BAR HARBOR MUNICIPAL BUILDING

SPACE NEEDS ASSESSMENT

JUNE 7, 2013

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I. EXECUTIVE SUMMARY

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The Town of Bar Harbor engaged the architecture firm, Design Group Collaborative (DGC) to provide a space needs assessment for the Bar Harbor Municipal Building located at 93 Cottage Street in Bar Harbor. The Town administrative staff provided input regarding personnel and department organization now and in the future. This information will assist the Town determine whether the existing Municipal Building is well suited for Town functions. This information will also help the Town assess pending major investments in the repairs to the brick exterior and interior office improvements.

The assessment process included two site visits to confirm existing conditions and staff configurations, a code analysis of the existing building to provide a perspective on life safety elements within the existing building, a questionnaire for Department Heads, and a review of the heating and electrical use of the existing building with a comparison of operating costs for a new building.

Included in this report is a space programming chart with square foot calculations and information regarding construction costs for new construction. A site plan and building plans with Department square footage is also included.

As stated in one of the department questionnaire responses the Municipal Building should be “a professional but attractive facility that people want to transact business in and conveys a sense of pride”. The following observations have been made regarding the building’s most urgent issues:

- The number of existing parking spaces dedicated to the Municipal Building is inadequate and requires approximately 6 more spaces.
- Based on the Uniform Plumbing Code additional restrooms are required to meet the occupancy of the building. If Phase II renovations occur, current ADA regulations may require additional ADA restroom upgrades.
- In general, all departments express a need for increased waiting and counter areas for customer service, as well as layout and packet assembly space, and copier/scanner, plotting areas.
- Acoustics in the Town Manager’s Office is poor.
- Departments located in the spaces that have not been renovated report poor ventilation and poor air quality.
- The staff reported a desire to see the original character of the building restored similar to what was accomplished in the most recent renovation of the Town Clerk’s office.
- The second floor Auditorium is underutilized. There are no bathrooms on this level. The Fire Chief currently allows only 150 to occupy the room due to exiting and egress requirements.

- The staff lunch/breakroom is located in a busy area that serves as a mail room, time clock and storage area. It does not promote group nor quiet lunches.

- Consider the need for a new locking, security card system for the building.

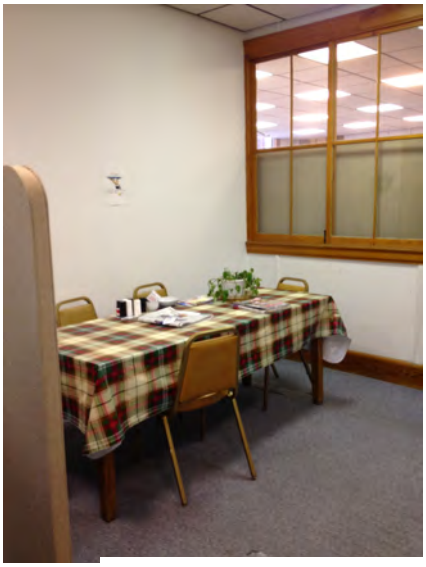
- The cost of renovating the existing building is substantially less than new construction.

- Rental income of approximately $24,000/year attributed to the existing Municipal Building more than offsets the energy savings of approximately $10,000/year for a new building.

Recommendations:

The building is a source of pride for the residents of Bar Harbor. It is in good condition and it's character meets the requirements of a Town service center. The building is large enough for future growth and expanded services. The rented office spaces are compatible with Town office functions. Its central downtown location is ideal.

We recommend re-organization of some of the staff areas and suggest the creation of more centralized areas that can be shared among departments with similar needs. Areas that can be shared easily among two or more departments are customer service areas, a centralized file and office supply area, layout and assembly area for large packet organization, copier/scanner area, and a conference or meeting room. A central reception area to assist residents and visitors with way finding might also be considered.



Lunch/ Break room

II. FIELD OBSERVATIONS

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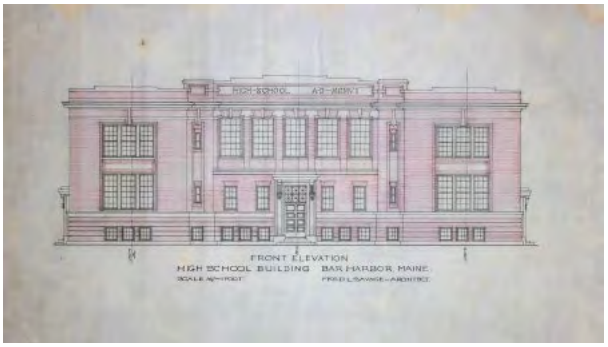
BUILDING CONDITIONS

The Bar Harbor Municipal building was built in 1907 and designed by Fredrick Savage. This Colonial Revival building was originally the Bar Harbor High School. The masonry design with large windows, high ceilings and wood wainscot on the interior reflects similar school designs of this era. The building is not listed on the National Register for Historic Places. This listing would provide protections with regard to code and ADA compliance if future renovations to the building were to occur. The reference to "historic properties" in the National Fire Protection code would apply if the building were placed on the National Register of Historic Places.



Fred L. Savage building elevation, 1907
Mt. Desert Island Historical Society website

Since 1989 the Town has spent $1.2 million on upgrades and renovations including renovations to the Town Clerk and Town Manager's office, a fire alarm, cooling systems, ADA entrance and elevator.

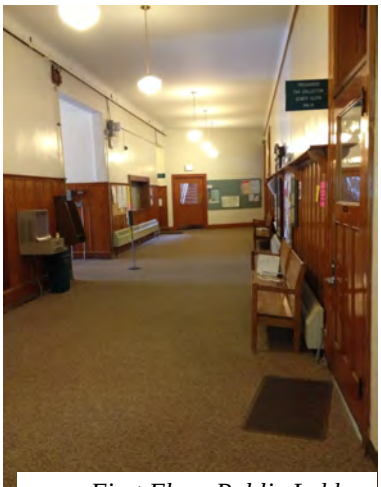
This study is not an exhaustive review the existing conditions of the physical aspects of the building and systems since renovations are planned for the future that will address most deficiencies and a study of the exterior envelope including roof repairs has been submitted to the Town in 2012.

Code Review

ADA Compliance (ADA 2010):

In 1990 Congress passed the Americans with Disabilities Act (ADA). The ADA has five titles. Title II prohibits discrimination against people with disabilities by public entities. Public entities include any state or local government and any of its departments, agencies, or other instrumentalities. All activities, services, and programs of public entities are covered, including activities of state legislatures and courts, town meetings, police and fire departments, motor vehicle licensing, and employment.[1]

An additional fully compliant ADA restroom may be required if substantial renovations are under taken. ADA suggests that 20% of renovation costs be dedicated to ADA upgrades.



First Floor Public Lobby

[1] 29 USC § 790-794

Plumbing Code

Area	Existing	Required
1st Floor Office Area (Employee Only small toilet rooms)	Toilets: 2 Sinks: 2 Urinals: 0 Fountains: 0	Toilets: 2 Male, 3 Female (5 Total) Sinks: 1 Male, 1 Female (2 Total) Urinals: 1 Fountains: 0
1st Floor Office Area (Public Lobby)	Toilets: 4 Sinks: 4 Urinals: 2 Fountains: 0	Toilets: 1 Male, 4 Female (5 Total) Sinks: 1 Male, 1 Female (2 Total) Urinals: 1 Fountains: 1
2nd Floor Council/Auditorium	Toilets: 0 Sinks: 0 Urinals: 0 Fountains: 0	Toilets: 2 Male, 4 Female (6 Total) Sinks: 2 Male, 2 Female (4 Total) Urinals: 2 Fountains: 2

The above numbers show the existing restrooms and the required number of facilities that the building needs according to the 2009 Uniform Plumbing Code. To determine the number of facilities required we did not take into consideration simultaneous use.

The existing First Floor has 5 toilet rooms, 2 very small toilet rooms that are seldom used and 3 for public use. One of the public restrooms is fully ADA compliant. As the chart shows, expanded and separate bathrooms are required for both male and females. In the employee questionnaire, it was expressed that the current ADA restroom be renovated.

The upper lever, which includes the Council Chamber and Auditorium does not have any facilities for employee or public use. This level will require separate Male and Female restrooms with the above number of plumbing fixtures in each.

Life Safety (NFPA 2006)

The existing building is sprinklered. A code analysis (See Appendix A) highlights the requirements that the building must meet. The building appears to meet exit distance requirements. Emergency exiting from the Auditorium is located on the north side of the room, due to the lack of remote exits the occupancy of the Auditorium is capped at 150 people even though it could hold at least twice that number. The Council Chamber Room occupancy is also capped. It should have two means of egress remotely located from each other if the room has more than 50 persons.

SITE

The site is located in the downtown area and is conveniently located close to local businesses, other municipal buildings (Police and Fire) and public transportation. In the event of large public gatherings parking occurs on Cottage Street. The Municipal Building has a bike rack stand and modest landscaping and plantings. The north side of

the building has a steep slope next to the adjacent property. *This downtown location is a key component to the value of the existing building.*

There are 8 employee parking spaces located in the west parking lot. This lot can only be accessed in one direction and exited by backing out. There are no ADA spaces available for staff in their lot. The east parking lot is a public lot. There are two ADA spaces located next to the Municipal Building ADA Entrance. Town staff, employees from the surrounding businesses, the public and delivery trucks uses this lot. Availability of parking is limited in the summer. Town Water Department, Waste Water, Public Works, Fire Chief and Police Department staff who regularly do business and pick up their mail at the Municipal Building do not have dedicated parking spaces available for their use.

West Municipal Staff Parking Lot

MECHANICAL REVIEW

ENERGY USE ASSESSMENT
BAR HARBOR MUNICIPAL OFFICES

BAR HARBOR, MAINE

March 2013

I. Overview:

J.M. Kilby Engineering, P.A was requested by Carla Haskell of Design Group Collaborative Architects to review energy use at the existing Municipal Office Building and compare with targeted energy use under the following scenarios:

a) The existing Municipal Office Building after renovations.
b) A replacement municipal office building.

Electric and fuel oil bills were obtained and analyzed. A visit to the facility was conducted on February 12, 2013 to obtain a general overview of the building and its current systems.

II. Executive Summary:

- The existing Municipal Building is relatively energy efficient for an office building of its age and construction. However, much of the apparent energy efficiency is because large areas of the building are mostly unoccupied with minimal equipment and lighting loads.

- Renovating the existing Municipal Building will likely result in slightly higher (3%) annual energy use due to increased air conditioning and ventilation. However, if a Variable Refrigerant Volume (VRV) Heat Pump system is installed and used to offset some of the oil heating, then the renovated building could save about 9% per year in energy costs compared to the current building.

- A somewhat smaller Replacement Municipal Office Building designed to meet reasonable energy efficiency goals should save about 20% in energy costs compared to the current building.

III. Existing Building Energy Use:

A. Utility Data: Fuel oil consumption data from September 2010 through May 2012 was obtained from the Town of Bar Harbor and compared to heating degree-days calculated for the local area (Acadia National Park) for the same time period. Electric Bills from July 2011 to June 2012 were also obtained and tabulated.

   a. Heating Oil: The building used 7,940 gallons of #2 Fuel Oil during the 2010-2011 heating season and 6,759 gallons during the 2011-2012 heating season. Both heating seasons were among the warmest in history. For the purpose of calculation and accurate comparison, an annual oil use of 8,350 gallons has been assumed to reflect a more "normal" winter. Of course, this assumed oil consumption will be too high should winter temperatures not return to historical averages.

   b. Electricity: The building used 136,028 kWh of electricity from June 2011 through May 2012.

B. Energy Utilization Index (EUI): EUI, or *energy use intensity*, is a unit of measurement that describes a building's energy use. EUI represents the energy consumed by a building relative to its size. A building's EUI is calculated by taking the total energy consumed in one year (measured in kBtu) and dividing it by the total floor area of the building. Generally, a low EUI signifies good energy performance. There are two EUI values:

   a. Site EUI: Site energy measures the amount of energy consumed at a facility—a number that is reflected on gas and electric utility meters, and on meters attached to any onsite renewable sources.

   b. Source EUI: Source energy includes site energy consumed at the building, and also includes energy used offsite to generate and transport the energy that is used at the building. Most notably, electricity is very efficiently used within buildings, but takes about 3 kWh offsite to generate and transport each 1 kWh used in the building.

C. The calculated Site EUI for the existing Municipal Office Building is 61 kBtu which is much less than the the national median of 95 kBtu for offices. The median EUI has been "normalized" based on geography. In other words, the Municipal Building uses less energy per square foot than the typical office building in a similar climate. However, there are reasons why this older, poorly insulated building appears to be relatively energy efficient:

a. Assumed Area: The EUI calculation is significantly affected by the assumed building area. The existing building area is about 26,500 square feet of which about 1/3 is below grade. Below grade areas are earth sheltered and tend to lower the calculated EUI.

b. Unoccupied Areas: About 1/2 of the Basement and 1/8 of the 1st Floor is currently unoccupied. Also, about 1/2 of the 2nd Floor consists of a large open space which is not occupied as office space. These areas are not populated with energy consuming people, computers, lights, etc. which tends to improve the calculated EUI.

c. Lack of Air Conditioning and Ventilation: The building is only about 20% air conditioned and much of the building is not properly ventilated. If air conditioning and ventilation were to be installed as part of a major renovation, they will consume energy and raise the EUI.

IV. Renovated Existing Building Energy Use:

A. Assumed HVAC Systems: The southeast quadrant of the 1st Floor was renovated approximately three years ago. Existing fintube radiation was replaced with steel panel radiators and wall-hung, split system air conditioners were installed for cooling. A heat recovery ventilator was installed to bring in fresh ventilation air.

a. It is assumed that an extensive renovation will include air conditioning and ventilating an additional 13,200 SF of area with similar systems used in the southeast quadrant. The air conditioning system is assumed to be Variable Refrigerant Volume (VRV) heat pump system. Existing fintube radiation will be replaced with panel radiators and the zone controls will be upgraded.

b. It is assumed the existing boiler plant and heating water distribution system would generally remain as currently installed.

B. Energy Use for Renovated Building:

a. Added Cooling: An additional 13,200 SF of area cooled with equipment sized at 440 SF per ton would require about 30 tons of cooling. Using BIN calculation methods, the added cooling is estimated to consume an additional 10,000 kWh per year. The calculation assumed the following:

i. Occupied Cooling Setpoint: 74 ^{o}F
ii. Unoccupied Cooling Setpoint: 82 ^{o}F
iii. Hours of Operation: M-F, 8 AM – 5 PM.
iv. Occupancy: 20 people during occupied hours, 0 during unoccupied.
v. Lighting/Equipment Loads: 1.5 watts/square foot.

b. Added Ventilation: Assuming an additional 500 CFM of outside air during occupied hours, the added ventilation would require another 150 gallons of fuel oil each year. This assumes ventilation air is brought into the building through a 50% effective heat recovery ventilator.

c. Energy Utilization Index (EUI): The calculated Site EUI for the existing building after renovations is 63 kBtu. The slightly higher EUI is due to the additional energy required for the increased cooling and ventilation described above. It assumes that fuel oil will be used exclusively for heating.

C. Energy Savings by Using New VRV Heat Pumps for Heating: If the variable refrigerant flow heat pump systems were used to heat the building when the outside temperature is above 30 ^{o}F, the building would use less energy and save costs.

a. Heat Pumps: A VRV heat pump system has a coefficient of performance (COP) of around 2.8 or better at these outside temperatures. This means that for every 1 kWh of electricity input into the system, almost 3 kWh of heat delivered to the building.

b. Energy Costs: At $3.50 per Gallon and 75% efficiency, the cost of 1,000,000 Btu's from Fuel Oil is about $33.82. At $0.17 per kWh and a COP of 2.8, the cost of 1,000,000 Btu's from heat pumps is about $19.92.

c. Energy Utilization Index (EUI): The calculated Site EUI for the renovated existing building, using heat pumps above 30 ^{o}F is 48 kBtu.

V. Proposed New Municipal Building Energy Use:

A. Building Size: Design Group Collaborative has conducted as space use analysis and determined a replacement building would be about 20,000 square feet.

B. Energy Star Target Finder: *Target Finder* is an online tool that enables architects and building owners to set energy targets and receive an EPA energy performance score for projects during the design process. Projects that earn a score of 75 or higher are eligible for the "Designed to Earn the ENERGY STAR" certification.

a. An EPA project score of 75 corresponds to a Site EUI value of 65 kBtu for an office building in Bar Harbor, Maine.

b. This EUI would appear easy to reach since the existing building's EUI is less than 65. However, the new building will be smaller with more people and equipment per square foot. The building will also be fully air conditioned and ventilated. The Target EUI of 65 is reasonable, but the design will need to be mindful of energy use.

C. Assumed HVAC Systems and Energy Use: A new 20,000 square foot building is assumed to use LP-gas for space heating and domestic water heating. Of course, electricity would be consumed for lights, equipment and air conditioning. Two reasonable mixes of LP-gas use and electricity use to meet a Site EUI value of 65 kBtu are as follows:

a. Mix #1: 8,500 gallons of LP-gas / 145,000 kWh per year.
b. Mix #2: 7,000 gallons of LP-gas / 190,000 kWh per year.

D. Energy Utilization Index (EUI): The calculated Site EUI for the proposed 20,000 SF building is 65 kBtu for either energy mix.

VI. Summary of Estimated Annual Energy Costs

A. Existing Building:
Electricity – 136,000 kWh @ $0.17 = $23.120
Fuel Oil – 8,350 gallons @ $3.50 = $29,225

Annual Energy Costs: $52,345

B. Renovated Building: *(using Heat Pumps)*
Electricity – 191,000 kWh @ $0.17 = $32,470
Fuel Oil – 4,300 gallons @ $3.50 = $15,050

Annual Energy Costs: $47,520

C. New Building: *(20,000 SF)*
Electricity – 145,000 kWh @ $0.17 = $24,650
Propane – 8,500 gallons @ $2.00 = $17,000

Annual Energy Costs: $41,650

Note: The energy use and costs contained in this report are estimates based on numerous assumptions, including the future costs of energy, and presented before any design work has been completed. There is no warranty, expressed or implied, that actual usage and costs will not vary (perhaps significantly) from these figures.

Report Submitted by:

J.M. Kilby Engineering, P.A.

John M. Kilby, P.E.

III. SPACE PROGRAMMING

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As noted in the Executive Summary the 27,000 square foot building provides ample room for staff departments, public service, meeting rooms and storage. Reorganization and centralization of some of the interdepartmental needs can be accommodated within the existing square footage. The building also provides the Town with rental income that averages $24,000 on an annual basis.

Below is a summary of the town departments that are currently in the municipal building:

TOWN CLERK
Services: Record and issue all vital records, election activities, council agendas and minutes, State licensing, general administration, support staff for the Town Manager. The Town Manager's office is currently adjacent to this department area.
Personnel: 2 and the Town Manager

As stated in the questionnaire, this area was renovated in 2008. This renovation included heating and ventilation upgrades as well as private office functions. The renovation design maintains the original character of the building while accommodating the needs of an office building.

The upgrades have been well received by the staff and it appears to serve their current needs. The public waiting and service area and volunteer space appears to be small. The Town Manager's Office has poor acoustics and noise from the public entrance and lobby easily penetrate into the Town Manager's office.

FINANCE DEPARTMENT
Services: The Finance Department controls all financial transactions for all funds for the Town including collection and dispersal of all monies, registration of all vehicles and boats. Technology, Assessing, GIS, and Building Maintenance report to this department.
Personnel: 5.5

A need for a more efficient waiting/service area and copy work room were stated in the questionnaire. Lack of privacy between the staff workstations and the service counter was also observed. The need for improved ventilation and cooling in the summer and heating of the space in the winter was also noted.

CEO/ASSESSING
Services: Assessing maintains acceptable valuations and quality rating within State guidelines. Code Department issues permits for construction, conducts site inspections, manages permits for the Planning Board, Appeals Board, Design Review Board and several other boards, committees, and task forces.
Personnel: 4 current with the possible addition of 1

The two departments have been combined into one quadrant of the building, with staff areas occupying the west side and files occupying the large room to the east in their quadrant.

Both departments have reported the need for a better waiting/customer service counter and a private conference room as well as immediate access to files and records. The CEO's office has stated a need for more copy/ layout workroom.

This area has not been renovated and again the need for improved ventilation in the summer and heating of the space in the winter was also noted. Any additional personnel would require additional space.

TECHNOLOGY DIVISION
Services: Purchase and maintain software/hardware systems, including cameras, broadcast systems, backups, WAN's, phones, etc. Supports all technology systems for Town and its departments.
Personnel: 1

This department will occasionally work in the Server Room that is located in the Basement in the opposite side of the building. Additional space is needed for an appropriate counter/service area and a separate secure equipment storage area.

BUILDING SERVICES
Services: Maintenance of building general cleaning
Personnel: 1

The restroom facilities are heavily used in the summer. The building is used as an informal way station for visitors, Chamber of Commerce visitor's, cruise ship passengers and people paying parking tickets. This use is highest in the summer season.

The staff lunch room is shared between all departments. The room contains a lunch table, small counter and kitchenette, time clock, department mail boxes and storage. It was requested that the room be updated and configured to provide more privacy and less flow through traffic.

PUBLIC MEETING SPACES

The advent of videotaping and televising Town Council meetings has moderately decreased attendance at Council and Planning Board Meetings. The Council Chamber occupancy size is limited to 50 people because it only has one exit. The size of the Chamber appears to suit the meeting sizes.

The Auditorium is 3068 sf and has potential for a maximum standing room capacity of over 400 people. Because the exit doors are not dispersed evenly throughout the room occupancy is limited to 150. A stage was removed from the South side of the room. There are no bathrooms and no kitchen facilities on this floor. Alcohol is not allowed in this and any Town owned buildings. It also has no mechanism to adjust the natural light through the south side windows.

This space is infrequently rented for public gatherings, Boy Scouts, etc. It can not be used effectively as overflow meeting space for crowded Town Council meetings because there are no camera's in the Auditorium to televise the events. There is a television mounted in the Auditorium for remote viewing. The Auditorium was once considered for

Bar Harbor Municipal Building

Existing vs Proposed Spaces

Design Group Collaborative
3/27

			Existing			Proposed			COMMENTS
		Persons per Area	Total # of Spaces	Area of Ea. Space (sq. ft.)	Net Area Sub-Total (sq. ft.)	Total # of Spaces	Area of Ea. Space (sq. ft.)	Net Area Sub-Total (sq. ft.)	
I.	**Town Clerk/ Manager**	2				2			
1.	Town Manager Office	1	1	336	336	1	336	336	Conference Table for 4 people
2.	Clerk Office	1	1	111	111	1	100	100	General/Assistance
3.	Assistant Clerk Area	1	1	170	170	1	170	170	includes consultant workspace
4.	Public Waiting/ Counter	2 - 4	1	122	122	1	200	200	Licenses- marriages, fish, dogs
5.	Layout Table/packet assembly area	4 - 6	1	74	74	1	200	200	
6.	General Assistance/Election Office	2- 4	1	111	111	1	120	120	Election Material
7.	Office Storage/Permenant Record Storage		2	33	66	2	36	72	
8.	Conference Room	4 - 6	0		0	1	300	300	Shared with Finance
9.	Copier/ fax/ file area		1	63	63	1	63	63	
10.	Fireproof Vault		1		0				remotely located
	Sub-Total Town Clerk:				1,053			1561	
	Circulation Factor			0.55	579		0.3	468	
	Total Town Clerk:				1,632			2,029	
II.	**Finance Department**	5.5				5.5			
1.	Finance Director	1	1	162	162	1	162	162	
2.	Tax Collector	1	1	130	130	1	130	130	
3.	Staff Area	3	1	450	450	1	612	612	
4.	Copier/Fax Area		1	20	20	1	118	118	Staff work space
5.	Record Files		1	30	30	1	30	30	remotely located
6.	Lockable Safe Area		1	21	21	1	21	21	
7.	Public Waiting/ Assistance Counter	3-4	1	118	118	1	200	200	
	Sub-Total Finance:				931			1,273	
	Circulation Factor			0.19	177		0.3	382	
	Total Finance:				1,108			1,655	

Bar Harbor Municipal Building

Existing vs Proposed Spaces

Design Group Collaborative

3/27

		Existing				Proposed			COMMENTS
		Persons per Area	Total # of Spaces	Area of Ea. Space (sq. ft.)	Net Area Sub-Total (sq. ft.)	Total # of Spaces	Area of Ea. Space (sq. ft.)	Net Area Sub-Total (sq. ft.)	
III.a	**Assessing Department**	2				2			
1.	Assessor's Office	1	1	151	151	1	151	151	
2.	GIS Coordinator/ Deputy Assessor	1	1	138	138	1	138	138	
3.	Public Waiting	3	1	0	0	1	120	120	Currently shared with CEO
4.	Large Scanner, plotter, printer	1	1	50	50	1	150	150	Currently shared with CEO
5.	Document Storage Flat File Area/ Archives	1	1	415	415	1	475	475	Currently shared with CEO
6.	Map/Library/Resource Space	0	0	0	0	1	200	200	For use by staff and the public
	Sub-Total Assessing :				754			1,234	
	Circulation Factor			0.12	90		0.165	204	
	Total Assessing :				844			1,438	
III.b	**CEO/ Planning**	2				3			
1.	Code Enforcement Officer Office	1	1	105	105	1	120	120	
2.	Assistant	1	1	57	57	1	100	100	
3.	Special Project Planning Office	1	0	0	0	1	120	120	Anticipating future position for 1 staff member
4.	Public Waiting	3	1	64	64	1	120	120	Currently shared with Assessing
5.	Copier/ fax/ file area	1	1	60	60	1	60	60	**Shared with Assessing**
6.	Storage	1	1	50	50	1	60	60	
7.	Copy/ Assembly Area	1	1	20	20	1	100	100	**Shared with Assessing**
8.	Conference Room	4 - 6	1	60	60	1	200	200	Private Meeting Space
	Sub-Total CEO/Planning :				416			880	
	Circulation Factor			0.16	67		0.3	264	
	Total CEO/Planning :				483			1,144	
	Total CEO/Planning/Assessing :				1,327				
IV.	**Technology Division**	1				1			
1.	Tech. Services Administrator Office	2	1	160	160	1	220	220	Includes Workbench/ repair Space
2.	Secure Equipment Sto./ Repair		0	75	0	1	75	75	
3.	Server/Fiber Room (see Building Services)		0		0	0		0	located in west Basement
	Sub-Total Technology Division:				160			295	
	Circulation Factor			0	0		0.3	89	
	Sub-Total Technology Division:				160			384	
V.a.	**Building Services**	1				1			
1.	Maintenance Office	2	1	226	226	1	226	226	
2.	Server/Fiber Room		1	249	249	1	249	249	
3.	Broadcast Booth	1	1	42	42	1	100	100	located next to Council Chambers
4.	Electrical		1	30	30	1	30	30	
5.	Lunch Room	6	1	287	287	1	350	350	
6.	Janitor Supply Room (1st Floor)		1	73	73	1	50	50	
7.	Boiler Room		1	378	378	1	378	378	
	Sub-Total Building Services:				1,285			1,383	

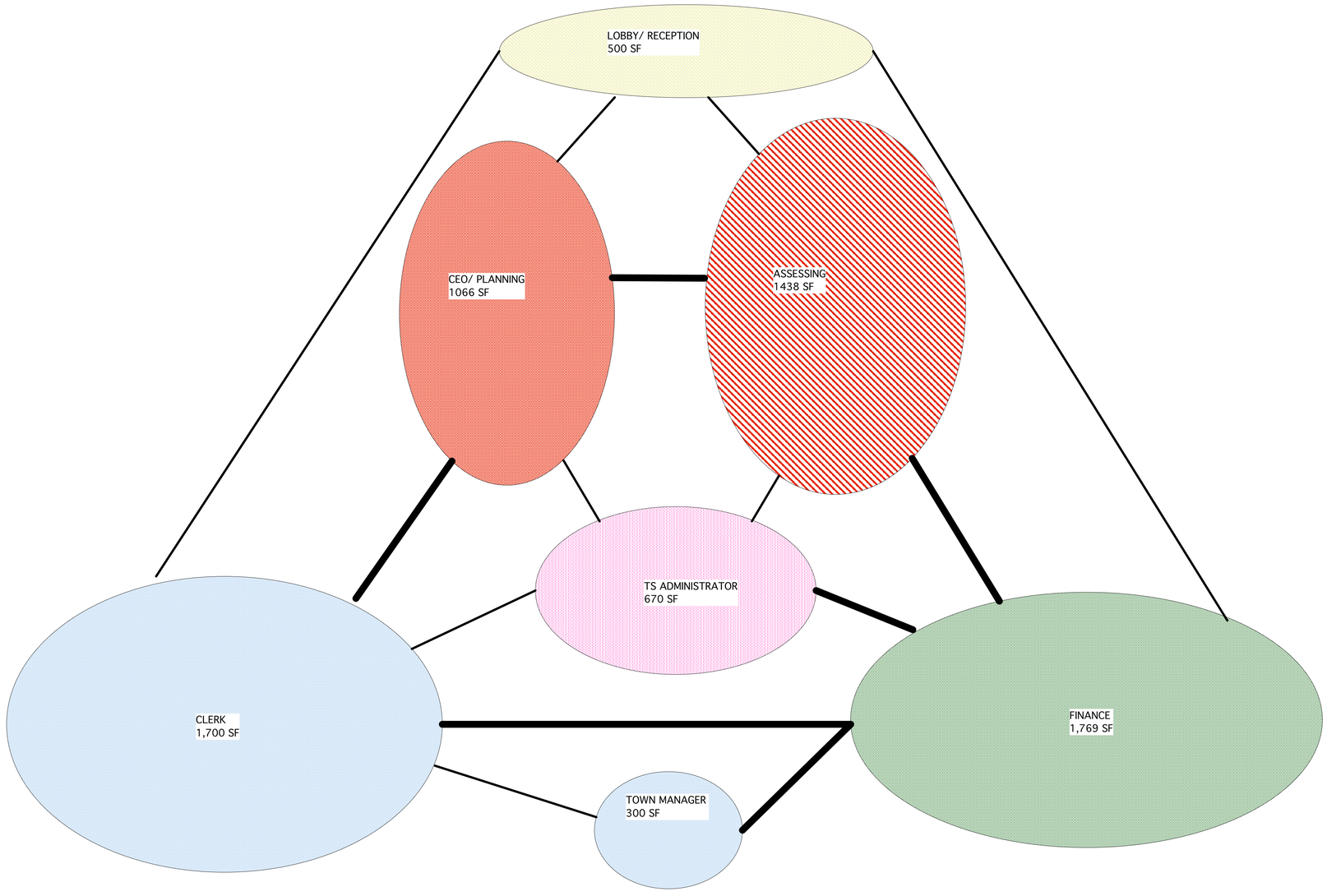
Bar Harbor Municipal Building

Existing vs Proposed Spaces

Design Group Collaborative

3/27

		Existing				Proposed			COMMENTS
		Persons per Area	Total # of Spaces	Area of Ea. Space (sq. ft.)	Net Area Sub-Total (sq. ft.)	Total # of Spaces	Area of Ea. Space (sq. ft.)	Net Area Sub-Total (sq. ft.)	
V.b.	**Storage**								
1.	Clerk Locked Storage	0	1	368	368	1	368	368	
2.	Police Department Sto.	0	1	536	536	1	536	536	
3.	Harbor Master		1	82	82	1	82	82	
4.	PLanning Board Sto.		1	131	131	1	131	131	
5.	Finance, Water, Highway Storage		1	601	601	1	601	601	
6.	Assessing Storage		1	373	373	1	373	373	
7.	Former Town Manager & Town Clerk Office/ Available Office Space		1	876	876	0	0	0	
	Sub-Total Storage :				2,967			2,091	
V.	**Public Space**								
1.	Council Chambers	117*	1	823	823	1	823	823	
2.	Small Meeting Room	10-12	1	225	225	1	300	300	Webinars, Committee Meetings, Renter Use
3.	Public Lobby	20-50	1	906	906	1	500	500	Need acoustics, lighting, air quality, temp control, signage, reception
4.	Public Meeting Room	483*	1	3,068	3,068	1	3,068	3,068	
	Sub-Total Meeting Space :				5,022			4,691	
VII.	**Rental Space**								
1.	Chamber of Commerce	3-4	1	1,033	1,033				
2.	Hancock County Nursing	3-4	1	542	542				No Fee
3.	Architect	3-4	1	860	860				
4.	Artist Rental	3-4	1	830	830				
5.	The Wave	3-4	1	810	810				
	Sub-TotalBuilding Services:				4,075				
		* Based on NFPA Occupancy rates for Assembly areas							
	Employees	13.5				14.5			
TOTAL NET AREA (NSF):					18,421			14,814	
	Net-to-Gross Conversion Factor				1.48			1.40	
BUILDING GROSS AREA (GSF):					**27,281**			**20,740**	



PROJECT NORTH

REV.	DESCRIPTION	
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OWNER REVIEW

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(207) 664-0560

BAR HARBOR
MUNICIPAL BUILDING

BAR HARBOR, MAINE

Administration
Programming Bubble Diagram

SHEET TITLE:

DATE:	03/21/2013
SCALE:	AS NOTED
PROJECT NO.	122031
DRAWN BY:	LS
A/E OF RECORD:	CMH

GRAPHIC SCALE: 0 1"

SHEET No. A 101

A1 FIRST FLOOR PLAN

1/8" = 1'-0"

IV. CONCLUSION

IV. CONCLUSION

Future growth:
This report compares the continued Town use of the existing Municipal Building with a new facility over the next 20 years. The comparison takes into account continued maintenance, planned renovations and operation costs. Future growth as stated by the department staff is anticipated to be 1 or 2 people relating to the Town Special Projects position for the Planning Department. We recommend a 20% growth rate over the next 20 years raising the employee count from 13.5 to 16.2.

Conversion Ratio:
The existing Municipal Building is a masonry building with thick walls and wide public corridors and stairways. The net to gross conversion ratio expressed in the space use charts, indicate the ratio of useable area to non-useable area. This factor includes the thickness of walls, width of corridors and circulation space. In comparing an existing building to a new building the conversion factor for the existing building is 1.48. This ratio was adjusted for a proposed new facility 1.4 to meet modern building construction standards.

Construction Costs:
In addition to the $1.2 million that the Town has invested in upgrades the Municipal Building, the Town anticipates exterior improvements of approximately $1 million and Phase II renovations of approximately $1,967,980 based on $195/sf. This square foot cost matches the cost of the prior renovation. Phase II renovations also includes adding bathrooms on the second floor.

The cost of new construction for a town office building could range from $200/sf-$300/sf. depending on the quality of materials and complexity of the design. We have calculated a median cost of $250/sf for comparison purposes. The Project soft costs include fees, furniture, equipment land costs, and site development. The soft costs were adjusted to 21% for the renovation and 30% for new construction based on the need for suitable land, parking lots and utilities.

Operating Costs:
Based on the energy use assessment that is included in this report the existing building should average approximately $10,000 a year more in energy costs versus a new facility.

Rental Income:
The existing building has a rental income of approximately $24,000/year and has room for unanticipated growth. A new facility has not been sized to include rental space.

Summation:
Based on current construction costs, provisions for future growth, and its ideal location the existing Municipal Building appears to be a sound investment for the Town. The higher energy costs in the existing building are more than offset by the rental income. Improvements in the Phase II renovation should strive to increase efficiencies in staff operations while maintaining a high level of customer service.

Preliminary Opinion of Cost **Renovations vs New Construction**		**EXISTING**		**NEW**
TOTAL NET AREA (NSF):		18,421		14,814
Net-to-Gross Conversion Factor		1.48		1.40
BUILDING GROSS AREA (GSF):		**27,281**		**20,740**
Rental SF		- 4,075		
		23,206		
Exterior Improvements		$1,000,000		
PHASE II Renovation including additional toilet facilities on the 1st and 2nd floors		+ 4,964 sf		20,740 sf
Cost per sq. ft.		X $195		X $250.00
Construction Cost		**$1,967,980**		**$5,185,000**
Project "Soft Costs" (inc fees, furniture, equipment, site development)	0.21	$413,276	0.30	$1,555,500
Total Project Cost		**$2,381,256**		**$6,740,500**

V. APPENDIX

APPENDIX
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VI. APPENDIX
- Code Review
- Existing Conditions Drawings- DGC Architects
  A 101 – Existing First Floor Plans
  A 102 – Existing Second Floor Plans
  A 103 – Existing Third Floor Plans
  L 100 - Site Plan

CODE REVIEW

PRELIMINARY CODE SUMMARY: Bar Harbor Municipal Building

PROJECT DESCRIPTION: Space Needs Analysis

GENERAL INFORMATION:

DATE PREPARED: March 21, 2013

CODES USED:
Maine Uniform Building and Energy Code, 2010 Edition
International Building Code (IBC), 2009 Edition
NFPA 101 Life Safety Code, 2006 edition
Americans with Disabilities Act (ADAAG), 2010 Standards
Mechanical: International Building Code, 2006 Edition
Plumbing: Maine Plumbing Code, 2006 Edition
Electrical: National Electrical Code, 2008 Edition
Energy: ASHRAE Standard 90.1
Fuel Gas: NFPA 58 – Liquid Petroleum
Ventilation/ Indoor Air Quality: ASHRAE Standard 62.1

SPRINKLERED: Sprinklered NFPA13

EXISTING & NEW CONSTRUCTION TYPE:
IBC- MASONRY TYPE IIA
NFPA- TYPE II

OCCUPANCY CLASSIFICATION:
IBC: Assembly A3/ Business
NFPA 101: CHAPTER 38, Business
Chapter 12, Existing Assembly
Chapter 42, Storage Occupancy

REQUIRED SEPERATION:
NFPA 101: Assembly/ Business = 1 hour (permission to reduce to 1 hour if sprinklered.)
Business/ Storage (Ordinary Hazard) 1 hour (1 hour reduction taken for approved sprinkler system)

First Floor	**9093 sf**	
Clerk	1633/ 100sf per person=	16 people
Finance	1633/ 100 per person =	16 people
CEO/Assessor	1327/ 100 per person =	13 people
Available Space	876/100 sf per person=	8 people
Public Lobby	906/ 7sf per person =	130 people
Subtotal		183 people

Second Floor	**9093 sf**	
Meeting Room	225/ 15sf per person=	15 people
Auditorium	3068/ 7 per person=	438 people
Council Chambers	823/ 7 per person=	117 people
Rental	830/ 100 per person=	8 people
Rental	860/ 100 per person=	9 people
Rental	542/ 100 per person	5 people
Subtotal		592 people

Basement	**9093 sf**	
General Storage	2090/500 sf per person=	4 people
Rental	1033/ 100 per person=	10 people
Rental	810/ 100 per person	8 people
Subtotal		22 people

TOTAL OCCUPANCY	**27,279 sf**	**797 people**

MEANS OF EGRESS, GENERAL:

Exits: NFPA: Openings in a required separation shall be protected by fire door assemblies equipped with door closers.

CONTINUITY: IBC: The required capacity of a means of egress system shall not be diminished along the path of travel. 1003.6

OCCUPANT LOAD: **NFPA Table 7.3.1.2**
OFFICES: 100 sf/person
STORAGE USE 500 sf/person

ASSEMBLY AREAS WITHOUT FIXED SEATING—UNCONCENTRATED (TABLES & CHAIRS):
IBC: 15 sf/occupant net, Table 1004.1.2.
NFPA: Concentrated- 7 Net, Unconcentrated- 15 net

ACCESSORY STORAGE AREAS, MECHANICAL EQUIPMENT ROOMS: 300 gsf/person

MEANS OF EGRESS: Vertical Openings- Every vertical opening between floors of a building shall be suitably enclosed **or protected** as necessary. NFPA 4.5.5

EGRESS WIDTH:
CAPACITY FACTORS (WITH SPRINKLER SYSTEM):
IBC: Stairways = 0.2" per occupant. Other egress components = 0.15" per person, Table 1005.1.

NFPA: Stairways = 0.3" per person; Level Components and Ramps = 0.2" per person, Table 7.3.3.1.

Corridors shall be not less than 44"

Means of Egress Requirements (NFPA)

Capacity of Means of Egress: Not less than 36". (7.3.4.1) Minimum clear width 44" for any corridor or passageway serving 50 occupant or more. (38.2.3.2)

Number of Exits: Not less than 2 exits from every story. (38.2.4)

Common Path of Travel Limit: 75 feet

Dead End Corridor Limit: 20 feet

Travel Distance Limit: 200 feet

Protection Requirements (NFPA)

Protection of Vertical Openings: Unenclosed vertical openings in accordance with 8.6.8.2 shall be permitted (38.3.1 (1)).

Corridor Separation: Fire resistance rating not required for a space occupied by a single tenant. (A 38.3.6.1 (2))

Single Means of Egress from Second Floor: A business occupancy not exceeding 3 floors and not exceeding 30 people per floor are permitted a single exit providing travel distance does not exceed 100', where the exit is enclosed, and where the exit discharges directly outside.

ACCESSIBLE MEANS OF EGRESS:

NUMBER REQUIRED: IBC: Not less than one accessible means of egress per accessible space. Where more than one means of egress is required, not less than two shall be accessible. 1007.1

ACCESSIBLE EXIT STAIRWAYS:

Stairs not required to be accessible must provide signage indicating the location of accessible means of egress, Section 1007.7.

NFPA: Unless only one exit is required, two accessible means of egress are required. Section 7.5.4.

MEANS OF EGRESS, DOORS:

DOORS: IBC: Doors shall provide a clear width of 32" wide min., nominal 48" wide max. and 80" high min., Section 1008.1.1. Doors shall swing in the direction of travel when serving an occupant load of 50 or more persons. Section 1008.1.1.

NFPA: Doors shall provide a clear width of 32" min. Section 7.2.1.2.4. Doors shall swing in the direction of travel when serving an occupant load of 50 or more, in exit enclosures, and in high hazard contents areas. Section 7.2.1.4.2. & 3. During its swing, a door shall leave not less than one half of the required width of an aisle, a corridor, a passageway, or a landing

unobstructed and shall not project more than 7" into this width when fully open, Section 7.2.1.4.4.

DOORS IN SERIES: IBC: The space between the doors shall be 48" plus the dimension of the door swing. Section 1008.1.7.

NUMBER OF EXITS: IBC: Two exits or two exit access doorways from any space shall be provided where the occupant load exceeds 50. Section 1015.1.

NFPA: Two exits or two exit access doorways from any space shall be provided except that a single exit is allowed to be common for the common path of travel allowed. Review Assembly occupancy

NFPA: In low hazard storage occupancies, a single means of egress is allowed. NFPA 42.2.4.1

DOOR ARRANGEMENT: IBC: In a sprinklered building, if two doors are required from an area, they must be a distance apart at least as great as 1/3 the greatest diagonal dimension. Section 1015.2.1 E 2.

NFPA: Two exits shall be located at a dist. apart from each other at least 1/3 the length of the max. overall dimension; if more than two exits are required, at least two shall meet the separation requirement and the rest located such that if one is blocked by fire, the rest are available. Sections 7.5.1.3.2, 7.5.1.3.3 and 7.5.1.3.6.

MEANS OF EGRESS, EXIT ACCESS:

INTERVENING SPACES: IBC: Egress can pass through intervening spaces that are accessory to the area being served. Egress cannot pass through kitchens, storage rooms, closets, or spaces used for similar purposes. Egress cannot pass through rooms that can be locked to prevent egress. NFPA 7.5.1.6 Section 1014.

NFPA: If the corridors are not required to be rated, they can discharge into open plan areas. Section 7.5.1.2.2.

EXIT SIGNS In all spaces required to have more than one exit or exit access. Every point in egress corridor within 100' of a sign

POWER SUPPLY FOR EXIT SIGNS & ILLUMINATION
Battery packs or generator
Fire Detection Must be tied into an approved building fire alarm system

FIRE EXTINGUISHERS: Max 75' distance between FE in egress access NFPA 10

ADA Parking Spaces- 26-50 spaces = Provide 2 ADA spaces

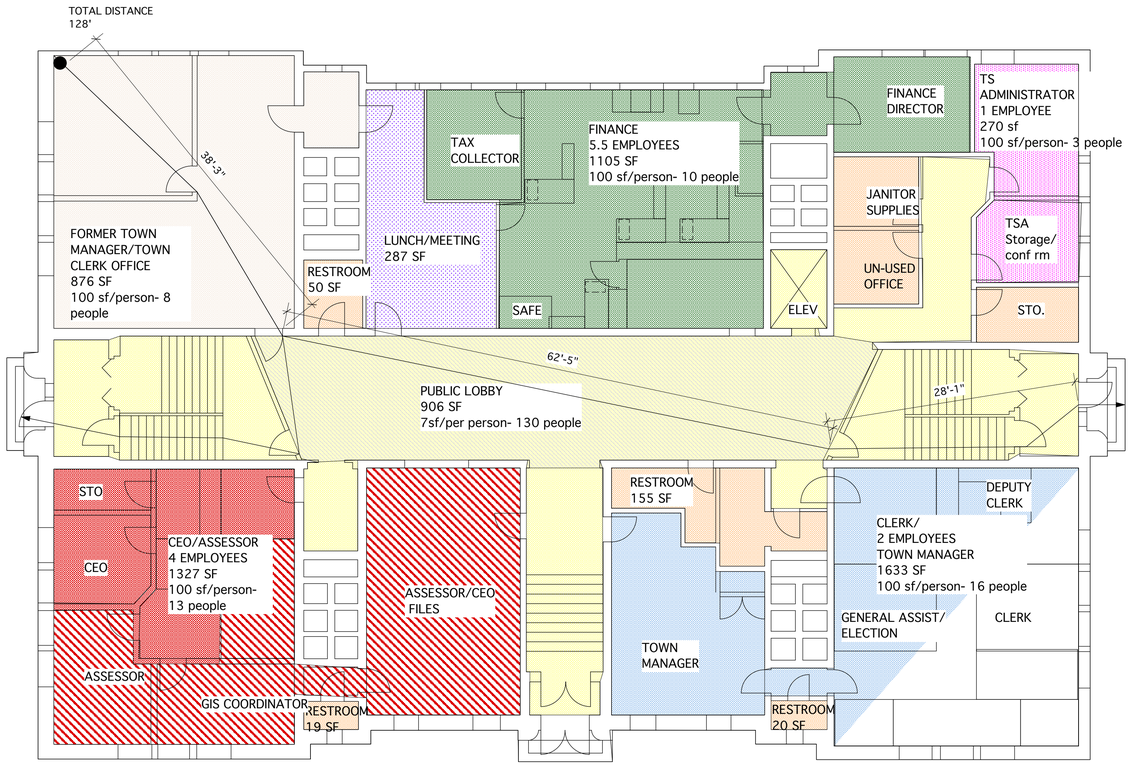
Uniform Plumbing Code, 2009 ED.

TOWN EMPLOYEES: 15- 20 EMPLOYEES (MAX.):
RENTAL SPACE EMPLOYEES: 15- 20 EMPLOYEES (MAX.):
Office- 20 Female, 20 Male
- WC - FEMALE - 3 REQUIRED
- LAVS - FEMALE - 1 REQUIRED
- WC - MALE - 1 REQUIRED
- URINAL - 1 REQUIRED
- LAVS - MALE - 1 REQUIRED

EXISTING: 4 Toilets, 4 Sinks, 1 non segregated ADA toilet and sink.

Assembly- 200 Female, 200 Male
- WC - FEMALE - 8 REQUIRED: 0 PROVIDED
- LAVS - FEMALE - 1 REQUIRED: 0 PROVIDED
- WC - MALE - 2 REQUIRED: 0 PROVIDED
- URINAL - 2 REQUIRED: 0 PROVIDED
- LAVS - MALE - 1 REQUIRED: 0 PROVIDED

EXISTING CONDITIONS DRAWINGS



A1	FIRST FLOOR PLAN
1/8" = 1'-0"	

PROJECT NORTH

REV.	DESCRIPTION	
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OWNER REVIEW

CURRENT ISSUE STATUS:

DESIGN GROUP COLLABORATIVE
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104 MAIN STREET
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(207) 664-0560

BAR HARBOR
MUNICIPAL BUILDING

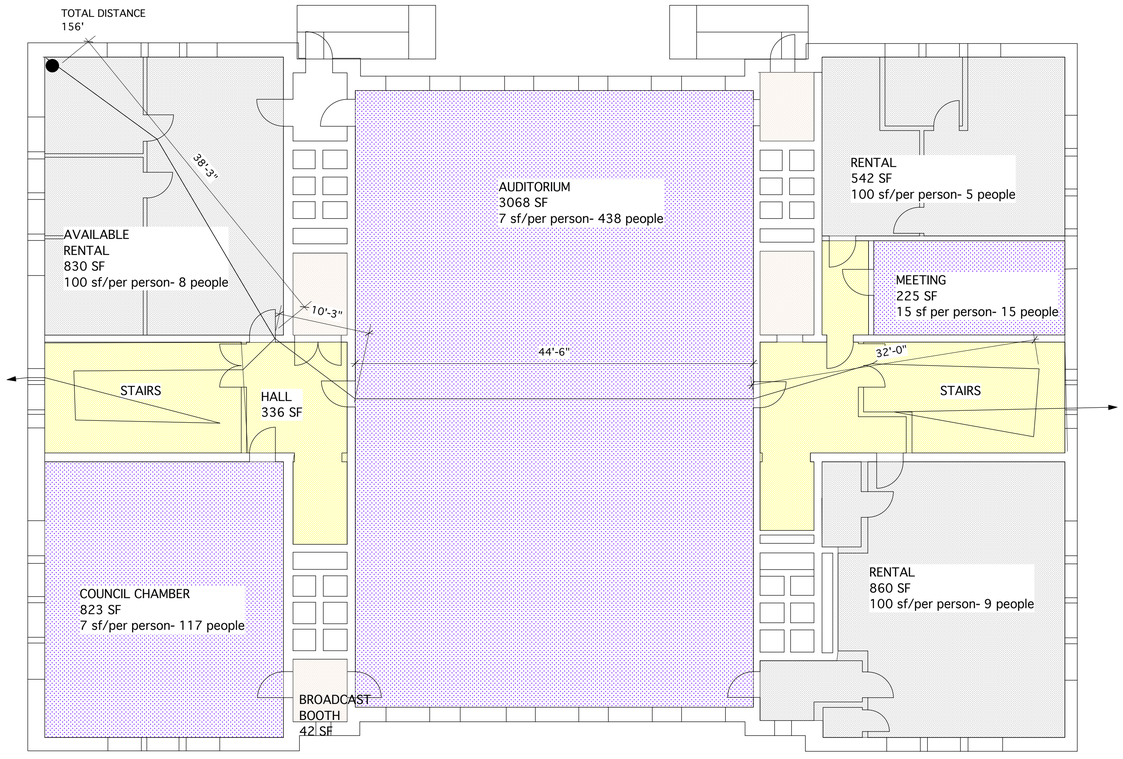
BAR HARBOR, MAINE

FIRST
FLOOR PLAN

SHEET TITLE:	
DATE:	03/21/2013
SCALE:	AS NOTED
PROJECT NO.	122031
DRAWN BY:	LS
A/E OF RECORD:	CMH

GRAPHIC SCALE: 0 1"

SHEET No. A 101



PROJECT NORTH

REV.	DESCRIPTION	
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BAR HARBOR
MUNICIPAL BUILDING

BAR HARBOR, MAINE

SECOND
FLOOR PLAN

SHEET TITLE:

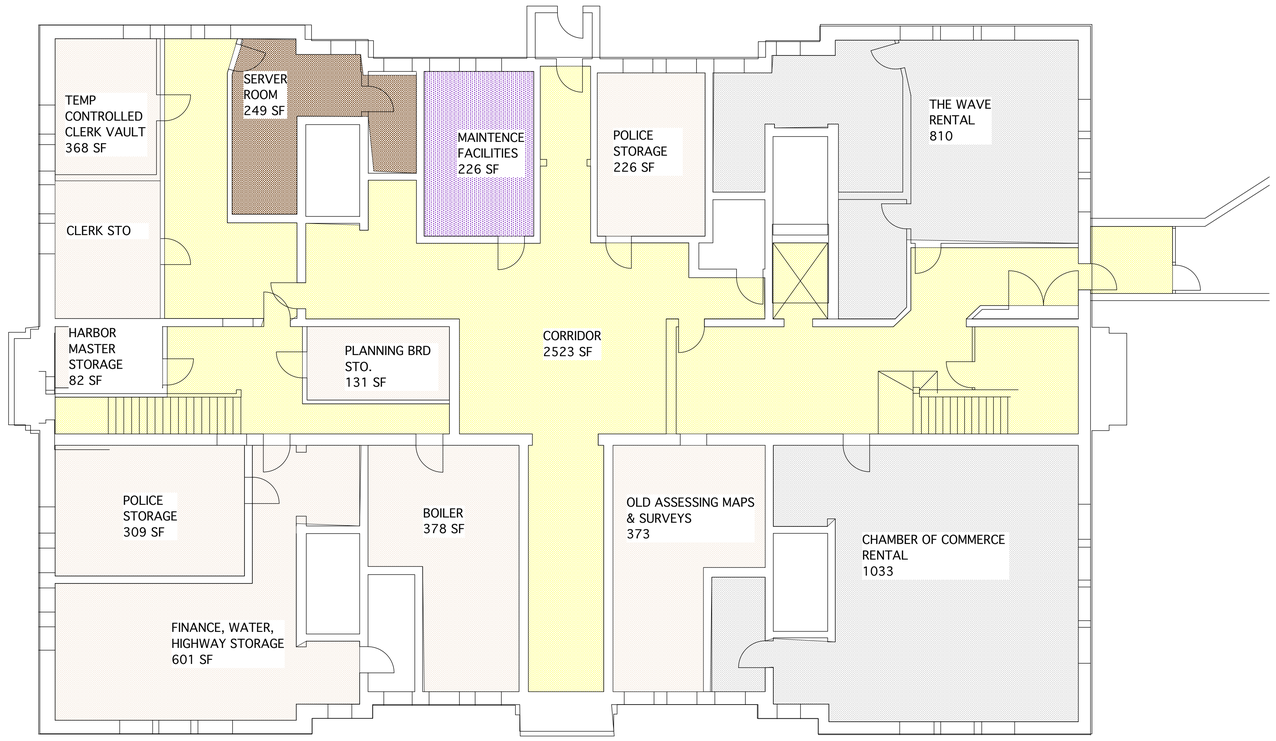
DATE:	03/21/2013
SCALE:	AS NOTED
PROJECT NO.	122031
DRAWN BY:	LS
A/E OF RECORD:	CMH

GRAPHIC SCALE: 0 1"

SHEET No. A 102

A1 SECOND FLOOR PLAN

1/8" = 1'-0"



A1 BASEMENT FLOOR PLAN

1/8" = 1'-0"

PROJECT NORTH

REV.	DESCRIPTION	
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BAR HARBOR
MUNICIPAL BUILDING

BAR HARBOR, MAINE

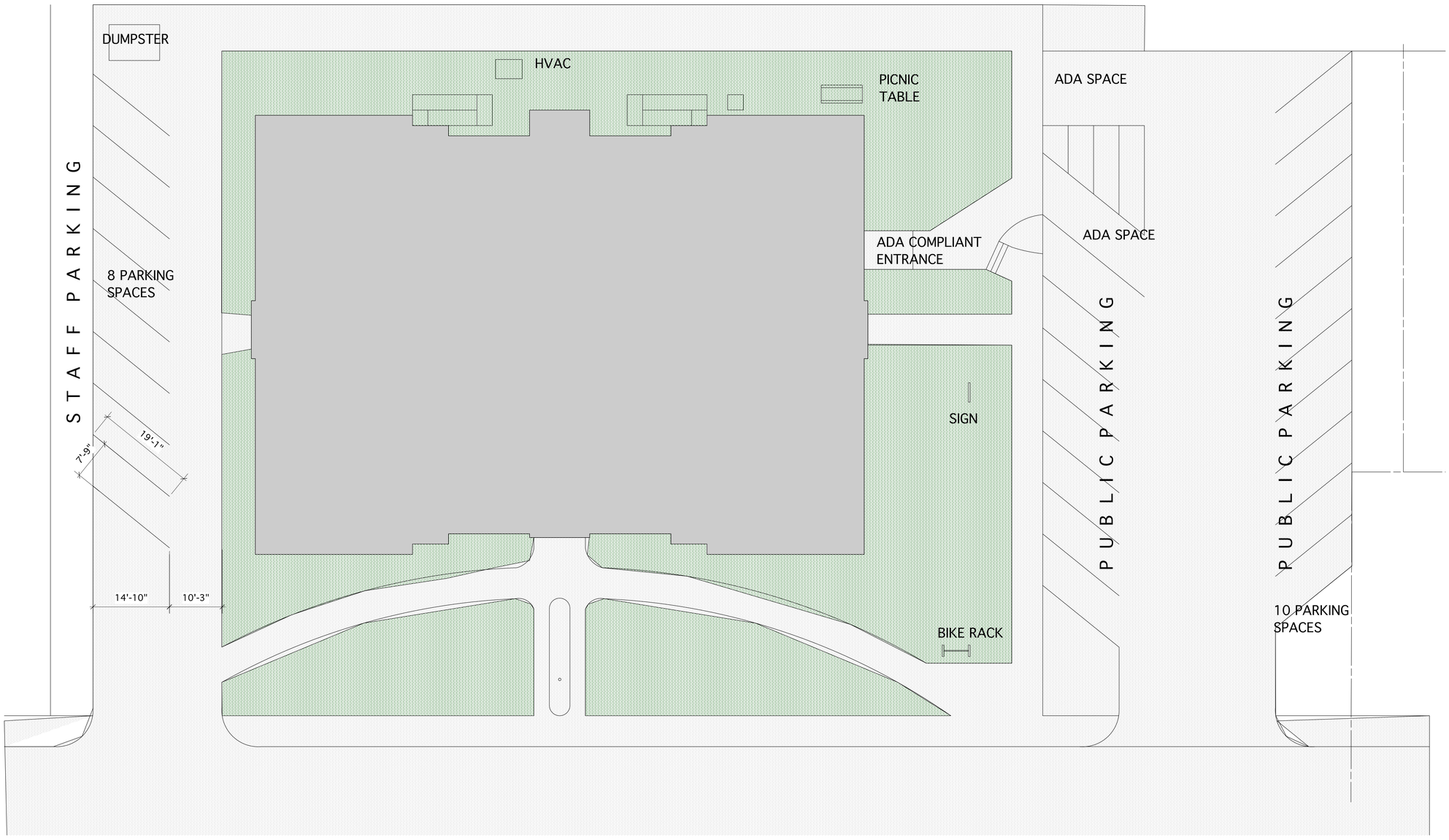
BASEMENT
FLOOR PLAN

SHEET TITLE:

DATE:	03/21/2013
SCALE:	AS NOTED
PROJECT NO.	122031
DRAWN BY:	LS
A/E OF RECORD:	CMH

GRAPHIC SCALE: 0" 1"

SHEET No. A 103



PROJECT NORTH

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BAR HARBOR
MUNICIPAL BUILDING

BAR HARBOR, MAINE

SITE PLAN

SHEET TITLE:

DATE:	03/21/2013
SCALE:	AS NOTED
PROJECT NO.	122031
DRAWN BY:	LS
A/E OF RECORD:	CMH

GRAPHIC SCALE: 0 1"

SHEET No. L 100

A1 SITE PLAN

1/8" = 1'-0"