



# FORT MONROE REUSE PLAN

August 20, 2008

The Fort Monroe Reuse Plan was created by the  
Fort Monroe Federal Area Development Authority:

**BOARD MEMBERS**

*\*denotes Executive Committee*

**Governor's Cabinet Appointees**

The Honorable Viola O. Baskerville, *Secretary of Administration*

The Honorable L. Preston Bryant, Jr., *Secretary of Natural Resources,  
Chairman\**

The Honorable Robert P. Crouch, *Assistant to the Governor for  
Commonwealth Preparedness*

The Honorable Patrick O. Gottschalk, *Secretary of Commerce and Trade*

The Honorable Jody M. Wagner, *Secretary of Finance*

**General Assembly Appointees**

The Honorable John Miller, *Senate District 1*

The Honorable Mamie Locke, *Senate District 2, Secretary / Treasurer\**

The Honorable Tom Gear, *House District 91*

The Honorable Phil Hamilton, *House District 93\**

**Citizen Appointees** (*Hampton City Council*)

Dr. Alvin Bryant

Mr. Robert Harper

Dr. Kanata Jackson

Dr. Wayne Lett

Mr. John Quarstein

Mr. Robert A. Scott

Mr. Tommy T. Thompson, *Vice Chairman\**

**Governor Appointees** (*Professional Experts*)

Dr. Rex M. Ellis

Ms. Catharine Gilliam\*

**EXECUTIVE DIRECTOR**

William A. Armbruster

**HISTORIC PRESERVATION ADVISORY GROUP**

Kathleen S. Kilpatrick, *Director, Department of Historic Resources*

Robert Nieweg, *Director, Southern Field Office,  
National Trust for Historic Preservation*

Mary Means, *Principal, Mary Means and Associates*

Eleanor Krause, *Principal, RKTects*

Dr. Laurennett Lee, *Curator, African American History,  
Virginia Historical Society*

Jeanne Zeidler, *Director, Jamestown 2007*

John Munick, *former CEO, Drucker and Falk Realtors*

Alisa Bailey, *President, Virginia Tourism Corporation*

Dorothy Redford, *Executive Director, Somerset Plantation  
State Historic Site, NC*

**CONSULTANTS**

Bay Area Economics, *Market Analysis*

Dutton + Associates, *Historic Preservation*

Dover, Kohl & Partners, *Town Planning*

Economics Research Associates, *Tourism Analysis*

David Knisely, Garrity-Knisely Attorneys, *BRAC Law*

Hanbury Evans Wright Vlattas + Company, *Architecture & Preservation*

Conover Hunt, *Planning & Coordination*

H. Blount Hunter Retail & Real Estate Research, *Market Analysis*

Kimley-Horn & Associates, *Engineering and Transportation*

Matrix Design Group, Inc., *Environmental Analysis & Engineering*

Trudy O'Reilly, *Public Relations Advisor*

Zimmerman/Volk Associates, *Housing Analysis*

*The 2008 Reuse Plan is based on the significant planning  
performed by the Hampton FADA in 2006-2007.*

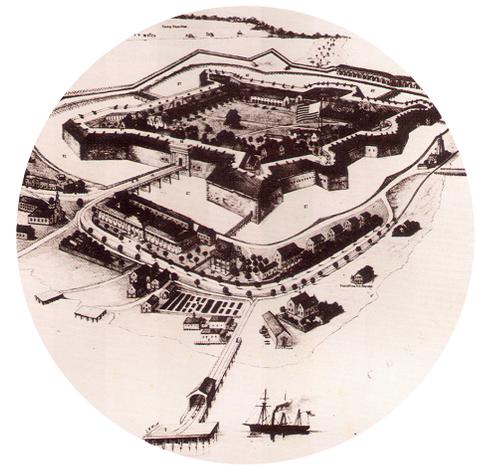


*Planning a future  
for freedom's legacy*

# TABLE OF CONTENTS

Introduction	1
Planning Essentials	2
Land Use Concepts and Limits	3
Economic Impact Strategy	4
Tourism Strategy	5
Environmental Considerations	6
Transportation, Infrastructure & Flood Control Strategy	7





# introduction 1



Figure 1.1. Aerial View of Fort Monroe

Spanning 570 acres, Fort Monroe is located in Hampton, Virginia on Old Point Comfort where the Hampton Roads Harbor and Chesapeake Bay meet. Established as a U.S. Army installation in 1819, this National Historic Landmark District contains a diverse collection of buildings, structures, and landscapes rich in military and American history. Fort Monroe will be closed as a military facility in 2011 pursuant to the recommendations of the 2005 Base Realignment and Closure Commission (BRAC), and much of the land will revert to the Commonwealth of Virginia. After the Army leaves the post, every effort to retain and maintain the special qualities of this incredible place will be made. The Fort Monroe Reuse Plan is an important first step to promoting the proper preservation, reuse, and future evolution of this priceless historic treasure.

The Fort Monroe Federal Area Development Authority (FMFADA) was created by legislative action of the Virginia General Assembly in 2007 to study, plan, and recommend the best use of the resources that will remain when the Army vacates the post. The FMFADA is the official “Local Redevelopment Authority” (LRA) recognized by the Department of Defense. The FMFADA is an 18-member body with appointees from the City of Hampton, the Virginia House of Delegates and Senate, and the Governor of Virginia. The Board includes five Cabinet level officials and two specialists in historic preservation and heritage tourism.

The FMFADA relies on the expertise of national consultants in the areas of town planning, BRAC law, environmental engineering, historic architecture and preservation planning, structural engineering, housing market analysis, commercial/retail analysis, public relations/marketing, and tourism planning to inform the decision-making process.

The Fort Monroe Reuse Plan places a high priority on preserving, maintaining, and reusing historic buildings on Fort Monroe. Fort Monroe was designated a National Historic Landmark (NHL) in 1960. A primary objective for reuse is to minimize the impact on historic structures and permit limited new construction without jeopardizing the Fort’s NHL status. The plan envisions the preservation of the majority of contributing buildings located within the Fort Monroe National Historic Landmark District; more than 170 buildings are proposed to remain and be reused. Together with the strategic repair and reuse of historic structures, the plan emphasizes the preservation of significant landscapes and viewsheds. Understanding that any new development at Fort Monroe will be subject to strict limits and regulations, the plan describes areas where some new construction is allowed.

The Fort Monroe Reuse Plan includes official policies, land use concepts and limits, and fundamental planning principles, as well as strategies related to preservation, economics, tourism, the environment, transportation, infrastructure, and flood control. The intent of the Reuse Plan is to define a framework, and provide a vision for future reuse. The concepts and ideas contained herein identify key opportunities and issues facing reuse; these concepts and ideas are intended to be further refined in future phases of planning. A separate Technical Support Manual, available at [www.fmfada.com](http://www.fmfada.com), complements the Reuse Plan and provides detailed analysis, supporting documentation, and recommendations to guide reuse. While the Reuse Plan is intended to be an officially adopted document, *The Technical Support Manual for the Reuse of Fort Monroe* is a working document that will be updated as plan details evolve.

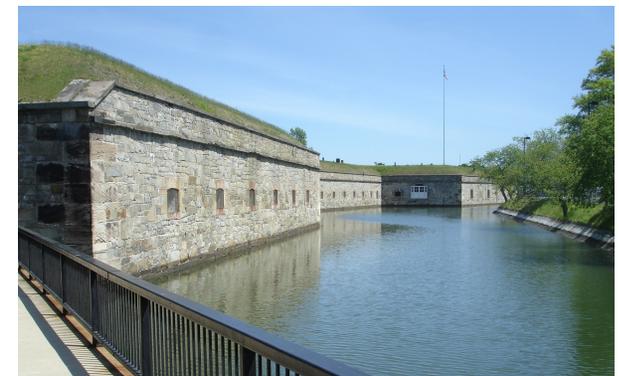


Figure 1.2. Fort Monroe is the largest stone fort in the United States.

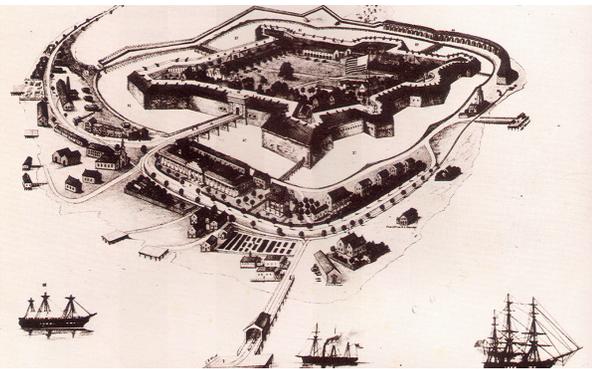


Figure 1.3. Lithograph from the Fort Monroe Casemate Museum, 1862



Figure 1.4. Fort Monroe, 1861

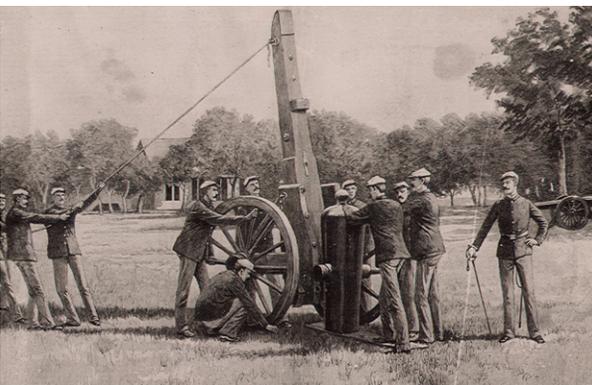


Figure 1.5. Artillery training on Parade Ground at Fort Monroe

## HISTORY OF THE INSTALLATION

Fort Monroe was built between 1819 and 1834, but the history of fortifications on the site goes back nearly four centuries. In 1607, Captain John Smith recognized the strategic importance of this land, calling “Cape Comfort” an “isle fit for a castle”. The name evolved to Point Comfort by 1609 and Old Point Comfort by the 1640s. In 1609 English colonists built Fort Algernourne here to protect the approaches to the colony at Jamestown. Throughout the colonial period, there were other fortifications at this site, but none lasted very long.

The British used the Old Point Comfort lighthouse as an observation tower during the War of 1812. The Chesapeake Bay was virtually defenseless during this conflict and the British were able to burn cities beginning with Hampton in June 1813 and ending with Washington, D.C. in August 1814. Our young nation was determined not to allow this to happen again and the United States upgraded its coastal defense system. Construction began on the stone fortification at Old Point Comfort in 1819 and continued for several years until it was declared complete in 1834. The fort was constructed as part of the Third System of coastal fortifications; it was the first of these forts to be built and was named in honor of President James Monroe. These fortifications were designed to be state-of-the-art for siege warfare in the early 1800’s, and all were designed as substantial masonry structures. Fort Monroe, however, is unique in that it is

the largest of the Third System fortifications, is built of stone, and it has a moat. Designed by Simon Bernard, the stone fort is an exceptional example of engineering and design.

Construction was not only limited to the fortification wall. Quarters, workplaces and support buildings were erected both inside and outside the walls. Growth spurts on the post naturally coincided with nationwide Army building campaigns that followed almost every major war effort. The presence of the Artillery Corps also influenced development. Training facilities specific to the Corps and housing for students and instructors is a significant portion of the surviving historic fabric. Many buildings reflect standard Quartermaster Corps designs for offices and housing units, but there are several unique structures, such as the Batteries that were essential to Fort Monroe’s role as a coastal fortification.

Historically, the Civil War is the Fort’s most significant period. The Fort remained in the Union and was never attacked by the Confederates. It served as the staging area for attacks along the southern coastline and against the Confederate capital at Richmond, Virginia. In 1861 the Fort earned the name “Freedom’s Fortress”; escaped slaves came to Fort Monroe seeking refuge, and were declared contraband, the spoils of war, by commanding officer Major General Benjamin F. Butler. Eventually thousands of contrabands were granted freedman status under the Fort’s protection.

Although this is the most significant period of the Fort, no structures built during the Civil War remain today.

After the Civil War, the Artillery Corps was re-established at Fort Monroe. The construction during this period is largely due to a nationwide Army building campaign for renovation and construction. The post Headquarters, the Old Post Office (Building 83), the frame houses inside and outside the fort, and Building 5 were erected during this period. The first of the Endicott Batteries, Battery Gatewood, DeRussy, Ruggles, Anderson, and Church, were completed in the Post Civil War Expansion Period.

At the beginning of the 20th century, the Artillery Corps, which encompassed both field and coast artillery, became separate units. The Coast Artillery School was located at Fort Monroe. The construction of the Coast Artillery School Complex (the current day TRADOC complex) and much of the housing on Fort Monroe was built during this period; Battery Parrott and Irwin were also finished. After coastal artillery became obsolete, and the Coast Artillery School was relocated to California, Fort Monroe became the headquarters for the Army Ground Forces and eventually the U.S. Army Training and Doctrine Command (TRADOC), continuing the installation's long history as a training post.

Over two centuries Fort Monroe's military tradition has melded with the grandeur of on-site hotels. Many grand hotels were built on Old Point Comfort during the 19th century. The 1st Hygeia Hotel was built in 1822, the Sherwood Inn in 1843, and the 1st Chamberlin Hotel in 1896. Only the Chamberlin, which was reconstructed after a 1920 fire in 1928, still stands on Old Point Comfort today. For more information on the history of Old Point Comfort as a resort destination, as well as prospects for future tourism uses, please see Section 5.

Permanent and temporary structures have been built, renovated, or torn down inside and outside the fort walls with every major Army building campaign through World War II. Today there is a diverse and extensive inventory of buildings, landscapes, and vistas that portray Fort Monroe's military past. The long history of the Fort, as well as its magnificent placement along the Chesapeake Bay, further reinforce the demand for a careful, considerate plan for reuse.



Figure 1.6. Main Gate bridge, early 1900's



Figure 1.7. Company of Artillery men in front of Barracks Building 5, 1861

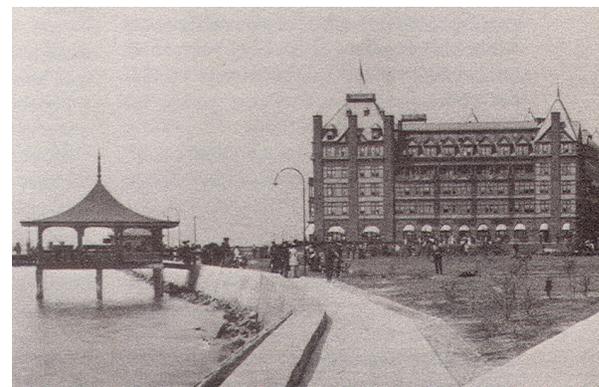


Figure 1.8. Chamberlin Hotel, pre-1920s

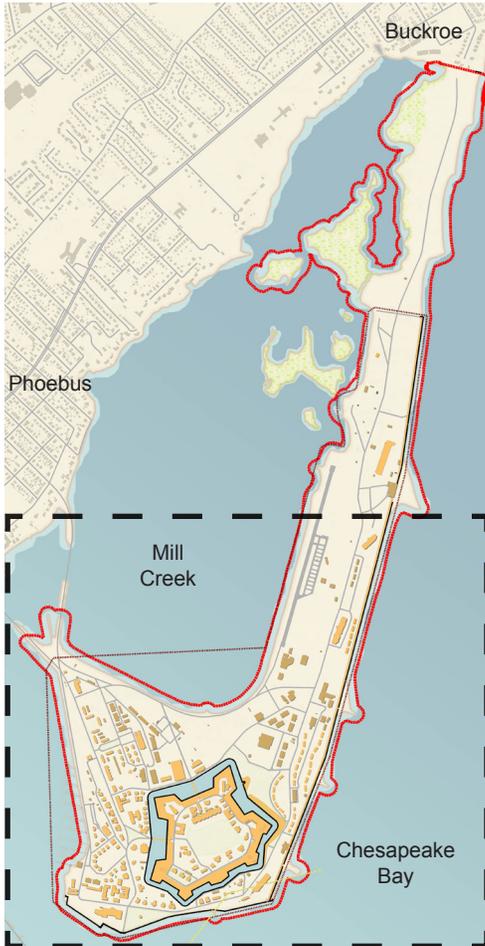


Figure 1.9. Existing Conditions

**Legend**

-  historic landmark contributing elements
-  non-contributing buildings
-  national historic landmark boundary
-  planning area



Figure 1.10. Existing Conditions, detail view of southern Fort Monroe

## EXISTING CONDITIONS

Fort Monroe is bound by Mill Creek to the west, the Chesapeake Bay to the east, and the Hampton Roads harbor to the south. The Buckroe community of Hampton is located north of the Fort and Phoebus to the west. Access to Fort Monroe is through Phoebus, with Mellen Street and Mercury Boulevard each leading to the Main Gate.

The date of construction for buildings on the post ranges from 1819 to 2005. All buildings on Fort Monroe, except for a few located along Dog Beach, are within the boundaries of the Fort Monroe National Historic Landmark District. The district consists of 157 contributing elements: 147 contributing buildings, 6 landscape features, 3 structures, and 1 stone fort (with 11 named or numbered elements).

There are 300 housing units and 1.5 million square feet of non-residential structures on Fort Monroe. Over 13 acres of sand beach are visible at high tide, stretching the 2.3 mile eastern shore. In addition, there are numerous parks and open spaces spanning 130 acres, as well as a 332 slip marina. The street network that currently exists on Fort Monroe consists of a loose grid of blocks and streets. Careful tree plantings over many years have led to a lush green canopy and beautifully landscaped, tree-lined streets.

For more detail on the existing conditions of the site, please see Section 3: Land Use Concepts and Limits.

## PUBLIC PLANNING PROCESS

Community involvement was an essential component in creating a workable vision and plan for the future of Fort Monroe. The visualizations, plans, and recommendations found in the Fort Monroe Reuse Plan are the result of extensive public input from citizens, experts, and local and state leaders. In July 2006, interested citizens came together in an open planning process to identify the ideas, needs, and concerns regarding the future of Fort Monroe. Organized as an intensive design event called a charrette, the community and team of design professionals worked to create the plan over the course of seven days. More than 600 interested residents and stakeholders participated in the planning process, including neighbors, business people, elected officials, and community leaders.

Following the design charrette, a draft plan was presented to the public in November 2006. The plan was then refined and additional meetings were held to gather public input. Since May 2007, participants have continued to have the opportunity to provide public comments at Fort Monroe Federal Area Development Authority meetings, as well as through written feedback and the formal public hearing process.



Figure 1.11. Over 200 community members attended the Kick-off event during the design charrette.



Figure 1.12. At the Hands-on Design Session, participants gathered in small groups and drew ideas on maps.



Figure 1.13. Meetings of the Fort Monroe Federal Area Development Authority have guided the Reuse Plan and allowed opportunity for continued public comment.





# planning essentials 2

Through the planning process, the community and design team arrived at a series of basic urban design, preservation, and policy principles to guide the preservation, reuse, and continued development at Fort Monroe. Shaped from input from participants during the charrette, the “Planning Essentials” embody a shared vision for the future of Fort Monroe. The Planning Essentials are a blueprint for action and will be followed consistently throughout the evolution of the site. They will guide the work of the Fort Monroe Federal Area Development Authority, local and state leaders, and community members to ensure that the reuse of Fort Monroe remains true to the community’s vision.

This chapter presents the broad scope of the proposed reuse for Fort Monroe; the application of these essentials in the Reuse Plan is described and illustrated in Section 3, and in *The Technical Support Manual for the Reuse of Fort Monroe*.

## FORT MONROE ESSENTIALS

### 1. PROTECT THIS HISTORIC PLACE AND KEEP IT VITAL

- first-quality stewardship of these shared treasures
- preserve and continually occupy the historic structures
- showcase and promote the history: tell the story

### 2. OPEN IT UP

- no gated streets
- expand the marina; open the beach
- continuous public waterfront esplanade / trail
- new multi-modal access at north end
- advertise the sense of community, not isolation

### 3. ESTABLISH A LARGE-SCALE OPEN SPACE PARK

- substantial recreational spaces and special places
- restored, protected environments
- green backdrop surrounds and extends from village

### 4. SEEK ECONOMIC SUSTAINABILITY

- finances to eventually offset annual maintenance bill, restoration costs, operational costs... and more
- mix land uses and building types
- blend culture, commerce, workplaces, housing, tourism / lodging

### 5. ALLOW NEW DEVELOPMENT, WITHIN STRICT LIMITS

- insist upon compact, complete, connected, walkable urban form
- balance and choice in transportation: walking, cycling, transit, auto
- control height, geographic extent, and architecture
- fill in lost spaces, refine and complete street scenes
- restrict and inhibit any departures from the standards

## 1. PROTECT THIS HISTORIC PLACE AND KEEP IT VITAL

Designated as a National Historic Landmark in 1960, Fort Monroe is a one-of-a-kind, irreplaceable part of our American heritage. From the establishment of Fort Algernourne in 1609 to Major General Benjamin Butler's declaration of escaped slaves as "contraband" to the long-time coastal defense of the Hampton Roads harbor, Fort Monroe truly is a centerpiece in American history. The buildings and landscapes that are the backdrop to this history will be preserved. Just as the military did for so long, Fort Monroe's new guardians will preserve both the place and its story.

As the Army prepares to vacate Fort Monroe in 2011, the Army and FMFADA will work together to properly maintain and transition the management of these historic structures from the U.S. Army to the Commonwealth of Virginia (or its designated agent). Fort Monroe will not be frozen in time or preserved solely as a museum, but will be a living and vibrant part of the Hampton Roads community. Historic structures will be re-occupied with new residents and tenants as soon as available. Heritage and recreational tourism programs will be created to attract visitors to the Fort. New neighbors and visitors will help to animate the place and also share in some of the financial burden associated with maintaining this historic landmark.

## 2. OPEN IT UP

Under Fort Monroe's current configuration as a U.S. Army installation, the public may enter onto the post but only after receiving a day pass from the guard house. When the Army vacates the Fort and the secure perimeter is therefore no longer needed, Fort Monroe will be opened up and made accessible to all. With its rich history and significant open spaces, Fort Monroe will be shared and enjoyed by many, not just the people that live or work here full time. It is time to tell the living story of Fort Monroe, and invite people in to share in its past, present, and future.

When marketing Fort Monroe to potential residents, businesses, and institutions, it will be promoted as a historic *community* – a community that is an integrated part of the greater Hampton Roads region, not one that is isolated from its surroundings. Open spaces will be shared; no portion of the Fort Monroe waterfront should become private property. The Old Point Comfort Marina should be expanded to give more people access to the water. Boating regattas and other water-oriented activities on Mill Creek should be encouraged as a way to open up the Fort Monroe waterfront to the entire community. On the Chesapeake Bay side, the beaches will be open to the public. The boardwalk along the enhanced seawall will form a continuous public waterfront esplanade. Walking trails will be provided throughout the Fort, allowing easy access to the waterfront, recreation, and natural preservation areas. Small greens will be created as



Figure 2.1. View of Building 5 in 1879



Figure 2.2. View of Building 82 today; the reuse of historic buildings will allow them to be preserved for future generations.



Figure 2.3. View of Building 119 today. Stately homes face Continental Park and the Chesapeake Bay, and contribute to the rich architectural heritage of the Fort.



Figure 2.4. Existing conditions on McNair Drive and the Old Point Comfort Marina; an expanded marina would make the waterfront accessible to more residents and visitors.



Figure 2.5. Existing conditions from the Old Point Comfort Lighthouse to Engineer Pier; a continuous public waterfront esplanade is envisioned along the existing seawall.

part of infill development to add to the green network already in place on the Fort and to provide additional public areas for gathering and relaxation.

The street network must be improved to include a vehicular and pedestrian connection to the north; in addition, there should be more than one option created for entering and leaving the Fort at the existing entry gate area. Internal to Fort Monroe, the grid of streets that currently exists should be enhanced through additional connections. While managing automobile needs, a finer network of streets reduces the need for wider streets and increases the walkability of the place by providing shorter routes for pedestrians and bicyclists.

Pedestrian activity will be supported throughout the Fort. New streets will be pedestrian-friendly, with trees and on-street parking separating pedestrians from moving vehicular lanes; streets will be designed for slow travel speeds, to further enhance the pedestrian experience. Improvements to the existing street and pedestrian networks will provide a finer network of streets with greater options for mobility, and greater connectivity between Fort Monroe and its surrounding communities.

### 3. ESTABLISH A LARGE-SCALE OPEN SPACE PARK

Fort Monroe's prominent location along the Chesapeake Bay presents a unique opportunity to reclaim part of the disappearing shoreline of Virginia's coast and establish a large-scale open space park on the property. During the public planning process, participants expressed the need for additional open space for the region and the surrounding community.

The expansive open areas that exist today on Fort Monroe are part of its character. Many of these open spaces will be preserved and maintained as substantial recreational spaces. While the exact program of recreational uses remains to be determined, both active and passive recreational opportunities will be offered.

In addition to recreational spaces, the natural areas located at the northern end of the Fort will be protected. The marsh and wetland areas that extend into Mill Creek will be restored and preserved as sensitive habitats. Invasive plant species will be removed and stormwater run-off from the developed areas of the Fort will be carefully managed to minimize adverse effects on the natural environment. A nature center should be considered adjacent to the natural areas to educate and inform visitors on the important Tidewater ecosystem. Environmentally-friendly paths and trails along the nature preserve, and throughout Fort Monroe, should be included. In addition, strict measures will be taken to protect the Mill Creek



Figure 2.6. Beaches will be part of the large-scale open space network at Fort Monroe.



Figure 2.7. Existing long views across open space at the northern end of the Fort.



Figure 2.8. Existing view of Continental Park on the Chesapeake Bay; together with the recreational open space to the north, a large-scale green space network is formed.



Figure 2.9. Potential office use



Figure 2.10. Potential lodging use



Figure 2.11. Potential residential use

and Chesapeake Bay shorelines. Beach re-nourishment programs are already being put in place and the physical infrastructure along the shorelines improved to prevent erosion.

Understanding that the reuse of Fort Monroe includes the preservation and extension of the Historic Village at the southern end of the property, the recreational and natural open spaces will be incorporated into the overall Fort Monroe community to provide a green backdrop for the settled areas.

#### 4. SEEK ECONOMIC SUSTAINABILITY

The Commonwealth of Virginia and Hampton Roads community must work together to create an economically sustainable future for the Fort. The plan for the future of Fort Monroe must include a balance of funding mechanisms and revenue generators to reach an equilibrium that ensures maintenance of the Fort and its public programs. This means people will be invited to live, work, spend the night, or eat a meal on Fort Monroe. The special features of Fort Monroe that benefit everyone must be balanced with a financial model that helps Hampton reclaim the economic loss of jobs and activity associated with the Army leaving Fort Monroe. Even if all of the existing buildings were to be re-occupied by new tenants paying market-rate rents, there will not be enough surplus income to cover these costs. To reach the goal of preservation and economic sustainability, therefore, there must

be some additional, but strictly controlled, development at Fort Monroe.

The reuse of Fort Monroe will not focus on one single land-use option or a single financial transaction. A mix of land uses and building types is important not just for the social culture of any community, but for economic reasons as well. An enduring settlement contains not just houses or workplaces, but a mix of uses that are adaptable for change over time. A variety of uses within a neighborhood, including commercial businesses, creates the ability to live, work, shop and find other services within walking distance. Encouraging a balance of people living and working on Fort Monroe provides multiple benefits, including fewer daily trips that rely on the regional road network, increased support for local businesses, and new and historic housing options to accommodate a diverse population.

In addition to more people living and working on Fort Monroe, it is important to have a blend of cultural, civic, entertainment, and education opportunities. For instance, tourism and lodging will be accommodated in the mix of uses. From small bed-and-breakfast establishments to larger lodging accommodations, opportunities will exist on Fort Monroe for people to come and visit the place and stay longer than a day.



Figure 2.12. Building 133, existing conditions (above); potential reuse floor plan (below).

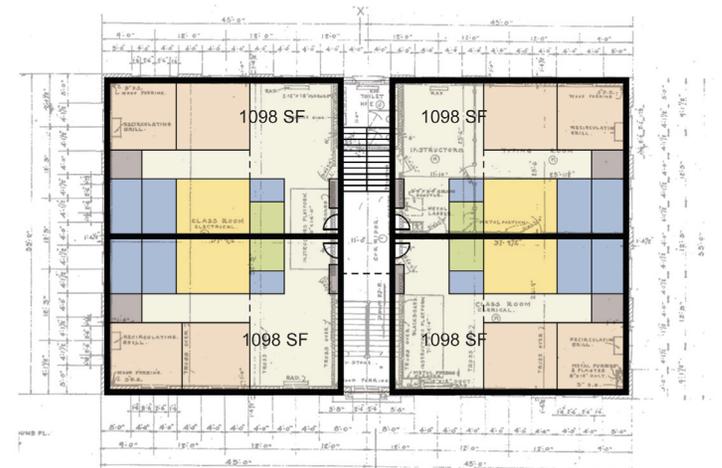


Figure 2.13. Building 163, existing conditions (above); potential reuse floor plan (below).



**BUILDING NO. 133 - COAST ARTILLERY SCHOOL : OFFICERS BUILDINGS**

- 22 units (11 units per floor; 4 one-bedrooms; 4 two-bedrooms; 3 lofts)
- Average SF/ unit : 1130



**BUILDING NO. 163 - COAST ARTILLERY SCHOOL**

- 12 units (4 units per floor; 4 two-bedrooms)
- Average SF/ unit : 1098



Old Point Comfort's 400 years of recorded history offers a meaningful and multi-faceted educational experience for residents, students and travelers to enjoy. A comprehensive effort will enable visitors to thoroughly experience Fort Monroe's stunning architectural themes, wonderful Chesapeake Bay and Hampton Roads stories, and dramatic history. A heritage tourism program will be established to attract visitors to the area and showcase the unique stories embedded in the Fort's soil.

For more information on the market and tourism strategy for the reuse of Fort Monroe, please see Sections 4 and 5 of this document.

## 5. ALLOW NEW DEVELOPMENT, WITHIN STRICT LIMITS

The physical structure and form of Fort Monroe has continually changed over time. The Fort is an ever-evolving place in American history and yet, it is agreed, the historic patterns of Fort Monroe must be protected and preserved. While the historic urban fabric is maintained and reused, there is an opportunity for additional areas of the Fort to be rethought and carefully redeveloped. Some new development will be allowed on Fort Monroe, in specified areas *and within strict limits*.

New development will make Fort Monroe more complete, not subtract from its special character. The new and recast neighborhoods will be compact, complete, connected, and walkable. They should be inspired by the urban design lessons drawn from the Fort itself and the many ways the Fort reflects forms found in the best historic Tidewater settlements. The area of Fort Monroe that currently contains the back of house and service areas could be reclaimed and filled-in. The new and recast neighborhoods of Fort Monroe will incorporate a mix of uses and street-oriented architecture.

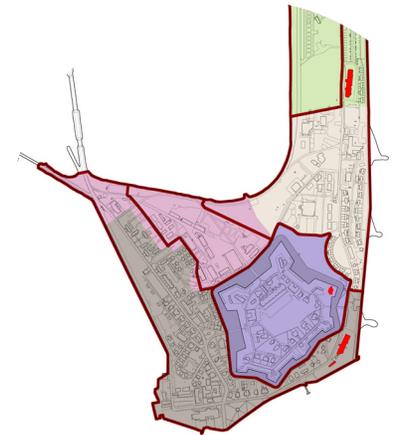
Prior to any new development or reuse at Fort Monroe, strict standards will be put in place to regulate the character and quality of new construction. These design standards will include regulations to control building height, form, geographic extent of development, and architectural styles. The design standards will further ensure that historic structures are maintained to the highest of standards and new structures complement the existing historic fabric.



Figure 2.14. Limited new construction will continue the character established by historic buildings on the Fort.



Figure 2.15. New buildings will follow established design standards. These standards will regulate building height and form, and should include requirements for building elements (such as doors, windows, porches or stoops) that provide natural surveillance and create high-quality public spaces.



# land use concepts and limits 3

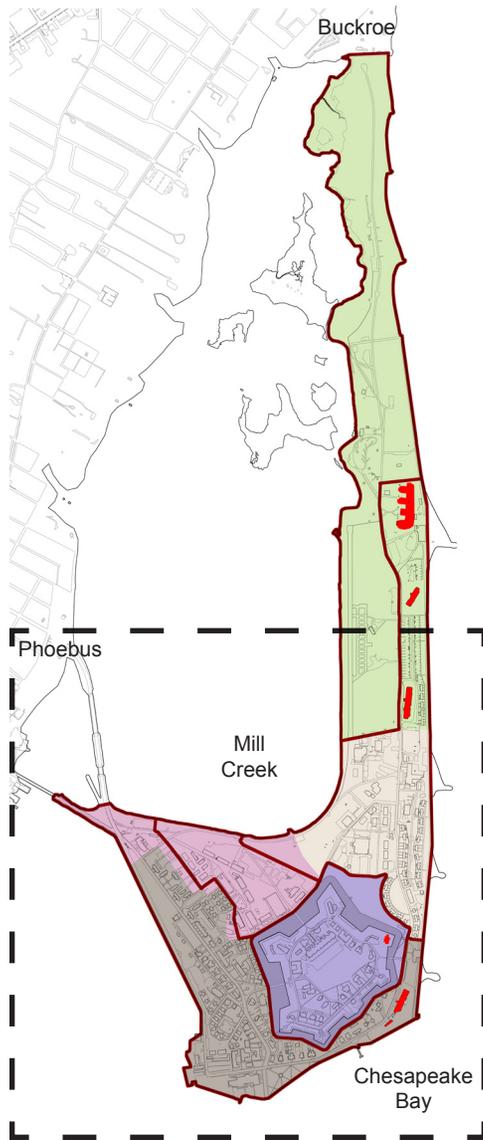


Figure 3.1. Land Use Plan

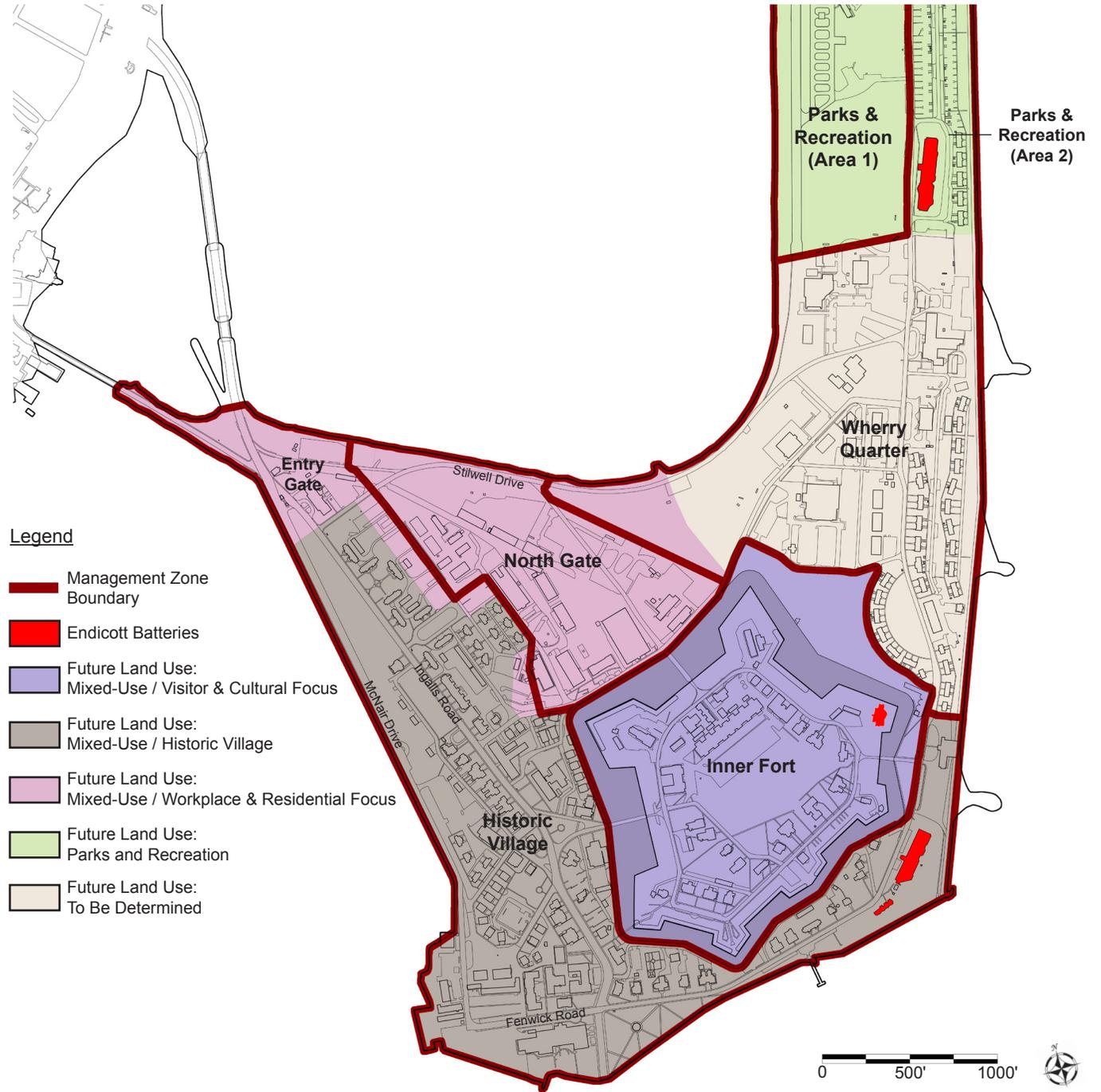


Figure 3.2. Land Use Plan, detail view of southern Fort Monroe

In this section, specific concepts and limits for future uses of the buildings and site are described, organized by the five distinct management zones of the programmatic agreement (PA). The zones are delineated in Figure 3.1 (Land Use Plan); within each zone, various future land uses are proposed. The plan provides a framework for future decisions according to the planning essentials, and allows flexibility over time where needed as additional analyses are performed and market conditions vary. As the Reuse Plan is implemented, initial efforts will focus on the reuse of existing structures; then on selective infill, reclamation of underutilized land, careful realignment of circulation patterns, and the establishment of a large-scale open space to the north; and lastly, on the redevelopment of plan areas for which a consensus regarding future use has not yet been determined. A variety of urban design concepts, including documentation of the three original scenarios created through the 2006 public planning process, plus detailed drawings of the preferred scenario, are contained in *The Technical Support Manual for the Reuse of Fort Monroe*.

As part of the Base Realignment and Closure (BRAC) process the Army is required under Section 106 of the National Historic Preservation Act to evaluate the historic properties at Fort Monroe and to establish specific steps to avoid or reduce harm to such properties (please see description of the programmatic agreement, right).

### **SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT OF 1966, AS AMENDED, AND ITS RELATIONSHIP TO THE REUSE PLAN:**

Prior to its departure from Fort Monroe, the Army is required by federal law to take into account the effects of its departure on historic properties and to provide the Advisory Council on Historic Preservation (Advisory Council) a reasonable opportunity to comment. This requirement is codified in Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), and is triggered by the Army's proposed departure.

As part of its planning process and compliance with Section 106, the Army has consulted with the Advisory Council, the Virginia Department of Historic Resources and over 32 other consulting parties including federally recognized tribes, the Fort Monroe Federal Area Development Authority, the City of Hampton, and various community and citizen groups on ways to avoid, minimize, or mitigate the potential effects of its departure on historic properties. It is important to note that the focus of Section 106 consultation is on outlining a process for ensuring consideration of potential effects to historic properties, not on specific reuse scenarios. As such, consultation resulted in a programmatic agreement that outlines specific responsibilities and actions for various parties to ensure that historic properties are appropriately considered in the future planning and use of Fort Monroe (to review details of the programmatic agreement, please refer to *The Technical Support Manual for the Reuse of Fort Monroe*).

The programmatic agreement establishes a series of management zones (see Figure 3.3) and associated historic property treatment guidelines that provide future users of Fort Monroe with basic direction and guidance regarding historic properties. The intent of the management zones is to recognize that while Fort Monroe as a whole is historic, there are distinct differences in the way the property developed over time and these differences needed to be considered in the future planning and management of Fort Monroe's historic properties. The programmatic agreement also requires development and use of design standards that provide detailed guidance for the treatment of existing historic properties, as well as construction of new facilities where appropriate.

The creation of the Reuse Plan occurred in close coordination with the Section 106 consultation process. The programmatic agreement management zones and associated treatments were used as guides in developing and evaluating various reuse scenarios. The design standards and review processes outlined in the programmatic agreement will guide further revisions to the reuse plan and ultimately its implementation.

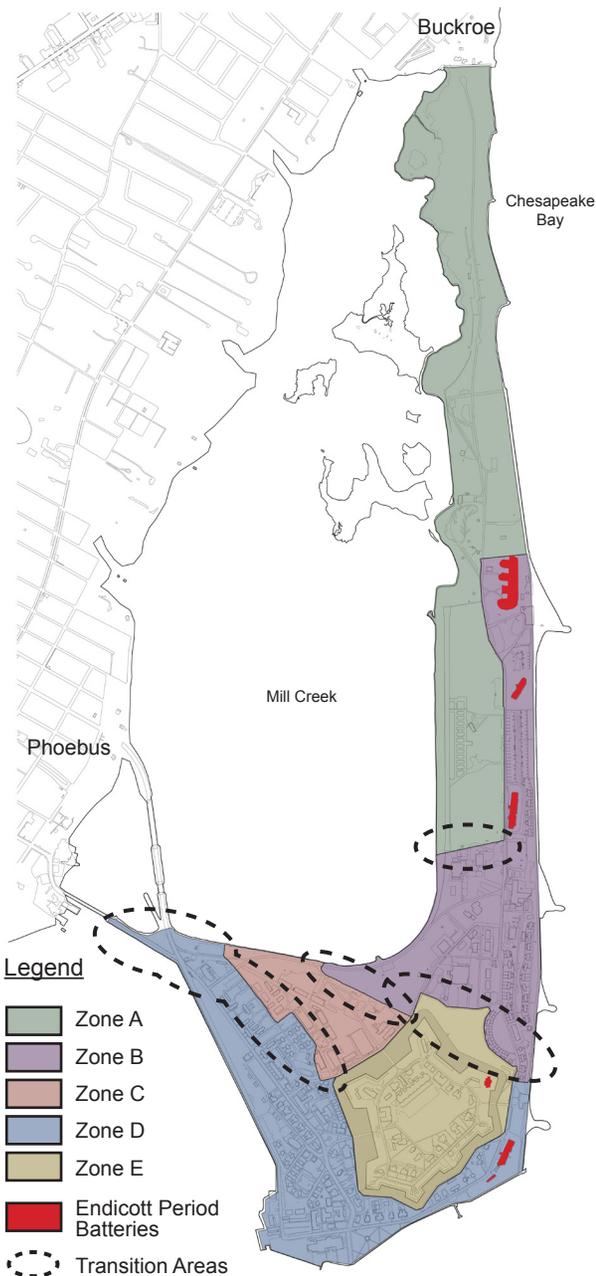


Figure 3.3. The proposed management zones of the programmatic agreement, with "Transition Areas" outlined.

The management zones of the programmatic agreement (PA) contain a distinct set of criteria for acceptable demolition, preservation, and reuse of buildings, and appropriate methods for infill or new development. To best accommodate sensitive transitions, provide fluidity between zones, and guarantee the best outcomes in the preservation and reuse of Fort Monroe, there will need to be discretion used when applying the criteria to buildings and lands located along the boundaries between zones. The Reuse Plan directs that land located along a boundary be thought of as a "transition area" – a blending of adjacent zones where the rules are to be applied with extra care and flexibility, at the discretion of the State Historic Preservation Officer. These transition areas are depicted in Figure 3.3. Not every area deemed suitable for development by the PA is proposed for development by the Land Use Plan; for example, the area north of the Wherry Quarter is considered eligible for development under the PA but the Land Use Plan proposes minimal development, if any, in the Parks and Recreation Areas. In some transition locations between PA management zones, the illustrative plans show wider greenbelts and more generous park spaces, to best showcase the historic resources or to implement the preferred walkable designs.

**KEY PRINCIPLES OF THE PROGRAMMATIC AGREEMENT INCLUDE:**

- Recognize and protect the Fort's NHL status
- Preservation through reuse and rehabilitation
- Provide public access to the Fort
- Support economic sustainability
- Consider effects to Fort Monroe as a whole
- Continued enforcement for future parties

**RESPONSE TO THE NATIONAL PARK SERVICE RECONNAISSANCE STUDY:**

The findings in the Reuse Plan have been evaluated in light of the National Park Service (NPS) Reconnaissance Study Report. We consider the NPS Reconnaissance Study the first step to explore ways the FMFADA and the NPS can work in partnership together.

The National Park Service has offered technical assistance and the FMFADA intends to accept the offer. We are hopeful that NPS will work with FMFADA to chart a course for greater involvement by NPS beyond said technical support. NPS will be invited to join us as we develop an interpretive master plan and visitor services. We will be using a model developed by the Park Service for historic sites, to ensure that our planning is in keeping with the NPS standards. Other areas for NPS collaboration and involvement will be identified as we move the planning process forward. Information drawn from the NPS study can be found in Section Five (Tourism Strategy).



Figure 3.4. Illustrative Plan, depicting applied land use concepts and limits for the reuse of Fort Monroe. This is not a regulatory drawing; it is meant to illustrate land use concepts, and may be used to guide the future reuse of the Fort. The plan illustrates the preservation of the urban fabric of Fort Monroe, including historic structures and landscapes, and infill development in appropriate areas, and within strict limits.



Figure 3.5. Illustrative Plan, detail view of southern Fort Monroe



Figure 3.6. The Lincoln House (Quarters 1) is one of the historic treasures located inside the stone fort.



Figure 3.7. The Casemate Museum at Fort Monroe



Figure 3.8. Existing residences within the Inner Fort

## INNER FORT

The most valuable historic resource at Fort Monroe is the old fort itself. Not only does it contain the oldest structures on post, but it provides the locations where historic events of national and international significance took place. Examples of architectural excellence and historic importance from the earliest permanent period of development include the Lincoln House (Quarters 1), the Tuileries (Quarters 17 and 18), the five Casemate fronts, the Chapel of the Centurion, and the Sally Port (Main Gate). The Parade Ground is the central organizing feature of the old fort. It is the termination of the vistas through the Main and North Gates from across the moat. The Parade Ground is bordered on the south, east, and west edges by mature live oak trees. To the north, Building 5 provides a firm, architectural backdrop. The southwest corner of the fort is a unique area due to the concentration of historic sites, the location of the Casemate Museum, and fine architecture all located in a well-maintained, park-like setting.

This historic center will require the highest standard of preservation and protection. The Reuse Plan proposes no new development inside the stone fort. The Land Use Plan designates this area as “Mixed-Use / Visitor & Cultural Focus”. The existing buildings will be maintained and can be reused for a variety of purposes, including historic interpretation purposes, museums, meeting spaces, offices, lodging, and residences. The adaptive reuse of buildings will explore the unique opportu-

### CONCEPTS AND LIMITS FOR REUSE OF THE INNER FORT AREA:

- The Land Use Plan designates this area as “Mixed-Use / Visitor & Cultural Focus”.
- Historic buildings will be protected and can accommodate a variety of new uses, including historic interpretation purposes, museums, meeting spaces, offices, lodging, and residences. The adaptive reuse of buildings will explore the unique opportunities presented for preservation, restoration and rehabilitation.
- No new development is proposed for this area.
- Surface parking lots will be removed from the Parade Ground to restore the historic landscape.

nities presented for preservation, restoration, and rehabilitation. Restoration and rehabilitation efforts may include enhancements such as the removal of non-historic additions, and restoration of building façades to their historic appearance. Outside of the fort walls and moat, the remains of the Water Battery will be preserved and the area surrounding the battery maintained as an open space. The highest priority will be placed on incorporating a mix of uses that attracts visitors to this special area, and showcase Fort Monroe’s extensive history.

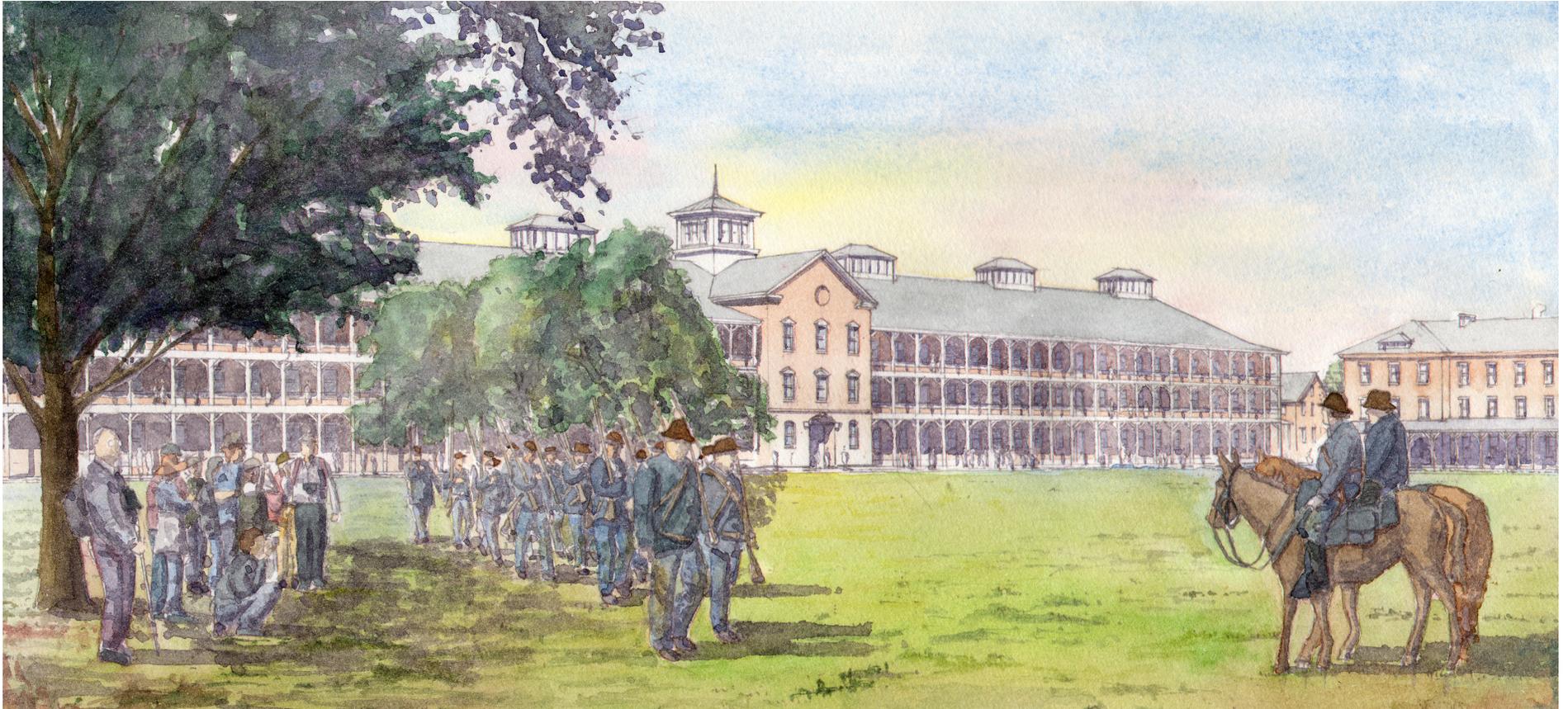


Figure 3.9. The restoration of historic structures and landscapes within the Inner Fort area can enhance heritage tourism opportunities; above, one opportunity for the restoration of Building 5 and Parade Ground is illustrated.



Figure 3.10. Existing conditions of Building 5, as viewed from the Parade Ground today.

Future decisions related to preservation, restoration, and rehabilitation will look foremost to supporting the interpretation of the Fort as a historic site, and enhancing cultural tourism. For example, the restoration of the south façade of Building 5 presents the opportunity to enhance both the building and the northern boundary of the Parade Ground. Being a first-class steward of the resource includes protection of the National Historic Landmark status while seeking opportunities for adaptive reuse, education, and interpretation. The FMFADA directs that the area encompassing the moat,

stone fort, Water Battery, and certain surrounding areas should be managed to ensure that the historic buildings and landscapes within the stone fort be protected in perpetuity. Programming and funding for museums, cultural facilities, and other heritage tourism related services will be pursued. The FMFADA will further explore appropriate management, programming, and tourism activities to attract visitors to Fort Monroe.

This historically significant area will require careful design to screen parking, with as much

visitor parking as possible located within a comfortable walking distance outside of the fort walls and moat. For example, one area of priority for the removal of parking is the surface parking lot that currently occupies a portion of the Parade Ground. The FMFADA plans to restore this central green space, which will provide a gathering area for visitors and restore prominence to the surrounding historic buildings.

#### **CONCEPTS AND LIMITS FOR REUSE OF THE HISTORIC VILLAGE AREA:**

- The Land Use Plan designates the majority of this zone as “Mixed-Use / Historic Village”. The future land use will be a complete mix of uses similar to those found in other historic towns and villages in the Tidewater region, and should include workplaces, shops, both single and multi-family residences, lodging, and civic institutional uses.
- There is a small portion of the Historic Village zone that has been designated “Mixed-Use / Workplace & Residential Focus”, near the entry to the Fort and along Pratt Street. The concepts and limits for the future land use of these transition areas are further described in the Entry Gate and North Gate sections.
- Historic buildings and landscapes will be protected, and can accommodate a variety of new uses. The adaptive reuse of buildings will explore the unique opportunities presented for preservation, restoration, and rehabilitation.
- Selective infill development is proposed where buildings previously existed. New buildings will respect the character of historic buildings by having similar massing and architectural elements, and follow the Design Standards established in *The Technical Support Manual for the Reuse of Fort Monroe*.
- The Old Point Comfort Marina should be expanded, further increasing public access to the waterfront.
- Structured parking may be permitted in the Historic Village to accommodate the reuse of existing buildings, including the Chamberlin Hotel. Structured parking should be lined with habitable spaces to provide a pedestrian-friendly front to public spaces, including streets, parks, and waterfront areas.

#### **HISTORIC VILLAGE**

Directly outside the fort walls to the west, an assortment of graceful buildings face tree-lined streets in a compact village setting. The area is organized around Ingalls Road, providing direct access from Fort Monroe’s main entrance to the old fort’s Main Gate and the TRADOC center complex. This area has the largest concentration of historic buildings and includes a diversity of building types and ages. It is a very cohesive section of the Fort due to the consistent scale of buildings, materials used in construction, and landscaping. Standard Quartermaster Corps plans, architect-designed buildings, housing, administrative, training, and support buildings tied together by unified landscaping create a pleasing ambience with a residential scale and rhythm.

Along the Chesapeake Bay, stately Officers’ quarters line Fenwick Road and face the water. Frequently called “The Gold Coast,” its focus is Continental Park. The park and the seawall

are popular public places. Architecturally, all of the houses are quite handsome. The visual appeal of this area is not limited to the residences that front Fenwick Road. The views of the harbor and the Bay are unrivaled. The old fort walls provide a backdrop for the houses and there are many picturesque views of the moat. The Flagstaff Bastion, where the official flag of Fort Monroe is flown, is a distinctive visual landmark.

The Land Use Plan designates the majority of this zone as “Mixed-Use / Historic Village” There is a small portion of the Historic Village zone that has been designated “Mixed-Use / Workplace & Residential Focus”, near the entry to the Fort and along Pratt Street. The concepts and limits for the future land use of these transition areas are further described in the Entry Gate and North Gate sections.

The future land use in the “Mixed-Use / Historic Village” area will be a complete mix of uses similar to those found in other historic towns and villages in the Tidewater region, and should include workplaces, shops, both single and multi-family residences, lodging, and civic institutional uses. Historic buildings will be protected, and reused to accommodate a full mix of planned uses. The adaptive reuse of buildings will explore the unique opportunities presented for preservation, restoration, and rehabilitation. Selective infill development will be allowed in appropriate locations, on a very limited basis.

Generally, infill buildings should be located in areas where buildings previously existed. New buildings should respect the character of historic buildings by having similar massing and architectural elements. The street alignments of Ingalls Road, McNair Drive, and Fenwick Road will be preserved without widening. Minor additions to the street network to increase connectivity may be considered, provided they do not disturb historic circulation patterns. Continental Park, Cannon Park, and Reeder Circle are significant landscape features listed as contributing elements to the NHL District. All should be preserved and maintained, and should be used as a precedent for creating high-quality public spaces elsewhere on the Fort.

The Chamberlin Hotel, located within the Historic Village area, is the tallest existing building on the installation; while the 9-story building creates a focal silhouette along the shoreline, it should be an exception to the model for development, so that it retains its signature quality. Infill buildings within the Historic Village should maintain a 2 to 3 ½ story height limit.

The Old Point Comfort Marina is located along McNair Drive within the Historic Village area. To implement the essential planning idea of “opening up” the Fort to a variety of users, this marina should be expanded with the addition of new boat slips and a new marina facility. The expansion will grant users access to the



Figure 3.11. Ingalls Road, existing conditions



Figure 3.12. Existing residences on Ingalls Road



Figure 3.13. Old Point Comfort Marina, existing conditions

## CONCEPTS AND LIMITS FOR REUSE OF THE ENTRY GATE AREA:

- The Land Use Plan designates this area as “Mixed-Use / Workplace and Residential Focus”.
- Historic buildings will be protected, and can accommodate a variety of new uses. The adaptive reuse of buildings will explore the unique opportunities presented for preservation, restoration, and rehabilitation.
- The street circulation pattern in the Entry Gate area will be redesigned, preserving existing bridges and street alignments where possible while allowing for more than one option for entering and exiting.
- A new civic space should be created to establish a memorable entry sequence to the Fort.
- Any new buildings or structures will be compatible with the existing architectural character of the Historic Village area, and follow the Design Standards as established in the *Technical Support Manual for the Reuse of Fort Monroe*.

water, whether by means of boat storage, boat usage, or simply walking along the docks. In addition, the boardwalk along the seawall facing the Chesapeake Bay will be expanded and enhanced, forming a continuous public waterfront esplanade.

The former Chamberlin Hotel is controlled by a private entity (OPC Hampton, LLC) under a lease with the Department of the Army. The lease was signed prior to the recommendations of the 2005 BRAC Commission. With the use of historic preservation tax credits, the building is currently being renovated and transformed into senior housing. The current site plan for the property includes surface parking adjacent to the main building; the future development of the site will need to include an assisted living center and structured parking (on or off-site) to handle parking needs. The new garage, whether constructed on or off-site, should be lined with habitable spaces to provide a pedestrian-friendly front to public spaces, including streets, parks, and waterfront areas.

### ENTRY GATE

The Entry Gate is part of the Historic Village management zone; it is the primary entrance to Fort Monroe, located at the convergence of Mellen Street and Mercury Boulevard. Today, the existing circulation pattern is geared toward security, with one entrance leading past guard houses which controls access to

and from the Fort. Once the Army vacates the post, it will be necessary to make the Fort readily accessible for residents, workers, and visitors.

The Land Use Plan designates this area as “Mixed-Use / Workplace and Residential Focus”. Given the constraints of the existing entrance, it is recommended that the intersection be reconfigured to create two separate ways in and out of Fort Monroe. This reconfiguration needs to respect the historic character of the entrance and preserve existing bridges and street alignments where possible, yet allow more than one option for entering and exiting. The reconfiguration of the entry circulation should utilize existing historic structures together with new open spaces and buildings to create a memorable entry to this important place. New buildings will reflect the scale, setbacks and character of the Historic Village, be 2 to 3 ½ stories in height, and be sited to define high-quality public spaces.

For more information on the proposed reconfiguration of the entrance, please see Section 7 and *The Technical Support Manual for the Reuse of Fort Monroe*.

### NORTH GATE

The North Gate area is located north of the moat, spanning from the moat to Mill Creek. This area has been changed many times, according to evolving needs and circumstances.

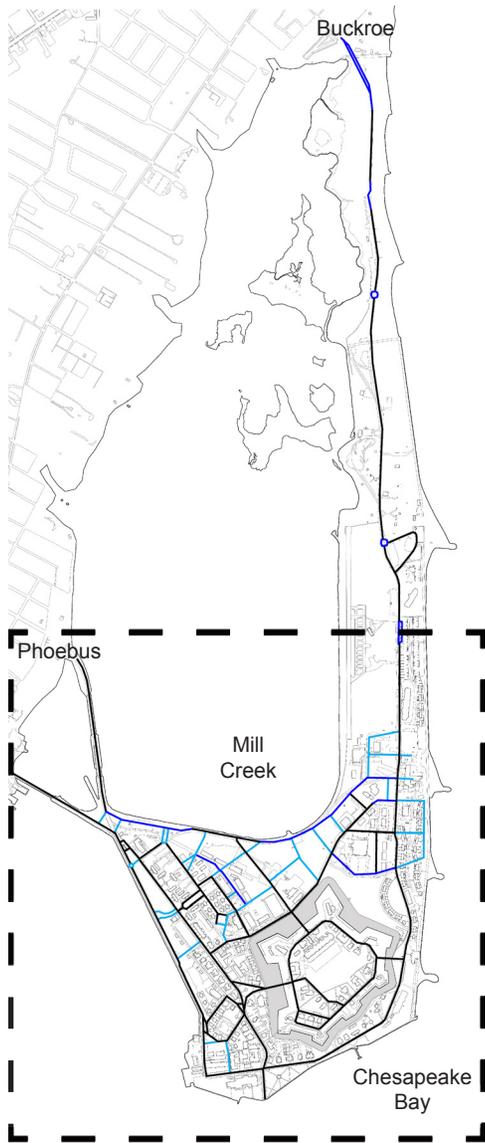


Figure 3.14. Street alignment concepts. Additional maps that describe the details of the street modifications envisioned are contained in *The Technical Support Manual for the Reuse of Fort Monroe*.

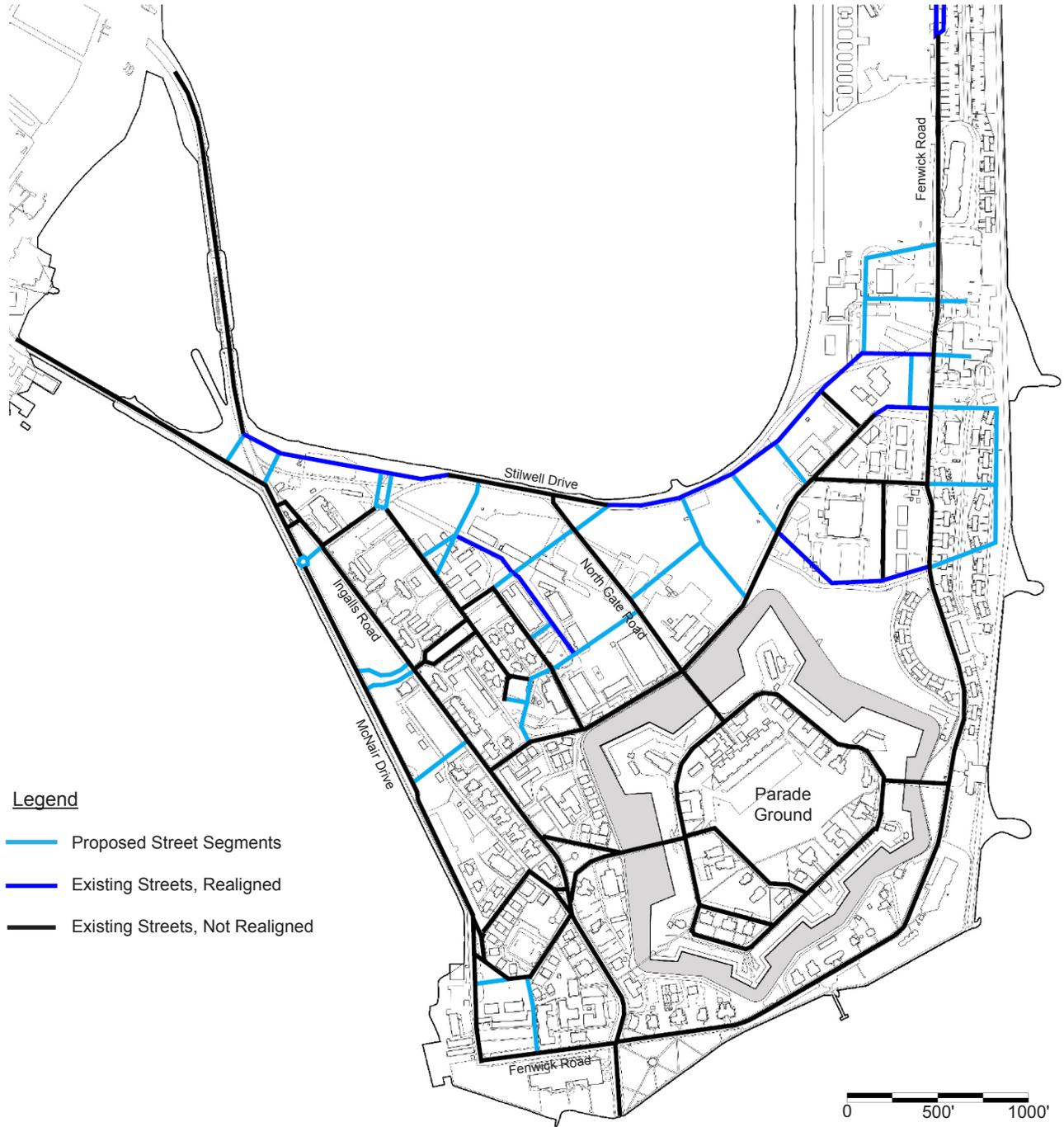


Figure 3.15. Street alignment concepts, detail view of southern Fort Monroe

## CONCEPTS AND LIMITS FOR REUSE OF THE NORTH GATE AREA:

- The Land Use Plan designates this area as “Mixed-Use / Workplace and Residential Focus”.
- Historic buildings will be protected and adapted to accommodate a variety of new uses. The adaptive reuse of buildings will explore the unique opportunities presented for preservation, restoration, and rehabilitation.
- Controlled new construction will be encouraged in this area, to transform the existing service landscape into a pedestrian-friendly entrance to the historic fort. New buildings may accommodate a variety of uses, including residential, office, commercial, civic, and lodging. Any new building or structure will be limited to 2 to 3 ½ stories in height, and follow the Design Standards as established in the *Technical Support Manual for the Reuse of Fort Monroe*.
- Existing street rights-of-way will be reused, where feasible; in addition, new street rights-of-way could be added to create smaller, walkable block sizes. The new and existing streets should form an interconnected network to provide multiple options for navigation and should include on-street parking, sidewalks, and street trees.
- New amenities should be provided, including neighborhood parks, access to the Mill Creek waterfront, and pedestrian amenities such as crosswalks and sidewalks.

It has historically been used for storage warehouses, surface parking lots, and garages for grounds-keeping vehicles, among other uses. Many of the structures date from the 1930s and there are a few of architectural merit, including Building 56 (a Quartermaster Corps Colonial Revival style design), Building 57 (a unique Egyptian Revival façade) and Buildings 59 and 135 (good examples of period industrial design). There are no structures of any individually historic importance in this area.

Much of the land in the North Gate area is underutilized due to its current use as “back of house” services or storage space. This area will most likely be used for new construction that is compatible with the existing historic buildings. For example, North Gate Road, which terminates on the North Gate of the stone fort, can be revamped to create a complete street scene. Existing street alignments will be preserved where possible, to preserve traditional alignments and simplify the phasing of new development. New street connections and street-oriented buildings could be added to transform this area into a mixed-use, pedestrian-friendly entrance to the historic fort. Mid-block areas could be used for parking to accommodate new uses for historic buildings within the moat, located within a short walk of this area. New streets should provide on-street parking, which will slow traffic and increase the walkability of streets, while offering additional parking options.

The Land Use Plan designates this area as “Mixed-Use / Workplace and Residential Focus”. The design of this area should focus on creating “good addresses” – buildings set within a walkable urban framework that accommodate a variety of uses, including residential, office, commercial, civic, and lodging. Contributing historic structures in this area will be integrated seamlessly among new buildings. New buildings should define the edges of streets and civic spaces, while providing services (such as parking and loading) to the rear. All new construction, regardless of its eventual use, will reflect the scale and character of the historic urban fabric of Fort Monroe, and be limited to 2 to 3 ½ stories in height. The adaptability of the historic buildings to a variety of uses demonstrates the viability of using the Historic Village as precedent for the urban form of the North Gate area.

As the land use for this area of the Fort is rethought, attention will be given to amenities which need to be provided regardless of eventual land use. For example, neighborhood parks need to be provided as gathering spaces for residents, employees and visitors. The waterfront area of Mill Creek should be accessible to all, including a walking trail along the water’s edge. There should be pedestrian connections throughout, including sidewalks along all streets and crosswalks that lead to main destinations, such as the stone fort and waterfront areas.



Figure 3.16. Concept for infill development in the North Gate area, in the form of walkable streets and blocks. Above, an analysis of pervious vs. impervious spaces; green is open and pervious space, outlined buildings are historic.



Figure 3.17. Illustrative plan depicting a detailed view of the concept for infill development in the North Gate area. The plan demonstrates proposed similarities between the street-oriented disposition and setbacks of new buildings in this area to those of the Historic Village.



Figure 3.18. Wherry Quarter aerial view, looking north

#### CONCEPTS AND LIMITS FOR REUSE OF THE WHERRY QUARTER:

- The land use plan divides this management zone into three areas. A small portion of the western edge is designated “Mixed-Use / Workplace and Residential Focus”; this area is the completion of the neighborhood formed in the North Gate area.
- To the north, along the waterfront, the land is designated as “Parks and Recreation”, and is further described in the next section (Parks and Recreation Areas).
- The majority of the land within this zone has been designated “To be determined”. Several options are being considered for the eventual land use and physical design of this area; before the FMFADA creates a final reuse concept, additional studies of economic impact, tourism facility needs, sea level rise, and infrastructure needs (among others) should first be completed. Regardless of final use, the land should be cleaned up to the level necessary to allow a variety of uses.

#### WHERRY QUARTER

The Wherry Quarter is the area northeast of the moat. It contains warehouse and service/utility structures, surface parking, some areas of open space, and the Wherry housing units along the bayfront. The 1950’s-era housing units were designed as low-cost housing for military personnel. The two-story brick structures are in a state of disrepair and were scheduled to be removed by the Army, but efforts were halted due to BRAC.

The land use plan divides this management zone into three areas. A small portion of the western edge is designated “Mixed-Use / Workplace and Residential Focus”; this area is the completion of the neighborhood formed in the North Gate area, and should follow the land use concepts and limits described for North Gate. To the north, along the waterfront, the land is designated as “Parks and Recreation”, and is further described in the next section (Parks and Recreation Areas). The majority of the land within this zone has been designated “To be determined”. Several options are being considered for the eventual land use and physical design of this area; before the FMFADA creates a final reuse concept, additional studies of economic impact, tourism facility needs, sea level rise, and infrastructure needs (among others) need to be completed. By focusing first on the reuse of existing buildings and selective infill development in other areas of the Fort, the FMFADA will be allowed ample time to evaluate options and make informed final decisions about the use of this

area. Regardless of final use, the land should be cleaned up to the level necessary to allow a variety of uses.

## PARKS & RECREATION AREAS

On the northern end of the peninsula recreational areas are prevalent, offering expansive views to both Mill Creek and the Chesapeake Bay. The Endicott Batteries are located along the Bay shoreline. A seawall along the water's edge helps to protect the Fort from flooding and erosion, offering public access to the waterfront for residents and visitors. Dog Beach is located in the northern tip of the peninsula and provides a pristine beach environment with expansive sand dunes and beautiful views of the Chesapeake Bay.

The Land Use Plan designates this area as "Parks and Recreation". By concentrating development on the southern, already-settled portion of the Fort, this northern area is preserved as open or recreational space. The beach will expand with the implementation of a beach renourishment program and the waterfront will remain open and accessible to the public. A nature center and walking trails can be included adjacent to the sensitive wetlands and uplands. Walker Field, the former air-strip, can be reinvented as an open space. An amphitheater could be constructed within the great park to provide a place for residents and visitors to gather and enjoy a casual celebration or event.

The existing alignment of Fenwick Road will be substantially preserved with minor modifications to incorporate traffic calming features, such as median dividers, roundabouts, and slight bends in the road. These measures are intended to keep the area safe for pedestrians and cyclists. A northern connection to the Fort will be included to provide improved access to and from Buckroe and Fort Monroe, and to accommodate underground infrastructure upgrades. The exact alignment of this connection will be determined in collaboration with the City of Hampton. Parking for visitors of the historic resource and beaches will be provided in convenient locations, both on-street and in nearby surface parking lots. For larger events and increased visitors to Fort Monroe, an alternative parking solution will be explored (such as a trolley service from an off-site location that brings people onto Fort Monroe). Sustainable technologies should be utilized for parking areas, to minimize the ecological impact of these facilities. Continuous pedestrian trails will allow public access between parking areas and destinations such as beaches, park spaces, and natural areas.

The Parks and Recreation Area is divided into two sub areas. Parks and Recreation Area 1 (PR-1) is an area devoted to open space uses. It includes public beaches, preserved natural areas, recreation fields, walking trails, an existing RV park, and appropriate parking facilities. New construction will be limited in order to maintain the current and historic



Figure 3.19. Existing beaches at Fort Monroe



Figure 3.20. Aerial view, looking north, existing conditions



Figure 3.21. The natural setting along Mill Creek provides educational opportunities for visitors to learn about the Tidewater ecosystem.

### CONCEPTS AND LIMITS FOR REUSE OF THE PARKS AND RECREATION AREA:

- The Land Use Plan designates this area as “Parks and Recreation”.
- A northern connection to the Fort will be included to provide improved access to and from Buckroe and Fort Monroe, as well as underground infrastructure upgrades.
- The existing alignment of Fenwick Road will be substantially preserved, with minor modifications to incorporate traffic calming features. These may include median dividers, traffic circles, and slight bends in the road.
- Parking for visitors will be provided in convenient locations, both on-street and in nearby surface parking lots.
- Parks and Recreation Area 1 (PR-1) is an area devoted to open space uses. It includes public beaches, preserved natural areas, recreation fields, walking trails, an existing RV park, and appropriate parking facilities. New construction will be limited in order to maintain the current and historic character of little permanent development and a more natural setting.
- Parks and Recreation Area 2 (PR-2) is a part of the Wherry Quarter management zone; it is an area where the land and natural setting have been disturbed with development, including the Bay Breeze Community Center, the Endicott Batteries, and pre-existing northern portion of Wherry housing. New construction will be limited and be constructed within the same general geographic area of disturbance as previous development. The use and function of any new development will support the adjacent open space uses.

character of little permanent development and a more natural setting. Parks and Recreation Area 2 (PR-2) is a part of the Wherry Quarter management zone; it features open lands, existing buildings, and areas where buildings were once located. Existing buildings include the Bay Breeze Community Center and several of the Endicott Batteries. Areas where buildings once were include the area south of the Bay Breeze Community Center where the northern portion of Wherry housing was once located. The batteries are contributing historic structures and will be preserved and potentially reused; further analysis of this reuse possibility is necessary. The existing Bay Breeze Community Center, a non-contributing building, can remain or be redeveloped. New construction will be limited and conform to the same general geographic area of disturbance as previous development; new buildings will support the adjacent open space uses.



# economic impact strategy 4

*The Economic Impact Strategy was prepared by Bay Area Economics, in collaboration with H. Blount Hunter Retail & Real Estate Research and Zimmerman/ Volk Associates, Inc.*

Fort Monroe employs 4,051 military personnel, civilian employees, and contractors.<sup>1</sup> The closure of Fort Monroe will result in a relocation of personnel to local and non-local facilities not later than 2011. Two-thirds of the positions currently at Fort Monroe will likely remain in the Hampton Roads region including more than one-half moving to Fort Eustis 18 miles away. Programmed realignment actions include:

- Relocation of 2,217 personnel to Fort Eustis in FY 2011;
- Discretionary moves of 634 personnel, most likely within the region;
- Transfer of 388 personnel to Fort Knox in Kentucky in FY 2010; and
- Elimination of 462 jobs held primarily by civilians in FY 2011.

Potential economic impacts of those moves include jobs, taxes to the City of Hampton, retail sales and housing values.

- Those individuals who lose their jobs will feel a direct and difficult impact.
- Cutbacks in local Federal spending as a result of Fort Monroe closure will lead to losses of “spin-off” jobs elsewhere in the economy. However, in this case,

<sup>1</sup>Fort Monroe BRAC Planning, 20 April 2006 Robert Edwards/IMNE-RMO 11

most of the jobs are being moved within the region with the real job loss limited to 850 personnel and a portion of the private-sector jobs supported by the Fort Monroe local expenditures reduced as a result of the base closure.

- As a result of Fort Monroe’s presence, the Federal government will discontinue the annual payments to the Hampton School District that help offset the cost of educating children of Federal employees, particularly those that live on tax-exempt land.
- With a move 18 miles north on I-64, it is unlikely that civilians and military personnel that own homes in or near Hampton will relocate in the short term. The few homes sold by employees that move to be closer to Fort Eustis could affect the local Hampton housing market in the year before and after closure, but they are unlikely to have substantial long-term impacts on property values.

Clearly, one imperative in planning Fort Monroe reuse is to attract new jobs and resident customers to replace those lost to BRAC. Filling even one-half of the vacated office space on Fort Monroe would more than replace the jobs lost from the region due to closure. Several of the jobs associated with the physical plant operation and maintenance will continue but as non-Federal positions. Additional short-term

jobs will be created by environmental remediation and building rehab and upgrades. Attraction of civilians to Fort Monroe housing may largely offset the local impact of losing military families as patrons of local stores and restaurants. Given the military personnel’s access to commissaries and Post Exchanges, their spending in local stores likely has been somewhat limited.

One of the more difficult economic impacts will be the transfer of responsibility for upgrading and maintaining Fort Monroe’s extensive stock of historic structures as well as its seawall, open space and non-historic buildings. Many of the transferred buildings will require capital improvements to provide access for the disabled and to meet all local health and safety codes before they can be reused for private purposes. Additional analysis will be undertaken to refine the cost estimates for upgrading and maintaining Fort Monroe’s infrastructure and those buildings likely to remain in long-term public use. It is important to note that no agreement has yet been negotiated between the Fort Monroe FADA and the City of Hampton regarding the City’s role in providing any operation and maintenance or services to the Fort, and any such agreement should identify revenue sources to offset the financial impact of bringing these O&M costs and services into the City’s systems.

## MARKET POTENTIALS

A key principle in Fort Monroe reuse planning is that the reuse should be economically self-sustaining, avoiding financial burdens on the Commonwealth of Virginia or on the City of Hampton. The market analysis helps to identify and quantify those opportunities.

Unlike many military bases in more isolated and economically depressed locations, Fort Monroe offers many important opportunities for reuse of historic buildings, valuable waterfront land and other building resources. This reuse could generate funding for required capital improvements to the infrastructure and buildings as well as long-term operations and maintenance costs associated with stewardship of Fort Monroe's historic assets and natural environment. Reuse of historic buildings will generate lease revenues from leases and/or from sale of leaseholds (i.e., an up-front payment for the right to occupy a house or building for 50 or more years), particularly housing that can attract households to take advantage of the beauty and heritage of Fort Monroe. Additional revenues will be generated by reuse of non-residential buildings for office, hospitality and retail uses.

### Housing

- Fort Monroe holds the potential to become a development of national importance, attracting future residents from well beyond Hampton Roads to lease year-round and second/vacation homes.
- Providing a variety of housing types will allow Fort Monroe to attract a variety of new residents. The target mix derived from the propensities of market area households to rent year-round and second/vacation homes includes:
  - 47 percent empty nesters and retirees,
  - 25 percent traditional and non-traditional families, and
  - 28 percent younger single- and two-person households.
- Figure 4.1 identifies initial estimates of supportable rents or prices for the range of housing types supportable at Fort Monroe (leasehold fees for leases of 50 or more years are estimated at 90 percent of potential sales prices).
- Absorption of new and rehabilitated units is projected to average 209 units per year.

### Office

- Fort Monroe is not a traditional location that would be sought by all office-using tenants. It does not offer the easy highway access, proximity to major employment centers and modern office space that most of the region's business parks provide.
- Office space absorption fluctuates from year to year in the Peninsula office market. While the Peninsula office market is not subject to predictable annual demand for space, the addition of 200,000 to 300,000 square feet of new space per year is a realistic market expectation based upon past trends. Fort Monroe could compete to attract a share of that demand, but it may take several years to reuse and fill buildings.

Figure 4.1: Target Residential Mix  
New Year-Round and Second-Vacation Housing Units  
at Fort Monroe

Housing Type	Base Rents/ Prices
Multi-family for-rent (lofts/apartments, lease)	\$750 to \$1,400 per month
Multi-family condo / co-op (leasehold ownership)	\$225,000 to \$1,000,000
Single-family attached (duplexes, quad-plexes, leasehold ownership)	\$475,000 to \$875,000
Urban single-family detached (detached houses, leasehold ownership)	\$725,000 to \$1,150,000

SOURCE: Zimmerman/Volk Associates, Inc., 2006,  
amended 2008.

- Existing buildings can be converted to office space. However, the fact that many of the buildings were converted from historic barracks, cottages and other housing means that they do not offer the typical office space layouts and features that some users may prefer or require. Existing office space will require upgrades to meet the needs of the private market. Some small office buildings can be expected to attract local businesses such as accountants, attorneys, architects, and other professionals seeking the opportunity to live near their work in a high-amenity location.
- The potential for larger tenants lies primarily in recruiting one or more specialized office users. Larger buildings or new space can be constructed for corporate users or specialized tenants such as research & development firms. Specialized users may exist for historic structures and for larger spaces that have been outfitted by the military with advanced technology wiring and internal systems. An extensive recruitment plan may be required to solicit appropriate tenants.

Existing buildings offer 516,622 square feet of space that can be converted to offices, though office may not be their highest and best use of all this space. Using only the TRADOC complex and the

cluster of buildings at North Gate and Patch Road (Buildings 56, 57, 59, and 135) would create enough office space to replace existing jobs that will be lost to closure. These buildings will require significant renovation and infrastructure enhancements to make them suitable for private tenant use.

- Building 5 could be reused as a museum, but it also has potential for a variety of non-traditional uses that might result in the creation of a world-class asset or institution limited only by the imagination of community leaders:
  - a high-profile “think tank” or public policy institute created by a consortium of national and local educational institutions;
  - a residential conference center aligned with one or more local universities;
  - an executive training center/meeting facility;
  - an “honors campus” or off-campus extension of a local college or university;
  - a campus for a new college;
  - a specialized research center (medicine, engineering, applied sciences);
  - a site for a major maritime research center or oceanographic institute;
  - a year-round retreat similar to the Chautauqua Institution;

- an artists’ colony with live/work facilities and public display areas;
- the headquarters of one or more major non-profit organizations or charitable foundations; or
- a magnet school or Governor’s School for performing arts and science.

#### *Retail*

- Fort Monroe is not a suitable site for substantial retail development (e.g., big box retailers) requiring regional customer support. The site is too isolated from significant clusters of resident consumers, it is accessed by low-capacity neighborhood streets rather than major arterial highways, and it is too close to competitive retail in the Coliseum Central node.
- Rather, Fort Monroe can attract a small contingent of niche retailers that see an opportunity to serve a very desirable residential neighborhood. Restaurateurs with destination drawing power will be attracted in the near term to signature sites offering waterfront settings and views of the Hampton Roads harbor and Chesapeake Bay.
- “Retailing follows rooftops,” so merchants are likely to respond to site opportunities at Fort Monroe only once a consumer base emerges through development of housing, offices, and visitor destinations. Major destination restaurants are an exception

to this rule and will seek out Fort Monroe sites prior to the development of a neighborhood retail consumer base.

- Fort Monroe’s retail strategy will optimally center upon the development of “village-scale” retailing as an amenity for residents as well as employees and visitors. Retail development at Fort Monroe can contribute to pricing premiums for residential units and contribute to quality of life by providing daily needs within walking distance (or a short drive) of residents.
- Creating two small clusters of mercantile activity each merchandised to meet the needs of 500 to 1,000 households and nearby offices would encourage pedestrian access by residents and workers. The redevelopment could support 7,500 to 12,000 square feet of retail space with limited new housing beyond reuse of existing structures.
- Establishing a centrally located “village center” shopping district offering a greater variety of convenience goods, personal services, and casual dining options should be encouraged as warranted by density of residents, employees, and tourists. With more expansive development of new housing, tourism and recreation uses, a small village center could be supported once extensive leasing and development provide the potential customers.

### Lodging

- Lodging can be a part of Fort Monroe’s future, taking advantage of the water location and the important historic resources.
- Hampton does not offer beach-oriented hotels, which may be appropriate for consideration at Fort Monroe. Development could include a variety of facilities:
  - one or more independently-owned bed & breakfast inns;
  - one or more small cottage-style hotels such as the Sanderling Inn in Duck, NC; and/or
  - a spa/resort oriented to the beach and/or boating.
- Section 5 discusses options for transforming Fort Monroe into a greater tourist destination, building on its historic importance and natural beauty.



Figure 4.2. Building 5 has a wide range of possibilities for reuse.



Figure 4.3. Waterfront settings provide opportunities for new restaurants on signature sites.



Figure 4.4. Reuse of existing housing can attract households to take advantage of the beauty and heritage of Fort Monroe.



Figure 4.5. View of historic housing along the moat; the existing water tower is visible in the background.



Figure 4.6. Existing infrastructure, such as streets and sidewalks, will need to continue to be maintained.



Figure 4.7. Private users will be responsible for maintaining many of the existing buildings.

## FUTURE FINANCIAL PERFORMANCE AND FISCAL IMPACTS

Critical to the long-term success of Fort Monroe reuse is the need to be financially self-sufficient. Based on preliminary analysis of individual line items in the potential operations and maintenance (O&M) budget, between \$3.9 and \$4.4 million will be needed annually to care for public infrastructure and parks and open space. Analysis will continue to further refine these cost estimates in concert with the City of Hampton as more information becomes available about infrastructure conditions and other factors impacting service costs. Additional costs to operate the FMFADA and pay leasing and management fees will be incurred as reuse proceeds; they are discussed in the financial analysis portion of this report.

The public responsibility and cost of maintenance will be reduced by assigning private users with the responsibility for maintaining many of the buildings. The Fort Monroe management entity will receive lease revenues from reuse of many buildings and sites for private uses. The City of Hampton will receive real property, sales, food/beverage and hotel tax revenues from new development and reuse of historic and other buildings as well as fees for specific services. It is important to note that no agreement has yet been negotiated between the Fort Monroe FADA and the City of Hampton regarding the City's role in providing any operation and maintenance or services to the Fort, and any such agreement

should identify revenue sources to offset the financial impact of bringing these O&M costs and services into the City's systems.

Potential partnerships between the management entity and the City will be explored to address short-term and mid-term O&M and capital improvement costs.

Additional costs will be incurred to operate and maintain the historic buildings within the moat that are designated for public uses. At this early stage in concept development for the museums and other public uses, those costs have not yet been estimated.

FMFADA and the City of Hampton will work together closely to make appropriate arrangements for operation and maintenance of Fort Monroe's infrastructure in a manner that mitigates the City's risk of unforeseen and unfunded infrastructure capital requirements and operating costs. No agreement has been negotiated yet.

### *Financial Performance*

The FMFADA will generate revenue primarily from leasing historic structures and land for new development:

- An Interim Leasing Program could generate early income to funds operations while keeping buildings in operation and avoiding physical deterioration that could result in higher rehabilitation costs in the future.

- In keeping with the FMFADA policy of not selling its assets, a Pre-Paid Leasehold Program could transfer use and responsibility for structures for a period of 50 to 75 years. Instead of purchasing a home, buyers would purchase the right to lease the home for, say, 75 years and would possess most of the rights and responsibilities of homeownership without technically owning the property. On-going maintenance and improvements to the homes would be the responsibility of the leaseholder.
- FMFADA also could enter into ground leases with one or more third-party developers for adaptive rehabilitation of historic structures as well as new construction in the Entry Gate, North Gate and Historic Village planning areas. Land values will reflect the ultimate value of the new development after adjustments for infrastructure requirements and environmental remediation.

Preliminary analysis estimates capital costs at approximately \$40 million, comprised of infrastructure improvements, building improvements, and other miscellaneous projects. Fort Monroe's infrastructure requirements are less than would be expected for a military facility of this age and size because the U.S. Army invested \$88.4 million in rebuilding systems after Hurricane Isabel hit in 2003. An important element – the electri-

cal power distribution system – is not included in this analysis. The cost of any required system upgrades is not known nor is the degree to which such costs could be financed by rate-payers.

To implement its Interim Leasing Program and Pre-Paid Residential Leasehold Program, the FMFADA will need to make initial investments in existing buildings to ensure their marketability. These improvements are limited to cosmetic treatments such as exterior and interior repainting as needed, carpet cleaning/replacement, acoustic tile replacement, window washing, selected appliance replacements, and life-safety signage. Any major rehabilitation or upgrades of existing structures would be made by one or more third-party developers.

On-going operating costs, estimated at roughly \$6 million per year, will include:

- FMFADA expenses for personnel, contract services and marketing;
- O&M costs for public infrastructure, parks and open space;
- costs of maintaining buildings retained for public use or not yet transferred under long-term ground leases; and
- leasing/asset management fees paid to third-party developers and property managers.

The financial analysis reflects reasonable expectations about the pace of future absorption and development and the associated revenues. However, these cost and revenue projections are still preliminary and will change as more information becomes available.

#### *Summary of Preliminary Findings*

Overall, the financial model indicates that Fort Monroe can become financially self-sustaining with sufficient funds to cover its own operating costs and fund capital projects. A key assumption is the successful launch of a Pre-Paid Residential Leasehold Program and the leasehold value received and timing of sales. The projections of the financial model will change over time as more information becomes available. The projections are intended to provide a sense of scale as to the potential costs and revenues based on current conditions. The model is designed to accommodate changes in key assumptions and to test the sensitivity to different possible future events.





# tourism strategy 5

## HISTORY OF OLD POINT COMFORT AS A RESORT DESTINATION

Old Point Comfort's seaside location has been the site for several of America's leading resort hotels. In the early to mid 1800s salt water bathing, as well as salty bay air, was believed to have revitalizing and health restorative properties.

Many grand hotels were built on Old Point Comfort in the 1800s, making it the leading resort in the south. The first of these hotels was the luxurious Hygeia Hotel, named for the Greek goddess of health. Built in 1822, the hotel was used primarily to house the workmen engaged in the construction of Fort Monroe. Described as "large and commodious" the Hygeia Hotel became a popular rendezvous for Senator Henry Clay, President John Tyler, Edgar Allan Poe and other leading figures of the day until its demolition during the Civil War. With steamboat and railroad connections, Old Point Comfort was a destination of choice for travelers.

Reconstruction of the Hygeia began in 1866, built to accommodate over 1,000 guests. When Harrison Phoebus assumed ownership in 1872, it was called the "Great Southern Resort." The Hygeia Hotel welcomed prominent guests from around the world, including King David Kalakaua of Hawaii. Many guests arrived by steamboat from throughout the South to enjoy the "health-giving wonders of Old Point Comfort." The Hygeia was eventually destroyed by order of the U.S. Army in 1903. In 1896 the \$5 million Chamberlin Hotel opened featuring electric lighting and rooms with private baths. Tragically, this grand structure was razed by fire in 1920. In 1928, the second Chamberlin Hotel was completed and offered an array of amenities including an indoor saltwater pool. The Chamberlin Hotel remains an enduring landmark representative of Old Point Comfort's long history as a resort destination.

The majestic hotels on Old Point Comfort helped to spur tourism development and other resorts in the Hampton Roads region, including tourist destinations at Phoebus, Buckroe, Norfolk, and Virginia Beach.

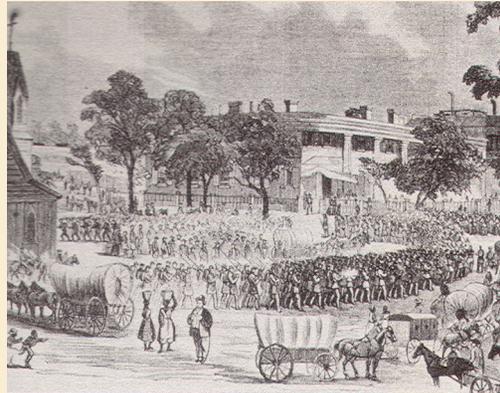


Figure 5.1. Hygeia Hotel, 1862



Figure 5.2. Chamberlin Hotel, 1880s

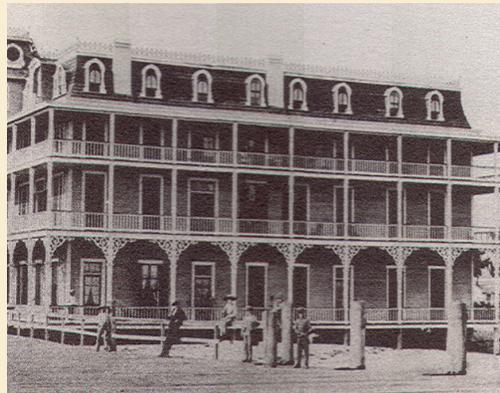


Figure 5.3. The Second Hygeia Hotel, 1873



Figure 5.4. Chamberlin Hotel, pre-1920s

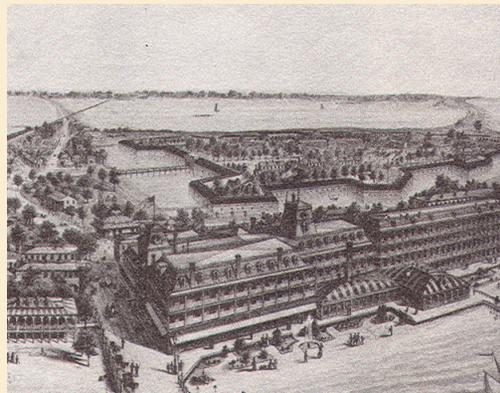


Figure 5.5. The expanded, four-story Hygeia Hotel



Figure 5.6. Chamberlin Hotel, 2006

*The Tourism Strategy was prepared by Economic Research Associates (ERA) of Washington, D.C. The following is a summary; additional materials can be found in The Technical Support Manual for the Reuse of Fort Monroe. Prior to the start of Economic Research Associates' analysis, the Fort Monroe Federal Area Development Authority formed a Tourism Advisory Group to examine the potential for heritage and beach tourism at Fort Monroe. Members of the Fort Monroe Tourism Advisory Group are:*

*Sallie Grant-DiVenuti, Hampton Convention and Visitors Bureau  
Jim Ricketts, VA Beach Convention & Visitors Bureau  
Phyllis Terrell, Colonial Williamsburg Foundation  
Shawn Hash, Owner/Operator, Tangent Outfitters  
Jack Berry, Richmond Convention & Visitors Bureau  
Chris Canfield, Virginia Tourism Corporation  
Steve Galyean, Virginia Tourism Corporation  
Alisa Bailey, Virginia Tourism Corporation*

This section reviews existing visitor attendance and lodging patterns, and data on heritage tourism, resort tourism, and general waterfront recreational activities. ERA collected and analyzed data on a number of recreational and historical uses. Research addressed elements affecting visitor expenditures and destinations including visitor characteristics, visitor origin, purpose of trip, length of stay, and mode of transport.

## **TOURISM MARKET OVERVIEW**

According to the Virginia Tourism Corporation, Virginia tourism in 2007 totaled 35,000,000 visitors, the same as 2003-2004, reflecting a non-growth trend.

- Average party size is one to two persons, suggesting more travelers without children.
- 78% are overnight visitors; 57% utilized hotel/ motel accommodations

### *National Parks*

- Total attendance at the 11 parks within 200 miles of Fort Monroe in 2007 was 7,845,605 persons; visitation is seasonal, with numbers spiking during the summer months. The most heavily visited site is the Colonial National Historic Park, encompassing Historic Jamestown, Yorktown Battlefield and Cape Henry Memorial. Visitation trends show that historic sites and battlefields have the highest total visitation throughout the year.
- There are three wildlife/wilderness sites administered by the National Parks Service within 200 miles of Fort Monroe. Common activities at these sites are fishing, swimming, boating, camping, horseback riding, shelling, and ranger-led programs. These sites offer free admission but include many pay-as-you-go activities ranging in price from \$10-\$16 per person, and achieve annual visitation between 860,000 and 2.2 million.

- Military parks commemorate the sites of major civil war battles. Activities at these sites include guided tours and hiking. These sites typically have a visitor's center, offer free admission, and achieve annual visitation between 500,000 and 1.6 million.
- Military history attractions are the least popular attractions with annual visitation ranging between 85,000 and 380,000. These sites are restored forts offering a glimpse into the area's past. The sites achieving the highest visitation have been carefully restored, offer strong programming and natural amenities.

### *Local Hotel Market*

- Based on data provided by the Hampton Convention and Visitors Bureau (CVB), The City of Hampton contains 3,151 hotel rooms. Approximately 36 percent are full-service properties with adequate meeting space.
- Hampton hotel occupancy in 2007 averaged 58.1 percent with an average daily rate of \$73.89. By comparison, the reported statewide average room rate in 2007 was \$97.45 and the occupancy rate averaged 59.6 percent.
- Annual occupancy rates declined between 2002 and 2007, decreasing from 66 percent to 58.1 percent (2007). Hotel occu-

pancy is seasonal, with almost 31 percent of 2007 roomnight demand experienced in June, July, and August.

- In 2007, almost 40 percent of Hampton visitors were there for pleasure, almost 20 percent of visitors were there for work and an additional 22 percent came for a meeting or a convention. 25 percent of 2007 Hampton visitors were from Virginia.
- By comparison with the competitive facilities, Hampton's traditional focus on more budget oriented properties has kept average room rates low, influenced by the government per diem rates for the defense-related visitor market and limited available amenities.

#### *Regional Resort Comparables*

- ERA examined seven comparable resort properties: The Tides Inn, Virginia Crossing, Boar's Head Inn, Crowne Plaza Williamsburg at Ft. Magruder, Kingsmill Resort and Spa, Keswick Hall, and The Sanderling Resort on the Outer Banks of North Carolina. Average daily rates and annual occupancy levels outpaced the Hampton market in 2007.
- Because of its long-time focus on budget and military-oriented lodging, the Hampton area lacks a beachfront resort hotel of the type and scale exhibited in these comparable resort properties.

- The market for resort properties is seasonal, with one-third of 2007 room night demand in June, July, and August and room revenue almost four times as high in July/ August than in December, January, and February.

#### *Marina*

- There are 27 marinas within a 30-minute drive of Fort Monroe.
- Approximately half of the marinas maintain a wait list for slips. Pent up demand is concentrated in either the newer modern marinas, or for larger slips for boats over 40 feet.
- Current slip demand patterns suggest that amenities and services will be important facility attributes.
- Average per night slip rental rates are between \$1.35-1.85 per foot. Average long-term slip rental rates range from \$6.25 to \$8.00 per foot per month. Marinas that offer semi-annual rates range from \$8.50 to \$10 per foot per month. Month to month rates vary between from \$7.70 to \$15.00 per foot per month.

#### *Recreational Vehicles and Campground*

The market for RV facilities at Fort Monroe is opportunistic, but the size of the existing facility — 14 spaces — cannot support the level of amenities that generate premium rates. Prior

to the BRAC decision, the Army formulated a plan to more than double the existing facility. Infrastructure is already in place to accommodate a larger and more upscale park.

- The average nightly cost at trailer parks near Richmond is \$24.50.
- Some parks charge premiums depending on the season or view.
- Most parks have a swimming amenity.

#### *Key Findings*

ERA's research indicates that there is tourism potential for Fort Monroe based on two complementary, but different site characteristics:

- The extraordinary historical significance of the site to a range of submarkets – military historians, African American visitors, and preservationists who will be drawn by the Fort's military compound, connection with slavery, and historic structures.
- The appeal to recreation and resort visitors: 3.2 miles of beach and seawall, the open space between the bay and the harbor, the Recreation Center, marina and RV grounds.

Estimated visitation includes between 100,000 to 150,000 persons per year for cultural attractions and 115,000 to 125,000 annual beach visitors, totaling 225,000 and 275,000 persons per year. These visitors will likely follow the seasonality patterns that cluster the

greater majority of visitations within the three summer months and two shoulder months.

To increase total visitation, the Fort's historic/military and cultural attractions should be linked to a packaged visitor experience incorporating existing historic destinations such as Jamestown, Yorktown and Williamsburg and positioned as complementary to these places. ERA notes that visitation at historic sites nationwide is declining, despite the stated preference for these types of sites among aging Baby Boomers and other select audiences.

ERA's experience suggests that when niche markets (African American history groups, military history, etc.) become a focus of marketing and interpretation, the market responds favorably, but the numbers attracted will be highly dependent upon the quality, pricing and duration of the visitor experience created.

#### *Resort Potential*

There is also qualified potential in the resort hotel market for the Fort Monroe site. If focal markets are identified and a 'branded hotel' can be attracted to the site, a minimum of 130-150 rooms will be required, but will also bring the advantage of a national reservations system and a chain-affiliated company's marketing strength.

#### *Conclusion*

The overall conclusion about tourism potential at Fort Monroe is that a market exists for development of tourist and visitor destination facilities, but, at this time, the core market is regional, not national or international; it is automobile-oriented, is more price-sensitive than the area's existing destination resort visitors, and is seasonal in nature with visitation peaking in summer months.

#### **MARKETING FORT MONROE: INTERPRETATION AND SUSTAINABILITY**

In addition to analysis of alternatives for management and development, the most appropriate marketing strategies for the project have been evaluated. The marketing plan for Fort Monroe will be affected by several factors:

- The phasing and timing of redevelopment and integration of new elements – for example, if the Museum cluster 'inside the moat' will require 7-10 years to develop, this element should not be marketed heavily until the year before it opens. Incremental cultural attractions can be marketed much earlier in the process. The recreational aspects of the site can be marketed more quickly and be used to position Fort Monroe as a leisure waterfront destination while the cultural attractions are being enhanced and developed. Accessibility to the site can be rapidly enhanced once the recreational components are established.

- The opportunity to form a Cultural Attraction Cooperative Agreement with other area historical and cultural attractions that will draw cultural visitors to the greater Hampton Roads area. A joint effort should be structured to attract new visitors and to extend the stay of existing visitors. This can be accomplished by expanding the marketing focus of the "History Triangle" to become "America's History Quadrangle" that would include new Fort Monroe cultural destinations. This regional/national/international joint marketing arrangement will require a clear understanding about how to expand the campaign strategy as well as an agreement on how to fund it among the partners.
- The Fort Monroe Hotel will also affect how the site is marketed. In ERA's view, the Fort will be more generally accessible and enjoys spectacular views of the Bay, but will need an aggressive market positioning strategy and the financial capacity and name recognition of a branded hotel to make the greatest impact and generate revenues for FMFADA. However, introduction of a branded location should not be implemented in a cookie-cutter manner from a design perspective. The new hotel should be designed and built at a scale that might recall the exterior character of the Hygeia Hotel, incorporating state of the art amenities on the interiors. The resort component can be tied to access to the

beach, the marina and a system of walking and biking paths throughout the site, complemented by spa services and other resort amenities.

- The potential for ongoing funding for a strategic marketing program will affect the scope, reach and targeted audience programs that will sustain Fort Monroe as a destination. A comprehensive marketing effort should position Fort Monroe as a major addition to the Hampton Roads area. This can involve the Virginia Tourism Corporation as well as specific interest donors who might support events, special exhibits or other programming. A comprehensive approach to interpreting Fort Monroe's history should also appeal to foundations, whose impact could include funding/ marketing of educational programming and underwriting travel/ transportation costs for school visits. Connections with area/ state universities through scholarly research and development of educational materials can provide content for marketing, but not require full funding by FMFADA.
- It is recommended that a budget line item be included for ongoing marketing of the site. Typically 3-5 % of the total operating budget should be dedicated to marketing costs.

A marketing strategy for FMFADA and Fort Monroe should be structured to appeal to a diverse audience and different income levels.

### **FORT MONROE DEVELOPMENT OPTIONS**

The FMFADA has several options regarding the management and development of heritage and recreational tourism components at Fort Monroe. The following text outlines the many management, leasing, or sale options available to the organization for the tourism components of Fort Monroe. ERA understands that the board is considering development of a non-profit organization under which some components could be managed and developed, and would be used to provide fund raising to support public programs.

#### *Concessions Management*

- Pros: Highly experienced, efficient, well-funded, easily obtain necessary financing, steady franchise fee income stream
- Cons: Institutional, high overhead, will limit control, may be hesitant to take on non-revenue producing components

#### *Direct Management*

- Pros: Maintain complete control, cohesive plan, strong revenue potential
- Cons: Require high capital investment from FMFADA, may be difficult to obtain financing/ funding, lack experience in management of hospitality operations, take on complete project risk

#### *Ground Lease*

- Pros: Steady rental income stream, maintain ownership of sites, no capital investment requirement, long-term value enhancement
- Cons: Limited development control, can be difficult to finance, may lack cohesion with introduction of sub-leasing and various management agreements for separate components

#### *Direct Sale*

- Pros: Large immediate capital income to fund non-profit initiatives
- Cons: Complete release of control, lack of cohesion, no long term income potential; will not address long term guarantees for quality and protection

#### *National Park Service*

- Pros: Will ease linkage to "America's Historic Triangle"; guarantees some government funding, maintains site cohesion, guarantees site's protection in perpetuity; NPS is a 'brand'
- Cons: Bureaucratic, under-funded, restricted income potential, tax exemption limits fiscal and economic benefits for surrounding community; lease terms limit use of historic tax credits.

## NATIONAL PARK SERVICE'S "RECONNAISSANCE STUDY"

The National Park Service's "Reconnaissance Study" of historic Fort Monroe was the first step to determine whether the Fort should be more extensively evaluated for possible inclusion in the National Park System after the Army vacates the base in 2011 and the property reverts to state ownership.

This reconnaissance study, conducted by the Northeast Region of the National Park Service (NPS), contains the analysis and findings of the likelihood of Fort Monroe's resources meeting Special Resource Study criteria for designation as a unit of the National Park System. The study was undertaken by an interdisciplinary team of NPS personnel representing the fields of park management and maintenance, history, curatorial services, architectural history and park planning.

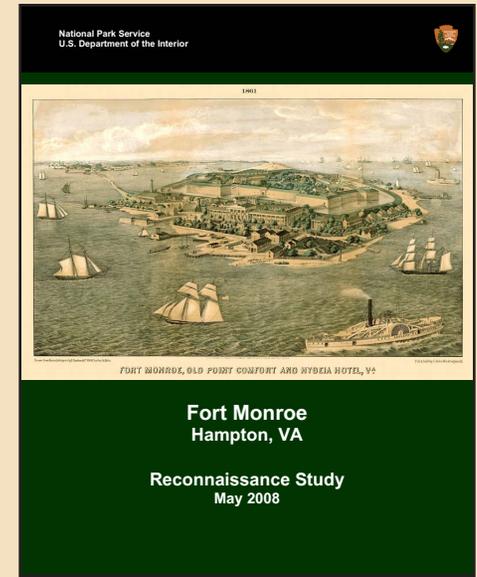
The conclusions of the study indicate that the resources of Fort Monroe are likely to meet the criteria for national significance and suitability as a potential unit of the National Park System should a Special Resource Study be authorized by Congress. These resources enjoy a high degree of integrity due to the continuous stewardship of the United States Army.

Because of cost and a number of other factors, including the current lack of knowledge regarding future uses of the Fort's resources, the study concludes that it is unlikely that a Special Resource Study would find the entire resource base of Fort Monroe feasible for NPS designation. Even the Fort itself, the area surrounded by a moat, is not likely feasible without a strong and financially sustainable partner to contribute to the costs of managing, maintaining and operating its historic structures and landscapes. The study also concludes that until such time as the Reuse Plan for Fort Monroe is approved by the Department of Defense, and the administrative structure and its authorities for implementation of the plan are known, the need for NPS management cannot be determined.

This study, therefore, recommends that Congress defer any authorization of a Special Resource Study until the NPS can review the Department of Defense approved Fort Monroe Reuse Plan to determine if any potential role for the NPS is likely to meet the feasibility criterion. This review would also permit the NPS, based on the provisions of the plan and the administrative mechanisms for its implementation, to determine if a Special Resource Study is likely or unlikely to find that there is need for NPS management of some portion of the Fort's resources. Any potential role for the NPS would need to be considered in light of the Commonwealth of Virginia's taking on the ownership of resources associated with Fort Monroe after the Fort has been vacated by the United States Army. At the conclusion of the BRAC closure process for Fort Monroe, virtually all of its nationally significant resources will revert to the Commonwealth of Virginia.

In the interim, the NPS will offer to provide technical assistance under existing authorities to the FMFADA to assist that agency in devising plans for the historic preservation of the Fort's resources and for the development of an Interpretive and Educational Master Plan defining programs, visitor services and visitor experiences that promote public understanding and appreciation of those resources and the rich history of Fort Monroe. Such assistance does not presume that the NPS will own, operate, manage or provide interpretive services at the Fort in the future.

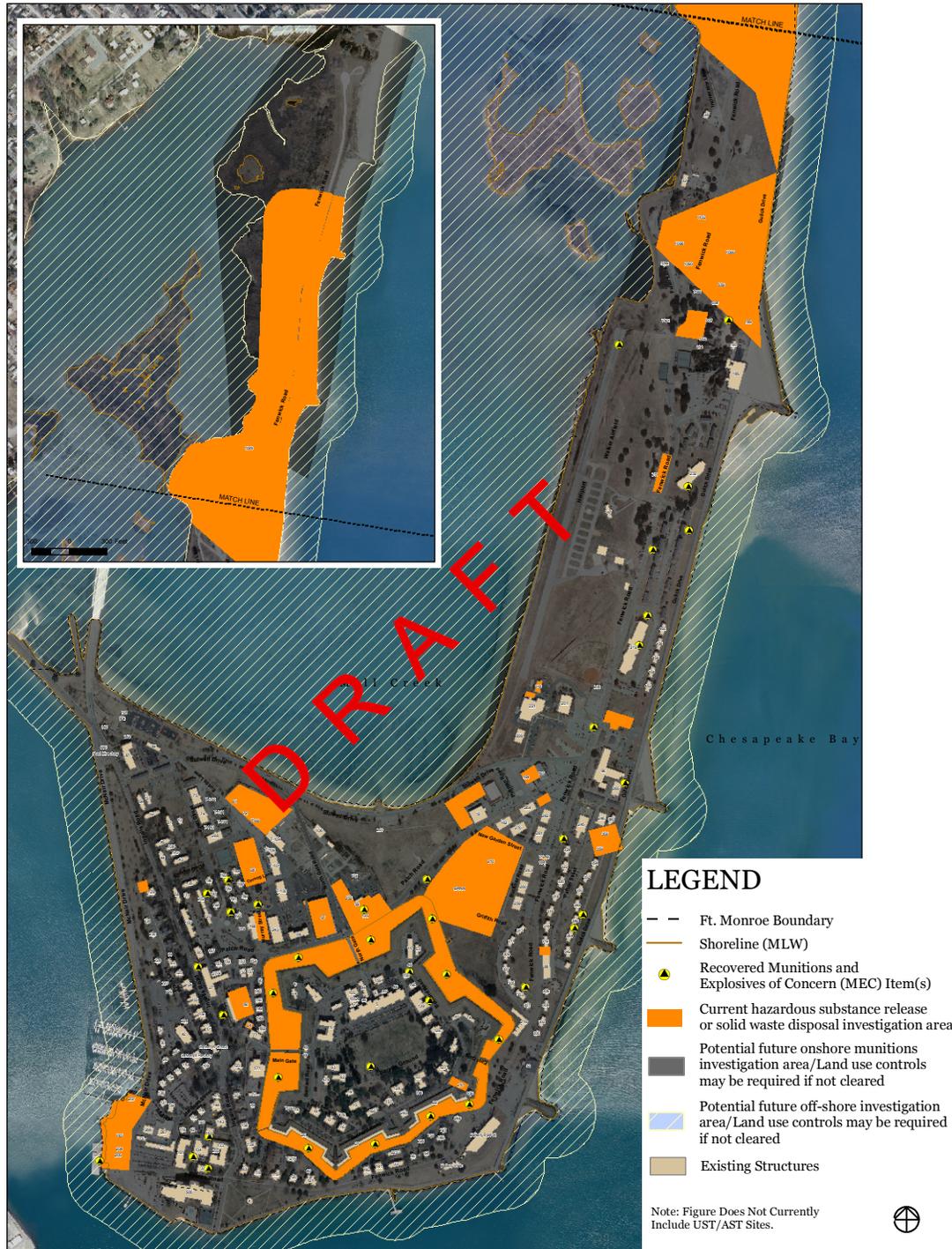
*This information was drawn from the Reconnaissance Study of Fort Monroe in Hampton, Virginia conducted by the Northeast Region of the National Park Service, May 2008, Executive Summary. The study can be reviewed in its entirety at [www.FMFADA.com](http://www.FMFADA.com).*







# environmental considerations 6



The Environmental Considerations analysis was prepared by Matrix Design Group, Inc. The following section summarizes conditions related to the investigation and cleanup of environmental contamination in soil, sediment, groundwater, surface water, and buildings at Fort Monroe which has the potential to affect redevelopment. A brief discussion of the actions currently underway to address known and potential environmental contamination is also provided. A detailed environmental analysis, on which this summary is based, is available in The Technical Support Manual for the Reuse of Fort Monroe.

## BACKGROUND AND REGULATORY STATUS

From 1834 until the early 1970s, Fort Monroe was used as a coastal defense fort and coastal artillery school. Training and industrial support operations there during more than 150 years of operation generated hazardous substances, excess munitions and explosives of concern (MEC), and other wastes of environmental concern.

The U.S. Army, in consultation with the Virginia Department of Environmental Quality (VDEQ), is currently conducting an investigation of known and potential environmental contamination in soil, sediment, groundwater, and surface water from historical hazardous substance spills and waste disposal activities at Fort Monroe. This work is being conducted in accordance with the requirements of the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), National Contingency Plan (NCP), and Subtitle I of the Resource Conservation and Recovery Act (RCRA).

The Base Closure & Realignment Acts of 1988 and 1990 provide a number of specific legal requirements that must be met when a military base is closed and transferred to a different owner, such as the Fort Monroe Federal Area Development Authority (FMFADA). Specifically, the U.S. Army is responsible for paying for the investigation and cleanup of environmental contamination in soil, sediment, groundwater and surface water necessary to protect human health and the environment.

## KNOWN AND POTENTIAL ENVIRONMENTAL CONTAMINATION CONCERNS

A review of historical literature and environmental investigative reports available for Fort Monroe indicates that environmental contamination concerns exist which have the potential to affect redevelopment. Known and potential concerns include:

- Munitions releases and disposal
- Hazardous substance releases and solid waste disposal
- Petroleum hydrocarbon releases
- Asbestos, lead-based paint, and other hazardous materials in buildings

A figure depicting the areas of known and potential environmental contamination concerns related to redevelopment is provided as Figure 6.1.

### *Munitions Releases and Disposal*

Munitions and explosives of concern (MEC), including but not limited to cannonballs, Parrott shells and mortars, were used at Fort Monroe from the Civil War through World War II. Buried MEC have been encountered onshore and offshore, including in the moat.

### *Hazardous Substance Releases and Solid Waste Disposal*

Hazardous substance releases from light industrial operations, including but not limited to boat maintenance facilities, photo labs, maintenance shops, pesticides mixing areas, and a railroad line may have resulted in environmental contamination in soil, sediment, groundwater, and/or surface water at Fort Monroe. Lead contamination may also be present in soil at several former firing ranges. Several landfills, the most recent of which ceased accepting waste in the mid-1950s, and two incinerators also operated at Fort Monroe. Disposal of solid waste from these operations may have caused environmental contamination in soil, groundwater, sediment, and/or surface water at the Site.

### *Petroleum Hydrocarbon Releases*

More than 200 underground and above-ground storage tanks were historically present on Fort Monroe. Products stored in these tanks included heating oil, gasoline, diesel, and used oil. Petroleum hydrocarbon releases have been documented at various locations throughout the installation.



Figure 6.2. Groundwater sampling



Figure 6.3. Groundwater sampling



Figure 6.4. Soil sampling at former target range

### *Asbestos, Lead-Based Paint, & Other Hazardous Materials in Buildings*

Due to the age of the buildings at Fort Monroe, a significant amount of asbestos and lead-based paint is likely present onsite. Comprehensive asbestos and lead-based paint surveys suitable for demolition purposes have not been performed on the majority of buildings at Fort Monroe. Rather, specific, targeted demolition or room-by-room renovation surveys have been performed. Other hazardous materials may also be present in buildings including, but not limited to, light ballasts and switches containing hazardous chemicals. There are a limited set of circumstances under which the cleanup of these materials in buildings is paid for by the Department of Defense. In most cases, the new property owner (lessee) is responsible for investigation and cleanup costs associated with the removal of asbestos, lead-based paint, and other hazardous materials in buildings.

### **IMPORTANCE OF THE REUSE PLAN IN ENVIRONMENTAL CLEANUP**

Shaded areas identified in Figure 6.1 indicate areas with known or potential environmental contamination concerns at Fort Monroe. These areas must be adequately investigated so that environmental cleanup decisions can be made. Environmental cleanup requirements will be based primarily on future land uses shown in the approved Reuse Plan for Fort Monroe. Typically,

- Property used for residential purposes, hospitals and medical care, schools and daycare, and certain types of research generally require the highest (i.e., most conservative) level of cleanup.
- Property used for commercial or retail purposes generally require a moderate level of cleanup; and
- Property used for recreational purposes generally require the lowest (i.e., least stringent) level of cleanup.

### **SCHEDULE FOR ENVIRONMENTAL INVESTIGATION AND CLEANUP**

Late in 2006, representatives of the U.S. Army, VDEQ, and the FMFADA's predecessor organization (the Hampton FADA) began meeting on a regular basis. These meetings – now including the FMFADA – will continue until the Fort Monroe property transfers from the U.S. Army to the new owner. These meetings are used as venues to identify environmental contamination concerns with respect to redevelopment and facilitate the U.S. Army's environmental investigation and cleanup efforts.

The parties agreed on a scope of work for the investigation of hazardous substance release and solid waste disposal sites and the U.S. Army began field investigation work in August 2007. A more detailed plan for the comprehensive investigation of MEC releases

and disposal is currently under development with MEC field investigation work expected to begin early in 2009. As these investigations are completed, cleanup can proceed immediately, or alternatively may be phased to take place concurrently with redevelopment to achieve cost-savings.

The cost of environmental clean-up and the amount of time it will take is directly related to the type and extent of environmental contamination present and the level of clean-up required for protection of human health and the environment based on the planned reuse.

transportation,  
infrastructure, & flood control strategy 7





Figure 7.1. Existing conditions, main roads

*The Transportation, Infrastructure, and Flood Control analysis was prepared by Kimley-Horn & Associates. The following sections provide an overview of the data collection, analyses, and recommendations. Additional and more detailed information can be found in The Technical Support Manual for the Reuse of Fort Monroe.*

## TRANSPORTATION

Mobility is a critical factor in future development opportunities at Fort Monroe. The ability to move people and resources within this highly historic and isolated area with varying land uses is a key element of creating positive experiences for residents, commuters, area consumers, and tourists. Without proper planning and implementation, transportation could become a significant detriment to the future success of Fort Monroe. As part of the Fort Monroe reuse plan, traffic flow into and out of the area was evaluated to determine the level of mobility needed to support redevelopment of surrounding lands and improve access for recreational opportunities, while preserving the historical assets. In the context of the Fort Monroe reuse plan, the transportation element has three primary goals:

1. Restructure the Fort Monroe entrance to serve multiple users and various developments that will provide the necessary density for a self-sustaining development.
2. Establish an identity for certain areas within the Fort and provide clear access for the variety of users that will enjoy the various attributes.

3. Provide key transportation improvements that will support future economic vitality and an enhanced quality of life for the surrounding communities.

These transportation improvements must consider vehicles and other modes of transportation such as transit, parking, pedestrians, and bicyclists.

Today, all access into and out of Fort Monroe occurs at a single five-legged intersection. There are two roadways in the City of Hampton (Mellen Street and Mercury Boulevard) that intersect from the north to form two of the five legs. These two roadways traverse through the adjacent Phoebus neighborhood and provide access to Interstate 64 (I-64) and other parts of the city. Internal to the Fort, McNair Drive, Ingalls Road, and Stilwell Drive create the remaining three legs of this intersection. As reuse opportunities are considered, the transportation analysis must evaluate not only the roadway network within the confined boundaries of Fort Monroe but also the external connections to the surrounding communities.

There are several key framework streets that provide both external and internal mobility to Fort Monroe including access to existing office/administration facilities and residential developments. The transportation study area includes the entire Fort as well as portions of the Phoebus community. The external cor-

ridors within the study area consist primarily of I-64, Mallory Street, Mellen Street, and Mercury Boulevard. The internal corridors consist primarily of McNair Drive, Ingalls Road, Stilwell Drive, and Fenwick Road. The Fort's roadway network consists of a street network and sidewalk system. Modifications to these existing networks should be minimal and would likely be comprised of minor improvements to provide enhanced access in certain areas. There are three roadways that provide access across the moat but these access points place significant size restrictions on the delivery vehicles, construction equipment, moving vans, and other large vehicles. Along with a narrow two-way ring road with limited parking, these infrastructure limitations may restrict the ability for some private sector uses and public events that generate crowds or large groups.

According to the Hampton Roads Transit (HRT) website, there is no fixed-route transit service between Fort Monroe and other areas of Hampton. Given that there are no HRT routes within Fort Monroe, transit-related passenger amenities are minimal. As reuse options are considered, it is recommended that a majority of the bus stops be marked with a highly visible sign, and actively used areas should be considered for transit stops with shelters.

A broad-level transportation analysis was performed to determine the impacts on the

overall access to the Fort, and especially the main entrance, of traffic generated by the proposed reuse scenario. Given the constraints of the existing entrance, geometric improvements are recommended for this intersection for both operational and aesthetic reasons. The proposed configuration will create two separate ways into and out of Fort Monroe. A concept for this is depicted on the illustrative plan contained in Section 3 of this report. Additional maps that describe the details of the street modifications envisioned are contained in the *Technical Support Manual for the Reuse of Fort Monroe*. In the proposed configuration, those users destined for the historic areas of the Fort would be directed to Ingalls Roads, while residents/visitors of the proposed uses located at the northern/mid-section of Fort Monroe would be directed to Stilwell Drive. However, Fort Monroe is only one end of a trip, and the attraction of Mellen Street and Mercury Boulevard create the need to provide an internal connection along Eustis Lane to provide access to both external roadways. Since Eustis Lane will act as the decision point of the trip (motorists turning right or left), signalization is recommended at its intersections with Ingalls Road and Stilwell Drive.

The analysis presented above reflects an analysis of the internal street network on the Fort and the immediate adjacent street networks in the Phoebus community. The analysis was completed without the benefit



Figure 7.2. Infrastructure construction on the Fort

of the results of the recently completed tourism study. Based on the recent consideration of a tourism component on Fort Monroe, the Virginia Department of Transportation has expressed concern regarding the potential impact of redevelopment at Fort Monroe on the Interstate 64 Mallory Street and Woodland Road interchanges. Therefore, it is recommended that a more comprehensive traffic study be completed to study the effects of redevelopment and tourism potential on the internal and external street networks, inclusive of the Interstate 64/Mallory Street/Woodland interchanges.

In the future, a connection should be made from Fenwick Road to the Buckroe area at the north end of Fort Monroe. The City of Hampton has prepared a few conceptual alignments for this connection and will be proceeding with further development of these concepts in the near future. The proposed connection is intended to provide a more convenient public access to the proposed recreational uses located at the northern end of Fenwick Road, and would also provide a completely separate alternate route during emergency evacuations of the Fort.

## INFRASTRUCTURE

In general the Fort's infrastructure appears to be in better condition than was expected. Kimley-Horn's experience with other base closures has been that the existing infrastructure, particularly utility infrastructure, is old and not well maintained and typically requires substantial rehabilitation and/or replacement. In 2003, Hurricane Isabel inflicted considerable damage to the Fort's infrastructure and enabled the Army to secure \$90 million in funding for hurricane repairs. This funding allowed for the replacement and upgrading of roads, some of the water distribution system, and some of the storm and sanitary sewer systems. Based on information provided by the Army, Figure 7.3 summarizes the condition of the different infrastructure systems.

INFRASTRUCTURE COMPONENT	CONDITION
Roads	Very Good
Water	Fair to Good
Sanitary Sewer	Very Good
Drainage	Good
Electrical Power	Very Good
Natural Gas	Fair

Figure 7.3. Infrastructure conditions on the Fort

While most of the infrastructure is reported to be in generally good condition, proposed development will require some upgrades to the existing systems, as well as extensions to the redevelopment areas primarily for water, sewer, and storm drainage infrastructure. If a northern connection to Buckroe is implemented, then water should be extended from

the north to provide an enhanced looped system on the Fort. As redevelopment and potential private occupancy of existing buildings ensues, separate power and water metering for the various buildings will likely be required and could represent a significant cost overall based on the quantity of buildings that would require metering. Currently, the Fort's infrastructure systems are predominantly owned by the Army including roads, drainage, water, sanitary sewer, gas, etc. Future ownership, operation, and maintenance of this infrastructure could present significant challenges and possibly costs as it is understood that most of these systems do not meet local municipal, regional, or state standards. At a minimum it is recommended that a study be undertaken to assess the condition of each of these systems to identify deficiencies and upgrades that may be required that would be dependent on future ownership of these systems. As it relates to the aforementioned assessment study and analyses, it is important to note that each of the municipalities that comprise the Hampton Roads region, as well as the Hampton Roads Sanitation District (HRSD), are currently under a consent order with the Virginia Department of Environmental Quality (DEQ). This consent order includes specific requirements that each municipality must meet concerning the condition, operation, and upgrading of their wastewater collection systems. This would likely have an affect on the analyses and subsequent recommended improvements to the City of

Hampton's and HRSD's systems that the Fort discharges to in the Phoebus area and may represent costs to upgrade these systems as well.

### **INFRASTRUCTURE COSTS**

Based on data collection, information provided by the Army and Public Works staff, and preliminary analyses, preliminary cost estimates have been developed for certain infrastructure components that appear to be under capacity for new development or require extension to the new development areas. Costs associated with the new development itself, such as roads, water, sewer, drainage, and street lighting, also are excluded as those costs would likely be included in the development costs for the new development.

The infrastructure components are representative of what would typically be public infrastructure (i.e. water, sewer, stormwater). These costs also are exclusive of any upgrades to the existing infrastructure systems required to bring the infrastructure into compliance with standards of the eventual operator of these systems. These costs cannot be determined until it is known what the system requirements of the eventual operator include and an assessment is conducted to determine the deficiencies, if any, of that system. Infrastructure components that would typically be considered private infrastructure (power, gas, and communications) are not included in these estimates since these costs would be

developed by the eventual owners of these systems, such as Dominion Virginia Power, Virginia Natural Gas, Cox Communications, and/or Verizon. The cost information is based on 2008 costs (see Figure 7.4).

### **FLOOD CONTROL**

Located on the southernmost point of the Hampton Roads Peninsula, Fort Monroe lies almost entirely in a designated 100-year floodplain. The only part of the base not in a floodplain zone is a strip of land running north-south along the eastern edge of the Fort. The Fort is a National Historic Landmark and many of the buildings have not been elevated or altered since their construction, making them especially prone to flood damage. First floor elevations of these structures, as determined by the U.S. Army Corps of Engineers' 2004 structure inventory of Fort Monroe, lie below the 100-year floodplain elevation. These elevations also are well below the flood heights reached during Hurricane Isabel. Their preservation for historic purposes limits modifications which can be made to the structures to flood-proof them or raise first floor elevations to conform to current floodplain requirements. Hurricane Isabel flooded Fort Monroe in September of 2003 with a peak flood elevation of 6.26 feet. This flooding was comparable to the 1933 Hurricane, which brought peak storm surges of approximately 7.41 feet. This caused severe flooding at Fort Monroe from the storm surge moving

Figure 7.4. Estimated infrastructure costs

Improvement	Estimated Cost		
<b>Water System Improvements</b>			
System Upgrade Recommendations from URS Study (2004 dollars)		\$1,500,000	
Escalation to 2008 dollars			\$2,623,509
Northern Connection from Buckroe 10,000' length - assumed 12" diameter		\$1,000,000	
Extension to new development area 4,000' length - assumed 12" diameter		\$400,000	
Water meters for all non-metered existing buildings Assumes HRSD and NNWW SDC fees would be waived			
	Escalation		
	Installation	for Retrofit	Total
30 - 5/8" meters	\$400	\$600	\$18,000
39 - 3/4" meters	\$500	\$750	\$29,250
22 - 1" meters	\$600	\$900	\$19,800
10 - 2" meters	\$800	\$1,200	\$12,000
10 - 3" meters	\$1,000	\$1,500	\$15,000
1 - 4" meter	\$1,500	\$2,250	\$2,250
14 - 4" detector checks	\$5,000	\$7,500	\$105,000
13 - 6" detector checks	\$8,000	\$12,000	\$156,000
8 - 8" detector checks	\$10,000	\$15,000	\$120,000
		Total Water Metering	\$477,300
		<b>SubTotal Water</b>	<b>\$4,500,809</b>
<b>Wastewater Collection System Improvements</b>			
New Pump Station in new development area		\$750,000	
Extension to new development area Assumes pump station will move to central location 2,000' length - assumed 12" diameter sfm		\$200,000	
HRSD Pump Station #225 Upgrade and off-site system upgrades (Allowance)		\$250,000	
		<b>SubTotal Wastewater</b>	<b>\$1,200,000</b>
<b>Stormwater Quality Collection and Retention System</b>			
New Regional Stormwater Management Basin (BMP) in new development area - assumed to be 5 acres total of a wet detention system (Allowance)		\$1,000,000	
New outfall from BMP (Allowance) 600' length - assumed 42" diameter		\$120,000	
New inflow pipe from new development area 2 pipes totaling 500' length - assumed to be 36" diameter		\$75,000	
		<b>SubTotal Stormwater</b>	<b>\$1,195,000</b>

Improvement	Estimated Cost	
<b>Flood Protection</b>		
Cost from COE Study (2005 dollars)	\$26,400,000	
Escalation to 2007 dollars	\$31,944,000	
Minus Portion that was Funded in 2007	\$22,000,000	
SubTotal	\$9,944,000	
Escalation to 2008 dollars	\$10,938,400	
	<b>SubTotal Flood Protection</b>	<b>\$10,938,400</b>
<b>Northern Connection Roadway and Bridge</b>		
2-lane undivided roadway Right-of-way acquisition costs excluded Wetlands Mitigation costs excluded		
Length of new road (30' width) = 700' @ \$450 per l.f.		\$315,000
Length of road reconstruction (30' width) = 1,000' @ \$300 per l.f.		\$300,000
Length of bridge construction (30' width) = 300' @ \$175 per s.f.		\$1,575,000
	<b>SubTotal Northern Connection</b>	<b>\$2,190,000</b>
<b>Reconfigured Main Entrance</b>		
Length of road reconstruction (24' width) = 1,500' @ \$250 per l.f.		\$375,000
New traffic signal		\$250,000
	<b>SubTotal Reconfigured Main Entrance</b>	<b>\$625,000</b>
<b>Moat Bridge Repairs</b>		
Repair Costs from April 9, 2007 KCI Technologies Bridge Inspection Report (2007 dollars)	\$282,350	
Escalation to 2008 dollars		\$324,703
	<b>SubTotal Moat Bridge Repairs</b>	<b>\$324,703</b>
	<b>TOTAL</b>	<b>\$20,973,912</b>

up through storm drains, beach over washes, sea wall topping and failure, backflow through storm sewers and berm blowouts. The storm also caused the collapse of several piers and extensive tree loss from high winds.

In response to the substantial damage sustained on Fort Monroe during Hurricane Isabel, in May 2005 the Norfolk District, U.S. Army Corps of Engineers (ACOE) conducted a flood evaluation and protection study to evaluate the flooding and develop measures to reduce future flooding from storms of similar strength. From these measures a recommended flood protection plan was developed consisting of the following elements:

- Installation of flap roller gates on the outlet from the Fort Monroe moat to prevent back flooding during large storm events.
- Construction of a new seawall in the southern Fenwick Road region with a higher elevation of 9.5 feet NAVD, extending from the Navy Pier to the Battery Parrott to include a “toe” of small armor stone to prevent scouring of the base of the wall.
- Construction of a series of beach berms and breakwaters from the southern end of the northern seawall at Battery Parrott to the intersection of the proposed berm (see next point) and the existing seawall.

- Construction of an interior berm southward across the northern end of the moat and into the southern portion of the base to prevent flooding from Mill Creek. The interior berm would be installed in the moat with an elevation of 8.0 feet (NAVD 88).
- Lowering of the berm existing north of Bowling Alley in Mill Creek to reduce the ponding of water trapped behind the berm during heavy rainfalls and flooding from other locations on the Fort.

In 2007, the Department of Defense approved partial funding to fund some of the improvements proposed in the ACOE study. These improvements are currently under construction and mainly include the following elements of the original recommendations:

- Reconstruction of the flood wall along the southern end of the Fort at an elevation approximately 2.5 feet higher than the existing flood wall elevation
- Construction of the three southernmost breakwaters
- Construction of a terminal groin at the southern tip of the Fort

In addition to these improvements, the Army secured some additional funding to control flooding through the storm sewers and has recently installed backflow prevention valves



Figures 7.5. Newly constructed seawall and armor stone.



Figures 7.6 - 7.7. Hurricane Isabel caused severe flooding along Ingalls Road.



Figure 7.7.

on storm sewers that discharge into the Chesapeake Bay and Mill Creek as well as all of the inflow and outfall pipes located in the moat. This represents a critical element of the original ACOE recommendations as much of the flooding that occurred during Hurricane Isabel was due to storm surge through these drainage systems. The Army indicated that there also may be additional funds available based on the favorable bid that was received for the funded flood protection project. It is possible that these funds would be used to fund more of the improvements in the original ACOE study and could include the construction of three additional breakwaters northward of the three that are currently under construction. As redevelopment planning and implementation for reuse of the Fort continues, it is recommended that a funding source be identified to provide the additional funding required to complete the ACOE recommendations.

In order for any future private leaseholds or other private investment in Fort Monroe to take place, it will be important to secure federally subsidized flood insurance and comply with the City of Hampton's floodplain ordinance. An examination of the existing buildings on the Fort indicates they fall into three general categories.

- The first category consists of historic buildings.

- The second category includes buildings that are not historic but which were built prior to the time of the federal flood insurance study of the City of Hampton in July 1987 (Pre-FIRM buildings).
- The third category is that of buildings constructed since the flood insurance study was completed (Post-FIRM buildings).

FEMA's regulations indicate that localities can exempt historic structures from the requirements of the National Flood Insurance Program (NFIP) by either exempting them through the definition of substantial improvement or issuing variances to the structures. However, the improvements exempted must not preclude the continued designation as a historic structure. Thus, all historic buildings on the base would qualify for pre-FIRM exemption, as long as they meet the FEMA definition of a historic building. Pre-FIRM

buildings will be exempt from FEMA regulations and the Hampton City Flood Ordinance; however, any additions, extensions, or major improvements amounting to more than 50 percent of the market value of the structure will cause the entire structure to meet FIRM regulations.

The Fort engineering office indicates that since 1987, all new buildings have been constructed in accordance with the building requirements of the NFIP. All new construction (post-FIRM) must continue to conform to the current flood zone construction requirements. As noted above, the ACOE has inventoried all structures on the Fort and determined the ground elevation around the structures and the elevation of the first finished floor. This information may be used in the future to assess what, if any, modifications may need to be made to existing buildings for them to be eligible for federal flood insurance if adaptive-



Figure 7.8. View of the seawall along the Chesapeake Bay, looking south toward the Chamberlin Hotel.

ly reused by private residents or businesses. Additional consultation with FEMA and the City of Hampton will be required to determine the specific procedure for complying with flood insurance program requirements.

The effects of sea level rise need to be considered in any long term infrastructure planning and costs for Fort Monroe. Sea level has been estimated to rise approximately two feet in the next century as predicted by Wetlands Watch in association with the Virginia Institute of Marine Science. Climate changes are anticipated to increase the frequency and intensity of tropical storms and hurricanes. Accordingly, the flood protection measures previously constructed or under construction currently may not be sufficient to deal with the increased flooding potential created by long term sea level rise. Planning for Fort Monroe reuse should include a site specific evaluation of the impact of sea level rise (under various height predictions based on different models) as it relates to the need for additional flood protection measures at the Fort.

### **RECOMMENDATIONS – TRANSPORTATION**

Transportation – Complete a comprehensive traffic analysis to study the effects of redevelopment and tourism potential on the Fort’s internal street network as well as the external street networks, inclusive of Interstate 64.

Transportation – Coordinate with the City of Hampton regarding further studies regarding a northern roadway connection to the Buckroe area.

### **RECOMMENDATIONS – INFRASTRUCTURE**

Water – Complete a study to assess the condition of the Fort’s water distribution system and identify deficiencies in the system relative to current Newport News Waterworks or regional standards.

Wastewater – Complete a study to assess the condition of the Fort’s wastewater collection system and identify deficiencies in the system relative to current City of Hampton, Virginia Department of Health, and/or regional standards. This study also should include an infiltration and inflow as well as a capacity analysis for the Hampton Roads Sanitation District’s pump station #225.

Power – Request that Dominion Virginia Power perform a comprehensive conditional assessment of their system and provide costs associated with upgrading or replacement of their system inclusive of metering of existing buildings.

Capital Improvement Costs - Further develop cost analysis for anticipated capital costs as additional studies are undertaken and more data becomes available.

### **RECOMMENDATIONS – FLOOD PROTECTION AND INSURANCE**

Flood Protection – Identify a funding source to provide the additional funding required to complete the Army Corps of Engineers flood protection recommendations.

Flood Protection – Request that the City of Hampton give Fort Monroe the highest priority in their ongoing watershed and floodplain study.

Flood Insurance – Consult with FEMA and the City of Hampton to determine the specific procedures for complying with flood insurance program requirements.

Flood Protection – Develop a site specific evaluation of the impact of sea level rise (under various height predictions based on different models) for additional flood protection measures at the Fort.