following charts illustrate the participation numbers in selected sports in the State of Maine.

State of Maine participation numbers in selected indoor and outdoor sports - As reported by the National Sporting Goods Association in 2012.

Table AC – Maine Participation Rates

Sport	Maine Participation (in thousands) ⁵	Age Group	Largest Number
Exercise Walking	422	55-64	45-54
Exercising w/ Equipment	163	25-34	25-34
Swimming	173	7-11	35-44
Aerobic Exercising	104	25-34	25-34
Running/Jogging	118	18-24	25-34
Workout @ Club	43	18-24	45-54
Weightlifting	65	18-24	25-34
Basketball	42	12-17	12-17
Yoga	77	25-34	25-34
Soccer	6	7-11	7-11
Volleyball	7	12-17	12-17

ME Participation: The number of people (in thousands) in Maine who participated more than once in the activity in 2012 and are at least 7 years of age.

Age Group: The age group in which the sport is most popular or in other words, where the highest percentage of the age group participates in the activity. (Example: The highest percent of an age group that participates in exercise walking is 55-64.) **This is a national statistic.**

Largest Number: The age group with the highest number of participants. Example: The greatest number of exercise walkers is in the 45-54 age group. (Note: This statistic is driven more by the sheer number of people in the age group than by the popularity of the sport in the age span.) **This is a national statistic.**

⁵ While hockey shows a “0” for participation that simply indicates that data for that activity was not submitted.

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Participation by Age Group: It is important to note where the greatest level of participation comes from in swimming with regards to age group. The following table speaks to the top 3 age groups. These are national statistics.

Table AD – Sports Participation Summary

Sport	1 st Highest	2 nd Highest	3 rd Highest
Swimming	7-11	12-17	35-44

Based upon this information it would be important to focus programming in and around the facility on activities where the 7-11 and 12-17 age group are the highest or second highest rate of participation.

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Swimming Cross-Participation: As part of the annual survey conducted by the NSGA cross participation analysis is conducted. The chart below indicates the other activities that swimmers participated in, compares that rate of participation to the national number and also provides an index.

Table AE – Swimming Cross-Participation

Activity	% Swimmer Part.	Total US Part.	Index
Exercise Walking	45.5%	36.2%	126
Running/Jogging	28.7%	14.9%	192
Exercising w/ Equip.	28.1%	19.1%	147
Bicycle Riding	27.7%	12.3%	224
Aerobic Exercising	22.9%	15.3%	149
Weightlifting	19.1%	11.8%	162
Basketball	18.8%	8.2%	229
Work Out @ Club	18.7%	12.5%	150
Yoga	17.6%	10.1%	174
Tennis	11.8%	4.3%	275
Soccer	11.7%	4.7%	251
Volleyball	11.0%	3.5%	311
Baseball	9.9%	3.9%	251
Ice/Figure Skating	7.5%	2.5%	296
Softball	6.7%	3.3%	202
Gymnastics	4.8%	1.9%	253
Martial Arts/MMA	3.8%	2.2%	175
Wrestling	2.6%	1.0%	266
Lacrosse	1.7%	1.0%	179
Hockey (ice)	1.4%	1.2%	117

Activity: Various activities that could take place around a pool or recreation facility.
% of Swimmer Part.: Percent of swimmers that participate in the corresponding activity.
Total US Part.: Total percent of US population that participates in an activity.
Index: National index is 100.

Based upon the 20 activities listed above the rate of swimmer participation in those activities is greater than the national participation rate in all activities. This information is valuable for the Town as it allows them to determine how they package swimming and other program information.

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Below are listed those sports activities that would often take place either in an indoor community recreation facility, or in close proximity to, and the percentage of growth or decline that each has experienced nationally over the last 10 years (2005-2014).

Table AF – National Activity Trend (in millions)

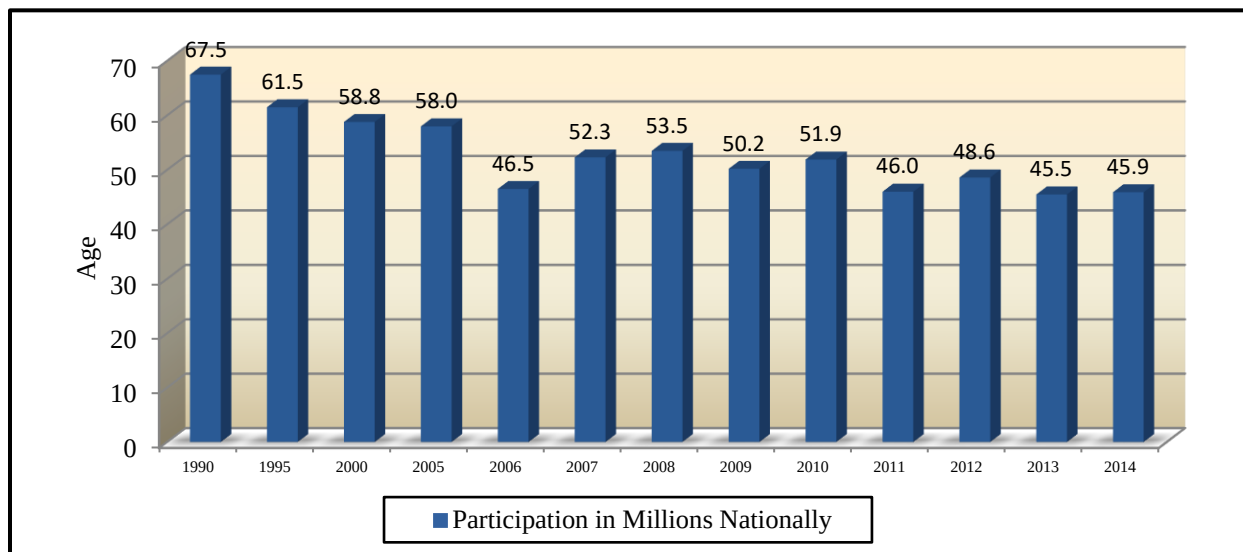
Sport/Activity	2005 Participation	2014 Participation	Percent Change
Swimming	58.0	45.9	-20.9%

2014 Participation: The number of participants per year in the activity (in millions) in the United States.

2005 Participation: The number of participants per year in the activity (in millions) in the United States.

Percent Change: The percent change in the level of participation from 2005 to 2014.

Chart L – Participation in Swimming:



While the national participation in swimming has been trending downward, USA Swimming has reported record registration numbers in the past 10 years. Additionally, swimming participation tends to see an increase in Olympic years. Although swimming has decreased the total number of participation is still in the top 3 of the National Sport Goods Association and is one of the few activities that individuals can participate in from birth to death.

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Aquatic Participation Trends: Without doubt the hottest trend in aquatics is the leisure pool concept. This idea of incorporating slides, lazy rivers (or current channels), fountains, zero depth entry and other water features into a pool's design has proved to be extremely popular for the recreational user. The age of the conventional pool in most recreational settings has greatly diminished. Leisure pools appeal to the younger kids (who are the largest segment of the population that swims) and to families. These types of facilities are able to attract and draw larger crowds and people tend to come from a further distance and stay longer to utilize such pools. This all translates into the potential to sell more admissions and increase revenues. It is estimated conservatively that a leisure pool can generate up to 30% more revenue than a comparable conventional pool and the cost of operation while being higher, has been offset through increased revenues. Of note is the fact that patrons seem willing to pay a higher user fee with this type of pool that is in a park like setting than a conventional aquatics facility.

Despite the recent emphasis on recreational swimming the more traditional aspects of aquatics (including swim teams, instruction and aqua fitness) remain as a part of most outdoor aquatic centers. The life safety issues associated with teaching children how to swim is a critical concern in most communities and competitive swim team programs continue to be important.

The family oriented outdoor water park concept has also gained in popularity by providing for a variety of interactive aquatics activities and programs in a park setting that features a lot of grass, shade structures, sand play areas and natural landscapes. This idea has proven to be financially successful with most outdoor aquatic centers being able to cover their operating costs with revenues generated by the facility itself. This has occurred by increasing the generation of revenues from higher user fees and increased use and attendance based on stronger market appeal.

A new concept is the spray ground, where a number of water spray features are placed in a playground setting where there is no standing water but the water is treated and recirculated much like a pool. This provides a fun, yet safe, environment where drowning is not a concern and lifeguards are not necessary.

Swimming is third only to walking and exercising with equipment in popularity of sports and leisure activities, meaning that there is a significant market for aquatic pursuits. Approximately 17.1% of the population in the New England region of the country participates in aquatic activities. This is a large segment of the population. Within the state of Maine, swimming is the number three most participated in sports activity behind exercise walking and exercising with equipment.

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Aquatic Facilities Market Orientation

Based on the aquatic trends and typical aquatic needs within a community, there are specific market areas that need to be addressed with aquatic facilities. These include:

- 1. Leisure/recreation aquatic activities** - This includes a variety of activities found at leisure pools with zero depth entry, warm water, play apparatus, slides, seating areas and deck space. These are often combined with other non-aquatic areas such as concessions and birthday party or other group event areas.
- 2. Instructional programming** - The primary emphasis is on teaching swimming and lifesaving skills to many different age groups. These activities have traditionally taken place in more conventional pool configurations but should not be confined to just these spaces. Reasonably warm water, shallow depth with deeper water (4 ft. or more), and open expanses of water are necessary for instructional activities. Easy pool access, a viewing area for parents, and deck space for instructors is also crucial.
- 3. Fitness programming** - These types of activities continue to grow in popularity among a large segment of the population. From aqua exercise classes, to lap swimming times, these programs take place in more traditional settings that have lap lanes and large open expanses of water available at a 3 1/2 to 5 ft. depth.
- 4. Competitive swimming/diving** - Swim team competition and training for youth, adults and seniors requires a traditional 6 to 10 lane pool with a 1 and/or 3 meter diving boards at a length of 25 yards or 50 meters. Ideally, the pool depth should be no less than 4 ft. deep (7 is preferred). Spectator seating and deck space for staging meets is necessary. This market is usually relatively small in number but very vocal on the demands for competitive pool space and time.
- 5. Specialized uses** – Activities such as water polo and synchronized swimming can also take place in competitive pool areas as long as the pool is deep enough (7 ft. minimum) and the pool area is large enough. However, these are activities that have small participant numbers and require relatively large pool areas. As a result, it may be difficult to meet the needs of all specialized uses on a regular basis.
- 6. Social/relaxation** - The appeal of using an aquatics area for relaxation has become a primary focus of many aquatic facilities. This concept has been very effective in drawing non-swimmers to aquatic facilities and expanding the market beyond the traditional swimming boundaries. The use of natural landscapes and creative pool designs that integrate the social elements with swimming activities has been most effective in reaching this market segment.

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7. Special events/rentals - There is a market for special events including kid's birthday parties, corporate events, community organization functions, and general rentals to outside groups. The development of this market will aid in the generation of additional revenues and these events/rentals can often be planned for after or before regular hours or during slow use times. It is important that special events or rentals not adversely affect daily operations or overall center use.

Specific market segments include:

1. Families - Within almost any market, an orientation towards family activities is essential. The ability to have family members of different ages participate in a fun and vibrant facility is essential.

2. Pre-school children - The needs of pre-school age children need to be met with very shallow or zero depth water which is warm and has play apparatus designed for their use. Interactive programming involving parents and toddlers can also be conducted in more traditional aquatic areas as well.

3. School age youth - A major focus should be to meet the needs of this age group from recreational swimming to competitive athletics. The leisure components such as slides, fountains, lazy rivers and zero depth will help to bring these individuals to the pool on a regular basis for drop-in recreational swimming. The lap lanes provide the opportunity and space necessary for instructional programs and aquatic team use.

4. Teens - Another aspect should be meeting the needs of the teenage population. Serving the needs of this age group will require leisure pool amenities that will keep their interest (slides) as well as the designation of certain "teen" times of use.

5. Seniors - As the population of the United States and the Brunswick area continues to age, meeting the needs of an older senior population will be essential. A more active and physically oriented senior is now demanding services to ensure their continued health. Aqua exercise, lap swimming, therapeutic conditioning and even learn to swim classes have proven to be popular with this age group.

6. Special interest groups - This is a market that needs to be explored to determine the use potential from a variety of groups. These could include swim teams (and other aquatic teams), school district teams, day care centers and social service organizations.

7. Military – Providing an aquatic center that can be utilized by military personnel for training purposes can be beneficial to the facility and allows for another user group to be accommodated. However, for a facility to be effectively utilized for this purpose may require deeper water depths and other features that may not have a strong market appeal to the general public.

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Aquatics Participation Summary:

The following is a brief summary of the possible aquatic participation rates for swimming.

- Swimming is the number 3 most popular sport nationally as well as in the service areas.
- The overall popularity of swimming has decreased by approximately 20.9% in the last 10 years.
- The age group with the highest rate of participation in swimming is 7-11.
- The rate of participation in swimming is approximately 16.4% of the population over age 7 in both service areas.
- There are estimated to be approximately 202,000 swimmer days available in the Primary Service Area (in 2016) and approximately 486,500 swimmer days available in the Secondary Service Area.
- Approximately 49% of all swimmers swim less than 24 times a year and only 6.4% swim 110 times or more. This means that most swimmers are recreational swimmers rather than competitive.

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Brunswick Area Outdoor Aquatic Facilities Assessment: Within the greater Brunswick area there are a limited number of outdoor pools to serve a significant population base.

There are generally three types of outdoor aquatic facilities. Natural bodies of water either freshwater or salt water that have beaches and other natural areas. Traditional outdoor swimming pools, with concrete/plaster pools, decks, locker rooms and other support spaces. The water is treated and sometimes even heated. The third type is a splash pad that has interactive water features, concrete decks and treated water but no standing water. Each of these types of outdoor aquatic facilities has a different appeal and market focus as well as different type of user. As a result, these three types of facilities should not be seen as interchangeable or serving the same markets.

There are a significant number of natural bodies of water in the Brunswick area but far fewer outdoor pools or splash pads.

Public and Non-Profit Outdoor Providers

There are a very limited number of public outdoor aquatic facilities in the Brunswick area but these do include:

- *Coffin Pond* – This aquatic center is owned and operated by the Town of Brunswick but it is a hybrid facility since it does not have a formal, finished tank but does have chlorinated water, sand bottom, and zero depth entry. The facility also has a small slide, an older bath house and a small concession area. This existing center has a market focus on younger children and suffers from the perception that the water and beach area is not clean.



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- *Winslow Park* – Located in Freeport, this park has a tidal beach that is available for swimming. This is an open water facility.

Beyond these immediate facilities, there are a number of other pools in communities that are outside of the Brunswick market.

- *Kennedy Park* – This park in Lewiston has a pool that includes a splash pad.
- *Almond Municipal Pool* – Located in Waterville, this is a significant outdoor pool that includes a wading pool, zero depth entry area with a mushroom, lap lanes and a slide area.
- *Kiwanis Pool* – This pool is located in Portland near the airport. It has a heated pool and splash pad.

Private Providers

In addition to the public providers noted above there are also a few private facilities. This includes:

- *Thomas Beach* – This facility is located just outside of Brunswick and the swim beach is part of a much larger campground and event area. This is an open water facility.
- *Funtown Splashtown and Aquaboggen*– These are two commercial water parks located in the Portland area. The fee for use is much higher than other facilities.

Indoor Aquatic Centers

Besides the existing outdoor aquatic facilities in the area, there are a number of indoor aquatic centers. However, indoor and outdoor pools serve very different markets and cannot be considered as being the same.

Bowdoin College Pool – This is an indoor pool with up to 22 lanes in the 25 yard configuration that also includes diving. The pool is not really open to the general public.

Bath YMCA – Located in close proximity to Brunswick, this facility includes an 8 lane x 25 yard pool, a warm water teaching/therapy pool plus an on-deck whirlpool.

Casco Bay YMCA – This Y has two pools and is located in Freeport.

Paulson and Frank Pools – These two pools are part of larger recreation centers in Portland.

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This is a representative listing of alternative outdoor /indoor aquatic facilities in the area and is not meant to be a total accounting of all service providers. There may be other facilities located in the greater Brunswick area that have an impact on the market as well.

Market Opportunities - Based on the other aquatic facilities located in the greater Brunswick area, the following are market opportunities for a new Brunswick Community Aquatic Facility.

- The Town's existing aquatic facility, Coffin Pond, is a hybrid facility that is not really a true pool and functions more as a natural body of water. This limits its appeal to the swimming market. The facility also has a rather narrow focus on younger children. The bath house and other areas of the facility are in poor physical condition and in need of a significant remodel or outright replacement.
- The closest true outdoor pool is located in Lewiston or to the south in Portland. These facilities are a considerable distance from Brunswick.
- There are several indoor aquatic facilities in the Brunswick area (Bowdoin College and Bath YMCA) and they play an important role in providing aquatic programs and services but there is a different appeal between indoor and outdoor pools.
- There are a number of natural bodies of water in the immediate area (Winslow Park and Thomas Beach) but these facilities serve a very different market than a formal outdoor pool.

Market Constraints – In addition to the market opportunities, it is also important to analyze possible market constraints. These include.

- While there are no true outdoor pools in the immediate Brunswick market, there are other aquatic opportunities present from indoor pools to natural bodies of water.
- The presence of other outdoor pools to the north, west and south will have some small impact on a possible regional market for a new Brunswick Aquatic Facility.
- The season for an outdoor aquatic facility is short (approximately 2 months) and can be adversely impacted by the weather.

Even with the presence of a number of existing pools there is still a market for a significant, publicly owned, aquatic facility in Brunswick. To be financially viable a Brunswick Aquatic Facility will need to have a focus not only on traditional aquatic activities (lap swimming, competitive swimming, lessons and fitness) but also on recreational swimming (slides, interactive

MARKET ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



play features, and shallow water). There will also need to be a high level of aquatic programming offered as well.

As has been noted earlier, there are estimated to be 202,000 swimmer days in the Primary Service Area and if a new aquatic facility were able to attract as few as 10% of these available swimmer days (a very conservative figure) this would convert to 20,200 swimmer days (this includes all types of swimming activities, not just paid admissions). This is a strong number of swimmer days that would also be augmented by further participation from the Secondary Service Area. Capturing 5% of the swimmer days (284,500 additional days) would mean another 14,225 visits.

6. Conceptual Design Process

General

As noted in the Programming Section of this report, the basic programming of the proposed aquatic facility is based on the results of a Town-wide survey. The design process required the design team to take the stated program desires from the survey and meetings with Town Staff, the Recreation Commission, and various stakeholders; then develop design options that address the program, site conditions, technical parameters of a pool complex, and the budget.

In the early stages of design and during public meetings, various images of aquatic facilities were presented to illustrate program options and solicit comments from the Town.

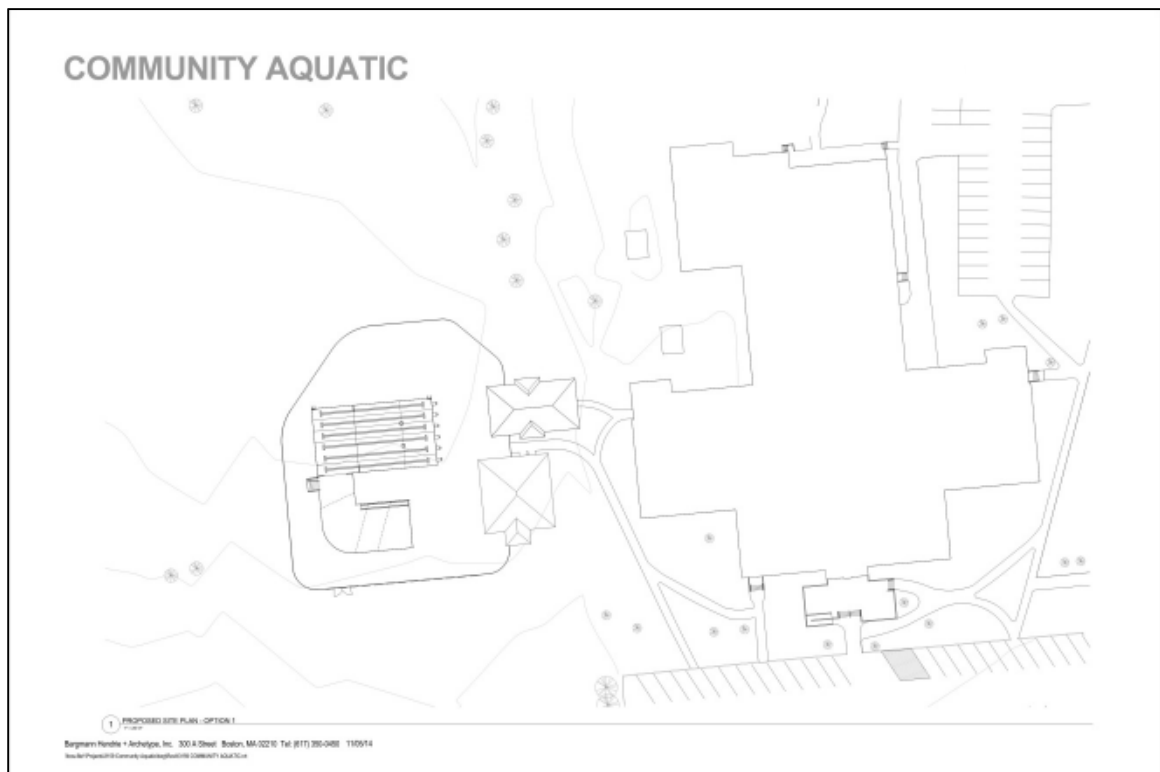


Images presented during the design process

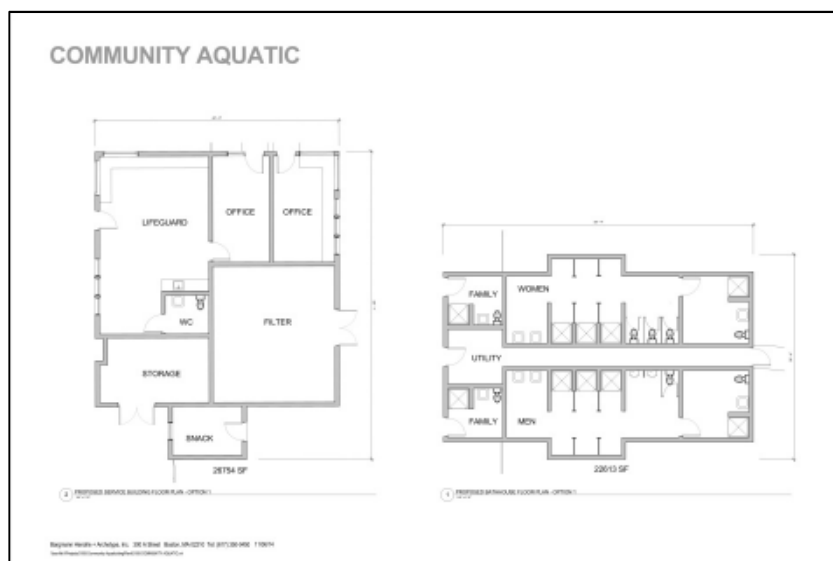
Early Concepts November 2014

The first designs begin to identify the size and shape of the pool, building designs, and the complex's location on the site.

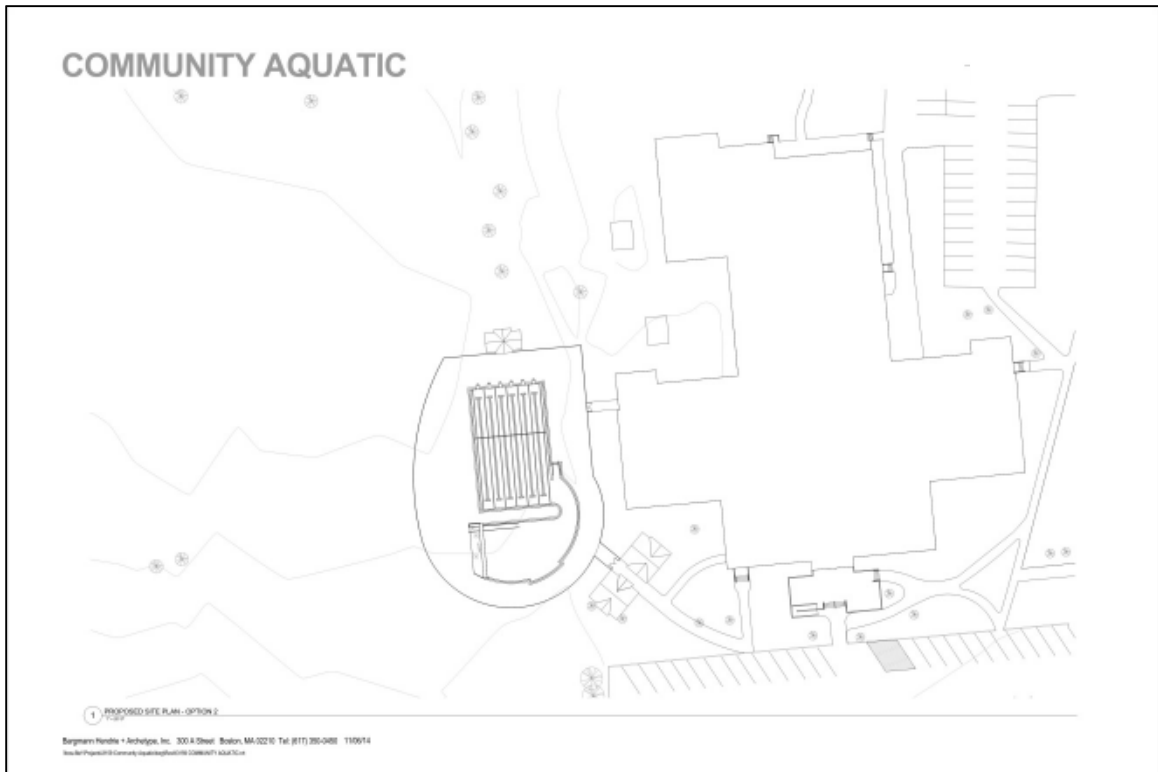
Option 1 features a 5,200 SF, 6 lane 25 yard lap area with an "L"-shaped zero depth entry pool. This design is a "free standing" complex and does not rely on the existing recreation center for toilet and shower facilities. A 2,300 SF support building houses lifeguard filtration equipment, a concession area, and storage. The toilet shower facility contains separate women's and men's facilities and two family "unisex" shower/toilet rooms. The fixture count provides the required quantity for the pool bather load.



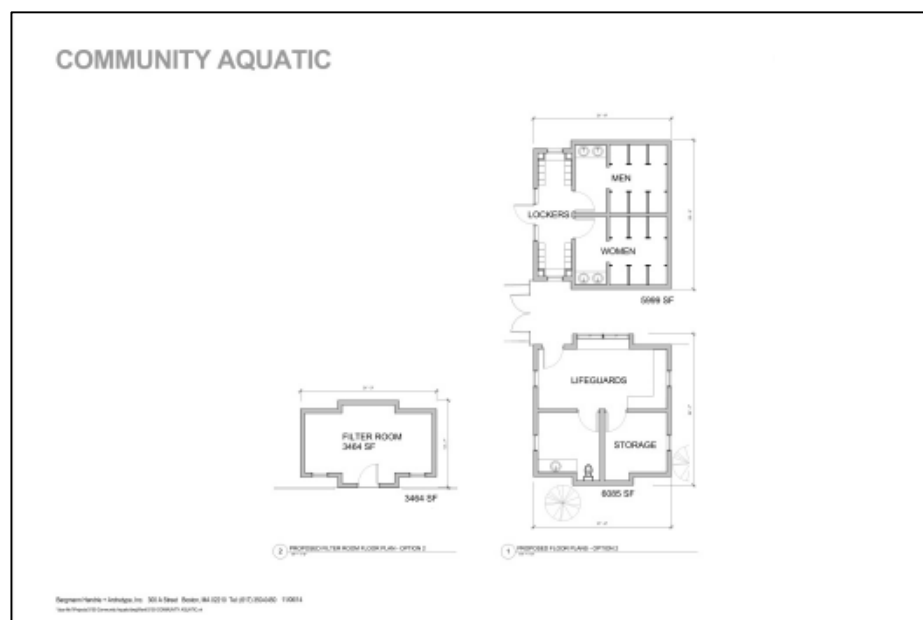
Option 1



Option 2 features a 5,500 SF, 6 lane 25 yard lap area with a curved zero depth entry pool. This design takes advantage of the toilets and showers in the existing recreation building. . Two 480 SF buildings house a lifeguard space, showers, changing space, and storage. A 275 SF filter building is located adjacent the deep end of the pool.



Option 2



Revised Concepts February 2015

The desire to incorporate a “lazy river” ranked very high in the Town-wide survey. A lazy river is a defined water course within a pool that allows you to float on a raft/flotation device through slow moving water. An additional drain, pump and return water outlets return water at a high flow rate to create a current through the water course. The lazy river is typically 3 feet to 3 feet 6 inches deep. When not used for flotation, bathers can walk or swim against the current for water exercise.



Image of Lazy River

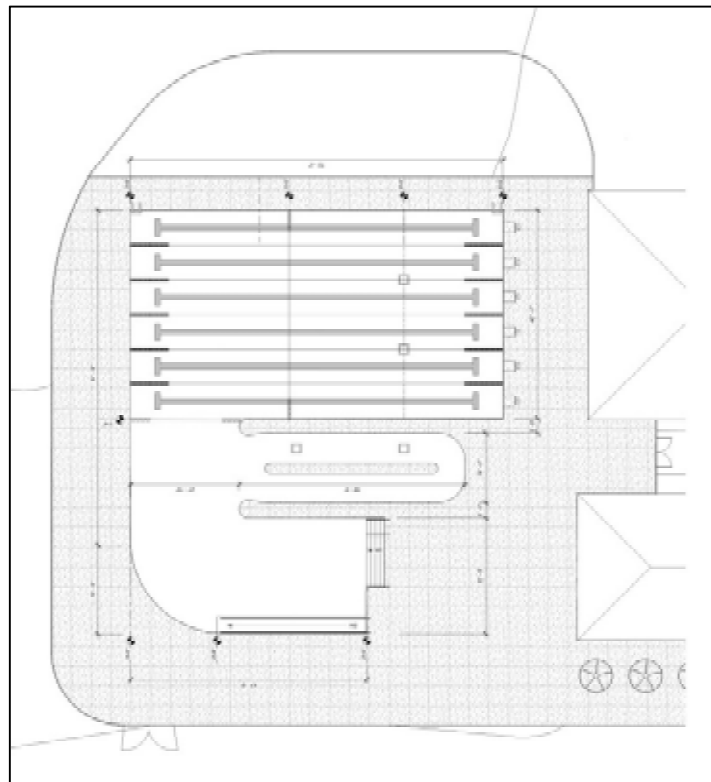
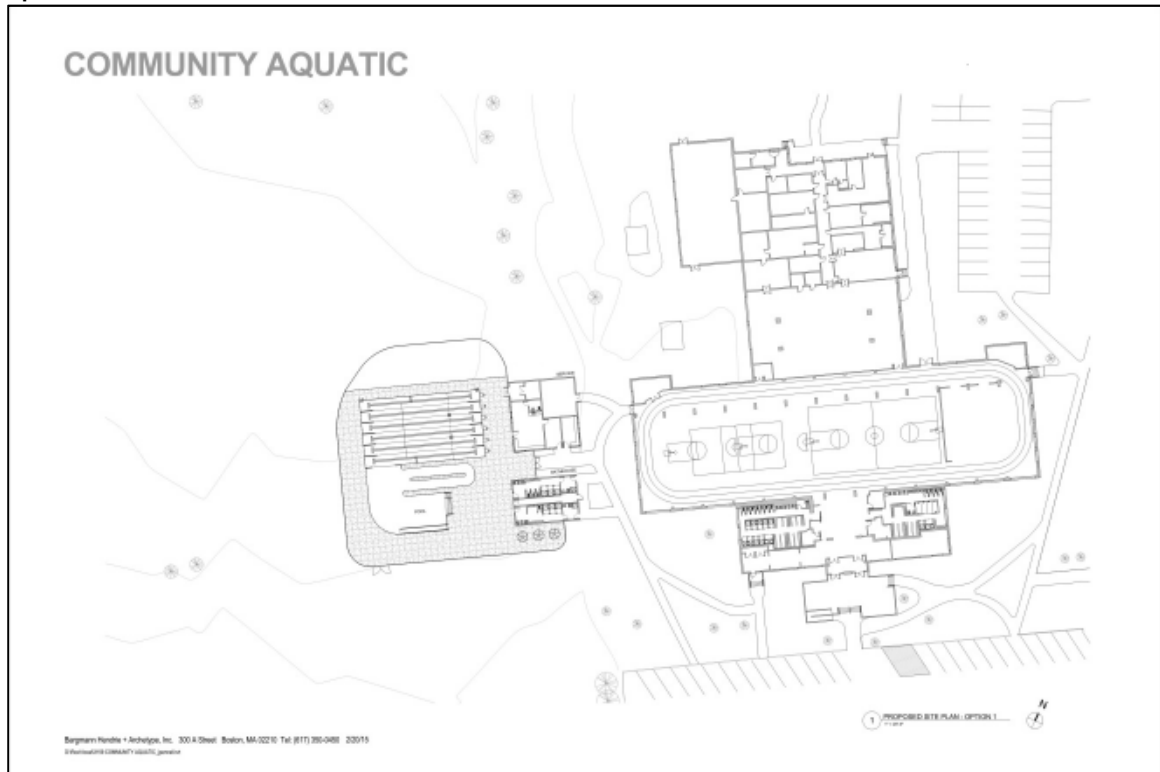
Design Options

Options 3 and Options 4 take the basic pool designs and incorporate a simple “lazy river” loop. Option 3 uses the larger “free standing” building designs for a complex independent from the recreation building. Option 4 utilizes the showers and toilets within the adjacent recreation building.

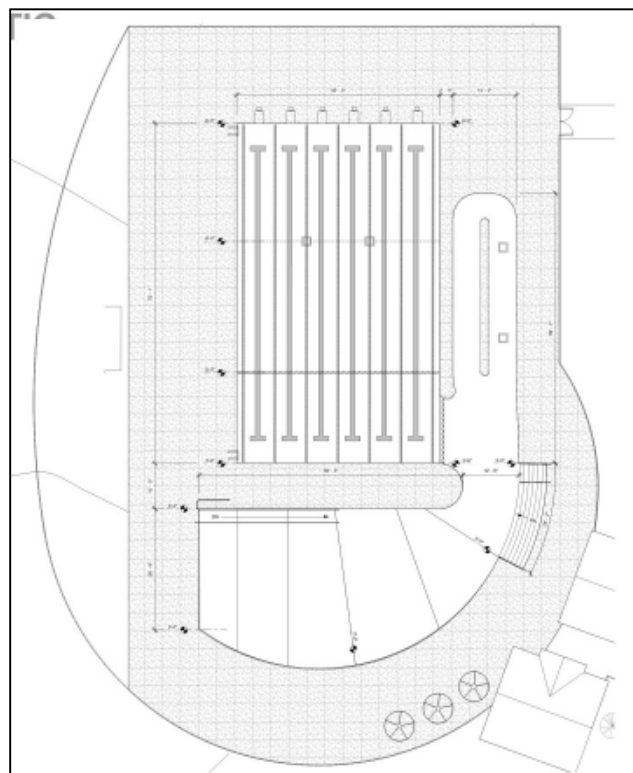
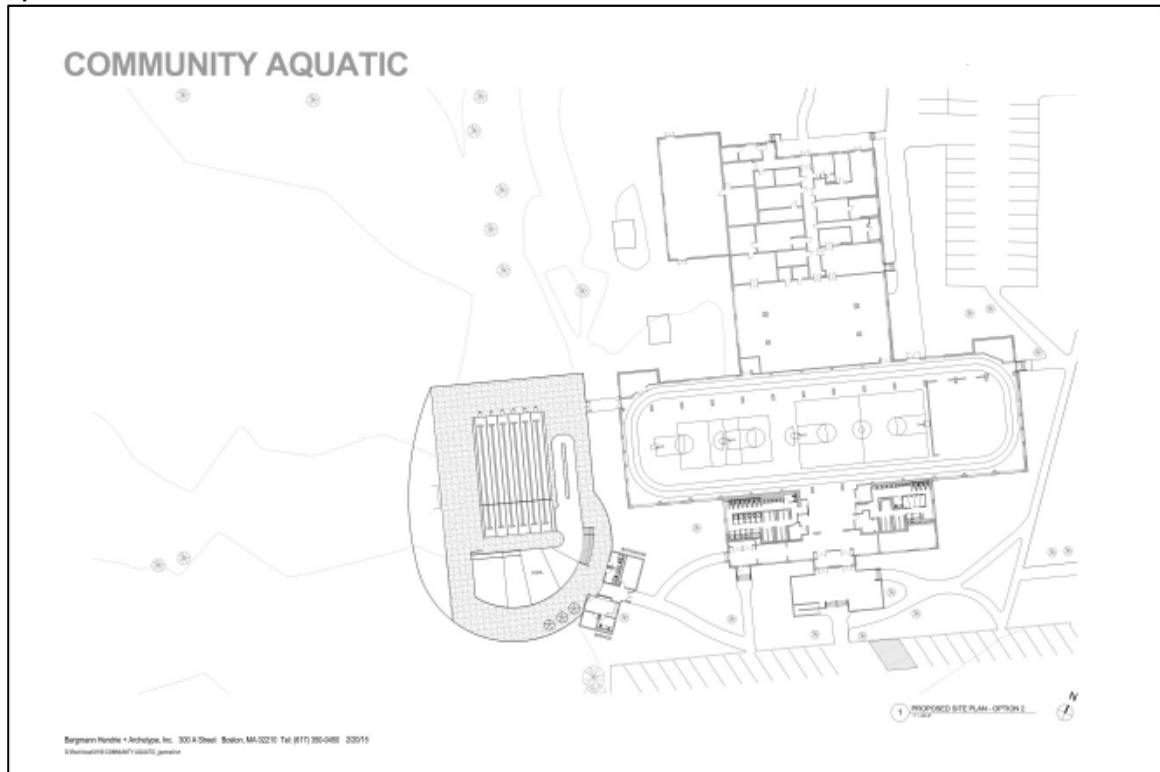
Features of the Lazy River Designs:

- Water course is approximately 25 yards long;
- Designs show basic loop; Option 2 could develop into a curved water course similar to the image above; Option 1 is the simple loop since it is located between the lap and entry areas.
- Tubes and floats require storage, handling, distribution and staff to monitor.
- The lazy river would require a staff member to manage the floats and a dedicated lifeguard to watch the water course.
- The lazy river adds surface area to the pool and required if additional piping, an indirect suction assembly to draw water from the pool, a circulation pump and return water nozzles.

Option 3



Option 4



Vortex Option October 2015

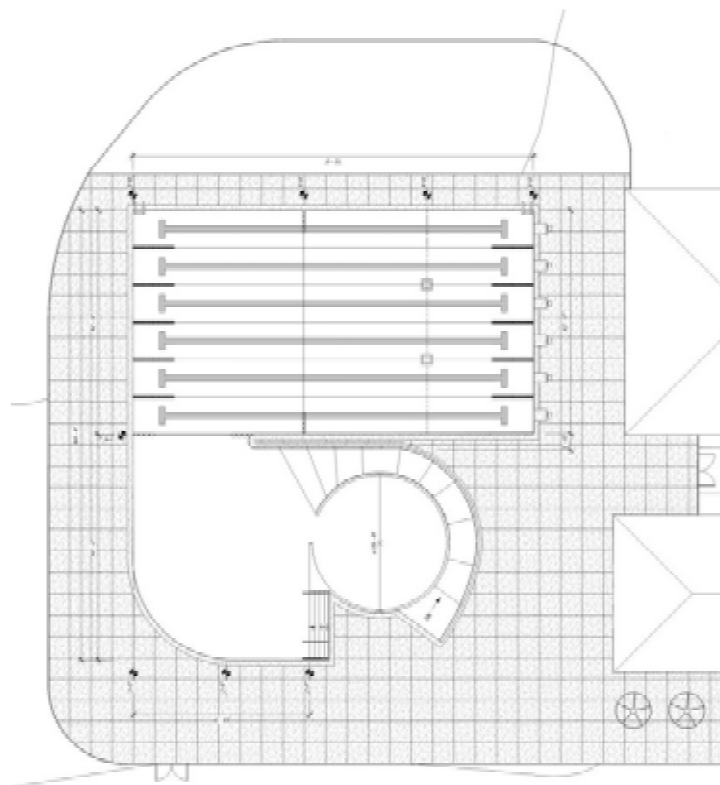
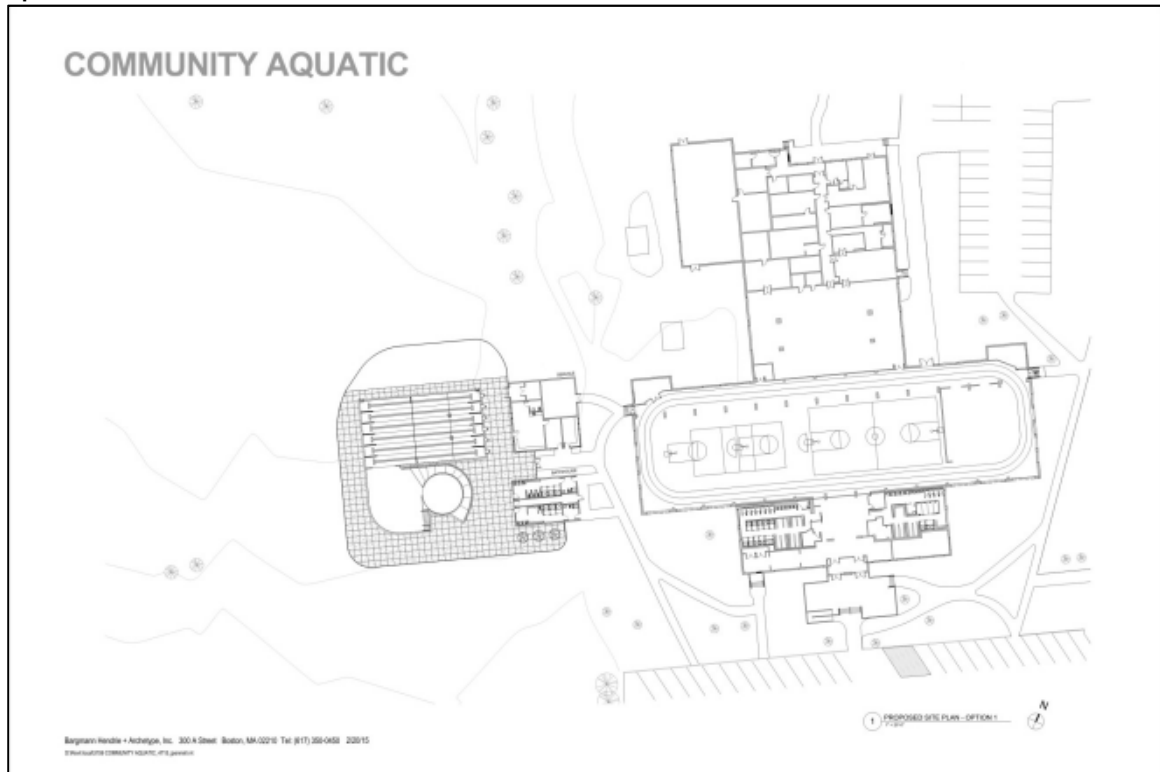
A **vortex area** was incorporated into Option 5 as an alternative to the lazy river. A Vortex is a semi-enclosed area within the pool that utilizes high velocity return water jets to create radial flow of water that allows bathers to float with the current, or walk or swim against it. The idea is based on the recreational pool at University of Maine Orono's Student Recreation and Fitness Center shown below.



Features of the Vortex Design:

- Vortex is approximately 25 feet in diameter;
- Tubes and floats are not used; area is too small.
- The vortex would require a dedicated lifeguard.
- The vortex adds surface area to the pool and requires additional piping, an indirect suction assembly to draw water from the pool, a circulation pump and return water nozzles.

Option 5 with Vortex



7. Conceptual Pool Option No. 6 Design Narrative

BH+A prepared design options and reviewed with Town Staff. Based on comments and feedback, Option 6, presented in October 2015 was considered the “preferred option” to develop.

SCOPE OF WORK

1. Pool complex would be constructed adjacent to the existing Recreation Center and utilize the existing toilet and shower facilities to reduce the size and plumbing fixtures required in the new construction. This reduces the size and cost of new building structures.
2. Two unisex toilet and shower facilities would be constructed at the new complex for convenience and provide accessible facilities.
3. A separate staff toilet would be provided in the lifeguard building. It is recommended that a separate facility be provided to allow separation between staff and the public.
4. An ADA accessible ramp into the west door of the existing building for access to existing bathroom and changing room facilities in the Recreation Center.
5. A small outdoor eating area will provided outside of the pool area for eating and as a waiting area for pick-up. If vending is desired it can be accommodated by the existing facilities in the Recreation Center.
6. Water and power would be extended from the existing building. Size of the existing service for this formal naval facility has adequate capacity to support the new facility. Sewer connection would be directed into the existing sanitary system.
7. Create new a walkway to the swimming pool from parking lot and existing building.
8. New wood framed bathhouse-buildings including:
 - Control/Lifeguard Office
 - Staff/First Aid Room
 - 2- Unisex toilets
 - Storage
 - Filter Room

Examples of building elements and finishes are indicated in these photographs:



Fiberglass Panel Walls (FRP), Solid Plastic Partitions, Composite Lumber Slat Ceilings



Sealed concrete floors, lavatory, shower fittings, and toilet accessories selected for wet environment and seasonal (non-heated construction)



Typical Pool Building Construction: Wood framed, cedar or fiber-cement clapboard siding, asphalt shingle roofing, fiberglass windows and doors. Photo also illustrates concrete pool deck and its finish.

9. 8-Foot high, vinyl coated chain link security fence at perimeter of pool enclosure.
10. Concrete entry walk, seating area, and pool decks.

11. The gunite (spray applied dry-mix concrete) swimming pool would have an approximate surface area of 6,500 SF and feature a plaster finish with tile markings. The proposed pool would have a zero depth beach entry area sloping toward a shallow splashdown area for the slide. This connects to 8 lap lanes, with depths from 3 ft. 6 inches to 12 feet at a diving board. Add alternate design options have been incorporated into the design. The alternate features would be included if additional funding is available..
12. Loam and seed sunbathing lawns within the pool enclosure.
13. Pre-fabricated shade structures located around the pool deck

Advantages

- Utilizes existing facility to maximum extent possible.
- Reduced building footprint to allow increase in pool construction
- Meets program requirements

Design Alternate- Large Slide

The Town requested that an option for a potential large scale slide be studied. This option is based on slide installed at the Beth Pancoe Pool in Bangor, Maine. The original pool design and contract for the Pancoe Pool included the infrastructure for the slide, but not the slide itself, as it was outside of the City's budget. Prior to the start of construction, a large donation was made by a local Bangor celebrity to fund the slide. The slide has been a tremendous attraction for the pool.



Slide at Pancoe Pool in Bangor Maine

Design Alternate -Lazy River

The final conceptual design allocates additional pool area toward two additional lap lanes and larger recreational area in the shallow end of the pool. The lap lanes allow for lap lane swimming when the slide and diving board are in use, provides additional surface area for recreational swimming, water exercise and swimming lessons. The final conceptual design allows for a lazy river to be included as an add alternate to the base pool design or a future addition to the pool.

Design Alternate – Large Slide with Lazy River

A third alternate was prepared that combines the base pool with a larger slide and lazy river.

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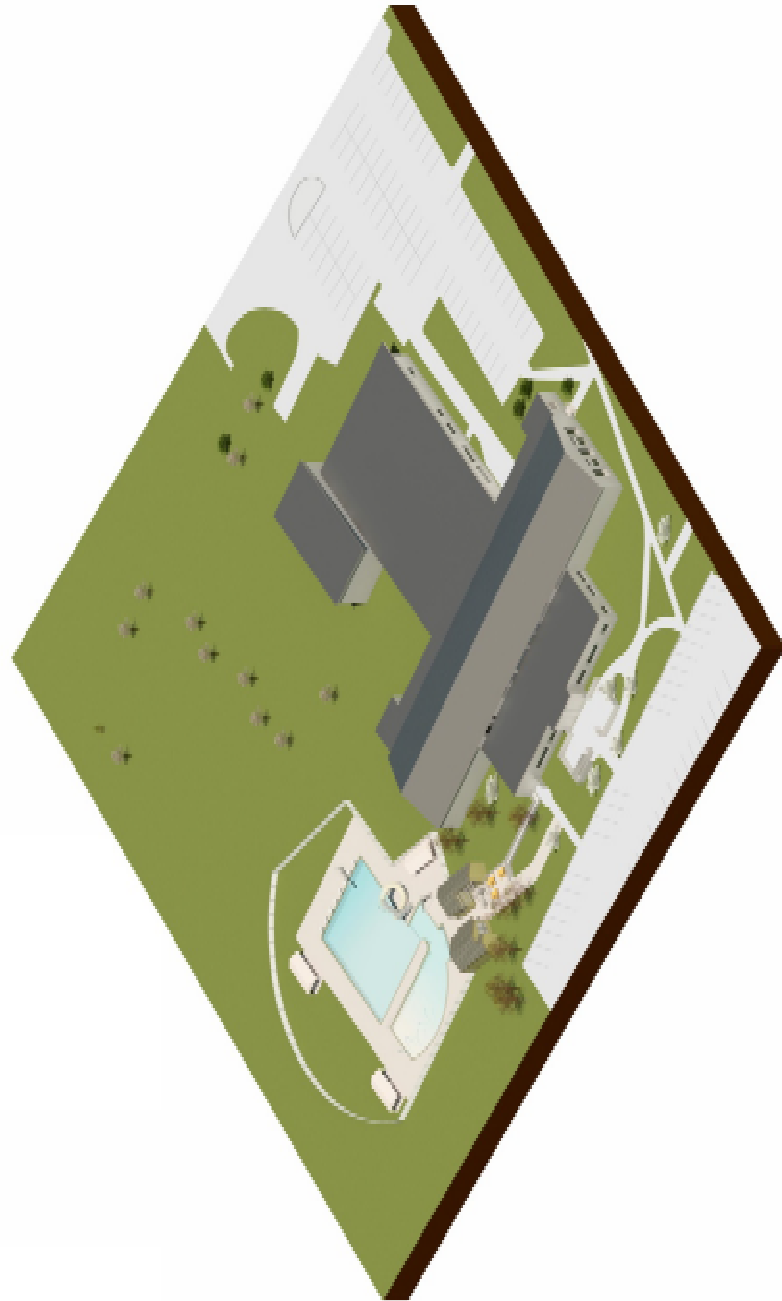


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BRUNSWICK RECREATION CENTER
MEETING DRIVE, BRUNSWICK, ME

COMMUNITY AQUATIC



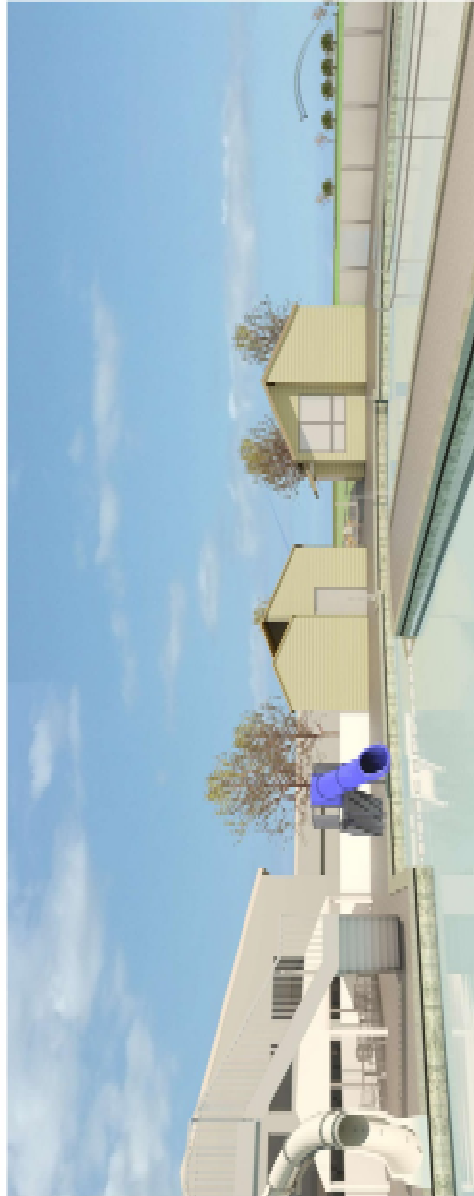
August 2016
bha+b
3000 Main Street
Brunswick, ME 04005
Tel: 207.734.1111
Fax: 207.734.1112
www.bha+b.com

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BRUNSWICK RECREATION CENTER
10000 DOWNS BRUNSWICK ME

COMMUNITY AQUATIC



Brigant Media + Architecture, Inc. 2014 Street Address: 10000 DOWNS BRUNSWICK ME 04005
www.brigantmedia.com/brunswickrecreationcenter COMMUNITY AQUATIC

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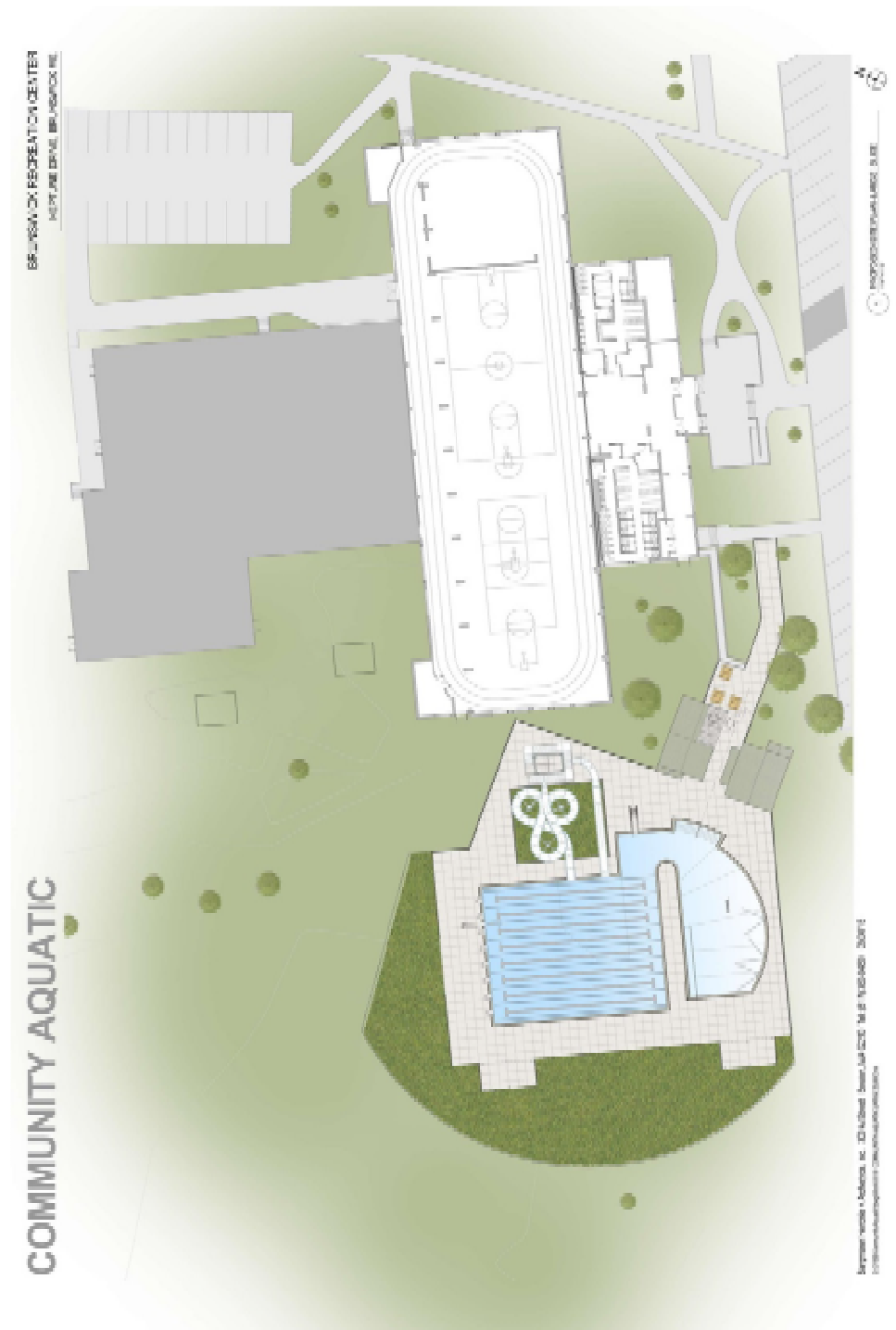


7S. Option 6S with Larger Slide Alternate – Design Drawings



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BRUNSWICK RECREATION CENTER
MEETING ROOM PRESENTATION

COMMUNITY AQUATIC



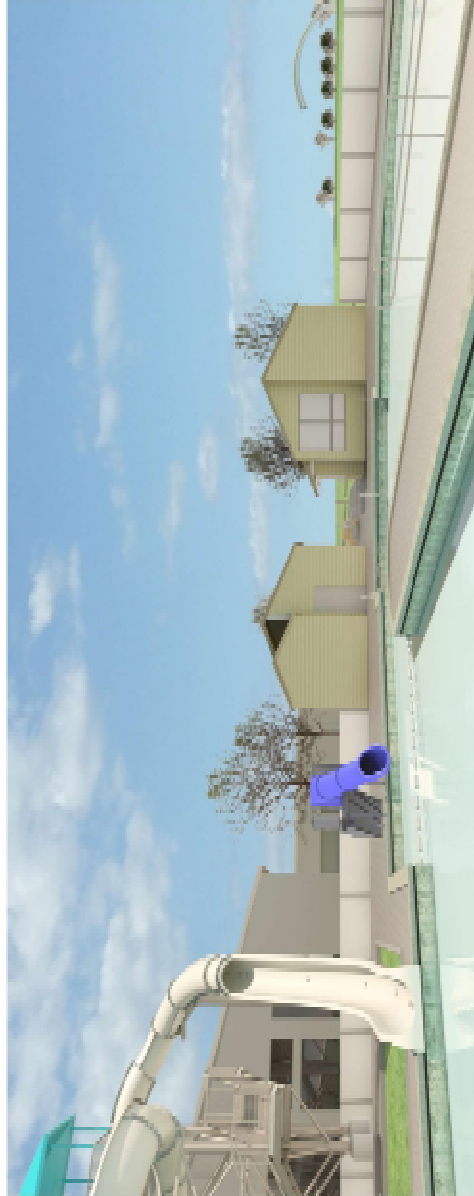
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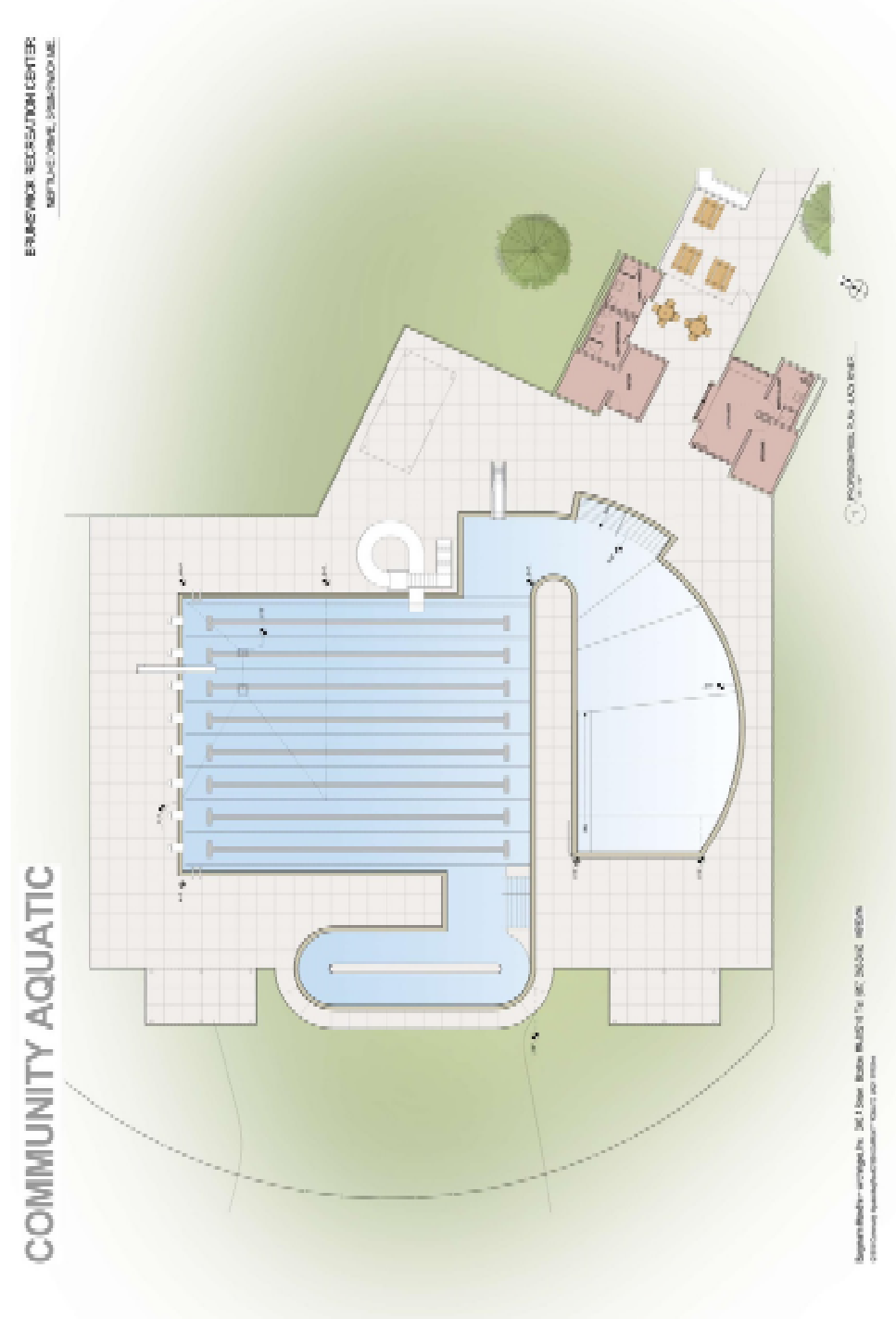


Brigant Architects + Engineers, Inc. 2014 Street Design, 10000 DOWNS BRUNSWICK ME
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7L. Option 6L with Lazy River Alternate – Design Drawings



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8. Option 6 - Basis of Design

BATHHOUSE BUILDING SPECIFICATIONS FOR PROPOSED WORK

The finishes and equipment provided in the toilet, shower, and changing areas are selected for the following qualities:

- Function
- Compliance with Codes
- Ease of maintenance
- Vandal-Resistance
- Durability and service life.

Concrete *Substructure:* Cast-in-place concrete foundations and footings and retaining walls for portions of the building constructed into the hillside. Assume ordinary spread footings.

Miscellaneous: Cast-in place concrete pump pits and housekeeping pads for pumps.

Slabs: Cast-in place concrete slabs on grade within structures. Concrete curb cast on top of slab below partitions.

General: Concrete shall be 4,000 psi mix, air-entrained: Cast-in-place concrete foundations and footings. Assume ordinary spread footings.

Floor Finishes: Acid etched and sealed concrete slabs.

Wall Framing: 2 x4 and 2 x6 dimensional wood framing with plywood sheathing

Millwork: Cabinetry: Plastic Laminate clad base and upper cabinets at staff area built in cabinets.
Counters: Solid-surface counters at staff service areas and counter tops.

Wall Exterior: Moisture barrier, back-primed and stained cedar clapboard or fiber-cement siding

Wall Interior: FRP panels. Fiberglass reinforced panels specifically designed for wet, sanitary applications. Work includes panels, fasteners, and trim pieces.



Roof Framing: Pre-engineered wooden roof trusses with plywood sheathing.

Roof Covering: 30 lb. roofing felt covered with 25 year, 3 tap asphalt/fiberglass shingles
Asphalt Shingles: CertainTeed Grand Manor: UL Certification of ASTM D3462; conforms to ASTM D3018 Type 1-Self Sealing, ASTM D3161-03b, Class "F" Wind Resistance (110-mph), ASTM D3161-991, 110-mph Wind Resistance.

Sheet Metal Flashing and Trim:

Roof Drainage Accessories: Gutters/downspouts, factory finished aluminum. 0.32 inch at gutters, 0.24 inch at downspouts.

Wall Flashing: Aluminum Sheet: Two-Coat Fluoropolymer: 0.032 inch thick

Joint Sealants:

Low-Modulus Nonacid-Curing Silicone Sealant: For general exterior joints of louvers, door frames, masonry, wood trim, and siding, and all other joints not included otherwise

Mildew-Resistant Silicone Sealant: Joint between all plumbing fixtures and counters and their adjacent substrate.

Multi-component Urethane Sealant: Horizontal joints in interior and exterior slabs on grade, concrete sidewalks, and pool decks.

Specialized sealants for pool walls and slabs: All sealants used for pool walls or slabs shall be designed for use within submerged water environments and highly chlorinated environments

Doors: Fiberglass Doors and Frames: Fiberglass reinforced plastic doors and frames with gel-coat finish. This includes all exterior doors and interior doors in wet areas including the bathhouse, filter room, storage room and doors in pool support building.

1. Tiger Door, LLC
2. Chem-Pruf Doors

Windows: *Fiberglass Windows:* Pultruded fiberglass complying with AAMA/WDMA/CSA 101/I.S.2/A440 and with exposed exterior fiberglass surfaces finished with manufacturer's standard enamel coating complying with AAMA 613.

1. Marvin All-Ultrex (basis of design)
2. Fibertec Window and Door Manufacturing.
3. Inline Fiberglass Ltd.
4. Pella Corporation.

Access Doors and Frames:

Provide access doors and frames at all locations required to access valves, cleanouts, pull boxes, switches, devices that require monitoring, service and adjustment. Metallic-Coated Steel Sheet for Door, Nominal 0.064 inch (1.63 mm), 16 gage, and factory primed

Security Doors: Push-up, manual, galvanized steel overhead coiling doors and shutters to cover exterior windows and alcove at "comfort" station entry.

Security Gate: Vinyl coated chain link fence gate located inside of toilet rooms to secure the shower area in the off-season.

- Door Hardware:** Stainless Steel, heavy duty. Cylinder locks on interior, mortise locks on exterior.
1. *Hinges:* Heavy weight, ball bearing, stainless steel 4 1/2" high; 2 pair for 8 ft. high doors.
 2. *Locksets:* ANSI A156.13, Grade 1 mortise locksets
 3. *Door closers:* Fully hydraulic, full rack and pinion action with a high strength cast iron cylinder.
 4. *Push Plates:* Push plates shall be 8" wide x 16" high
 5. *Door Pulls & Push Bars:* Pulls shall be 1" diameter solid bar stock, 10" center to center
 6. *Protective Plates:* Provide kick, mop, or armor plates with four beveled edges
 7. **Door Stops and Holders:** All wall mounted
 8. **Thresholds and Gasketing** at doors exposed to exterior; ADA compliant threshold.

Louvers: Fixed rain-resistant horizontal blade units including integral frame and insect screens. Aluminum Extrusions with two-coat fluoropolymer finish.

Ceiling: Cellular PVC or Cedar wood slat ceiling.

Painting and High Performance Coatings

Interior Painted Wood: Semi-gloss, waterborne, exterior, acrylic enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.4 mils (0.061 mm).

Interior Painted Walls: primer and two coats of paint (level 4 GWB finish)

Ferrous Metal: Semi-gloss, acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.3 mils (0.033 mm).

Zinc-Coated Metal: Semi-gloss, exterior, acrylic-latex enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.6 mils (0.066 mm).

Signage: Panel signs- One sign for each room and space. Cast-Acrylic Sheet. complying with ADA Accessibility Guidelines and ICC/ANSI A117.1. Text shall be accompanied by Grade 2 braille.

Toilet Partitions: Solid plastic partitions with stainless steel hardware.

Toilet Accessories: Stainless steel, heavy duty, vandal resistant accessories. High security type accessories are used when they provide the appropriate level of function and finish.

1. *Toilet and Shower Fixed Grab Bars:* Stainless steel, 1 1/2 inch diameter, peened grab sections
2. *Toilet Paper Dispenser:* Stainless steel multi-standard roll
3. *Sanitary Napkin Disposal:* Stainless steel, self-closing, removable receptacle.
4. *Robe Hook:* Stainless Steel, 2 prong.
5. *Soap Dish:* Extra heavy One Piece Brass Casting with bright polished chrome plated finish.
6. *Paper Towel Dispenser:* Stainless steel multi-fold
7. *Liquid Soap Dispenser:* Vertical tank liquid soap dispensers with hinged filler-top and unbreakable refill window.
8. *Shower Seat:* Stainless steel fold-down unit with padded seat
9. *Shower Assembly:* Stainless steel curtain rings, 72 inch high by 70 inch wide opaque white vinyl shower curtain
10. *Diaper-Changing Station:* Diaper-changing station with surface-mounted, mildew-resistant, molded polyethylene body that folds horizontally against wall when not in use

11. *Mop and Broom Holder*: 36-inch-long unit stainless steel with shelf; three hooks for wiping rags; four spring-loaded, rubber hat, cam-type, mop/broom holders and rod suspended beneath shelf for drying rags.

Fire Protection Specialties:

UL Rating: 4A-60B: C Fire extinguishers; bracket mounted or semi-recessed non-rated cabinets on both levels.

Shower Partitions:

Solid plastic partitions with stainless steel hardware would be recommended. Panels to be used as wall surface within showers directly attached to framing.

SWIMMING POOL SPECIFICATIONS FOR PROPOSED WORK

Pool Tank

1. Dry mix shotcrete pool tank including finish and markings.
2. Reinforced pneumatically applied concrete pool structures, including but not limited to:
3. Final hand trimming of excavation.
4. Reinforcing steel.
5. Design and provide pools structure.

Pool Finish Option -1

The pool finish shall consist of two coats of plaster finish. The two coats of pool plaster shall together equal three-eighths (3/8) to one-half (1/2) inch thickness and shall be applied by hand troweling method to a smooth, dense, impervious surface

At ramps, stairs, and zero depth areas and areas indicated, provide a quartz aggregate pool finish equal to Diamond Brite™ manufactured by Southern Grouts & Mortars, Inc. Pompano Beach FL 800-641-9247. Architect to select from full range of options including multi-color aggregate and pigmented plaster.



Aggregate Pool Plaster



White Plaster with Tile Wall Targets and Racing Lines

All racing lines, gutter areas, wall targets, stair nosing and safety markings shall be ceramic tile.

Tile size and color shall be based on the following American Olean products:

- Gutter tile: Glazed ceramic mosaic tile; 1x1 inch; provide bullnose units at edges.
- Stair treads and other markers: Unglazed porcelain Ceramic Mosaics; 2 x 2 inch with abrasive finish.
- Plaster control joint tile: Unglazed porcelain Ceramic Mosaics; 2 x 2 inch.

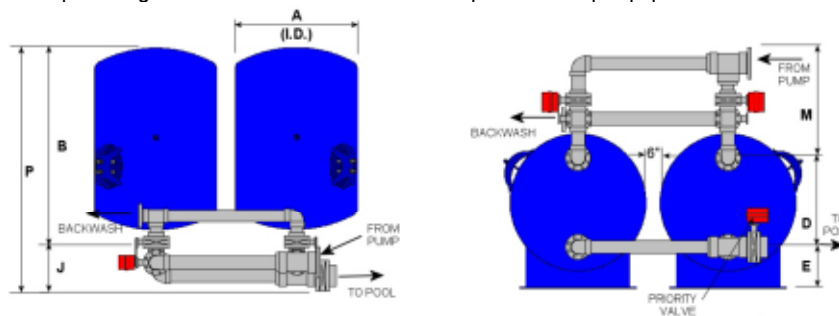
- Tile Colors: Colors to be selected by Engineer from "A" price Group (American Olean) or premium price group (3) (Daltile).

All in pool and deck level markings shall be equal to specialty tiles provided by Tiles with Marking at Graphics: Provide tiles manufactured by Tile Specialties, Spring Hill, Florida 904-686-8670 or approved equal. www.tilespecialties.com



Filtration

1. Complete high rate sand filtration and recirculation systems including, stainless steel perimeter gutter, zero depth trench drain, balance pit, all piping and automatic chemical controls. Complete chemical treatment system that includes, but is not limited to, the following:
 - Automated backwashing control.
 - Strainer baskets
 - Recirculation pumps for pools
 - Flow meters
 - Gages
 - Filters
 - Valves
 - Sight glasses
 - All interconnecting piping for equipment within the filtration room
 - Backwash holding tanks
 - Control Panels
 - Sensors and Probes
2. Automatic water level controls and water fill devices.
3. Operation/Maintenance Manuals of all equipment and systems. Manuals shall include proper shutdown procedures.
4. Framed and mounted diagram of filter system operation and backwash procedures. Furnish and install numbered, equipment plates, valve tags and pipe labels to correspond to instructions.
5. Startup Service and instruction to the Owner's operating personnel shall be given upon completion of the Project.
6. Shelving and mounting boards required for pool equipment and accessories.
7. Final plumbing connection of fresh water line to pool make-up equipment.



Typical configuration of dual tanks

Filter VFD

Variable Frequency Drive (VFD) shall be provided with each filter and feature pump (one per filter pump and feature) for control of the filter and feature pump motor. The VFD shall include a dial potentiometer to set ramp up/down speed of the pump motor. The VFD shall be wired into the RMF controller for on/off and run confirm functions.

The VFD shall be equipped with a bypass. SED2 bypass options shall send the motor to bypass mode based on an easily accessible door-mounted selector or based on the drive's programmable relay. A bypass pilot light shall provide indication of the bypass mode. The bypass mode shall provide overload protection. Contactors shall be electrically and mechanically interlocked. An essential services mode shall send the motor to bypass regardless of the selected mode.

Automatic Chemical Controller

DCM 500- ProMINENT FLUID CONTROLS Pittsburgh PA 412-788-7900

The controller shall automatically activate the appropriate chemical feeders in order to maintain the sanitizer level within ± 0.1 parts per million (PPM) or ± 10 mV (millivolts) of Oxidation Reduction Potential (ORP) and the pH within ± 0.1 pH unit of the setpoints selected by the operator. All setpoint and calibration levels shall be adjustable with a numeric keypad mounted on the front panel of the unit. The unit can be tied to the Recreation Center's building management software. In the event of a trouble signal from the pool, notifications can be sent via email or text to Town staff.

Chlorinator

The system shall be designed to feed low concentrations of calcium hypochlorite in solution intermittently or continuously as required. The system shall be a single pre-assembled, package unit with a welded aluminum frame consisting of chlorinator, electrical box, centrifugal pump, and balance tank for ease of installation and operation. The basis of the specification for this product is the Accu-tab PowerBase 3140 AT. The unit shall be capable of supporting an unstabilized pool of up to 400,000 gallons. Unit shall be NSF certified for up to 22 lbs/hour of chlorine. Unit shall have 140 lbs. of on board storage.

Each pool shall be equipped with the following basis of design chemical controller:

- ProMinent DCM 503 Series Controller to monitor and adjust pH, ORP and PPM with CYA stabilized water.
- ProMinent CO2 Controller: Feeder for CO2 in the control of pH in pools.

UV Option

Ultraviolet sanitation equipment is being introduced into more outdoor swimming pools as an additional method of sterilization. Although it is not mandated by code, model pool codes are recommending its use in large recreational pools that combine wading functions, water features and cater to a bathing population ranging from toddler to senior. A medium pressure UV systems provide an increased level of disinfection, protecting against the known chlorine resistant micro-organisms, such as Cryptosporidium and Giardia. An UV system should be carried as an alternate to the project.

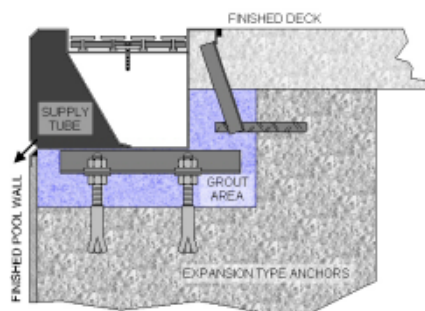
Pool Calculations

Pool Volume:	210,000 Gallons
Turnover rate:	4 hours
Filtration Rate:	875 gpm
Filter Area:	58 square feet (15 gallons per minute per square foot)
Backwash:	Design rate shall be 875 gpm for 6 minutes (5,000 gallons of backwash). Subject to usage and weather condition, backwashing of the filter will take place every 11 to 15 days.

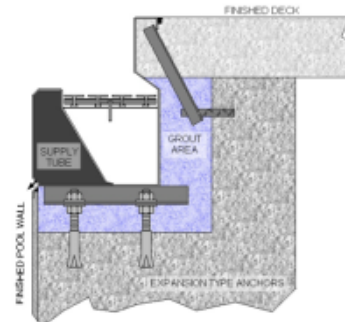
Acceptable Filtration Equipment Manufacturers are:

1. Neptune Benson, Inc. West Warwick, RI
2. EPD Filter Equipment
3. Paddock Pool Equipment
4. Aquatic Development Group- Whitten Pool Equipment, ADG

Pool Gutter Options



Deck Level

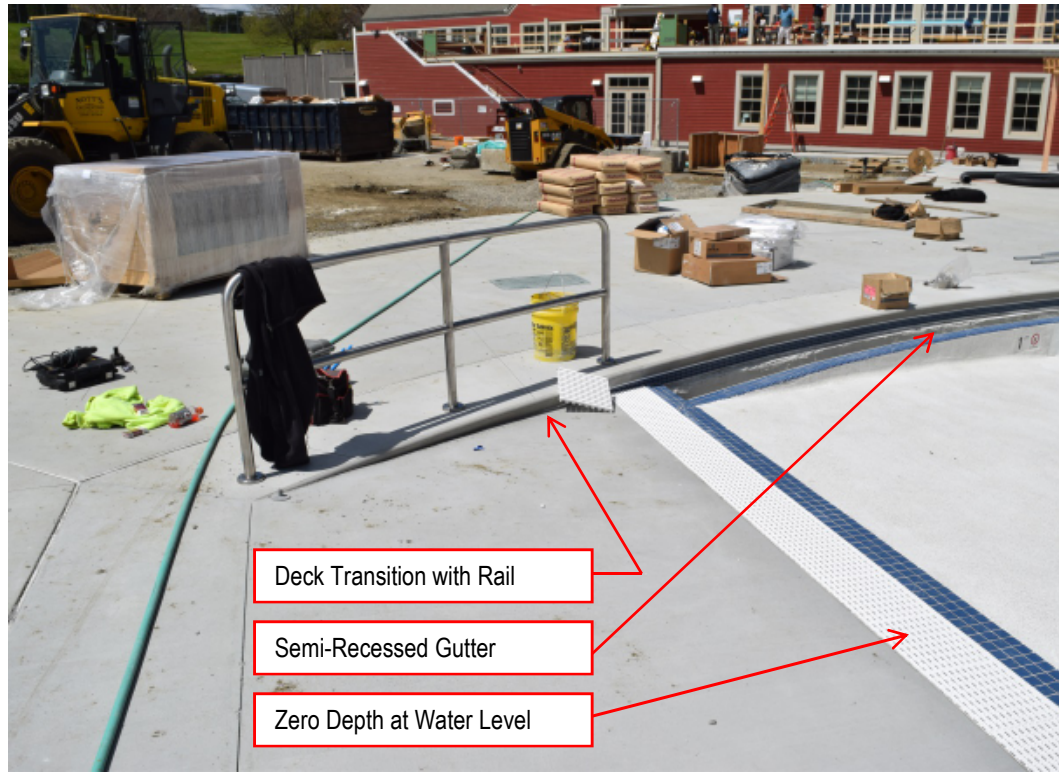


Semi- Recessed Gutter

The semi-recessed gutter would be typical around the pool. This gutter provides a visible vertical edge to the pool which is important to lap swimmers and is the location for in pool depth markers. The gutter would transition at the zero depth area to deck level gutter. Transitions would be protected by a guard rail as shown below.



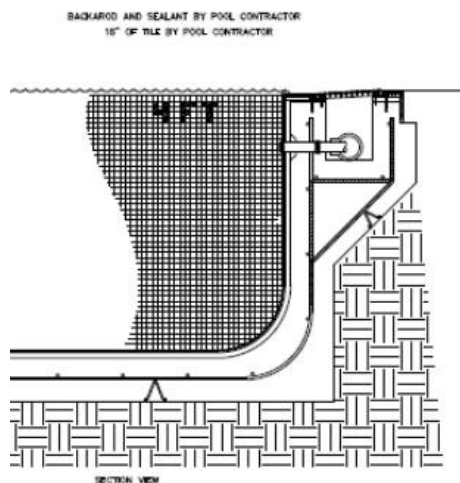
Zero Depth Entry Example



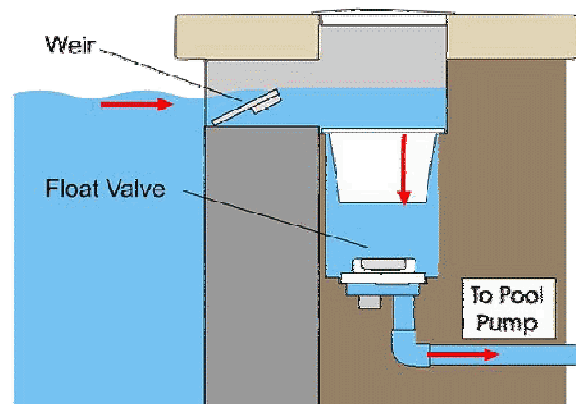
Zero Depth Entry with Deck Transition from Semi-Recessed to Deck Level Gutter

Skimmer Options

Options for formed in place gutters as well as traditional skimmer options should be considered during preparation of construction documents in the future. Some pool subcontractors have been able to field construct perimeter gutters in combination with standard skimming units to provide a code compliant, more cost effective approach to surface skimming.



Formed Gutter Design



Typical Skimmer Assembly

Pool Deck Equipment

Acceptable Manufacturers of Deck and Safety Equipment:

1. Paragon Aquatics, 341 Route 55, LaGrangeville, NY 12540-5105; ASD. Tel: (914) 452-5500, Fax: (914) 452-5426, Website: <http://www.paragonaquatics.com>
2. S.R. Smith Inc., 105 Challenger Dr. Portland, Tennessee 37148, Tel: (615) 325-0770, Fax (615) 325-0775, Website: <http://www.srsmith.com>.
3. Spectrum Pool Products, 7100 Spectrum Lane, Missoula, MT 59808, Tel: (406) 543-5309, Fax (406) 728-7143, Website: <http://www.spectrumproducts.com>.

Pool Deck Equipment Includes:

1. **Custom Fabricated Ramp Handrails and Guard:** Provide Custom fabrication, including anchorage, for the HCP Access Ramp Handrails as indicated. Provide Type 304 polished to Assist Rails: Provide custom fabrication. KDI Paragon 1.5 inch by 0.120-inch wall thickness rails. Anchorage shall be cast bronze No. 28102 with escutcheon plate No.28302.
2. **Ladders** shall be heavy duty and cross-braced. Provide number of steps as indicated and to accommodate depth at locations shown. Stainless steel pipe shall have a 0.109-inch wall thickness. Ladder Width shall be 24 inches.
3. **High Platform Lifeguard Chairs:** 6 foot high Paraflyte Lookout Chair by KDI Paragon, Chairs shall include devices for holding a life ring and umbrella. Refer to drawings for quantity and location. Contractor must confirm final location and quantity with the Owner prior to fabrication and installation.



Water Features

General: The water features are based on products by the Rain Drop Fountain manufactured by Sonar International, 2001 S Street N.W., Suite 250, Washington DC 20009, telephone 800/343-6063.

Water feature work in the proposed design include the following Options:

1. **Pop jets, Basketweave and Slant Fins:** Base proposal, these are provided to assist the flow of water in the zero depth area.



Pop Jets



Basket weave



Slant Fins

2. **Tumble Buckets:** Alternate work: Feature infrastructure is carried in the base proposal; feature is an alternate price.



Tumble Buckets in use

3. **Rain Drop** Alternate work: Feature infrastructure is carried in the base proposal; feature is an alternate price.

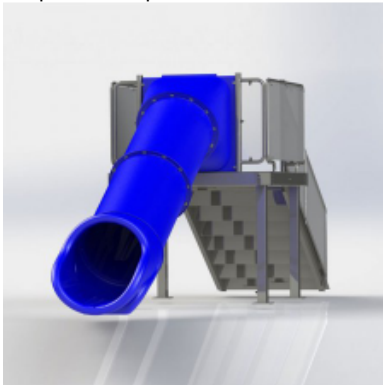


Rain Drop

Water Slide

Furnish all labor, materials, and equipment to complete all work as shown. Work includes the slide/flume unit, main drain(s) supply, supply piping, recirculation pump, and controls.

Two units are contemplated. A single straight flume for smaller children and a larger single loop slide. Basis of design is Spectrum Aquatics for the smaller slide and Natural Structures for the larger unit.



Slide Option for Smaller Bathers

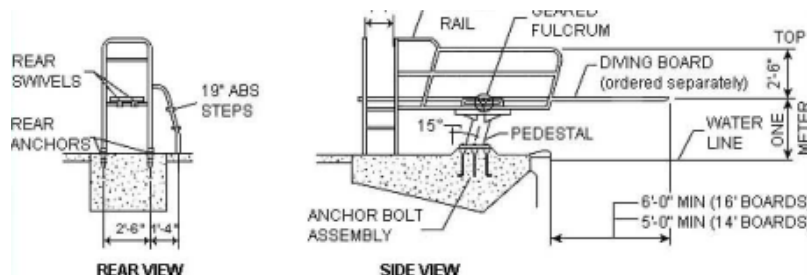


Single Loop:



Large Scale Slide Option

1-meter Diving Board with required hand rails and side access stairs).



Pool Bonding

Furnish all labor, materials, and equipment necessary to complete all work as shown on drawings and specified. This work is to include but not limited to the following: furnish and install common pool bonding grid, wire and bonding to swimming pool and all pool equipment.

References:

1. All work shall conform to the NFPA National Electrical Code and all Federal, State and Local Codes and Utility Company Regulations as applicable.
2. *NEC Article 680 Swimming Pools, Fountains, and Similar Installations* applies to this work.
3. All products shall be UL listed.

Maintenance and Safety Equipment

Loose Deck, maintenance, and safety equipment will be required to license and operate the pool. These items are typically not carried in the base construction contract. Equipment is typically obtained under goods and services procurement methods.

Acceptable Manufacturers of Deck and Safety Equipment:

1. Paragon Aquatics, 341 Route 55, LaGrangeville, NY 12540-5105; ASD. Tel: (914) 452-5500, Fax: (914) 452-5426, Website: <http://www.paragonaquatics.com>
2. S.R. Smith Inc., 105 Challenger Dr. Portland, Tennessee 37148, Tel: (615) 325-0770, Fax (615) 325-0775, Website: <http://www.srsmith.com>.
3. Spectrum Pool Products, 7100 Spectrum Lane, Missoula, MT 59808, Tel: (406) 543-5309, Fax (406) 728-7143, Website: <http://www.spectrumproducts.com>.
4. Seton Identification Products, 20 Thompson Road, Branford, CT 06405, Tel (800) 243-6624, Fax: 800-345-7819, Website: <http://www.seton.com>.

Equipment may include the following:

1. **Removable Lane Lines:** 4" diameter disks X 75'. Recreonics No. 14-330 Competitive Racing Lane Line or equal. Color to be selected by Architect from full range of colors. Submit sample legends for approval.
2. **Lane Line Storage Reels:** Spectrum Pro-line Maxi Stor-a-line Product No. 55525, provide storage capacity for quantity of lane lines in Contract.
3. **Floats:** Spectrum Pool Products Handi-Lock Floats: 5 by 9 inches for ½ inch diameter rope. Color to be determined. Rope for Floats: ½ inch diameter, white, polypropylene rope. Provide length to span pool and prevent slippage of the hook end. Hook End for Rope: Spectrum straight clamp rope hook model 58030. Provide hook at each end of rope.
4. **Ring Buoys:** 24 inch diameter, United States Coast Guard approved ring buoy. Solid closed-cell plastic throughout body with four two-inch wide webs for securing a continuous length of rope. Buoy, straps, and rope shall be white. Spectrum No. 72310.
5. **Throw Ropes:** ¼ inch floating polypropylene rope with attached float. Rope shall be 60 ft length. Rope shall be safety yellow with red float. Open end of rope shall be provided with a "lemon foot" to hold the line after throwing. Spectrum No. 72360.
6. **Rescue Tube:** Wrap-around rescue tube made of high quality Ensolite foam and covered with a heavy-duty vinyl skin. Skin shall be water, rot, and mildew resistant. Provide quick-release buckle, 6 ft. towline with looped line end. Spectrum No. 72000.

7. **Life Hook and Pole:** Double crook life hook made of heavy duty anodized aluminum. Pole shall be made from unbreakable rigid fiberglass. Provide two 8-foot poles with connector for a maximum length of 16 feet. Spectrum No. 70100.
8. **Backboard/Spine board:** X-ray translucent, bright yellow high-density polyethylene board. Board shall be 16 inches wide, 72 inches long and minimum 1 3/8 inch thick. Provide standard three strap restraints.
9. **Head Immobilizer:** 100% X-ray lucent head immobilizer with a durable, water and stain resistant material that are removable and washable. Immobilizer shall be compatible with backboard.
10. **First Aid Kit:** 36 unit American Red Cross Approved unitized first aid kit. Kit shall be of corrosion resistant construction, with rubber gasket, carrying handle, and mounting bracket.
11. **Emergency Eye Wash Stations:** Eyesaline® Emergency Eyewash Station Style No. 47243. Wall mounted unit with two (2) 32 oz. Single use bottles. Unit includes two-sided tape and screw mounting. Unit shall be rated for secondary (personal) use. Provide two Eyesaline 32 oz. Refills, Style No. 50347.
12. **Signage:** Provide signage at entry to pool facility indicating the Rules and Regulations for pool usage. Coordinate location with Architect in the field. Recreonics Public Pool Rules 12-203.
13. **Portable Vacuum:** Spectrum Standard Vacuum Pump with Stainless Steel Cart. Model No. 11130. 1 hp electric pump, wired for 115 VAC, 13.6 Amp, with a 100' heavy-duty cord and waterproof switch. The pump shall have barbed hose connectors on the intake and discharge. Cart shall be type 304 stainless steel with two semi-pneumatic wheels. Vacuum shall include all required hoses, handles, fittings, and couplings required for a complete installation.
14. **Wall Brush:** Extra-wide 36 inch curved end brush with five rows of 1-½ inch trim white nylon bristles. Spectrum No. 13240.
15. **Aluminum Telescopic Handle:** Drawn aluminum tube with twist action locking assembly. Pole shall be 12 ft. capable of extension to 24 ft.

Operation/Maintenance Manuals of all equipment and systems. Manuals shall include proper start-up and shutdown procedures.

Operating Diagram: Framed and mounted diagram of filter system operation and backwash procedures. Furnish and install numbered, equipment plates, valve tags and pipe labels to correspond to instructions.

Maintenance: Startup and Shut Down Service and instruction to the Owner's operating personnel shall be given upon completion of the Project.

PLUMBING

- 22.1 **Lavatories:** Wall mounted units with time metered mixing fixtures, code compliant, low gallons per flush toilets.
- 22.2 **Toilet/Urinal Flush-o-meters** Recessed sensor operated units. Hardwired installation. Exposed sensor flush-o-meters would be required for battery operation.
- 22.3 **Shower Fittings:** Symmons Hyd-a-pipe System. Thru-ceiling supply, non-adjustable institutional head; push button control.
- 22.4 **Exterior Shower (Rinse Station) Drain to storm:** location to be determined, allow for 2 in estimate.
- "Most Dependable Fountain" unit, Model TW 500SM (tempered water)

HVAC

- 23.1 General: The work under this section shall include all labor, materials, accessories, services, and equipment necessary to furnish and install:
1. All fans.
 2. All ductwork.
 3. All duct fittings.
 4. All ductwork accessories.
 5. All air inlet and outlet equipment.
 6. Testing, Adjusting and Balancing
- 23.2 **Ductwork:** All ductwork shall be fabricated of G-60 coated galvanized steel of lock forming grade and conforming to ASTM standards A-525 and A-527, unless otherwise noted, and shall be constructed in accordance with the latest SMACNA standards.
- 23.4.1 **Sequence of Operations for Exhaust fans**
1. Bath House Exhaust Fans shall be energized when the lights in the spaces they serve are switched on.
 2. Filter Area Exhaust Fan shall be energized when:
 - a. When the carbon dioxide detector senses CO2 levels in excess of 1000 parts per million.
 - b. When the manual switch is put in the "ON" position.

DIVISION 26 ELECTRICAL:

Complete grounding system as required by Article 250 of the National Electrical Code.

Wiring of Pool Filter Equipment

Light Fixtures: Vapor-tight, vandal-resistant LED light fixtures. Wall or ceiling mounted to suit location and application.

Site Lighting: Include site lighting of access way, parking lot pedestrian way to second level, year round spaces and entry way to pool

Pool Bonding

Furnish all labor, materials, and equipment necessary to complete all work as shown on drawings and specified. This work is to include but not limited to the following: furnish and install common pool bonding grid, wire and bonding to swimming pool and all pool equipment.

1. All work shall conform to the NFPA National Electrical Code and all Federal, State and Local Codes and Utility Company Regulations as applicable.
2. *NEC Article 680 Swimming Pools, Fountains, and Similar Installations* applies to this work.
3. All products shall be UL listed.

SITE WORK

31.1 Site Preparation: Strip and stockpile loam.

32.2 Construction Dewatering: The Contractor shall be responsible for providing all site dewatering and groundwater control without limitation necessary for constructing the project. The Contractor shall employ methods such as, but not limited to pumping from sumps, well points and gravel packed wells. Dewatering must comply with potential site and land use restrictions. These restrictions, to be established by the Navy are currently being established. Soil conditions and groundwater have not been determined at this time.

31.3 Backfill: Backfill site to achieve new rough grade elevation using on-site borrow; and imported borrow: Ordinary borrow shall be well graded, natural inorganic soil, meeting the following requirements:

1. It shall be free of organic or other weak or compressible materials, of frozen materials, and stones larger than six inches maximum dimension and not more than 35 percent passing the number 200 sieve.

31.4 Pool Sub-base: Dense graded crushed stone shall consisting of angular material derived from a stone quarry that is hard, durable and free of deleterious materials. Material shall be free from clay, loam or other plastic material. Extend pool sub-base beyond the pool footprint to create

Reclaimed crushed and prepared concrete from existing pool and decks may be used as part of the sub-base.

31.5 Geotextile: Below the pool sub-base, place Mirafi 140N or approved equal.

31.6 Sub-Base for Decking: Provide minimum 8 inches of Gravel borrow consisting of inert natural non-recycled material that is hard, durable stone, gravel and coarse sand, free from loam and clay, surface coatings, and deleterious materials

EXTERIOR IMPROVEMENTS

32.1 Asphalt Paving: 3 inch thick asphalt paving where indicated on drawings

Binder course: Mix 4.5 to 5.5 percent of asphalt cement by weight in mixture in accordance with AASHTO T 195.

Finish course: Mix 5.0 to 8.5 percent of asphalt cement by weight in mixture in accordance with AASHTO T 195.

32.2 Portland Cement Concrete Paving at Sidewalks and Pool Deck: 4,000 PSI, air entrained concrete; with lamp black added at 2 lbs. per cubic yard. Plain steel welded wire fabric reinforcing; sleeved expansion dowels at deck expansion joints. 12-inch thick downturns all perimeters.

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- 32.3 **Fencing:** 9-gage, vinyl coated chain link fence fabric with 1 – ½ -inch weave. Top rail, intermediate rail, and bottom rail. Corner and line posts, vertical bracing at corners.
 ▪ 8ft. perimeter fencing
- 32.4 **Lawns:** Loam and seed. Lawn areas will not be irrigated; existing lawn areas need to be aerated and replanted.
- 32.5 **Plantings:**
Maintenance of Trees: Selective removal and pruning of existing trees. An allowance should be carried in a budget for modest landscape along the entry walk and aquatic facility entry.

SITE UTILITIES

- 33.1 **Deck Drainage;** Decks shall typically drain to the perimeter lawn areas. Deck areas between the pool and buildings that cannot sheet drain will be designed with small deck or trench drains. The drain structures
- 33.2 **Sanitary Sewer:** New ASTM D 3034 SDR35 PVC gravity sewer pipe; 10 feet from face of bathhouses structures, connected into existing sanitary manholes/line .
- 33.3 **Domestic Water.** New domestic water connection, meter and backflow assembly between existing building and Main Bathhouse building.
- 33.4 **Electrical:** New 400 AMP Panel in Main Bathhouse Building fed from existing Recreation Building.
- 33.5 **Telephone:** New conduit and punch down panel into Main Bathhouse Building to be fed by underground conduit from existing Recreation Building..

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8H. Discussion of Pool Heat

Heating the Outdoor Pool

Adding heat to an outdoor pool can potentially increase the usage of the pool and comfort of bathers during the morning hours of operation. According to U.S. Climate Data, the average high and low temperatures for Brunswick are:

	May	June	July	Aug	Sept
Average high in °F:	66	74	80	79	70
Average low in °F:	43	52	58	57	48

A comfortable temperature for an outdoor swimming pool is 78°F. This is on the low side for competitive lap swimming and average for outdoor, unheated pools in the northeast. US Swimming and other national swimming organizations suggest 82-84°F for children and older adults using the pool for exercise and lessons.

Based on the average high temperatures, an uncovered, unheated outdoor pool should meet achieve the 78° outdoor temperature during July and August. A reading of 78° might be achieved at midday once the sun has had an opportunity to warm the water.

Thermal Cover

A solar cover is one way to maintain the temperature of an outdoor pool close to the 78° temperature. The cover is placed on the pool overnight to maintain the heat that was absorbed during the daytime hours. The cover can also be placed when the pool is not used to absorb radiant heat and keep the pool warm. A thermal cover for the proposed pool would be roughly \$32,000.

Pool Heater

A pool heater can be operated to maintain a constant temperature or provide morning warm-up until a set-point temperature is achieved and the heater would be shut-off for the remainder of the day. Regardless of how it is operated, warming or maintain the pool water to 78-84°F requires a 1,600 MBTUH heater. (*MBTUH refers to 1,000 British Thermal Units*). This sizing is based on a starting water temperature of 55 degrees with a temperature rise of between 25 and 30 degrees. The month of operation and other variables will affect the amount of heating required.

The cost of a gas-fired commercial pool heater, installed with piping, valves, and controls is roughly \$55,000. The unit is approximately 8 feet long, 3 feet tall and 3 feet wide. The heater could be located on the exterior of the filter building but would need to be screened. Placing the unit inside would require additional space at roughly \$30,000.

If heat is desired for the pool, utilizing the Recreation Center's boilers may be another option. The pool would be operating when the boiler demand for the building is low. The cost to use the existing boiler would have to include pumps, controls, a heat exchanger within the filter room, and over 200 linear feet of insulated direct-burial piping between the boiler room and the pool.

In either case, a thermal cover is required by code at the cost of \$32,000.

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9. Estimates of Probable Project Costs

Estimate of Probable Construction Costs

A detailed conceptual estimate has been prepared for the outdoor pool complex. At this early stage of design, we have used square foot unit costs for certain components of the building and swimming pool.

The following assumptions have been made:

- The project will be competitively bid with at least four General Contractor's submitting bids.
- Unit Prices are based on current construction costs in Maine.

Total Project Costs

Total project cost sheets have been included for the pool design. Total project costs include Architectural/Engineering fees, expenses, and testing. The following items are not included in the total project cost sheets.

- Escalation costs past 2016. Escalation is currently being projected at 4% per year
- Removal of any Hazardous Materials or contaminated soils.
- Owner's project administration.
- Legal fees.
- Interest Expense.
- Advertising.

Additional Costs- Larger Slide and Lazy River

The base design in the estimate does not include installation of the larger slide or the lazy river element. Documents describing this expanded scope could be included in bidding documents to request a price to modify the base design by a Contractor.

Based on recent projects and manufacturer's quotes, the cost of the larger slide would be approximately \$175,000 including mark-ups. The cost of a lazy river including mark-ups would be approximately \$120,000

Additional Costs for Heat

As outlined in Section 8H- "Discussion of Pool Heat", a solar heat cover providing a passive approach to controlling water temperature is \$32,000.

A gas fired pool heater, enclosed inside of an enlarged filter room would add roughly \$120,000 to the project. This budget includes the heater, piping, controls, an expanded building and the solar heat cover.

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ESTIMATE OF PROBABLE CONSTRUCTION COSTS

16-Dec-16

SITWORK

Selective Demolition and Site Preparation	1 allowance	\$	10,000	\$10,000
Modifications to Existing Building/ New Rar	1 allowance	\$	25,000	\$25,000
Excavation/Backfill - Building	150 cy	\$	25	\$3,750
Excavation/Backfill - Pool	1,200 cy	\$	25	\$30,000
Concrete walk/pool deck	11,500 sf	\$	10	\$115,000
Loam Respread Stockpiled	500 cy	\$	9	\$4,500
seed	15,000 sf	\$	0.25	\$3,750
Planting	1 allow	\$	10,000.00	\$10,000
restore landscape	1 allow	\$	5,000	\$5,000
Chain link fencing	520 lf	\$	65	\$33,800
Entry & access gates	6 each	\$	2,500	\$15,000
Exterior signage	1 allowance	\$	500	\$500
New Site Utilities	1 allow	\$	50,000	\$50,000
Power Connection	1 allow	\$	30,000	\$30,000

Sitework subtotal **\$336,300**

Bathhouse Structure

Wood framed structure	910 sf	\$	200	\$182,000
Foundation, framing				
Framing				
Exterior and Interior finishes				
Equipment				
Mechanical Electrical & Plumbing Work				

Shade Structures

Wood framed structure	3 ea	\$	25,000	\$75,000
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Building Subtotal **\$257,000**

POOL

Pool Construction*	6,500 sf	\$	200	\$1,300,000
Pool Deck Slides Standard	1 ls	\$	40,000	\$40,000

*Includes Pool Tank, finish, filtration, deck equipment, and water features

Pool Subtotal **\$1,340,000**

Subtotal **\$1,933,300**

General Conditions, OH&P @ 20% \$386,660

Contingency at 15% \$347,994

Total Estimate of Probable Construction Costs **\$2,667,954**

Total Estimate of Probable Construction Costs (ROUNDED) **\$2,670,000**

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ESTIMATE OF TOTAL PROJECT COST

16-Dec-16

Total Estimate of Probable Construction Costs	\$ 2,670,000
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Project Soft Costs:

Design and Engineering Fees at 8% **\$ 213,600**

Design Fees Include:

Schematic Design
Design Development
Construction Documents
Bidding
Construction Contract Administration
Misc. Reimbursable Expenses

Quality Control Testing During Construction **\$ 6,000**

Allow

Soil Composition
Soil Compaction
Concrete
Reinforcing Steel

Fixtures Furniture and Equipment

<i>Loose Deck Safety Equipment</i>	\$ 25,000
<i>Lifeguard Building Equipment</i>	\$ 10,000
<i>Phone/data/security</i>	\$ 10,000

Soft Cost Contingency at 20% **\$ 52,920**

TOTAL PROJECT COST	\$ 2,987,520
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10. Business Plan



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OPERATIONS ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Section II – Operations Analysis

The following operations analysis has been completed for the Brunswick Community Aquatic Center. The following are the basic parameters for the project.

- The aquatic center includes a 25 yard 8 lane pool with a large slide and diving board, child deck slide and a zero depth entry area. There will also be a small bathhouse, with locker rooms, administration and guard office.
- The aquatic center will be open every day from Father's Day through mid-August. The center will be open weekends from Memorial Day to Father's Day, and from mid-August through Labor Day.
- The aquatic center will be built next to the Brunswick Recreation Center on Neptune Drive.
- The first year of operation will be late 2018 or later.
- The presence of other providers in the market will remain the same.
- The center will be operated by the Town of Brunswick.
- The operations estimate is based on a program and basic concept plan for the facility only.
- Swim teams utilizing the aquatic center will pay for all pool time utilized.
- A reasonably aggressive approach to estimating use and revenues from pass sales and programs taking place at the facility has been used for this pro-forma.
- No provision for any type of concessions has been shown.
- The weather has a major impact on the use and financial performance of outdoor aquatic centers and the use and revenue numbers could be lower based on a cool/wet year.
- This operations analysis should be updated once the final conceptual plan for the center has been completed.

OPERATIONS ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Operating Hours of the Aquatic Center:

Father's Day-Mid August (plus weekends from Memorial Day to Father's Day, and from mid-August through Labor Day)

Day(s)	Time
Monday-Sunday	10:00am-5:00pm

Fee Structure:

Category	Daily		Season Pass	
	Res.	N. Res.	Res.	N. Res.
Adult (13+)	\$5.50	\$8.50	\$50	\$88
Youth (12 and under)	\$4.00	\$6.00	\$40	\$70
Senior (60+)	\$4.00	\$6.00	\$40	\$70
Family (2 adults/4 children)	N/A	N/A	\$95	\$166

OPERATIONS ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Expenditures

Expenditures have been formulated based on the costs that are typically included in the operating budget for this type of facility. The figures are based on the size of the center, the specific components of the facility and the projected hours of operation. Actual costs were utilized wherever possible (Coffin Pond) and estimates for other expenses were based on similar facilities in the region. All expenses were calculated as accurately as possible but the actual costs may vary based on the final design, operational philosophy, and programming considerations adopted by staff.

Operation Cost Model:

Category	Budget
Part-Time (includes program staff)	\$79,327
Part-Time Benefits	\$6,069
Professional Services	\$300
Electricity	\$10,000
Water	\$10,000
Sewer	\$2,000
Rubbish Disposal	\$500
R & M Facilities	\$500
Telephone	\$750
Advertising	\$2,000
Travel	\$250
Training	\$1,500
General Supplies	\$1,000
Chemicals	\$10,000
Replacement Fund	\$5,000
TOTAL	\$129,196

OPERATIONS ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Part-Time Staff

Part-Time Positions	Rate/Hr	Benefits	Total	Hrs/Wk	Weeks	Total
<i>Aquatic Ctr. Director</i>						
Summer	\$17.00	\$1.85	\$18.85	41	9	\$6,957
Off-Season	\$17.00	\$1.85	\$18.85	14	6	\$1,584
<i>Cashier</i>						
Summer	\$12.00	\$1.31	\$13.31	49	9	\$5,869
Off-Season	\$12.00	\$1.31	\$13.31	14	6	\$1,118
<i>Head Lifeguard</i>						
Summer	\$15.00	\$1.64	\$16.64	53	9	\$7,935
Off-Season	\$15.00	\$1.64	\$16.64	14	6	\$1,397
<i>Lifeguard</i>						
Summer	\$13.00	\$1.42	\$14.42	302	9	\$39,185
Off-Season	\$13.00	\$1.42	\$14.42	76	6	\$6,574
Program Instructors ⁶						
Aquatics	Variable					\$7,803
Salaries						\$78,422
Benefits (7.65%)						\$5,999
TOTAL						\$84,421

Note: The minimum wage will increase to \$12.00 an hour by 2020 so this rate has been utilized for staffing cost projections.

⁶ Program instructors are paid at several different pay rates and some are also paid per class or in other ways. This makes an hourly breakdown difficult. Aquatics includes lessons, aquatic exercise, private lessons and other activities.

OPERATIONS ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Revenues

The following revenue projections were formulated from information on the specifics of the project and the demographics of the service area as well as comparing them to state and national statistics, other similar facilities and the competition for aquatic services in the area. Actual figures will vary based on the size and make-up of the components selected during final design, market stratification, philosophy of operation, fees and charges policy, and priorities of use.

Revenue Projection Model:

Fees	Budget
Daily Admissions	\$47,024
Summer Passes	\$53,010
Rentals (includes swim team use)	\$5,880
Aquatics Programs	\$25,202
Special Events	\$500
TOTAL	\$131,616

OPERATIONS ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Expenditure - Revenue Comparison

Category	Budget
Expenditures	\$129,196
Revenues	\$131,616
Difference	\$2,420
Recovery Rate	102%

This operations pro-forma was completed based on general information and a basic understanding of the project with a preliminary program and concept plan for the center. As a result, there is no guarantee that the expense and revenue projections outlined above will be met as there are many variables that affect such estimates that either cannot be accurately measured or are not consistent in their influence on the budgetary process.

OPERATIONS ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Appendix

Admission Revenue Worksheet

Aquatic Programs and Rentals

Aquatic Staff Part-Time Hours

OPERATIONS ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Brunswick Aquatic Center - Admission Revenue Worksheet

Daily Fees (Summer)	Fees	Number	Revenue
Adult	\$5.50	35	\$193
Youth	\$4.00	60	\$240
Senior	\$4.00	20	\$80
Group	\$3.50	35	\$123
Total		150	\$635
			x 58 days/year
Grand Total			\$36,830
	% of users	% of fee increase	
Non. Res.	30%	50%	\$5,525
Adjusted Total			\$42,355

Daily Fees (Off-Season)	Fees	Number	Revenue
Adult	\$5.50	20	\$110
Youth	\$4.00	35	\$140
Senior	\$4.00	10	\$40
Group	\$3.50	15	
Total		80	\$290
			x 14 days/year
Grand Total			\$4,060
	% of users	% of fee increase	
Non. Res.	30%	50%	\$609
Adjusted Total			\$4,669

Summer Passes	Fees	Number	Revenue
Adult	\$50	108	\$5,394
Youth	\$40	216	\$8,631
Senior	\$40	72	\$2,877
Family	\$95	324	\$30,747
Total		719	\$47,649
	% of users	% of fee increase	
Non. Res.	15%	75%	\$5,361
Adjusted Total			\$53,010

Revenue Summary	
Daily	\$47,024
Summer Passes	\$53,010
Total	\$100,033

Passes	
Primary	452
Secondary	268
Total	719

The number of Summer Passes is based on 3.5% of the households in the Primary Service Area (12,906 in 2016) and 1.5% of the households in the Secondary Service Area (17,835 in 2016).

OPERATIONS ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Brunswick Aquatic Center - Aquatic Programs

Program Calculations - Expenses

<i>Learn to Swim Classes</i>	Rate/Class	Classes/Day	Days	Sessions	Total
Summer	\$ 14.42	8	8	4	\$ 3,692
Total					\$ 3,692

<i>Water Exercise</i>	Rate/Class	Classes/Wk	Weeks	Total
Summer	\$ 14.42	6	8	\$ 692
Total				\$ 692

<i>Other</i>	Rate/Class	Classes/Wk	Weeks	Total
Private Lessons	\$ 14.42	4	8	\$ 461
Lifeguard Training	\$ 25.00	33	1	\$ 825
Misc.	\$ 14.42	3	8	\$ 346
Birthday Parties	\$ 14.42	6	8	\$ 692
Total				\$ 2,325

Contract/Other \$ 2,000

Grand Total \$ 8,708

Program Calculations - Revenues

<i>Learn to Swim</i>	Classes/Week	Fee	Participants	Sessions	Total
Summer	8	\$65	4	4	\$ 8,320
Private Lessons	4	\$35	1	8	\$ 1,120
Total					\$ 9,440

<i>Water Aerobics</i>	Classes/Week	Fee	Participants	Sessions	Total
Summer	6	\$7	8	8	\$ 2,688
Total			% of users	Fee Increase	\$ 2,688
Non Res.			10%	50%	\$ 134
Grand Total					\$ 2,822

<i>Other</i>	Classes/Week	Fee	Participants	Sessions	Total
Lifeguard Training	1	\$250	8	1	\$ 2,000
Misc.	3	\$12	5	8	\$ 1,440
Birthday Parties	6	\$125	1	8	\$ 6,000
Total					\$ 9,440

Contract/Other \$ 3,500

Grand Total \$ 25,202

Rentals

Revenues	Rate/Hr.	Number of Hrs.	Weeks	Total
25 yard Pool	\$60	1	8	\$ 480.00
Per Lane Hour	\$8	60	8	\$ 3,840.00
Swim Meets	\$75	4	4	\$ 1,200.00
Recreation Pool	\$45	1	8	\$ 360.00
Total				\$ 5,880.00

Swim Team Use - 6 lanes x 2 hrs/day x 5 days/wk

OPERATIONS ANALYSIS

Town of Brunswick

Community Aquatic Facility Feasibility Study



Brunswick Aquatic Center - Aquatic Staff Part Time Hours

Director (Summer)	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon.-Wed.	8am-10am	2	1	3	6
		10am-5pm	7	1	3	21
	Sat-Sun	10am-5pm	7	1	2	14
Total						41

Director (Off-Season)	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Sat-Sun	10am-5pm	7	1	2	14
Total						14

Cashier (Summer)	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Sun	10am-5pm	7	1	7	49
Total						49

Cashier (Off-Season)	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Sat-Sun	10am-5pm	7	1	2	14
Total						14

Head Lifeguard (Summer)	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Thurs-Fri	8am-10am	2	1	2	4
	Mon-Fri	10am-5pm	7	1	5	35
	Sat-Sun	10am-5pm	7	1	2	14
Total						53

Head Lifeguard (Off-Season)	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Sat-Sun	10am-5pm	7	1	2	14
Total						14

Lifeguard (Summer)	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	8am-10am	2	2	5	20
		10am-Noon	2	4	5	40
		Noon-5pm	5	6	5	150
	Sat-Sun	10am-Noon	4	4	2	32
		Noon-5pm	5	6	2	60
Total						302

Lifeguard (Off-Season)	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Sat-Sun	10am-Noon	2	4	2	16
		Noon-5pm	5	6	2	60
Total						76

11. Funding Sources

General

Municipalities traditionally fund capital projects by direct borrowing, authorizations from a capital budget, or focused taxes directed toward a specific project. As budgets and borrowing by municipalities for capital projects become tighter, opportunities to share the cost through grants, partnerships, and fundraising has become an increasingly popular approach. Swimming pool complexes lend themselves to such opportunities.

Outside Grants

The Land and Water Conservation Fund Act of 1964 (LWCF) was established to assist federal, state and local governments in the acquisition and/or development of public outdoor recreation facilities. Administered at the federal level by the National Park Service and at the state level by the Bureau of Parks and Lands in the Maine Department of Agriculture, Conservation and Forestry, LWCF grants can provide up to 50% of the allowable costs for approved acquisition or development projects for public outdoor recreation. A stipulation of the fund requires that the project remain an outdoor recreational facility in perpetuity.



There are many swimming pools across the northeast that have been constructed using LWCF assistance. An outdoor aquatics facility meets the criteria as a Development Project. Maine's Department of Agriculture, Conservation and Forestry, Grants and Community Recreation Bureau of Parks and Lands administers the LWCF.

Harold Alfond Foundation: The Harold Alfond Foundation is a charitable private foundation with principal interests in the fields of education, health care, and youth development in the State of Maine, its primary geographic area of interest. Emphasis is given to projects in Central Maine, where Mr. Alfond and his family worked and resided, however a review of the Foundation Grant History indicates support for worthwhile projects throughout Maine. Today, preference is given to large scale projects with the potential to have a transformative impact on the people and economy of Maine. When considering major grants, the Foundation will often match funds raised by the grantee from other organizations and individuals to foster community partnerships.



Partnerships

Municipal facilities that can support the needs of an outside organization or group have been able to obtain partial funding for capital and operational budgets. If a swimming pool can provide aquatic opportunities for a youth camp program, a rehabilitation facility, a private school, or similar organization. The financial support can be applied towards improvements or upgrades that may be outside of an established budget. For example, a rehabilitation facility that could use the pool for therapy might be a potential source to fund a heater for the pool.

Friends Groups

Non-profit "Friends-Of" groups are common with many aquatic facilities. These groups are structured so they may solicit and receive donations that can be directly applied toward the construction, betterment, or continued operation of the facility. The group's membership typically includes stakeholders with a vested interest in the pool such as active users, swim teams, and individuals with a strong commitment towards aquatics. Donations can be applied toward the initial capital cost through a directed donation to the Town. Donations can also be used to purchase components directly such as starting blocks, water features, benches, and other site amenities. Continued support after the pool is opened can ensure that equipment and amenities can be added or replaced and ensure the facility continues to meet the aquatic needs of its users.



Energy and Utility Based Rebates

Efficiency Maine's C&I Prescriptive Program offers fixed or "prescriptive incentives" to reduce the cost of projects that municipal facilities use energy more efficiently. The C&I Custom Program is designed to achieve electrical and thermal energy savings. Although seasonal outdoor swimming pools do not contained the equipment found in typical buildings that participate in these programs, incentives are usually available for the following:



- Lighting Controls
- VFD's (variable Frequency Drives) for the pool the pumps. The VFD allows the pumps to automatically adjust their speed and energy usage at times of low demand.
- High Efficiency Boilers if pool heat is provided

Solar

There are a number of opportunities to incorporate solar power and heating to an outdoor pool facility. Solar energy is an increasingly popular way for cities and towns to lock in reliable costs of electricity for decades while reducing a facilities' impact on the climate. A solar power purchase agreement (PPA) allows municipalities, who cannot take advantage of federal tax programs, to enjoy the same benefits of clean solar power afforded to businesses and homeowners. A solar PPA is an innovative financial structure that requires no upfront capital investment. Instead, a municipality is paired with private solar investor, who can take advantage of federal tax programs not available to the municipality. The investor (which may be a 3rd-party investor) then offers to purchase and build a solar array at the municipality's location, and then sells the solar power generated from that array to the nonprofit at electric rates defined in the offer letter.