Final
September 2015

SITE DEVELOPMENT PLAN
General Lucius D. Clay National Guard Center
Georgia Army National Guard
Marietta, Georgia
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SECTION 1

Executive Summary

The Clay National Guard Center Site Development Plan (SDP) illustrates the strategy to accommodate the best alternative for the configuration of the Lucius D. Clay National Guard Center (CNGC) in the 107 acre site located at Dobbins Air Reserve Base (ARB) in the town of Marietta, Georgia, a community in northwest Georgia.

1.1 Scope and Process

The Clay NGC SDP process supports the future physical transformation of the site through an established participative planning process consisting of visioning, data gathering, data analysis, site visits, user interviews, requirements review, and concept alternative and plan development.

A visioning session with the Georgia Army National Guard (GAARNG) leadership was held at the Joint Forces Headquarters (JFHQ) in January 2014. During this meeting, the vision for the development of CNGC into a Headquarters, Aviation and Training Center was developed. In February 2014, the second work session was held to refine the site concepts and select the preferred alternative with key users and commanders of the units. As means to promote a more detailed study of the proposed CNGC projects, a third work session in the form of a charrette was held over the dates of 12 and 13 November 2014 whereby buildings and sites under consideration in this SDP were evaluated. The project is given additional depth of knowledge through the Geographic Information Systems (GIS) Data Requirements Review (GISDRR), unit interviews, requirements analysis, Environmental Assessment (EA), and the Level III Facility Condition Assessment (FCA). Further review and interface opportunities during the submittals of the 50% and 90% SDPs and the Project Planning Document Charrette (PPDC) refined and validated the Final SDP.

The PPDC addressed renovations for billeting facilities and site improvements throughout CNGC to create a safer environment for employees, students and visitors.
1.2  Vision, Drivers, Requirements

1.2.1  Vision and Mission

The vision and mission for CNGC, which is listed below, was delivered by the CNGC Garrison Commander, Colonel (COL) Tim Romine, in July 2012.

**Vision:** “Joint Installation with preeminent facilities designed to meet the needs of the Joint Force Headquarters, tenant units, interagency and community partners and our individual Service Members and their families. Recognized as a leader in providing quality customer service, while caring for the environment and being good stewards of available resources.”

**Mission:** “Ensure a safe and secure environment for tenant units and activities. Provide outstanding customer service in environmental, temporary lodging, fitness center operations and facility management in order for tenant organizations to conduct their missions. Be a good neighbor and active leader in the community.”

The vision and mission for CNGC are directly linked to the Georgia Department of Defense (DoD) Strategic Plan and the GAARNG Army Community of Excellence (2015). The missions, visions and values of the strategic plans are shown below.

**Georgia Department of Defense Strategic Plan**
(2010 – 2015)

**Mission:** The GA DoD provides ready and relevant military forces to the Combatant Commanders, and with the consent of the Governor, provides command and control and capabilities to support Homeland Defense and Defense Support to Civil Authorities.

**Vision:** A strong and growing joint military organization, recognized as a leader in strength, readiness, and innovation; postured for effective response; and chosen for new missions and force structure, that provides opportunities for members who live the GA DoD values to realize their potential through service to the State and Nation.

**Values:** Integrity First; Service Before Self; Initiative; Teamwork; Continuous Improvement

**Georgia Army National Guard Army Community of Excellence**
(2015)

**Mission:** Provide well trained and motivated forces to the Governor and Combatant Commanders in order to support unified Land Operations – Offensive, Defensive, stability, and Civil Support.

**Vision:** A leader in ARNG strength and readiness; known for innovation and sought for piloting new doctrine, equipment, and business solutions. The right choice for assignment of future mission and forces. An organization, whose units are postured for effective response across the state in pre-eminent facilities, filled with high performance people.

**Values:** Loyalty, Duty, Respect, Selfless Service, Honor, Integrity, Personal Courage.
Site Development Plan Drivers

In order to implement the mission and vision statements, the GA DoD and the GAARNG Strategic Plan (2010 – 2015) established goals and objectives. One of these goals, shown below, is closely tied to the planning drivers for the CNGC SDP.

**Goal:** Develop preeminent facilities by establishing regionally oriented, modern facilities that are positioned to leverage demographics while being simultaneously postured to respond in the Homeland Defense and/or Homeland Security capacity.

**Objective:** Construct and grow the GA DoD facilities by executing 100 percent of authorized military construction (MILCON) funds through fiscal year (FY) 2015.

**Objective:** Construct eight new regional facilities and support structures by FY 2019.

**Objective:** Upgrade and link all GA DoD facilities with modern communications no later than FY 2015.

**Objective:** Improve the safety standards of all GA DoD facilities to Risk Assessment Code (RAC) 1 status no later than FY 2015.

The Site Development Plan is aimed at improving the CNGC facilities and layout to support the GAARNG mission.

The link between the CNGC development drivers and the strategic objectives is strongly reflected in the following key issues:

- Preeminent facilities
- Quality customer service
- Caring for the environment
- Stewardship of available resources

During the January 2014 visioning session, development drivers to focus planning efforts were developed. The drivers are:

- Maximize facility use (Billeting)
- Meet anti-terrorism/force protection (AT/FP) requirements
- Enhance the Language Training Center (MI)
- Develop multi-use shared facilities to provide flexibility
- Develop enhanced services – improve quality of life
- Engage with community
- Maximize green space – consider infill development
1.2.2 Requirements

Requirements are the allowances adjusted by the master planner to reflect the actual facility needs by category and user.

Current relocation efforts throughout the State and, in particular, in the Atlanta metropolitan area, provide opportunities to reconfigure future uses of sites and facilities. Most recently CNGC has supported the relocation of the Medical Command (MEDCOM) from Oglethorpe.

Requirements for the existing functions and their current facility space use have been calculated and are shown in Table 1.1, Clay National Guard Center Requirements.

<table>
<thead>
<tr>
<th>User/ Function</th>
<th>Existing Facility Area (SF)</th>
<th>Authorized Facility Use Area (SF)</th>
<th>% Authorized</th>
</tr>
</thead>
<tbody>
<tr>
<td>78 AVN</td>
<td>187,201</td>
<td>364,442</td>
<td>51</td>
</tr>
<tr>
<td>These facilities are consolidated in the east portion of the installation and include buildings 1, 33, 300, 312, 350, 352</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Training Institute (RTI)</td>
<td>194,262</td>
<td>234,299</td>
<td>83</td>
</tr>
<tr>
<td>The RTI compound includes classrooms, a dining facility, recreational buildings and billeting, including buildings 2, 53, 54, 60, 63, 64, 71, 84, 353, 400, 409A, 409B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>201 RSG</td>
<td>49,865</td>
<td>50,982</td>
<td>89</td>
</tr>
<tr>
<td>Buildings 3, 30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICAL</td>
<td>29,686</td>
<td>51,927</td>
<td>57</td>
</tr>
<tr>
<td>Buildings 81, 142, 408</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JFHQ</td>
<td>237,065</td>
<td>271,164</td>
<td>87</td>
</tr>
<tr>
<td>Building 7, 7A, 32, 78, 201, 214, 403, 447, 450, 463</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFMO</td>
<td>39,521</td>
<td>26,450</td>
<td>149</td>
</tr>
<tr>
<td>Buildings 10, 18, 25, 30, 47, 47A, 70, 77, 79, 251, 263</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garrison</td>
<td>15,188</td>
<td>15,188</td>
<td>100</td>
</tr>
<tr>
<td>Buildings 8, 24, 25, 34, 200, 354, 407</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FMS (Field Maintenance Shop)</td>
<td>20,917</td>
<td>28,912</td>
<td>72</td>
</tr>
<tr>
<td>Buildings 19, 38, 39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>773,705</td>
<td>1,028,176</td>
<td>74</td>
</tr>
</tbody>
</table>

Note: Allowances are based on RPLANS.
Functional Area Requirements

Some functions listed in Table 1.1, such as Aviation, require an independent area or campus in order to ensure mission integrity and functional requirements. Other functions currently operate in various, often non-contiguous, facilities throughout the installation. With the maximum extent of the installation being less than a mile and the majority of the buildings in a half mile radius, it is feasible, although not optimal, for units to be dispersed, allowing the installation to make best use of the current building inventory without significant capital investment projects.

With a different funding environment, CNGC has excellent opportunities to accommodate new facilities when done with infill development rather than a separate campus per function.

The expansion limits and potential of the site are best represented with a diagram showing potential new development areas rather than a typical functional area diagram. Figure 1.1, Functional Area Requirements for Clay National Guard Center, shows existing structures and projects to be considered for horizontal and infill development.

1.2.3 Future Site Development Plan

The future site development plan for Clay National Guard Center effectively uses existing facilities and minimizes dependencies on capital improvements projects.

As identified in the requirements analysis, some functions (Aviation, RTI, FMS, and Medical) need more facility space to meet authorizations. There are a number of ways to meet the authorizations:

- Examine low occupancy facilities such as buildings 53, 54, and 63, for space utilization alternatives.
- New construction (there is no new vertical construction currently planned).

Building 63 is a low occupancy building that can reduce organizations’ space deficits.
Figure 1.1. Functional Area Requirements for Clay National Guard Center
SECTION 2

Existing Conditions

2.1 Installation Profile

2.1.1 Region

Clay NGC is named after General Lucius DuBignon Clay, a U.S. Army General born in Marietta who served as Deputy Governor of Germany under General Dwight D. Eisenhower from 1945-1947 following World War II and was named the “hero of Berlin.”\(^1\) CNGC is located in the town of Marietta, a town of more than 55,000 people in Cobb County, Georgia. Cobb County is included in the ten-county core of the Atlanta Metropolitan Area. The installation is located in an enclave of Dobbins Air Reserve Base (ARB) formerly occupied by the U.S. Navy as Naval Air Station (NAS) Atlanta and is almost completely encircled by the ARB. A small portion of its southern boundary fronts along Atlanta Road SE, a major five-lane roadway separating the Base from commercial properties on the other side of the highway.

2.1.2 Location and Demographics

CNGC is a 107 acre site located northwest of Atlanta as shown in Figure 2.1, Regional Location, and Figure 2.2, Local Vicinity. Table 2.1, Demographic Comparisons between Cobb County, Atlanta, Georgia and the U.S., presents key demographic data.

<table>
<thead>
<tr>
<th></th>
<th>Cobb County</th>
<th>City of Atlanta</th>
<th>State of Georgia</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age – Under 18</td>
<td>25.0%</td>
<td>19.4%</td>
<td>25.1%</td>
<td>23.5%</td>
</tr>
<tr>
<td>Age – 65+</td>
<td>9.7%</td>
<td>9.8%</td>
<td>11.5%</td>
<td>13.7%</td>
</tr>
<tr>
<td>High School Grad</td>
<td>90.7%</td>
<td>87.4%</td>
<td>84.4%</td>
<td>85.7%</td>
</tr>
<tr>
<td>Bachelor’s+</td>
<td>43.8%</td>
<td>46.2%</td>
<td>27.8%</td>
<td>28.5%</td>
</tr>
<tr>
<td>White</td>
<td>66.1%</td>
<td>38.0%</td>
<td>62.8%</td>
<td>77.9%</td>
</tr>
<tr>
<td>Black</td>
<td>26.2%</td>
<td>54.0%</td>
<td>31.2%</td>
<td>13.1%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>12.6%</td>
<td>5.2%</td>
<td>9.2%</td>
<td>16.9%</td>
</tr>
<tr>
<td>Median Household Income</td>
<td>$65,180</td>
<td>$46,146</td>
<td>$49,604</td>
<td>$53,046</td>
</tr>
<tr>
<td>Unemployment – March 2014</td>
<td>6.3%</td>
<td>6.8%*</td>
<td>7.0%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Unemployment – March 2010</td>
<td>9.4%</td>
<td>10.0%*</td>
<td>10.2%</td>
<td>9.9%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau (http://quickfacts.census.gov) and the U.S. Bureau of Labor Statistics

*Atlanta Metropolitan Statistical Area

\(^1\) http://www.fhwa.dot.gov/infrastructure/clay.cfm
2.1.2.1 Population

Cobb County is 340 square miles and, according to U.S. Census estimates, had a population of 717,190 in 2013, which is up from 688,076 in 2010, or an increase of 4.2% in that short period of time. The State of Georgia had a population of 9,687,633 in 2010 and increased to 9,992,167 by 2013, which is a 3.1% rate of growth (U.S. population growth was 2.4% over this same period). Georgia was the ninth most populous state in the nation in 2010 and, after passing Michigan, was the eighth largest by 2013. In short, Cobb County is a growing region in a growing state. In terms of population density, Cobb County is fairly densely populated with roughly 2,206 residents per square mile in 2010 (the state had 168.4 residents per square mile in 2010; the population density for the U.S. was 87.4).

In terms of the composition of the population, 66.1% of Cobb County’s population in 2012 was White, 26.2% was Black and 12.6% was Hispanic. This was somewhat representative of Georgia’s demographic composition (62.8%, 31.2% and 9.2%, respectively). It was not, however, representative of the City of Atlanta’s racial composition, which was 38% White, 54.0% Black and 5.2% Hispanic in 2012. U.S. totals were 77.9% White, 13.1% Black, and 16.9% in 2012. Thus, Cobb County is more White and Hispanic than Atlanta, but has more Blacks than the U.S. It also has fewer Hispanics than the U.S., but more than Atlanta.
Figure 2.2. Local Vicinity
Looking at age, 25% of Cobb County’s population was under 18 in 2012, with comparable figures of 25.1%, 19.4%, and 23.5% for Georgia, Atlanta, and the U.S. The percentage of the population 65 years or old was 9.7% for Cobb County, 11.5% for Georgia, 9.8% for Atlanta and 13.7% for the U.S. There are not significant differences in these numbers. Atlanta has fewer younger residents than Cobb County and both Cobb County and Atlanta have fewer elderly residents than the U.S. and Georgia.

Cobb County ranks high on education, with 90.7% of its residents having graduated from High School and 43.8% having a Bachelor’s Degree or higher. This is higher than Georgia (84.4% and 27.8%), Atlanta (87.4%) and the U.S. (85.7% and 28.5%). The only exception being Atlanta’s higher education level, with 46.2% of its population having a Bachelor’s Degree or higher.

2.1.2.2 Community and Economy

There is a significant difference income between Cobb County, Atlanta, Georgia and the U.S. Median household income in Cobb County (2008-2012) was $65,180, compared to $49,604 for Georgia, $46,146 for Atlanta, and $53,046 for the U.S.

According to the Bureau of Labor Statistics, the July 2015 unemployment rate for Cobb County was 5.5%. This compares with an unemployment rate of 9.4% in March 2010. Georgia’s unemployment rate was 6.0% in July of 2015 and was 10.2% in March, 2010. The unemployment rate for the Atlanta Metropolitan Area was 6.1% in July, 2015 and 10.0% in March, 2010. Therefore, during all times measured, Cobb County had lower unemployment rates than Atlanta, Georgia and the U.S. Additionally, as is the case for all units of government examined, the economy is improving and unemployment has dropped significantly in the past four years.

2.1.3 Organizational Structure

2.1.3.1 Georgia Army National Guard

The GAARNG is composed of more than 11,000 Soldiers, making it the thirteenth largest in the nation. It is made up of combat, combat support, combat service and combat service support units.

2.1.3.2 Current Installation Organizations and Functions

CNGC is located adjacent to the airfield at Dobbins ARB, which is use by the Air Force and Lockheed-Martin for a range of aircraft including C-130s, C-5s, and F-22s. The GAARNG operates 6 HH-60M, 1 Med helo, 11 UH-60, 4 UH-72A, 2 CH-60 Black Hawk rotary-wing aircraft and 1 C-23 Sherpa fixed-wing aircraft from the airfield.
Organizations and functions located at CNGC in 2015 are listed below and shown in Figure 2.3, Clay NGC Organization. In 2015, CNGC is home to the:

- **GA Joint Forces Headquarters (JFHQ)**
  - Garrison Functions
  - R&R Detachment
- **GAARNG**
  - Construction and Facilities Management Office (CFMO)
- **78 Aviation Troop Command (78ATC)**
  - 1 General Support Aviation Battalion (GSAB), 171 Aviation Regiment
    - HHC, Co C, Co D, Co E, 1 GSAB, 111th Aviation Regiment
    - HHC, Co A, Co D, Co E, 1-171 Aviation
  - Co C, 2nd Aviation Security and Support Battalion, 151 Aviation Regiment
    - Co B, 3-135 TAB
    - Army Aviation Support Facility (AASF) 2
- **201 Homeland Response Force (HRF)**
  - 201st Regional Support Group (RSG)
  - 4th Civil Support Team (CST)
  - 870 Explosive Hazard Team
  - Joint Task Force 781 CBRNE (Chemical, Biological, Radiological and Nuclear) Enhanced Response Force Package (CERFP)
    - 202 Explosive Ordnance Disposal (EOD)
    - 248 Medical Company
    - 138 Chemical Company
- **78 Troop Command (78TC)**
  - 122 Regional Training Institute (RTI)
  - 116 Army Band
  - 124 Mobile Public Affairs Detachment
  - 161 History Detachment
  - 1962 Contracting Team
  - 139 Chaplain Detachment
  - 1078 Trial Defense
  - 93 Finance Company
- **1048 Survey Design Team**

2.1.3.3 Relocations and Future Installation Organizations and Functions

- **78 AVN TC relocated to CNGC in 2010**
- **GAARNG Headquarters and HQ Division (HHD) relocated to CNGC in Dec 2011**
- **Georgia Joint Forces Headquarters (GA-JFHQ) relocated to CNGC in Dec 2011**
- **Recruiting and Retention Detachment (R&R Det) relocated to CNGC in Dec 2011**
- **116th Army Band relocated to CNGC in Dec 2011**
- **78 TC relocated from CNGC in 2014**
- **210 RSG relocated to CNGC in 2014**
- **GA Medical Detachment (Med Det) relocated in July 2015**

The future of the installation will be as the JFHQ and RTI for the State. Aviation mission will not change. Currently there are no planned unit departures or arrivals at CNGC.
Figure 2.3. Clay NGC Organization
2.2 Composite Constraints

2.2.1 Introduction

The Composite Constraints section provides an assessment of the installation’s current situation and a foundation for future development planning. The installation’s unique features are analyzed to understand how they constrain development or offer opportunities prior to the planning phase.

2.2.2 Facilities and Infrastructure

The first impediment to development is what is already developed, which includes existing facilities and infrastructure. Figure 2.4, Existing Facilities at Clay National Guard Center, shows the site plan of the installation. Most of the land at CNGC is already developed with facilities inherited from NAS Atlanta and with the newly-constructed JFHQ. While a small amount of open land exists, many new development opportunities would require demolition of existing structures.

Knowing that a facility exists and is taking up a footprint is one factor, but to make informed decisions about future use, it is important to understand the condition of specific facilities. To that end, a Facility Condition Assessment (FCA) was conducted in 2013 of 31 facilities comprising 509,450 SF on CNGC. The data from the FCA is integrated with August 2015 ISR data to generate Figure 2.5, CNGC Overall Facility Conditions, which shows the conditions on a map. Four different levels of a facility’s condition were assessed (Minor Deficiencies; Some Facility Deficiencies; Significant Facility Deficiencies; Facilities Deficiencies Present Significant Obstacles).

Several conclusions can be drawn by analyzing the data in Figure 2.5. The majority of the facilities (to include pavements and utilities) at CNGC have significant deficiencies. Typically, the condition problems impacting most facilities include rain water drainage, poor slab on grade, poor wall finishes, and roof issues.

Using this information will be critical in developing a long range plan for CNGC. If demolition is required for future space, facilities that are in poor condition and which will require substantial funding to rehabilitate are candidates for demolition.

Building 64, the language lab is in good condition. Most facilities at CNGC have an ISR rating which shows significant facility deficiencies, such as Building 3.
Figure 2.4. Existing Facilities at Clay National Guard Center
Figure 2.5. Facility Conditions at Clay National Guard Center
2.2.3 Natural Resources

Figure 2.6, *Natural Constraints*, illustrates the topography which is typically not a limiting factor at CNGC for the opportunities for development.

2.2.3.1 Vegetation and Habitat Areas

The installation covers a total of 107 acres with some wooded area along the northern side of CNGC. Woodlands are primarily pine forests and mixed pine hardwood forests. Tree coverage within the boundary is limited to the northwest portion around the gym.

Dobbins ARB, including CNGC, serves as a refuge for plants and animals that are being excluded from surrounding habitats due to increasing urbanization in Cobb County. Birds are the most prevalent wildlife. Typical species include: Starling, House Sparrow, Common Grackle, American Robin, Mockingbird, Mourning Dove, Common Crow, Blue Jay, and the Common Pigeon.

Mammals include the Gray Squirrel, Eastern Chipmunk, Eastern Cottontail, Opossum, House Mouse and the Norway Rat. Reptiles and amphibians include the Black Rat Snake, Northern Black Racer, American Toad, Bullfrog and the Eastern Box Turtle.

2.2.3.2 Topography and Slope

The topography at CNGC is generally gently rolling land but with some steep slopes on the northern side toward the airfield. (See Figure 2.6, *Natural Constraints*.) Elevations range from a low of 1,040 feet above mean sea level (MSL) to 1,105 feet above MSL.

Hydrology and Drainage

No onsite wetlands are located on CNGC. Onsite surface water generally drains toward the east, in the direction of Big Lake. Offsite lands to the north and south of the site also appear to drain towards Big Lake and associated wetlands. Surface water that enters the lake eventually drains into an unnamed tributary. This tributary eventually flows to Rottenwood Creek, which flows southeastward towards the Chattahoochee River.

According to FEMA Flood Insurance Rate Map (FIRM) Community Panel 13067C, no portion of the site is located within any 100- or 500-year floodplains.

An Environmental Baseline Study published on 15 June 2012 reported evidence of substantial and problematic soil erosion along landscaped grass areas between Buildings 555 and 553.

2.2.3.3 Soils

According to the Dobbins ARB General Plan (June 2010), a complete report of soil types in and around the installation is included in the Soil Survey of Cobb County, Georgia (December 1973), conducted by the Soil Conservation Service of the United States Department of Agriculture (USDA). The soils in the portion of the cantonment occupied by CNGC all fall within the Urban Land classification.

The Urban Land classification typically indicates that the area has a superficial layer of soil which varies in thickness from a few centimeters to several meters. The soil has been modified by cutting, filling, and shaping. Soil is classified as gently to strongly sloping, well-drained with red or predominantly yellowish-brown clayey subsoil. Typically this overlies unweathered granitic gneiss rock. There are significant variations in rock type, thickness, hardness and permeability and soil type within short lateral distances. These conditions restrict geologic interpretations regarding depth to solid rock and groundwater, as well as determining the direction of groundwater movement.
Figure 2.6. Natural Constraints
2.2.3.4 Climate

CNGC is close to the humid subtropical belt. Winters are typically mild, summers are hot and humid. January averages 42.7°F (5.9°C) while high temperatures in July average 89°F (31.7°C), but can exceed 100°F (38°C). Precipitation is plentiful, annual average rainfall is 50.2 inches (1,280mm). Heavy thunderstorms, frequently accompanied by high winds occur mostly in the summer. Ice storms are not uncommon during the winter.

2.2.4 Cultural/Archeological Resources

No intact, significant archaeological deposits exist at CNGC, according to the following references.

- GAARNG CFMO-ENV-C Memorandum for Ms. Dania Aponte, Feb 01, 2011
- Statewide Archaeological Site Assessment for the Georgia Army National Guard, 2008
- Dobbins ARB General Plan, June 2010

These references recommend no additional archaeological survey and procedures for unexpected discoveries should be followed.

2.2.5 Environmental Considerations

An Environmental Baseline Study (EBS) of the Base was published on 15 June 2012. The EBS looked at a 25-acre portion of Dobbins ARB. Most of the site (21.5 acres) was occupied by the GAARNG. The remainder of the site was 3.5 acres that could be requested by the GAARNG in the future. It was referred to as the Potential Lease Expansion Area (PLEA).

Two Recognized Environmental Conditions (RECs), within the meaning of ASTM Standard E 1527-05 (ASTM 2005b), areas were discovered on CNGC. ASTM E 1527-05 defines a REC as “the presence of likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structure on the property or into the ground, ground water, or surface water of the property.” REC-1 is associated with the wash rack and the oil/water separator (OWS) south of Building 554. The EBS recommended that the GAARNG conduct a geophysical survey using ground-penetrating radar at the location of the potential waste oil underground storage tank (UST) and/or OWS observed onsite near Building 554. The EBS also recommended that the drain at the former vehicle wash rack be capped or filled. Finally, it recommended that soils at the OWS outfall location be analyzed for semi-volatile organic compounds (SVOCs) if the wash rack has been used since 2001.

REC-2 is associated with an aviation gas (AVGAS) sludge burial site. The site received a No Further Remedial Action Planned (NFRAP) designation, the EBS said that “additional investigation may be warranted in the future if changes in site conditions or site usage occur.”

2.2.5.1 Solid Waste

No solid waste landfills, incinerators, or transfer stations are located on CNGC. At least three inactive landfills are located on Dobbins ARB. However, these landfills are located more than one mile southeast of the site and are not anticipated to impact the site.

Solid waste is disposed of in compliance with state regulations.

2.2.5.2 Recycling

Used petroleum, oil and lubricants (POLs) are generated at Building 555. These materials are stored onsite in a storage shed equipped with secondary containment and are picked up for recycling. Aviation fuels are also reclaimed and reused. As a result, little or no waste fuel is generated.
2.2.5.3 Hazardous Material and Waste Management

The EBS reported that “the generation of hazardous waste at the Site is minimal and its transportation and disposal is managed by Dobbins ARB.” The CNGC is part of the Dobbins ARB, which is registered as a Resource Conservation and Recovery Act (RCRA) Large Quantity Generator (LQG). Future handling and disposition of hazardous materials (HAZMAT) will operate in compliance with State and Federal regulations.

2.2.6 Operational Constraints

2.2.6.1 Airfield Constraints

Airfield clearance criteria are some of the most important constraints operating at any air base. Dobbins ARB supports an Air Force regulated airfield, which must comply with Unified Facilities Criteria (UFC) 3-260-01, *Airfield and Heliport Planning and Design*. All airfield surfaces and clear areas must adhere to the criteria as defined in this manual or obtain a waiver for the continued operation of the airfield. These criteria govern the location and height of structures near the airfield to reduce obstructions to flight operations.

**Airspace Imaginary Surfaces**

The airfield is protected by several imaginary surfaces surrounding the runway and the approach-departure surfaces. These imaginary surfaces include the object-free area, primary surface/lateral clearance, transitional surface, runway-end CZs, and two Accident Potential Zones (APZ) on either end of the runway. The following sections define the terminology used to describe the airspace imaginary surfaces.

**Approach-Departure Surfaces.** Development is constrained by approach-departure and transitional surfaces. Approach-departure surfaces are three-dimensional, imaginary surfaces that begin 200 ft beyond the end of the runway and slope upward directly beyond, following the runway centerline, at a slope of 50:1.

**Obstacle-Free Zone.** The airspace above the inner-approach surface, inner-transitional surfaces, and landing surface, along with the part of the strip bounded by these surfaces, is known as the obstacle-free zone (OFZ). The OFZ must not be penetrated by any fixed obstacle other than a low mass, frangible-mounted one that is required for air-navigational purposes.

**Runway Lateral Clearance Distance (Primary Surface).** The Primary Surface at Dobbins ARB was originally designed at 750 ft on either side of the runway centerline, and is, therefore, utilized for the maintenance of existing areas and structures. For any future construction, UFC 3-260-01, *Airfield and Heliport Planning and Design* indicates that the required width for the lateral clearance line is 1,000 ft on either side of the runway centerline. No structure should be located above ground level within this lateral clearance area unless it is a permissible deviation or directly supports flight operations.

**Transitional Surfaces.** Transitional surfaces extend laterally away from the sides of the primary surface, rising at a rate of 1 vertical foot per 7 horizontal ft, until reaching a height of 150 ft and horizontal distance of 1,050 ft.

**Clear Zones (CZs).** The CZ is an area 3,000 ft long and 3,000 ft wide extending off both ends of each runway. It is desirable that the Base acquires any tract of land that falls within this designated area, in accordance with Air Force policy. The CZ has the highest accident potential of the three zones. Any new construction in this area is not permissible without a waiver.

**Accident Potential Zone (APZ) I.** The APZ begins at the end of each CZ and extends 3,000 ft wide and 5,000 ft along the axis of the runway. Land use compatible with APZ I is limited to light industrial,
manufacturing, transportation, communications utilities, wholesale trade, open space, and agricultural use. Uses that concentrate people in small areas are considered unacceptable.

**Accident Potential Zone II.** APZ II is 3,000 ft long and extends 7,000 ft along the runway centerline, beginning at the end of APZ I. Recommended land uses within APZ II include all of those listed for APZ I, as well as low-density residential, service, and retail trade. Uses or activities that create high population densities are not considered compatible.

**Taxiway Clearances.** Obstructions or obstacles are also prohibited within the CZs associated with taxiways, taxilanes, and parked aircraft. Development within the airfield is restricted to required structures, such as airfield lighting and navigational aids. According to Air Force airfield safety clearance requirements for a Class B runway, with certain exceptions, obstructions are prohibited within 200 ft of aircraft taxiways and within 125 ft of aircraft apron boundary markings.

**Apron Clearance.** The clearance from the parking apron boundary marking is an area surrounding Air Force aircraft parking aprons and taxiways designated to protect the aircraft from accidental damage. This distance is established according to UFC 3-260-01, Airfield and Heliport Planning and Design, Table 6.1, for fixed-wing aprons. The clearance distance varies, since it is based on the wingspan of the most demanding aircraft that will use the apron, or the design aircraft. This area is to be free from all fixed or mobile obstructions.

**Building Restriction Line.** A building restriction line (BRL) has been established at Dobbins ARB generally to accommodate older facilities that violate current airspace standards. It is not a tool to allow new construction to be placed in a way that would violate existing airspace standards.

Certain operational facilities are exempt from this setback, including aircraft maintenance hangars and passenger terminals located on Dobbins ARB. However, these facilities must not be closer than the typical wing clearances established for taxiing aircraft. The apron clearance can be adjusted by establishing an effective concrete pavement (ECP) line if buildings intercede into the clear area. In these cases, a line is drawn to represent where the usable portion of the concrete ends.

No apron clearance violations are associated with the current parking layout. However, the transient ramp should have a wingtip restriction line rather than a no-build apron clearance line, since there are no defined parking spaces on that ramp. This clearance should be reevaluated when the CNGC-based aircraft move from Dobbins ARB to CNGC facilities.

As shown in Figure 2.7, Airfield Constraints, imaginary surfaces at Dobbins ARB include the primary surface (solid blue box), which surrounds the runway, a CZ at each end of the runway (red box), the transitional surface (solid green area) measured from the edge of the primary surface, and two APZs extending out both ends of the runway (orange and yellow boxes).

Buildings 312 and 352 are located with easy access to the aircraft apron.
Figure 2.7. Airfield Constraints
2.2.6.2 Explosive Safety Zones
There are no current or future munitions or other explosive storage at CNGC that require separation distances.

2.2.6.3 Electromagnetic Radiation Safety Zones
There are no current or planned sites with transmitting capabilities at CNGC that require a safety zone.

2.2.6.4 Antenna Look-Angles
There are no current or future antennae that need fields of view at CNGC.

2.2.6.5 Antiterrorism/Force Protection
Antiterrorism/Force Protection (AT/FP) criteria have become an essential part of the land use planning process. Incorporating AT/FP measures during the planning process will reduce the need to do so during facility design ensuring a higher degree of safety and lower costs. Unified Facilities Criteria (UFC) 4-010-01 DoD Minimum Antiterrorism Standards for Buildings quantifies and illustrates standoff distances to be used in site.

Until the 2012 update of the UFC, AT/FP standoff criteria were primarily based on the number of personnel inside a building. The last change to the criteria continued to include personnel as a factor, but also factored in the construction type of a facility into the standoff equation. In essence, four variables need to be determined to ascertain the required standoff for facilities. Table 2.2, Table B-1, UFC 4-010-01, provides baseline information about three of the variables (controlled perimeter, occupancy, and load bearing or non-load bearing walls). With this table, the planner is directed to Table 2.3, Table B-2, UFC 4-010-01, to determine the ultimate standoff based on the fourth variable, construction type. This information is also provided graphically in Figure 2.8, Conventional Construction Standoff Distance – Load Bearing Walls and Figure 2.9, Conventional Construction Standoff Distance Non-Load Bearing Walls. To provide an example, a Primary Gathering Building located at CNGC that is built with reinforced concrete would need to be set back from roads and parking lots by 66 feet to its load bearing walls without a controlled perimeter. The same facility would need to have a 16 foot standoff from a parking lot if it was within a controlled perimeter. A prime example for CNGC is the JFHQ facility in which the parking or other construction can now be up to 16 feet of the facility.

CNGC is within the controlled perimeter of Dobbins ARB and operates one manned access control point (ACP) at CNGC in addition to entries elsewhere at Dobbins not controlled by CNGC. The installation is also adjacent to a Lockheed-Martin Corporation compound collocated at Dobbins ARB with a controlled perimeter and entry. The installation is generally separated from the surrounding community by a railroad right-of-way except for a small pocket of light industrial businesses near the CNGC ACP.

Future development will have limited opportunity to incorporate land use planning strategies, such as consolidating high risk land uses or considering adjacent land use. Greater attention will be paid to site design, facility site, area development and circulation planning measures such as:

- **Assessing relationships of roads to a facility**: new facilities should be sited away from main thoroughfares, vehicle access should be controlled, parking should be located correctly, building entry points, access roads and drive-up/drop-off areas should be minimized.

- **Locating facilities relative to base perimeter**: to ensure adequate distance between perimeter fence and developed area.

- **Increasing distances between facilities to avoid collateral damage**: distance (between facilities and circulation) is the most effective tool to provide protection of structures and to function as a clear zone free of visual obstructions.

- **Considering orientation of buildings**: deny clear line of sight for new inhabited buildings, ensure that the main entrance to the building does not face an installation perimeter.
### Table 2.2. Building Standoff Distances Table B-1, UFC 4-010-01

<table>
<thead>
<tr>
<th>Conventional Construction Standoff Distance (CCSD) to:</th>
<th>Building Category</th>
<th>Applicable Level of Protection</th>
<th>Conventional Construction Standoff Distance</th>
<th>Minimum Standoff Distance</th>
<th>Applicable Explosive Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Load Bearing Walls ((a))</td>
<td>Non-Load Bearing Walls ((b))</td>
<td></td>
</tr>
<tr>
<td>1. Controlled Perimeter</td>
<td>Billeting and High Occupancy Family Housing</td>
<td>Low</td>
<td>A</td>
<td>C</td>
<td>18 ft (5.5 m)</td>
</tr>
<tr>
<td>2. Parking and Roadways without a Controlled Perimeter</td>
<td>Primary Gathering Building</td>
<td>Low</td>
<td>A</td>
<td>C</td>
<td>18 ft (5.5 m)</td>
</tr>
<tr>
<td></td>
<td>Inhabited Building</td>
<td>Very Low</td>
<td>B</td>
<td>D</td>
<td>18 ft (5.5 m)</td>
</tr>
<tr>
<td>3. Parking and Roadways within a Controlled Perimeter</td>
<td>Billeting and High Occupancy Family Housing</td>
<td>Low</td>
<td>E</td>
<td>G</td>
<td>12 ft (3.6 m)</td>
</tr>
<tr>
<td></td>
<td>Primary Gathering Building</td>
<td>Low</td>
<td>E</td>
<td>G</td>
<td>12 ft (3.6 m)</td>
</tr>
<tr>
<td></td>
<td>Inhabited Building</td>
<td>Very Low</td>
<td>F</td>
<td>H</td>
<td>12 ft (3.6 m)</td>
</tr>
<tr>
<td>4. Trash Containers</td>
<td>Billeting and High Occupancy Family Housing</td>
<td>Low</td>
<td>E</td>
<td>G</td>
<td>12 ft (3.6 m)</td>
</tr>
<tr>
<td></td>
<td>Primary Gathering Building</td>
<td>Low</td>
<td>E</td>
<td>G</td>
<td>12 ft (3.6 m)</td>
</tr>
<tr>
<td></td>
<td>Inhabited Building</td>
<td>Very Low</td>
<td>F</td>
<td>H</td>
<td>12 ft (3.6 m)</td>
</tr>
</tbody>
</table>

1. See Table B-2 for standoff distances.
2. For new construction, standoff distances less than those in this column are not allowed for new buildings regardless of analysis or hardening. For existing buildings that are constructed / retrofitted to provide the required level of protection, standoffs less than those in this column are allowed, but discouraged.
3. See UFC 4-010-02, for the specific explosive weights (pounds / kg of TNT) associated with designations I and II. UFC 4-010-02 is For Official Use Only (FOUO).

### Table 2.3. Table B-2, UFC 4-010-01

<table>
<thead>
<tr>
<th>Wall Type</th>
<th>Column Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Wood Studs – Brick Veneer</td>
<td>105 ft (32 m)</td>
</tr>
<tr>
<td>Wood Studs – EIFS</td>
<td>207 ft (63 m)</td>
</tr>
<tr>
<td>Metal Studs – Brick Veneer</td>
<td>187 ft (57 m)</td>
</tr>
<tr>
<td>Metal Studs – EIFS</td>
<td>361 ft (110 m)</td>
</tr>
<tr>
<td>Metal Panels</td>
<td>n/a (1)</td>
</tr>
<tr>
<td>Girts</td>
<td>n/a (1)</td>
</tr>
<tr>
<td>Reinforced Concrete</td>
<td>66 ft (20 m)</td>
</tr>
<tr>
<td>Unreinforced Masonry(3)</td>
<td>262 ft (80 m)</td>
</tr>
<tr>
<td>Reinforced Masonry</td>
<td>86 ft (26 m)</td>
</tr>
<tr>
<td>European Block</td>
<td>164 ft (50 m)</td>
</tr>
</tbody>
</table>

1. Metal panels and girts are not considered primary structural members.
2. Non-load bearing steel studs are assumed to have slip-track connections. Closer distances may be obtained through non-standard detailing and analysis.
3. Only used for analysis of existing structures. Not allowed for new construction.
Figure 2.8. Conventional Construction Standoff Distance – Load Bearing Walls
Figure 2.9. Conventional Construction Standoff Distance – Non-Load Bearing Walls
2.2.6.6 Noise Impacts

Both the short and long term health impacts of exposure to noise has been well documented by the Occupational Safety and Health Administration (OSHA) and the World Health Organization (WHO). In addition to causing permanent hearing loss, health impacts also include headaches, fatigue, and irritability.

Due to the noise generation characteristics of airports, noise is a critical issue at airfields, both in terms of its impacts to the on-base population, as well as its impacts on the adjacent off-base population. Both the Federal Aviation Administration and the Air Force have developed policies relating to noise. As a general rule, airfields are required to map their noise impacts through Air Installation Compatible Use Zone (AICUZ) studies. Three noise levels impacting CNGC (70 Db, 75 Db, and 80 Db) are shown in Figure 2.10, Built and Environment Constraints.

Department of Defense Instruction (DoDI) 4165.57, Air Installations Compatible Use Zones (AICUZ) provides guidance about what uses are permissible in specific noise contours. Generally, residential uses are not recommended for location in areas that exceed 65 Db. Administrative uses can be located in areas with noise levels between 65-69 Db. They are permitted in areas with noise levels of 70-79 Db, but only with proper sound attenuation. CNGC facilities lie between 70 Db and 80 Db noise zones. They are not recommended for areas whose noise levels exceed 80 Db. For the compatibility of a specific land use, please consult Table 2, Land Use Compatibility in Noise Zones, of DoDI 4165.57.

2.2.7 Composite Constraints

Figure 2.10, Built and Environmental Constraints, illustrates the combined limitations of AT/FP standoffs from the installation boundary, the transitional surface and other imaginary surfaces associated with the runway, wooded areas, and other areas of the Base. The developable areas at CNGC are extremely limited due to these constraints.

With the change in AT/FP standoffs there are greater opportunities for developing other uses at CNGC.

There are various opportunities to assess utility functionality and distribution throughout the installation.
Figure 2.10. Built and Environmental Constraints
SECTION 2– EXISTING CONDITIONS

2.3 Infrastructure – Transportation and Utilities

2.3.1 Transportation Network

2.3.1.1 Vehicular Circulation

The road network inside the installation centers around two axial roads: the primary Atlantic Avenue running generally north-south and eventually wrapping around the northern end of the runway to Dobbins and secondary Halsey Avenue running generally east-west. Short tertiary connecting roads and drives provide access to parking areas and facilities not directly along the primary roads. (See Figure 2.11, Existing Transportation Network.)

2.3.1.2 Main Gate

Vehicular and pedestrian access is currently from Richardson Road. The manned ACP provides access to CNGC via Atlantic Ave.

2.3.1.3 Other gates

CNGC can be accessed via several gates other than the main ACP:

- An emergency gate is located west-southwest of the main ACP adjacent to the JFHQ and is reached via Dixie Ave.
- A gate is located at the boundary separating CNGC and the Lockheed-Martin compound at the eastern end of Halsey Ave. and is controlled by Lockheed-Martin.
- Dobbins ARB access control points, including the main ACP at Cobb Parkway.

2.3.1.4 Pedestrian Circulation

CNGC has some formal pedestrian paths along the major axis of the installation. Connections are not always continuous and with limited directions guiding visitors. Given the limited extents of the installation promoting walking is a currently untapped resource that should be carefully considered in the future plan.

2.3.1.5 Parking

A GOV parking area (motor pool) with approximately 65 spaces is located at the eastern end of CNGC at Building 33. Overall GOV parking is limited. Numerous Private Vehicle (POV) parking lots are located throughout the installation either supporting an individual facility or located centrally between clusters of buildings. The location of the POV lots is not always adjacent to the facilities people are visiting, but given the compact nature of the installation most parking is within a 5 minute walk of the high occupancy facilities.

2.3.2 Signage, Lighting and Site Elements

A static display is located at the intersection past the main gate and is visible for incoming and outgoing traffic. Lighting in the parking lots ensures visibility in low light conditions. Site elements such as bicycle racks or recreational shelters are not present at CNGC. Similarly to the pedestrian paths, the site would greatly benefit from additional site elements such as signage, outdoor benches and gathering spots which would underscore the importance of the JFHQ in the state hierarchy.
Figure 2.11. Existing Transportation Network
2.3.3 Utilities

The utilities at CNGC are a subset of larger systems that serve Dobbins ARB. In general, all systems have adequate capacity to meet current and future requirements. Location of utility lines and infrastructure is shown in Figure 2.12, Existing Utilities.

2.3.3.1 Electrical

The Georgia Power Company provides electrical power to the Base through its Lockheed Martin 60-MW substation located on the north side of Air Force Plant 6. A backup power supply is provided through a 46-kV feeder, which enters Air force Plant 6 from the northwest along Atlanta Road. The substation is designed to only serve the Base; no off-Base uses are supplied electricity by this substation.

According to the Georgia Power Company, peak electrical demand occurs in the summer months, when total daily demand surpasses 37 megawatt-hours. Based on the current capacity of the substation, 38 percent of the substation’s capacity is in surplus during the peak periods.

The system has been privatized with the Georgia Power Company. The system consists of overhead and underground lines. The entire overhead system was upgraded as part of the privatization effort.

The Base also maintains a series of diesel-fuel-powered emergency generators, ranging in capacity from 5 to 365 kW. These generators are located at various buildings around the Base where power outages would seriously undermine the ability of the Base to complete its mission.

2.3.3.2 Water

The Cobb-County-Marietta Water Authority (CCMWA) has two surface water treatment facilities (the Quarles Treatment Plant and the Wyckoff Treatment Plant) which provide chlorination, fluoridation, filtration, and coagulation to raw water. Collectively, these two facilities can provide a maximum of 136 million gallons per day (mgpd) of water to residential, commercial, and industrial customers in Cobb County. The capacities of the treatment and storage facilities are more than adequate to satisfy the average daily demand of 70 to 80 mgpd.

All potable water to CGNC is supplied by CCMWA. It is supplied through a looped supply system. Dobbins ARB Civil Engineering meters tenant water consumption on the Base and bills them directly for their use. There have no reports of water quality issues. Capacity also is not a problem. In general, CGNC is well-served by the existing water system.

2.3.3.3 Wastewater

Wastewater generated at Dobbins ARB is delivered to a tertiary sewage treatment plant located on the southwestern side of the Base, to the west of CGNC. The wastewater treatment plant is operated by Air Force Plant 6 and has a maximum treatment capacity of 7 mgpd. Historically, average daily flow is 1.1 mgpd.

Once treated, the effluent is discharged via a gravity system to Nickajack Creek, which is located about 8 miles southwest of the Base.

The Base’s wastewater collection system is Government owned and operated and consists mostly of vitrified clay pipes ranging in size from 6 to 10 inches in diameter, with some new collection lines constructed of reinforced concrete pipe. Sewage is transported to the treatment plant via a network of six lift stations. Recent upgrades to the system have been associated with the construction of new buildings, in which case polyvinyl chloride (PVC) piping was used in place of vitrified clay or reinforced concrete piping.

The wastewater collection, treatment and disposal system is adequate to support all existing and anticipate requirements from CGNC.
Figure 2.12. Existing Utilities
2.3.3.4 Stormwater
The stormwater drainage system at Dobbins ARB/CNGC consists of collecting inlets, headwalls, and circular and elliptical culverts that guide stormwater through a combination of paved and unpaved ditches and natural drainage ways. The piping system for the Base is constructed of metal, vitrified clay, concrete, and reinforced concrete. The wide range of construction materials is indicative of system upgrades and extension projects that have occurred over time.

The watersheds serving the surface drainage system are divided between the Rottenwood Creek watershed in the northern portion of the Base and the Poorhouse Creek watershed in the southern portion of the Base.

Dobbins ARB receives significant runoff from Air Force Plant 6 (both the northern and southern parts) and CGNC due to the amount of paved land in these areas. Open water drainage exits the Base at seven locations along the eastern edge of the Base. Four outfalls located at the southern end of the Base discharge to Poorhouse Creek. One outfalls discharges into the City of Marietta’s municipal storm sewer. The remaining outfalls discharge to Rottenwood Creek.

The U.S. Air Force does not require the Base to monitor its stormwater for the volume of particulate matter discharged at the outfalls. The State of Georgia does require the Base to sample specific outfalls after the first use of aircraft de-icer each winter season. Typically, samples are collected at outfalls 003 and 005, which drain from the airfield parking apron and industrial areas. The Base does have a stormwater pollution prevention plan.

2.3.3.5 Communications
There are no reported issues with communications infrastructure for existing or future conditions.

2.3.3.6 Fuel
There is currently no fuel storage or distribution system at CNGC. The UH-60 Black Hawk and C-23 Sherpa aircraft assigned to CNGC utilize fueling systems located at Dobbins ARB.

2.3.3.7 Natural Gas
The Atlanta Gas Light Company provides natural gas to Dobbins ARB through a 6-inch steel gas main, which enters the Base near the Main Gate. It is then distributed via a limited-access, looped main system.

The system consists of a network of underground gas mains ranging from 3 to 8 inches in diameter. Expansion of the system would require enlarging these primary mains to handle any increase in natural gas flow.

The Atlanta Gas Light Company can meet virtually any requirement for natural gas demanded by the Base. However, during periods of particularly cold weather, the demand for natural gas is extremely high, which force the curtailment of natural gas to industrial customers, including those facilities at Dobbins ARB that are provided interruptible service.

There are some steel lines from the 1950s which need to be replaced, but are in working condition. The remaining system has no reported problems or issues.
2.4 Existing Land Use

A land use plan is one of the primary tools for guiding future growth. It is used to ensure compatibility and manage potential conflict between existing and new facilities. The following describes the existing land use at the installation which is shown in Figure 2.13, Existing Land Use. CNGC has a mix of land uses, mainly supporting troop and training functions with limited community and billeting support. Airfield operations and maintenance functions are consolidated along the airfield at the eastern end of the base, light industrial functions are located on the southern side of Halsey Avenue toward the perimeter east of the ACP, administrative and training facilities are located across Halsey Avenue from the light industrial facilities, and the western half of the base is comprised primarily of community facilities including living quarters, the gymnasium, training and administration, and the new JFHQ.

2.4.1 Airfield

CNGC is located adjacent to the airfield at Dobbins ARB, which is utilized by the Air Force and Lockheed-Martin for a range of aircraft including C-130, C-5, F-22, and others. The aviation and aviation support facilities are located on the east side of the installation, appropriately adjacent and proximate to the airfield.

2.4.2 Professional/Institutional

The new Joint Forces Headquarters is categorized in the professional institutional land use and is effectively adjacent to the other professional and institutional functions and support functions on the installation such as the chapel and RTI.

2.4.3 Open Space

Much of the site is developed with former Navy facilities now utilized by CNGC. A few pockets of undeveloped land exist at CNGC, but much of this land is constrained to development by topography.

2.4.4 Water

There are no natural water features at CNGC.

2.4.5 Land Use Compatibility

Land use at CNGC is generally arranged in a logical manner. There are no significant land use compatibility concerns at CNGC, and it is recommended that the overall land use plan be maintained with future development plans.
Figure 2.13. Existing Land Use
SECTION 3

Long Range Development Planning

3.1 Planning Assumptions

The vision, drivers and requirements provide the basis for the SDP with the following assumptions:

- **Units and Functions**
  - No new Modified Table of Organization and Equipment (MTOE) units with rolling stock will be planned to station at CNGC.
  - Combined Support Maintenance Shop (CSMS)/ FMS and United States Property and Fiscal Office (USPFO) functions will not relocate to CNGC in their current configuration.
  - 78 TC (HHD) has relocated to Charlie Brown Airport in FY15.
  - MEDCOM has relocated from Oglethorpe to CNGC (driver for this relocation is the consolidation of personnel support at CNGC closer to better serve National Guard personnel).
  - To the maximum extent possible, the SDP should not constrain potential future expansion of the aviation mission at CNGC.

- **Facilities**
  - No new facilities will be acquired or purchased at CNGC (i.e. Lockheed Martin campus).
  - Billeting currently has a low occupancy rate.

- **Other**
  - Facilitate RTI and Aviation growth/improved training readiness with positioning of training aids, simulators, or additional force multipliers.
  - Enhance Language Training Center capabilities and leverage any Joint Military Intelligence (MI) opportunities.
  - Recognition of the need to remain engaged with other Services on/in vicinity of Dobbins, as well as the community.
CHAPTER 3– LONG RANGE DEVELOPMENT PLANNING

3.2  Site Analysis

3.2.1  Siting Considerations

The expansion limits and potential of the site are best represented with a diagram showing potential new development areas rather than a typical functional area diagram. Figure 3.1, Sites for Future Projects for Clay NGC, shows areas to be considered for horizontal and vertical construction. Should a greater requirement for facilities be identified in the future, a more detailed look can be made to further consider for infill development at CNGC. Opportunities for infill development exist throughout the installation to include adding in height to current facilities.

Area 1 is one of the largest infill development areas at CNGC.
Area 2 shows parking expansions and Low Impact Development (LID) projects.
Area 3 is adjacent to the fitness center and can be developed for an outdoor trail in the wooded area.
Area 4 is a future development for parking expansion.
Area 5 is also a future development for potential parking of a motor pool.

The future site development plan of the CNGC retains most of the current site conditions which typically are functional and addresses the TAG Vision of safety, sustainability and pre-eminent facilities. Details are included in Table 3.1, CNGC Special Siting Considerations. Conditions described in Table 3.1 in green cells support the siting consideration well while those in yellow cells provide more limited support.

3.2.2  Requirements

Facility requirements have been analyzed based on:
- Unit interviews
- Analysis of existing facility use
- Coordination with CFMO
- Guidance from NG PAM 415-12 (Draft), Army National Guard Facilities Allowances, dated 25 January 2015.

Requirements are the allowances adjusted by the master planner to reflect the actual facility needs by category and user.

In 2015, CNGC was home to the units listed in paragraph 2.1.3. Current relocation efforts throughout the State and, in particular, in the Atlanta metropolitan area, provide opportunities to reconfigure future uses of sites and facilities. The future vision for CNGC will be to support the siting of the current units and their associated needs.

Requirements for these functions have been calculated and are shown in Table 3.2, Clay National Guard Center Requirements, and on a map in Figure 3.1, Sites for Future Projects for Clay NGC. Also included in Table 3.2 is the existing space each function occupies at their current location. Previous requirements analysis have shown that parking requirements at CNGC meet authorizations for POV and the location of the parking lots is within a five minute walking distance of the facilities where staff are assigned. GOV parking is very limited at CNGC.
Figure 3.1. Sites for Future Projects at Clay National Guard Center
Table 3.1. CNGC Special Siting Considerations

<table>
<thead>
<tr>
<th>Description</th>
<th>Existing Conditions</th>
<th>Future Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visibility – Public Presence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The GAARNG is supported in the local community.</td>
<td>CNGC receives limited reactions from the surrounding community.</td>
<td>No change from the existing condition is anticipated.</td>
</tr>
<tr>
<td><strong>Compatibility of adjacent and proximate land uses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGNC is almost completely encircled by Dobbins ARB. A small section (about ¼ mile) fronts the Atlanta Road SE, a major 5-lane arterial.</td>
<td>Current on- and off-site land uses are compatible with existing functions.</td>
<td>No change from the existing condition is anticipated.</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demographics for the State of Georgia are projected to grow and support the National Guard vision of 20,000 Soldiers by 2020.</td>
<td>The development of the site supports the future vision.</td>
<td></td>
</tr>
<tr>
<td><strong>TAG Vision and Emphasis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modernization</td>
<td>Existing facilities are vintage 1950s – 1970s structures with dated safety measures and support facilities.</td>
<td>The renovation and reutilization of facilities supports the goal of modernization and pre-eminent facilities.</td>
</tr>
<tr>
<td>Pre-eminent Facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sustainability - an opportunity for the GAARNG to be a leader in multiple Green or Sustainability initiatives by insuring that this complex is designed for energy efficiency, water conservation, etc.</td>
<td>Existing facilities at CNGC have a variety of sustainable initiatives.</td>
<td>Future development will be able to include sustainability and green initiatives.</td>
</tr>
<tr>
<td>Safety - an opportunity for Soldiers to work in a safer environment through modern facilities with state of the art lighting, Heating, Ventilation and Air Conditioning (HVAC), ventilation, cranes and lifting devices versus the current 1950’s vintage sites</td>
<td>CNGC does not have any critical safety deficiencies.</td>
<td>Any future facilities will be designed to ensure a safe working environment for Soldiers.</td>
</tr>
<tr>
<td><strong>Community Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No direct requests have been made from the community.</td>
<td>Current ties with the community are functional.</td>
<td>Future site development will promote a more positive community image.</td>
</tr>
<tr>
<td><strong>Optimal placement of facilities on a given site</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No new facilities have been included in the SDP.</td>
<td>Facilities are well sited for AT/FP</td>
<td>All future facilities will be designed compatibly with AT/FP requirements.</td>
</tr>
<tr>
<td><strong>Arraying buildings to improve traffic flow and providing screening of on-site activities from adjacent properties</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not required.</td>
<td>Traffic flow is currently functional.</td>
<td>There are no future negative impacts to traffic flow.</td>
</tr>
<tr>
<td><strong>Ability to expand site in the future</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited opportunities for development are available</td>
<td>Currently limited opportunities are available following some environmental actions</td>
<td>Future expansion opportunities are limited.</td>
</tr>
<tr>
<td><strong>Regionalization or consolidation efforts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGNC is well positioned to support the Atlanta region.</td>
<td>Regional consolidation efforts for the GAARNG are ongoing.</td>
<td>Future development plan will support regionalization and consolidation.</td>
</tr>
<tr>
<td><strong>Potential for joint use</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being on an Air Reserve Base, on the location of a former Naval Air Station, CGNC is ideally located to provide, or take advantage of, joint use of facilities</td>
<td>Currently, some joint use facilities and functions are being examined.</td>
<td>The future development plan has potential for joint use and to support other States.</td>
</tr>
</tbody>
</table>

Source: NG PAM 210-20, Army National Guard Military Construction Program Execution, pg.21
3.2.3 Functional Area Requirements

Some functions listed in Table 3.2, such as Aviation, require an independent area or campus in order to ensure mission integrity and functional requirements. Other functions currently operate in various, often non-contiguous, facilities throughout the installation. With the maximum extent of the installation being less than a mile and the majority of the buildings in a half mile radius, it is feasible, although not optimal, for units to be dispersed, allowing the Base to make best use of the current building inventory without significant capital investment projects.

With a different funding environment, CNGC has excellent opportunities to accommodate expansion when done with infill development rather than a separate campus per function. Given the natural and built constraints of the site, the inherited and minimally adaptable building stock, and the mostly dispersed functions, this approach is recommended.

3.2.3.1 Facilities Condition

CNGC has mostly an older building stock, many of the industrial facilities are retrofitted to benefit current uses. As funding is available a number of improvements to facilities should be considered. Appendix D, Facility Conditions Analysis, details the facility conditions and provides recommendations for prioritized upgrades (for most current conditions assessment compare Appendix D to ISR). Further analysis is recommended to assess efficient use of space and functionality improvements.

3.2.3.2 Expansion Capability Assessment

Environmental factors, natural and cultural resources, and facility infrastructure have direct bearing on an installation’s ability to develop and support assigned and future missions. At this stage of planning, the assessment is that the installation can likely sustain the SDP objectives.

CNGC has some key constraints and conditions that characterize opportunities for future development such as: proximity to the airfield, some steep topography on northwest quadrant of the site.

Analyzing the constraints and conditions against the number, type and approximate area requirements of the future functions planned for CNGC, the expansion capability of the site to meet the objectives of this SDP is excellent. As planning concepts are executed they will enhance the character and quality of the installation at a fair cost.

3.3 Conceptual Development Alternatives

During the planning process, two future site concepts were developed and evaluated during the concept development session. The concept development session facilitated a collaborative decision making forum among the current users and key stakeholders at CNGC to finalize the preferred elements of the future SDP.

3.3.1 COA 1

This course of action, illustrated in Figure 3.3, COA 1, has the benefit of a low dollar amount with no new construction. Aviation units could use Buildings 81 and 142 for Drill Hall. JFHQ and Garrison requirements would be housed in Buildings 2 (portion of facility following relocation of non MI units), 54 (half) and 63.

3.3.2 COA 2

This course of action, illustrated in Figure 3.4, COA 2, looks at efficient use of space and maximizing authorizations. Any additional aviation units would require new construction. JFHQ and Garrison requirements would be housed in Buildings 2 (part following relocation of non MI units), 3 and 63.
Table 3.2. Clay National Guard Center Requirements

*Source: Allowances are based on data in RPLANS, NG PAM 415-12 and relevant information from user interviews*

<table>
<thead>
<tr>
<th>User/ Function</th>
<th>Existing Facility Area (SF)</th>
<th>Authorized Facility Use Area (SF)</th>
<th>% Authorized</th>
</tr>
</thead>
<tbody>
<tr>
<td>78 AVN</td>
<td>187,201</td>
<td>364,442</td>
<td>51</td>
</tr>
<tr>
<td>These facilities are consolidated in the east portion of the installation and include buildings 1, 33, 300, 312, 350, 352</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Training Institute</td>
<td>194,262</td>
<td>234,299</td>
<td>83</td>
</tr>
<tr>
<td>The RTI compound includes classrooms, a dining facility, recreational buildings and billeting, including buildings 2, 53, 54, 60, 63, 64, 71, 84, 353, 400, 409A, 409B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>201 RSG</td>
<td>49,865</td>
<td>50,982</td>
<td>89</td>
</tr>
<tr>
<td>Buildings 3, 30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICAL</td>
<td>29,686</td>
<td>51,927</td>
<td>57</td>
</tr>
<tr>
<td>Buildings 81, 142, 408</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JFHQ</td>
<td>237,065</td>
<td>271,164</td>
<td>87</td>
</tr>
<tr>
<td>Building 7, 7A, 32, 78, 201, 214, 403, 447, 450, 463</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFMO</td>
<td>39,521</td>
<td>26,450</td>
<td>149</td>
</tr>
<tr>
<td>Buildings 10, 18, 25, 30, 47, 47A, 70, 77, 79, 251, 263</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garrison</td>
<td>15,188</td>
<td>15,188</td>
<td>100</td>
</tr>
<tr>
<td>Buildings 8, 24, 25, 34, 200, 354, 407</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FMS</td>
<td>20,917</td>
<td>28,912</td>
<td>72</td>
</tr>
<tr>
<td>Buildings 19, 38, 39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>773,705</td>
<td>1,028,176</td>
<td>74</td>
</tr>
</tbody>
</table>

Note: Allowances are based on RPLANS.

The focus points of the COAs included upgrade of existing facilities, increased use of low occupancy space, improvement of quality of life facilities and sustainability.
CHAPTER 3– LONG RANGE DEVELOPMENT PLANNING

Figure 3.3. COA 1

1. Relocate RTI (non-MI) from Bldg 2 to Bldg 3
2. AVN to occupy Bldgs 81 & 142 (Drill Hall)
3. AVN Dining Facility in Bldg 60
4. JFHQ Garrison and CFMC to occupy Bldgs 2 (half), 75 (half) and 63
5. MECOM to relocate SRP 8, in-processing to Bldg 54 (half)
6. Winder AASF relocation to use existing AVN facilities and Bldg 20

PROs:
- No new construction
- Low $ amount

CONs:
- More space required for Winder AASF

Figure 3.3. COA 1
CHAPTER 3 – LONG RANGE DEVELOPMENT PLANNING

Figure 3.4

COA 2

3-8 CLAY NATIONAL GUARD CENTER SITE DEVELOPMENT PLAN FINAL SITE DEVELOPMENT PLAN, SEPTEMBER 2015
SECTION 4

Future Site Development Plan

4.1 Selected Site Development Alternative

During the Concept Development Session (Appendix H, Concept Development Session Minutes and Presentation) refinements were made to the proposed concepts to develop the final consensually based selected alternative for future development of the site. The selected plan, Figure 4.1, Capital Improvements Plan, maximizes facility reuse to accommodate unit needs and allocates sites for future horizontal and vertical facilities.

The project list for CNGC is summarized in Table 4.1, CNGC Capital Improvement Program, and the location of the projects are shown in Figure 4.1, Capital Improvements Plan. The available space at CNGC constrains development of any new function mainly to infill development.

The MEDCOM relocation provided an opportunity to repurpose the former Shoppette and the bowling alley (Buildings 81 and 142) to support medical readiness. MEDCOM HQ has been housed in the adjacent administrative facility, Building 408, making this an ideal location. Additional parking to accommodate patients or visitors to the medical center can be located southwest of these facilities and linked by pedestrian paths with signage.

The unmet billeting requirements of the JFHQ and Garrison will be met with the renovation of Buildings 53, 54, and 63. Building 53 serves as dormitory and Minuteman Cafe. Building 54 is a dormitory where a major renovation is proposed to convert nine units configured in a “quad” design to 34 single units plus one quad. Building 63 is also a dormitory and can readily be converted to hotel style billets. Given the “1 + 1” design standard of Building 409 A and B, when combined with Building 63, the authorization for billeting will be satisfied for the foreseeable future of this type of unit.

POV parking remains a concern of many users at CNGC. Parking studies have shown that CNGC parking capacity meets the requirements. The concerns with the parking are mostly due to the location of the available parking not being ideally adjacent at surge times to key facilities. Given the compact nature of CNGC an average walk from the larger existing parking spaces to the most populated facilities is on average five minutes or less. One way to enhance the potential of walkability and existing assets is by making users aware of locations and distances with well-placed signage and pedestrian or cycle paths. The use of bicycles at CNGC is low, this is mainly due to the location and access to the installation. A bicycle sharing program at CNGC might alleviate some of the demands on parking. Potential for expanding parking is mainly on the west side of the installation around the JFHQ. Some recommended installation-wide improvements to improve the user experience include:

- Street signage, wayfinding and landscaping to highlight walking opportunities and facilities and give character to the importance of this headquarters installation.
- Site Improvements along the main axis of the installation to include placing the electrical distribution underground, and stormwater features such as bioswales along the sidewalks and in the parking lots.
- Site improvements in the northwest quadrant of the installation around the JFHQ and the gym in order to create a sense of place and give the users active and passive recreation opportunities.

Following the Facility Condition Assessment of Hangar 1 (August 2015), a number of critical projects were identified to avoid further deterioration of the facility on architectural and mechanical elements.

The east side of the installation houses prevalently light industrial and maintenance type functions performed by the installation. Current configuration, access and facilities are functional.

### Table 4.1. CNGC Capital Improvements Program

<table>
<thead>
<tr>
<th>Priority</th>
<th>FY Phase</th>
<th>Project Description</th>
<th>Scope</th>
<th>Funding Source</th>
<th>Cost Estimate ($000)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15</td>
<td>Renovate Buildings 81 and 142 for MEDCOM and SRP</td>
<td>9,631 SF 15,199 SF</td>
<td>SRM</td>
<td>NA</td>
<td>Project completed in 2015</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>Renovate Building 408 for MEDCOM</td>
<td>5,038 SF</td>
<td>SRM</td>
<td>NA</td>
<td>Project completed in 2015</td>
</tr>
<tr>
<td>3</td>
<td>16</td>
<td>Renovate Billeting - Building 63</td>
<td>21,528 SF</td>
<td>SRM</td>
<td>2,576</td>
<td>Renovate to hotel standard</td>
</tr>
<tr>
<td>4</td>
<td>17</td>
<td>Renovate Billeting - Building 53</td>
<td>20,760 SF</td>
<td>SRM</td>
<td>2,219</td>
<td>Renovate to hotel standard</td>
</tr>
<tr>
<td>5</td>
<td>18</td>
<td>Renovate Billeting - Building 54</td>
<td>19,685 SF</td>
<td>SRM</td>
<td>3,076</td>
<td>Convert quad layout to single units</td>
</tr>
<tr>
<td>6</td>
<td>18</td>
<td>Upgrade Electrical Distribution System</td>
<td>1 LS</td>
<td>SRM</td>
<td>476</td>
<td>Bury overhead lines</td>
</tr>
<tr>
<td>7</td>
<td>18</td>
<td>Site Improvements: Pedestrian Network and Landscaping</td>
<td>1 LS</td>
<td>SRM</td>
<td>646</td>
<td>Complete paths, widen sidewalks, add benches, signage, improve crosswalks</td>
</tr>
<tr>
<td>8</td>
<td>18</td>
<td>Site Improvements: Stormwater Management Improvements</td>
<td>900 LF</td>
<td>SRM</td>
<td>50</td>
<td>Reduce runoff with low impact design</td>
</tr>
<tr>
<td>9</td>
<td>19</td>
<td>Construct Parking Lot – adjacent to JFHQ</td>
<td>1 LS</td>
<td>SRM</td>
<td>1,257</td>
<td>Construct parking lot to include appropriate landscaping for proximity to JFHQ facility</td>
</tr>
<tr>
<td>10</td>
<td>19</td>
<td>Construct Parking Lot – west of Project 9</td>
<td>1 LS</td>
<td>SRM</td>
<td>1,349</td>
<td>Construct parking lot to include sustainability and landscaping elements</td>
</tr>
<tr>
<td>11</td>
<td>15</td>
<td>Renovate Building 403 for JFHQ and Garrison</td>
<td>4,200 SF</td>
<td>SRM</td>
<td>NA</td>
<td>Project completed in 2015 for Retention and Recruiting</td>
</tr>
<tr>
<td>12</td>
<td>20</td>
<td>Repair Hangar 1 (Building 1)</td>
<td>117,443 SF</td>
<td>SRM</td>
<td>3,659</td>
<td>Repairs to Hangar 1 to address failing systems and major deficiencies</td>
</tr>
<tr>
<td>13</td>
<td>21</td>
<td>Repair Hangar 3 (Building 300)</td>
<td>55,635 SF</td>
<td>SRM</td>
<td>1,800</td>
<td>Repairs to Hangar 3 to address failing systems and major deficiencies</td>
</tr>
<tr>
<td>14</td>
<td>18</td>
<td>Renovate Building 350</td>
<td>11,979 SF</td>
<td>SRM</td>
<td>450</td>
<td>Repairs to Building 350 to address failing systems and major deficiencies</td>
</tr>
<tr>
<td>15</td>
<td>17</td>
<td>Future Parking (Gravel)</td>
<td>10,213 SY</td>
<td>SRM</td>
<td>1,000</td>
<td>Create gravel parking west of Building 312</td>
</tr>
</tbody>
</table>
Figure 4.1. Capital Improvements Plan
4.1.1 Future Constraints and Opportunities

4.1.1.1 Natural
CNGC is a well-established and very built up environment and there will be no changes to the constraints as shown in Chapter 2. The future projects in the plan are primarily repairs and renovations of existing structures. No planned projects will clear vegetated areas, impact waterways or disturb habitats. The proposed future pavement would increase impervious surfaces, but low impact development will be incorporated into the design. The EA will determine any need for storm water mitigation.

4.1.1.2 Environmental
The EA will also determine the impacts of proposed additional parking around the JFHQ facility.

4.1.2 Future Infrastructure

4.1.2.1 Transportation
There are no planned changes to the road network or access points as the existing users will remain the same and the current network is safe and meets capacity requirements. Figure 4.2, Future Transportation, illustrates the potential parking areas and the locations of the improved pedestrian network.

4.1.2.2 Utilities
Given the current assessment, all utility systems will supply the required quantities and loads. Distribution systems are functional for capacity and reach throughout the installation. Some existing facilities need to plan for local upgrades to electrical systems. Communication and electrical systems will need validation for the repurposed facilities. No future utility systems are recommended to support the plan.

4.1.3 Future Land Use
The land use associations support the planning process by ensuring that siting of new functions and facilities is compatible with existing and planned adjacent facilities and functions.

Land Use at CNGC is neatly divided between the east and west side of the installation as shown in Figure 4.3, Future Land Use. The uses on the west side are institutional, community and troop. The uses on the east side are predominantly maintenance, airfield and industrial with a good buffer of institutional facilities in the central part of the installation. land use changes in the plan show the possible expansion of the industrial footprint in the east with horizontal construction along the airfield that could support GOV or aircraft parking and the expansion of the community area in the new MEDCOM facilities on the west side. All future land use is compatible with typical adjacencies.

Site improvements will encourage walking, create a sense of place, and help instill pride in the installation.
Figure 4.2. Future Transportation
Figure 4.3. Future Land Use
4.2 Implementation and Phasing Plan

To ensure a smooth construction process and continuity of operations an implementation plan is essential to monitor progress and domino effects of different projects. The planned facility projects will require minimal swing space due to the vacant and low use facilities. This allows the projects to be implemented in priority order based on need and can be completed in any order with no operational impacts.

4.3 Sustainability

Sustainability aligns economic, environmental, and social criteria to deliver a solution that maximizes positive impacts and minimizes negative impacts to our planet, people, and the economy. Alternative energies, increased efficiency, and reuse of materials are among the growing number of tools used in sustainable development for the reduction of environmental degradation and the conservation of resources. Sustainable principles help save money, protect the public health and resources and build positive connections between the local community and the military. Basic principles of sustainability are focused on: reduced dependence on non-renewable resources, environmentally harmful materials and practices and protection of environmental assets while maintaining short-term viability.

The DoD is committed to complying with environmental and energy statutes, regulations and Executive Orders (EOs). Some initiatives such as the Army’s Net Zero program goes beyond compliance aiming for installations which consume only as much energy and water as they produce and eliminate sending any waste to landfills.

The first step in achieving sustainability goals are efficiency and conservation measures. These have the lowest start-up costs and result in immediate significant savings. An aggressive efficiency and conservation approach for energy and water, reduction in waste production, and reduction in overall facility inventory are first steps that can have a great impact.

Other conservation measures focus on maximizing efficiency in use and improving systems integrity through initiatives such as smart metering and auditing. Awareness, education and community involvement are crucial elements to ensuring buy-in and continued success of the initiatives. These approaches can reduce resource consumption and costs by up to 30%.

The other approaches toward sustainability are projects which focus on renewal and repurposing. Given the significant capital investment typically required to initiate these projects, it is best to size them after resource demand has been reduced through efficiency and conservation.

Sustainability projects to be examined for CNGC include:

- Electrical conservation: high efficiency fixtures, metering, installing sensors, day lighting
- Electrical renewal: solar roofing (already installed on Hangars 1 and 3) and geothermal
- Water conservation measures and storm water management: vegetated roofs, bioretention and infiltration, rainwater harvesting, permeable paving, low-flow fixtures. Water is a resource of particular interest to CNGC. A study from the National Resource Defense Council (NRDC) identified the Atlanta metropolitan region as one of the most at-risk cities in the United States as it relates to water supply. The NRDC classification was based on the region’s projected water demand as a share of available precipitation, groundwater use as a share of projected available precipitation, susceptibility to drought, projected increase in freshwater withdrawals, and the projected increase in summer water deficit.
- Waste reduction, reuse and repurposing, recycling centers, composting
- Site selection and high efficiency buildings
SECTION 4 – FUTURE SITE DEVELOPMENT PLAN

• User education/awareness
• Sustainable procurement
• Local community and surrounding area coordination; larger scale initiatives and partnering. Contracting, alternative financing and partnering are key in large scale renewable projects.

It is recommended that the typical three phase process as shown in Figure 4.4, Sustainability Process, be followed to define additional opportunities:

• Phase 1 - Plan: CNGC Sustainability Plan, provides a planning level overview of the installation’s options for participating in mandated and beyond compliance sustainability initiatives in the context of Command Goals and Objectives
• Phase 2 - Design: Conduct Studies, Assessments and Audits to Finalize an Engineering Sustainability Implementation Plan aligned with Command Goals and Objectives
• Phase 3 – Implement, Evaluate and Sustain: Implementation and Monitoring of Sustainability Programs

Figure 4.4. Sustainability Process

Clay National Guard Center has transformed from a Naval Air Station into the home of the Georgia National Guard Joint Force Headquarters and also supports aviation, medical, and training missions.
4.4 Conclusion

The Clay National Guard Center Site Development Plan fulfills the vision of a modern, pre-eminent headquarters complex to support the State vision and mission as currently defined.

The central location of the CNGC in the more populated northern half of the State facilitates transportation to and from other GAARNG sites in the State. The compact nature of the site promotes walkable initiatives. Other sustainable projects such as: Leadership in Energy and Environmental Design (LEED) certified facilities, low impact development and metered utility use show positive development toward increased sustainability goals.

The modernization of a number of facilities will support the headquarter mission with attractive, efficient facilities that provide a significant improvement over current conditions. An example of the impact the future projects can have surrounding the JFHQ is shown in Figure 4.5, Illustrative Plan of the JFHQ Area. The cost impacts of the plan are phased and aligned with the current budget scenarios to ensure feasibility of execution. Overall the installation is well built up but there is potential to house additional facilities through infill development. Some facilities are nearing the end of their life cycle; a number of these should be considered for demolition rather than repurposing or renovation.

The figure shows a rendition of potential improvements around the JFHQ that can lead to more sustainable maintenance of open areas and to increased opportunities for recreation and socialization.
Figure 4.5 Illustrative Plan of the JFHQ Area
## APPENDIX A

### Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASF</td>
<td>Army Aviation Support Facility</td>
</tr>
<tr>
<td>ACM</td>
<td>Asbestos Containing Material</td>
</tr>
<tr>
<td>ACP</td>
<td>Access Control Point</td>
</tr>
<tr>
<td>AICUZ</td>
<td>Air Installation Compatibility Use Zone</td>
</tr>
<tr>
<td>APZ</td>
<td>Accident Potential Zone</td>
</tr>
<tr>
<td>ARB</td>
<td>Air Reserve Base</td>
</tr>
<tr>
<td>ASTM</td>
<td>American Society for Testing and Materials</td>
</tr>
<tr>
<td>ATC</td>
<td>Aviation Troop Command</td>
</tr>
<tr>
<td>AT/FP</td>
<td>Antiterrorism/Force Protection</td>
</tr>
<tr>
<td>AVGAS</td>
<td>Aviation Gas</td>
</tr>
<tr>
<td>BRL</td>
<td>Building Restriction Line</td>
</tr>
<tr>
<td>CBRNE</td>
<td>Chemical, Biological, Radiological and Nuclear</td>
</tr>
<tr>
<td>CCMWA</td>
<td>Cobb County-Marietta Water Authority</td>
</tr>
<tr>
<td>CERFP</td>
<td>CBRNE Enhanced Response Force Package</td>
</tr>
<tr>
<td>CFMO</td>
<td>Construction and Facilities Management Office</td>
</tr>
<tr>
<td>CNGC</td>
<td>Lucius D. Clay National Guard Center</td>
</tr>
<tr>
<td>COL</td>
<td>Colonel</td>
</tr>
<tr>
<td>CSMS</td>
<td>Combined Support Maintenance Shop</td>
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<tr>
<td>CST</td>
<td>Civil Support Team</td>
</tr>
<tr>
<td>CZ</td>
<td>Clear Zone</td>
</tr>
<tr>
<td>Db</td>
<td>Decibel</td>
</tr>
<tr>
<td>DET</td>
<td>Detachment</td>
</tr>
<tr>
<td>DoD</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>DoDI</td>
<td>Department of Defense Instruction</td>
</tr>
<tr>
<td>EA</td>
<td>Environmental Assessment</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>EBS</td>
<td>Environmental Baseline Study</td>
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<td>ECP</td>
<td>Effective Concrete Pavement</td>
</tr>
<tr>
<td>ECP</td>
<td>Entry Control Point</td>
</tr>
<tr>
<td>EO</td>
<td>Executive Orders</td>
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<tr>
<td>EOD</td>
<td>Explosive Ordnance Disposal</td>
</tr>
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<td>FCA</td>
<td>Facility Condition Assessment</td>
</tr>
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<td>FIRM</td>
<td>Flood Insurance Rate Map</td>
</tr>
<tr>
<td>FMS</td>
<td>Field Maintenance Shop</td>
</tr>
<tr>
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<td>Georgia Army National Guard</td>
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<td>GIS</td>
<td>Geographic Information Systems</td>
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<tr>
<td>GISDRR</td>
<td>GIS Data Requirements Review</td>
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<td>GOV</td>
<td>Government Vehicle</td>
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<td>GSAB</td>
<td>General Support Aviation Battalion</td>
</tr>
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<td>HAZMAT</td>
<td>Hazardous Materials</td>
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<td>HHD</td>
<td>Headquarters and HQ Division</td>
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<td>HRF</td>
<td>Homeland Response Force</td>
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<tr>
<td>HVAC</td>
<td>Heating, Ventilation and Air Conditioning</td>
</tr>
<tr>
<td>JFHQ</td>
<td>Joint Forces Headquarters</td>
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<tr>
<td>MGPD</td>
<td>Million gallons per day</td>
</tr>
<tr>
<td>LQG</td>
<td>Large Quantity Generator</td>
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<tr>
<td>LEED</td>
<td>Leadership in Energy and Environmental Design</td>
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<td>MEDCOM</td>
<td>Medical Command</td>
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<tr>
<td>MGPD</td>
<td>Million Gallons per Day</td>
</tr>
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<td>MI</td>
<td>Military Intelligence</td>
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<tr>
<td>MILCON</td>
<td>Military Construction</td>
</tr>
<tr>
<td>MSL</td>
<td>Mean Sea Level</td>
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<tr>
<td>MTOE</td>
<td>Modified Table of Organization and Equipment</td>
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<td>NAS</td>
<td>Naval Air Station</td>
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<tr>
<td>NFRAP</td>
<td>No Further Remedial Action Planned</td>
</tr>
<tr>
<td>OFZ</td>
<td>Obstacle-Free Zone</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>OWS</td>
<td>Oil/Water Separator</td>
</tr>
<tr>
<td>PVC</td>
<td>Polyvinyl Chloride</td>
</tr>
<tr>
<td>POL</td>
<td>Petroleum Oil and Lubricants</td>
</tr>
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<td>PLEA</td>
<td>Potential Lease Expansion Area</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>POV</td>
<td>Private Vehicle</td>
</tr>
<tr>
<td>PPDC</td>
<td>Project Planning Document Charrette</td>
</tr>
<tr>
<td>R&amp;R</td>
<td>Recruiting and Retention</td>
</tr>
<tr>
<td>RAC</td>
<td>Risk Assessment Code</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
</tr>
<tr>
<td>REC</td>
<td>Recognized Environmental Condition</td>
</tr>
<tr>
<td>RSG</td>
<td>Regional Support Group</td>
</tr>
<tr>
<td>RTI</td>
<td>Regional Training Institute</td>
</tr>
<tr>
<td>SDP</td>
<td>Site Development Plan</td>
</tr>
<tr>
<td>SRM</td>
<td>Sustainment, Restoration and Modernization</td>
</tr>
<tr>
<td>SRP</td>
<td>Soldier Readiness Program</td>
</tr>
<tr>
<td>SVOC</td>
<td>Semi-Volatile Organic Compound</td>
</tr>
<tr>
<td>TC</td>
<td>Troop Command</td>
</tr>
<tr>
<td>US</td>
<td>Underground Storage Tank</td>
</tr>
<tr>
<td>UFC</td>
<td>Unified Facilities Criteria</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>USPFO</td>
<td>United States Property and Fiscal Office</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
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</table>
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APPENDIX B

References

Army Regulation (AR) 210-20, Real Property Development Planning for Army Installations, 16 May 2004

National Guard Regulation (NGR) 210-20, Real Property Development Planning for the Army National Guard, dated 20 July 2004

National Guard Pamphlet (NG Pam) 210-20, Real Property Development Planning for Army National Guard, 5 October 2007

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APPENDIX C

Acknowledgements

Creating a Site Development Plan (SDP) for a military installation is a complex undertaking. The outstanding participation on the part of everyone listed below greatly facilitated the preparation of this SDP. Because of their support for and knowledge and insight of the Clay National Guard Center the installation will have the necessary guidelines and documentation for future development.

GAARNG
COL Blackstock, Tom JFHQ-GA G3
COL Carden
COL Dent, Alan JFHQ-GA DOL
COL Edge, Jeff USPFO
COL Romine CNGC Deputy Garrison Commander
COL Vanamburgh Chief of Staff
LTC Boyer
LTC Deaton
LTC Fryman
LTC Head
LTC Utlaut, Rob JFHQ-GA CFMO
MAJ Banister
MAJ Ellington
MAJ Henson
MAJ Polk
MAJ Tucker
MAJ Worden
CAPT Bell
CIV Doyle, Michelle JFHQ-GA CFMO
CIV Curtis, Dylan
CIV Eastman, Joel
CIV Nichols, Felicia JFHQ-GA CFMO
CH2M HILL
Frank Smith AICP, LEED ND
Emma Del Vento LEED GA
Mike Graham AICP, LEED GA
James Kahn
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APPENDIX D

Facility Conditions Analysis

A detailed installation-wide Level 1 and 2 facility conditions analysis was submitted September 2012. The Level 1 assessment contains general information about the facility including total space, current replacement value, and useful life expectancy along with current photographs. The Level 2 condition assessment of the exterior and interior of the facility is based on the ASTM Uniformat II Classification for Building Elements (E1557-97). Recommendations for further action if needed to bring the facility up to standard are provided in Level 2.

The chart on page D-2 provides a summary overview by block of the facility conditions. The numbers in the colored cells show exceptions to the overall condition.
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Appendix D
Facility Conditions Assessment

A facility conditions assessment is a process of examining a building with the intent to determine value and estimate sustainment, repair, and maintenance costs. A Level 1 assessment contains general information about the facility including total space, current replacement value, and useful life expectancy with current photographs. A Level 2 condition assessment of the exterior and interior of the facility is based on the ASTM Uniformat II Classification for Building Elements (E1557-97). Level 3 assessments are more encompassing. They include an examination of a building’s utility systems as well. This results in a by-line cost estimate as compared to a by-building cost estimate in a Level 1 assessment.

A Level 3 assessment was performed at Clay National Guard Center in February 2012. Thirty buildings were included. These buildings are listed in the summary tables that follow and include a total of 556,000 square feet and $75 million in value.

Table D-1 provides a summary of the cost estimates for the 30 buildings assessed. The table includes the following for each building:

- Real Property Inventory (RPI) total replacement value. These values were provided by the Facilities Manager. Replacement value indicates the cost of providing a complete and useable facility that serves the same purpose as the original facility. It includes standard construction, but does not include design, special foundations, equipment, personal property, or SIOH.

- Unified Facilities Criteria (UFC) costs. UFC 3-701-01, March 2011 with Change 1, June 2011, is the DoD Facilities Pricing Guide for FY 2011. It includes costs per square foot for various facility types. The costs shown in this column reflect the $/SF multiplied by the total building SF. These costs include typical building equipment and furnishings included in MILCON funding. It does not include enhanced ATFP, SIOH, design costs, taxes, or sustainable design features. The UFC includes standard deviation ranges from 4-44% depending on facility type.

- Building Total. The total costs shown for each building are sums of the individual line-item costs for each building’s subsystems using RS Means Square Foot Costs. The details of these line-item costs, as well as how the costs were generated, are outlined in the text following Table D-1.

It is important to note that these three columns should be used as a comparative reference only within the column header. RPI and UFC costs are intended for macro-level planning. The RPI value for Building 1 should be compared to other RPI values, the UFC costs compared to other building UFC costs, and Building Totals compared to each other. Because the RPI values, UFC costs, and Building Totals are derived by different means and include different cost elements, they should not be used in comparison of one another (i.e. the Building Total for Building 1 should not be compared to the UFC of RPI total for Building 1).
### Table D-1
**Level 3 Assessment Cost Summary**

<table>
<thead>
<tr>
<th>Facility #</th>
<th>RPA Name</th>
<th>RPUID</th>
<th>RPI Tot. Repl. Value</th>
<th>UFC Costs (based on SF)</th>
<th>Building Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>00001</td>
<td>Bldg 1 - Hangar</td>
<td>80539</td>
<td>$24,708,487.00</td>
<td>$25,720,017.00</td>
<td>$15,057,865.22</td>
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<tr>
<td>00002</td>
<td>Bldg 2 - RTI</td>
<td>78409</td>
<td>$5,614,354.00</td>
<td>$6,466,200.00</td>
<td>$5,624,948.47</td>
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<tr>
<td>00003</td>
<td>Bldg 3 - Trp Cmd</td>
<td>81149</td>
<td>$2,699,084.00</td>
<td>$2,983,500.00</td>
<td>$2,661,869.92</td>
</tr>
<tr>
<td>00008</td>
<td>Bldg 8 - ACP</td>
<td>70421</td>
<td>$360,301.00</td>
<td>$430,365.00</td>
<td>$433,994.40</td>
</tr>
<tr>
<td>00030</td>
<td>Bldg 30 - Storage</td>
<td>81150</td>
<td>$4,501,985.00</td>
<td>$3,781,960.00</td>
<td>$3,502,353.76</td>
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<tr>
<td>00038</td>
<td>Bldg 38 - FMS</td>
<td>74160</td>
<td>$1,371,952.00</td>
<td>$1,527,750.00</td>
<td>$1,232,437.52</td>
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<tr>
<td>00039</td>
<td>Bldg 39 - FMS Shed</td>
<td>74161</td>
<td>$2,135,541.00</td>
<td>$1,041,930.00</td>
<td>$750,135.28</td>
</tr>
<tr>
<td>00047</td>
<td>Bldg 47 - Env Stor</td>
<td>76889</td>
<td>-</td>
<td>$420,160.00</td>
<td>$463,034.45</td>
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<tr>
<td>00053</td>
<td>53 - Club &amp; Barracks</td>
<td>76891</td>
<td>$3,908,620.00</td>
<td>$2,999,680.00</td>
<td>$3,354,909.48</td>
</tr>
<tr>
<td>00054</td>
<td>54 - Barracks</td>
<td>76892</td>
<td>$3,321,305.00</td>
<td>$3,966,510.00</td>
<td>$3,145,184.17</td>
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<tr>
<td>00063</td>
<td>63 - Barracks</td>
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<td>$3,908,620.00</td>
<td>$2,999,680.00</td>
<td>$4,499,783.60</td>
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<td>00064</td>
<td>Bldg 64 - Language Lab</td>
<td>76895</td>
<td>$1,331,185.00</td>
<td>$1,273,740.00</td>
<td>$1,357,980.44</td>
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<td>00070</td>
<td>Bldg 70 - CFMO</td>
<td>73438</td>
<td>$2,312,631.00</td>
<td>$2,603,250.00</td>
<td>$2,192,635.21</td>
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<tr>
<td>00071</td>
<td>Bldg 71 - RTI OCS</td>
<td>73439</td>
<td>$379,107.00</td>
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<td>00077</td>
<td>Bldg 77 - CFMO Shop</td>
<td>70417</td>
<td>$1,482,287.00</td>
<td>$1,842,945.00</td>
<td>$1,298,228.46</td>
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<td>00078</td>
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<td>70418</td>
<td>$911,898.00</td>
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<td>$724,611.31</td>
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<td>00081</td>
<td>Bldg 81 - Shoppette</td>
<td>70422</td>
<td>$1,308,566.00</td>
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<td>00142</td>
<td>Bldg 142 - Para Repair</td>
<td>80543</td>
<td>$3,047,519.00</td>
<td>$3,039,800.00</td>
<td>$1,769,953.20</td>
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<tr>
<td>00214</td>
<td>Bldg 214 - Security</td>
<td>81140</td>
<td>$763,049.00</td>
<td>$971,397.42</td>
<td>$491,750.45</td>
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<tr>
<td>00300</td>
<td>Bldg 300 - Hangar</td>
<td>81151</td>
<td>$10,184,796.00</td>
<td>$11,219,520.85</td>
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<tr>
<td>00312</td>
<td>Bldg 312 - Hangar</td>
<td>74145</td>
<td>$1,069,329.00</td>
<td>$1,100,694.54</td>
<td>$455,671.08</td>
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<tr>
<td>00350</td>
<td>Bldg 350 - A/C Maint</td>
<td>74149</td>
<td>$2,310,067.00</td>
<td>$2,599,562.79</td>
<td>$1,105,044.68</td>
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<tr>
<td>00352</td>
<td>Bldg 352 - Flight Ops</td>
<td>74151</td>
<td>$998,518.00</td>
<td>$718,824.00</td>
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<td>00353</td>
<td>Bldg 353 - RTI SC</td>
<td>74152</td>
<td>$3,063,777.00</td>
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<tr>
<td>00354</td>
<td>Bldg 354 - Storage</td>
<td>74153</td>
<td>$359,394.00</td>
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<td>00400</td>
<td>Bldg 400 - Fitness Ctr</td>
<td>74163</td>
<td>$3,802,653.00</td>
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<td>00403</td>
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<td>74168</td>
<td>$567,023.00</td>
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<tr>
<td>00407</td>
<td>Bldg 407 - RTI HQ</td>
<td>75538</td>
<td>$1,037,295.00</td>
<td>$1,146,600.00</td>
<td>$1,066,126.38</td>
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<td>00408</td>
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<td>75539</td>
<td>$960,487.00</td>
<td>$982,410.00</td>
<td>$988,971.68</td>
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<td>0409A</td>
<td>409A - Barracks</td>
<td>75540</td>
<td>$3,440,095.00</td>
<td>$3,800,508.00</td>
<td>$3,368,750.20</td>
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<td>0409B</td>
<td>409B - Barracks</td>
<td>76873</td>
<td>$3,974,825.00</td>
<td>$4,392,654.00</td>
<td>$3,860,616.60</td>
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</table>

The Building Totals shown in the far right-hand column are a sum of a detailed Level 3 analysis for each building. This analysis includes an examination of 47 systems for each.
facility. This data is maintained in an electronic workbook and owned by the CFMO. **Figure D-1** below shows a snapshot of this data.

**Figure D-1: Snapshot of Level 3 Data**

<table>
<thead>
<tr>
<th>Facility #</th>
<th>RPA Name</th>
<th>RPUID</th>
<th>Level 3</th>
<th>Recommendation</th>
<th>Description</th>
<th>Condition</th>
<th>Quantity</th>
<th>Unit of Measure</th>
<th>Rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 S</td>
<td>Back</td>
<td>1234</td>
<td>Elements</td>
<td></td>
<td></td>
<td>Red</td>
<td>5</td>
<td>1000 S</td>
<td>50</td>
<td>5000</td>
</tr>
<tr>
<td>2000 S</td>
<td>Front</td>
<td>5678</td>
<td>Elements</td>
<td></td>
<td></td>
<td>Amber</td>
<td>3</td>
<td>2000 S</td>
<td>100</td>
<td>300</td>
</tr>
</tbody>
</table>

From left to right, the columns are:

- **Facility #**- facility number taken from the RPI
- **RPA Name**- real property assessment (RPA) name taken from the RPI
- **RPUID**- real property unique identifier taken from the RPI
- **Level 3**: Individual Elements- the 47 elements used by facility take-offs in RS Means
- **Recommendation**- a placeholder column for unique notes about a particular element. For example, an entry may be “windows broken” or “replace damaged panels”
- **Description**- includes the details according to the element for this building
- **Condition**- primary condition codes are Red, Amber, and Green. Amber/Red and Green/Amber are also used. These are defined below.
- **Quantity**- the amount based on the unit of measure
- **Unit of Measure**- this is typically the buildings footprint as defined in the RPI, but includes other units where appropriate
- **Rate**- cost per unit of measure
- **Cost**- total cost calculated as rate multiplied by quantity
- **Basis**- the cost basis is *RS Means Square Foot Costs*. The RS Means online tool, www.meanscostworks.com, is also used to cost unique items not specified in the RS Means manual.
- **Line/Page Number**- the page number corresponds to the facility type rates identified in *RS Means Square Foot Costs*. Line numbers correspond to the rates taken from www.meanscostworks.com.

The *RS Means Square Foot Costs* book is the primary source of this cost data. The individual line items, such as the example shown in **Figure D-1**, are based on standard industry rates. RS Means value for civilian hangars vary significantly from UFC rates. Thus, the USACE parametric cost estimating system, PACES, is used to standardize the rates for the CNGC.
hangars. Because the RS Means rates are from 2010, an escalation factor of 1.0292 was applied. An area cost factor of 0.89 was applied to normalize the costs for Atlanta, Georgia. These variables can be adjusted in the workbook; the workbook contains embedded instructions. The Building Totals shown in Table D-1 include the escalation and area cost factors.

Each of the facility elements were classified on a GREEN, AMBER, RED scale in accordance with Installation Status Report- Infrastructure (ISR-I) standards. The standards vary by element. For example, concrete frame is GREEN if there are no cracks visible, AMBER if cracks cover less than 25% of the frame, and RED if cracks cover more than 25%. Flat roofs, on the other hand, are GREEN, AMBER, or RED based on a point system that considers roof age, cracking, missing deck materials, and evidence of standing water. To standardize GREEN, AMBER, and RED ratings across all elements, the following definitions were used.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREEN</td>
<td>Modernized/replaced/built within the last five years, no issues noted</td>
</tr>
<tr>
<td>GREEN/AMBER</td>
<td>Modernized/replaced/built within the last ten years, no issues noted</td>
</tr>
<tr>
<td>AMBER</td>
<td>Some problems noted, not mission critical</td>
</tr>
<tr>
<td>AMBER/RED</td>
<td>Problems noted, will soon have mission impact</td>
</tr>
<tr>
<td>RED</td>
<td>Imminent impact or safety concern</td>
</tr>
</tbody>
</table>

As elements change over time the workbook should be updated. The tables below show the summary of ratings as of the February 2012 assessments. Table D-2, shows the rating categories for each facility. The far right-hand column, “Weighted Score” assists in ranking the facilities. A higher score indicates a higher priority for SRM. Other factors should also be taken into consideration when prioritizing SRM. Mission critical facilities, such as headquarters administrative space and security facilities, would have a higher priority over those that are not mission critical, such as warehouses.

Table D-2: SRM Plan by Building

<table>
<thead>
<tr>
<th>Facility #</th>
<th>Red</th>
<th>Amber/Red</th>
<th>Amber</th>
<th>Green/Amber</th>
<th>Green</th>
<th>Weighted Score</th>
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<td>6</td>
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<td>4</td>
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</table>
While Table D-2 illustrates an SRM plan by building, Table D-3 illustrates a plan by facility element. These elements correspond to the 47 systems observed during the facility condition assessments. This table shows the priority of building systems to be managed, a helpful tool for contracting work more efficiently.

Table D-3: SRM Plan by System.

<table>
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<tr>
<th>Facility Element</th>
<th>Red</th>
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<th>Amber</th>
<th>Green/Amber</th>
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Clay National Guard Center Site Development Plan
Facility Conditions Assessment

August 23, 2012

Agenda
CNGC Level 3 Facility Conditions Assessment - Presentation
Thursday, 23rd August 2012
0900 - 0955

Presentations
Scope
Level 1, 2 and 3 Assessments
High Level Observations & Recommendations
Q & A
1005 – 1100

Data Updating and Maintenance
Discussion
Evaluation

Presentations

CH2M Hill
- Presentation
  • Ms. Emma Del Vento, Military Planner
  • Mr. Frank Smith, Deputy Military Planning Group Director
- Data Collection and Site Team
  • Mr. Clay Cheek
  • Mr. Rob Coker
  • Mr. Warren Ladbrook
  • Mr. Steve Neuharth
- Data Sheet Development
  • Ms. Emma Del Vento
  • Mr. Rob Coker

Facility Condition Assessment
Scope of Work – What are we doing?
The existing conditions analysis will document the conditions of GAARNG properties.
...helps to prioritize budgets for further in-depth assessments and renovation projects.
Coupled with a building component-based life cycle cost analysis tool, the assessments can give an excellent picture of the immediate and long-term requirements for sustaining facilities.
The A-E shall perform the Levels 1, 2, and 3 existing conditions analysis. If during the Levels 1, 2, and 3 analyses it is determined by the GAARNG that a more detailed physical condition assessment is considered appropriate for a specific facility, such additional effort will require a modification to the Task Order.

Assessment Levels are based on the ASTM Uniformat II Classification for Building Elements (E1557-97) and will be conducted based on this guidance.

Level 3 Assessment:
The Level 3 assessment is similar to the Level 2, except an actual walk-through of the building is conducted, usually by an independent party (non-GAARNG personnel). As with the Level 2 assessment, conditions and costs are reflected on a system by system basis. This is a high-level assessment.

Level 4 Assessment (OPTIONAL):
The Level 4 assessment is a detailed condition assessment performed by a multi-disciplinary team of engineers covering mechanical, electrical, building envelope/architectural and life safety. Additional information necessary to develop design drawings and estimate repair costs is developed through the Level 3 assessment. Specific building deficiencies are identified, corrective actions developed, and cost estimates for implementation developed using a task oriented estimating system such as RS Means Costworks. Each deficiency and corrective action estimate is documented by system, deficiency type and priority, depending on the GAARNG’s needs.

Which Facilities were included in the survey?
31 facilities over 500,000SF surveyed (80% of CNGC except JFHQ)

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<th>BUILDING NO</th>
<th>BUILDING NAME</th>
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TOTAL SQUARE FEET
509450

Level 1 & 2 report
Template (Winder Armory)
Let’s look at the data sheet
- Instructions
- Cost Summary
- Budget by building
- Budget by system
- Suggested Precedence (to be completed)
- Data & Pivot Tables
- RPI
- Examples of Dashboard
- SOW
- Instructions
- Field Survey Data

**Discussion**

**CNGC Initial Analysis**
- Top 5 Bldgs
- Bottom 5 Bldgs
- Worst Systems
  - Rain Water
  - Drainage
  - Slab on Grade
  - Wall Finishes
  - Roof Construction
- Top 5 Space Available
  - Bldg 1, Hangar
  - Bldg 30, HRF
  - Bldg 81, NEX
  - Bldg 350, AC Mx
  - Bldg 408, Admin

**Evaluation Cross Check**
- Have we:
  - Documented the facility conditions
  - Given a picture of requirements for sustaining facilities
  - Advised where Level 4 assessments are recommended
  - Helped prioritize budgets
  - Provided data electronically compatible with the GAARNG designated Computerized Maintenance Management System (CMMS)
Way Forward

- Full Automation for Conditions Assessment
- Building Energy Audits
- Space Use Survey
APPENDIX E

DD FORM 1390/1391

The following pages provide draft documentation for funding of capital improvement projects listed below.

Building 63 Billeting Renovations.
Building 53 Billeting Renovations.
Building 54 Billeting Renovations.
Electrical Distribution System Upgrade.
Site Improvements, Pedestrian Network and Landscaping.
Site Improvements, Stormwater Management Improvements.
Site Improvements, Parking Lot Improvements.
Site Improvements, Additional Parking Lots.
AVN: Hangar 1 maintenance and repair.
## 1. COMPONENT

GAANG

## 2. DATE

TBD

## 3. INSTALLATION AND LOCATION

Clay National Guard Center  
Georgia Army National Guard  
Marietta, Georgia

## 4. PROJECT TITLE

CNGC-Building 63 Billeting Renovations

## 5. PROGRAM ELEMENT

72121

## 6. CATEGORY CODE

72121

## 7. PROJECT NUMBER

72121

## 8. PROJECT COST ($000)

2576

### 9. COST ESTIMATES

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## 10. DESCRIPTION OF PROPOSED CONSTRUCTION:

Repair Building 63 to current standards by replacing interior finishes consisting of flooring and painting, specialty items, HVAC system, plumbing system, electrical power distribution, lighting, fire alarm/MNS, CATV, voice and data systems, and new sprinkler system.

Areas affected by repair will be in compliance with applicable ATFP, Fire Suppression, Accessibility, ASHRAE, and LEED codes and standards as required upon completion of the project.

## 11. REQUIREMENTS:

Repair Building 63 by replacing worn and dated architectural finishes with new interior construction to provide billeting units compliant with current NG standards.

The work includes selective demolition of carpet, base and miscellaneous other finishes and their replacement.

The work includes replacement of HVAC system, plumbing system, electrical power distribution, lighting, fire alarm/MNS, CATV, voice and data systems, and new sprinkler system.

**REQUIREMENT:**

Facility upgrade is necessary to replace existing finishes that deteriorate due to normal wear-and-tear, and to improve energy and safety systems to current codes and standards.

**CURRENT SITUATION:**

Building 63 provides suites consisting of two bed rooms and shared bath room and kitchen. The existing layout resulted from prior renovations and is in accordance with current "1+1" design standards.

Greater energy efficiency is available by replacement of the HVAC system, water heaters and low flow plumbing fixtures.
**IMPACT IF NOT PROVIDED:**
Continued deterioration of interior finishes and appliances. Continued loss of energy efficiency. Continued operation in current state does not comply with goal to improve CGNC quality of life.

**HAZARDOUS MATERIALS:**
None known.

**DESIGN STATUS:**
Full A/E design of renovations is required.

**ECONOMIC ANALYSIS:**
Renovation is the most economical alternative that takes advantage of building structure, utility service and shell, which are fundamentally in good condition.
APPENDIX E – DD FORM 1390/1391

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| 10. DESCRIPTION OF PROPOSED CONSTRUCTION: |
| Repair Building 53 to current standards by replacing partitions, carpentry, doors, windows, interior finishes, specialty items, HVAC system, plumbing system, electrical power distribution, lighting, fire alarm/MNS, CATV, voice and data systems, and new sprinkler system. |
| The officers’s club area of the building is not included in the repairs. |
| Areas affected by repair will be in compliance with applicable ATFP, Fire Suppression, Accessibility, ASHRAE, and LEED codes and standards as required upon completion of the project. |

| 11. REQUIREMENTS: |
| Repair Building 53 by replacing antiquated design, inefficient space utilization with new interior construction to provide billeting units acceptable by current NG standards. |
| The work includes demolition of interior construction of the corridors and existing billeting rooms and baths, but excludes the office area on the first floor. |
| The work includes replacement of interior partitions, carpentry, doors, windows, interior finishes, specialty items, HVAC system, plumbing system, electrical power distribution, lighting, fire alarm/MNS, CATV, voice and data systems, and new sprinkler system. |
| The project will a replace disfunctional layout with a new effective use of space; update bathrooms and all other spaces to meet accessibility standards; improve energy performance by replacing existing light fixtures with high efficiency lighting; improve life savety with sprinkler system and alarms MNS; and replace HVAC equipment with high efficiency systems. |
| REQUIREMENT: Facility upgrade is necessary to accommodate the growing billeting needs of the garrison. |

| CURRENT SITUATION: |
Building 53 provides a suite of rooms for each resident along with minimally sized shower/bath functions. The toilet rooms are not accessible to handicapped individuals. The two-pipe HVAC system limits personal control in individual units. The rooms are not well lit.

Windows and exterior doors do not meet the new ATFP requirements set forth in UFC 4-101-01.

IMPACT IF NOT PROVIDED:
No accommodations for disabled personnel. No ATFP window requirements. Lack of billeting accommodations that fully comply with current standards.

HAZARDOUS MATERIALS:
None known.

DESIGN STATUS:
Full A/E design of renovations is required.

ECONOMIC ANALYSIS:
Renovation is the most economical alternative that takes advantage of building structure, utility service and shell, which are are fundamentally in good condition.
APPENDIX E – DD FORM 1390/1391

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9. COST ESTIMATES

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TOTAL PROJECT COST

| SIOH (5.7%)                                   |     |          |           | 166          |
| TOTAL FUNDED COST                             |     |          |           | 3076         |

10. DESCRIPTION OF PROPOSED CONSTRUCTION:

Repair Building 54 to current standards by replacing partitions, carpentry, doors, windows, interior finishes, specialty items, HVAC system, plumbing system, electrical power distribution, lighting, fire alarm/MNS, CATV, voice and data systems, and new sprinkler system.

The Lease Office is not included in the work.

Areas affected by repair will be in compliance with applicable ATPF, Fire Suppression, Accessibility, ASHRAE, and LEED codes and standards as required upon completion of the project.

11. REQUIREMENTS:

Repair Building 54 by replacing antiquated design, inefficient space utilization with new interior construction to provide billeting units acceptable by current NG standards. Maintain one “Quad” design unit, that easternmost unit on the second floor, but include new finishes to floor, plumbing, HVAC, and electrical.

The work includes selective demolition of parts of an interior load bearing masonry partition and existing entrances as passageways. Selective demolition includes all plumbing fixtures.

The work includes replacement of interior partitions, carpentry, doors, windows, interior finishes, specialty items, HVAC system, plumbing system, electrical power distribution, lighting, fire alarm/MNS, CATV, voice and data systems, and new sprinkler system.

The project will a replace disfunctional layout with a new effective use of space; update bathrooms and all other spaces to meet accessibility standards; improve energy performance by replacing existing light fixtures with high efficiency lighting; improve life savety with sprinkler system and alarms MNS; and replace HVAC equipment with high efficiency systems.

REQUIREMENT:

Facility upgrade is necessary to accommodate the growing billeting needs of the garrison.
CURRENT SITUATION:
Building 54 provides suites of four bed/bath rooms in each unit. Preferred design is for private units consisting of one bed room and bath in each unit with storage. The toilet rooms are not accessible to handicapped individuals. Current renovations are remediating mold on the lower level. The building’s HVAC system consists of floor mounted package terminal air conditioners in each room that utilize chilled water coils and heating hot water coils. The chilled water is provided by one air-cooled chiller. The heating hot water is provided by two natural gas fired boilers. The HVAC system is controlled by manual controls at each unit. The domestic hot water system consists of one natural gas fired boiler connected to a 500-gallon storage tank. The plumbing fixtures are water conserving, low-flow type.

The building has 600A Main Distribution Panel (MDP), 120/208V, 3PH fed, 4W service equipment from pad mounted service transformer located in the exterior of the building. Each quad unit has 100A, 120/208V, 3PH, 4W load center that feeds loads within the unit. The facility has combination of incandescent and fluorescent fixture in the interior. The lighting system is controlled primarily by manual switch.

The building is monitored with conventional (zoned) fire alarm system (FA) with Mass Notification System (MNS). The FA/MNS system is currently being upgraded.

Each unit is provided with CATV. It was observed that each sleeping unit has no telephone or wired internet connection. A Wi-Fi connection is available for internet access. Windows and exterior doors do not meet the new ATFP requirements set forth in UFC 4-101-01.

IMPACT IF NOT PROVIDED:
- No accommodations for disabled personnel. No ATFP window requirements.
- Lack of billeting accommodations that fully comply with current standards.

HAZARDOUS MATERIALS:
- None known.

DESIGN STATUS:
- Full A/E design of renovations is required.

ECONOMIC ANALYSIS:
- Renovation is the most economical alternative that takes advantage of building structure, utility service and shell, which are are fundamentally in good condition.
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**TOTAL PROJECT COST**

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**10. DESCRIPTION OF PROPOSED CONSTRUCTION:**

Demolish 1,250 linear feet of overhead lines and replace with buried, underground lines along Halsey and Atlantic Avenues. Replace pole mounted transformers along the lines with pad mounted transformers.

The lines extend from the flag circle north of JFHQ, 1,250 linear feet along Halsey Avenue to the westernmost hangar building and 820 linear feet along Atlantic Avenue from the main gate to Building 407.

**11. REQUIREMENTS:**

Included in the work is burroughing under Halsey Avenue and Atlantic Avenue at their intersection.

Strategic coordination of the execution of the work is required with traffic safety and timing of switch-over of existing to new service to avoid downtime of any of the facilities.

**CURRENT SITUATION:**

Existing overhead electrical distribution system with exposed cables, poles and pole mounted transformers brings visual clutter and risk of contact with energized cables to the main entrance and circulation routes on campus. This existing infrastructure is inappropriate for approach to the JFHQ and inconsistent with the goal of a coordinated, cohesive environment to improve quality of life at CNGC.

The project is justified, as burying the existing distribution system will provide safer, more secure electrical power to CNGC. In addition, the removal of overhead lines along these two key entry roads will improve the visual appearance upon entering CNGC, will address safety considerations related to current power poles and lines and improve walkability across the campus.

**IMPACT IF NOT PROVIDED:**

Continuation of the visual clutter, risk described, a lessening of pride in and respect for the installation. Continuance of the risk associated with
Aerial electrical conductors and a greater likelihood of electrical service interruptions by storms and accidents which result in downed lines. Interrupted electrical service during inclement weather, natural or man made emergency, when activation of NG is required, greatly impacts the ability of the Guard to serve its mission.

**HAZARDOUS MATERIALS:**
None known.

**DESIGN STATUS:**
Full engineering design of renovations is required.

**ECONOMIC ANALYSIS:**
Economic advantage of upgrading the electrical distribution system is intangible and not quantifiable. The risk of electrocution from contact with the lines or lack of service due to weather or other accidents is minimized with the burial of the lines. The inability of the Guard to react to disasters in time of emergency may be the result of electrical power outage has inestimable consequence.
APPENDIX E – DD FORM 1390/1391

1. COMPONENT
GAANG

2. DATE
TBD

3. INSTALLATION AND LOCATION
Clay National Guard Center
Georgia Army National Guard
Marietta, Georgia

4. PROJECT TITLE
CNGC-Site Improvements, Pedestrian Network

5. PROGRAM ELEMENT

6. CATEGORY CODE

7. PROJECT NUMBER

8. PROJECT COST ($000)
2099

9. COST ESTIMATES

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SIOH (5.7%)
TOTAL FUNDED COST

35
646

10. DESCRIPTION OF PROPOSED CONSTRUCTION:

Construct pedestrian network upgrades along Halsey and Atlantic Avenues, pedestrian connections between billeting and the RTI and between Buildings 81 and 142 and the JFHQ.

Improvements include new sidewalks, widened sidewalks, painted crosswalks at strategic intersections, sustainable landscaping and infill street trees, and pedestrian plazas with informal seating areas.

11. REQUIREMENTS:

Provide new sidewalks and widening of existing sidewalks so that personnel may easily pass each other along routes connecting CNGC identified destinations.

Provide additional trees and landscape to soften the environment.

Provide striped and raised street crossings at strategic points along Halsey Avenue between Atlantic Avenue and the flag circle north of JFHQ, where vehicles are known to travel at unsafe speeds.

Provide landscape elements, paving and benches as logical gathering places near popularly used facilities and heavily traveled paths. These informal spaces foster congregating, provide pleasant places for phone calls, outdoor computer work or reading and generally lead to a better sense of comraderie and community.

CURRENT SITUATION:

As is typical in pedestrian oriented environments, paths are worn in landscaped areas where shortcuts or more enjoyable routes are established between destination points. Likewise, motorists tend to move at the highest rate of speed for any perceived hazard level often subjugating pedestrians to greater hazard. Few outdoor places exist between and among...
existing structures on CNGC for casual interaction, sitting during pleasant weather, outdoor reading or computer work. Workers and students generally appear to be in a hurry to move from one point to another. Conversely, casual conversations are observed between parked cars in lots.

The pedestrian network upgrades are justified in that improving and completing the pedestrian network will provide safe paths that promote walking and deter visitors from moving cars across the campus. Improved streetscapes will also promote a sense of place, increasing CNGC’s attractiveness as a training destination, while serving the units located here.

**IMPACT IF NOT PROVIDED:**
The goal of improving quality of life at CNGC will be hard to meet if these improvements are not made and the interest in a “campus” atmosphere will be lost. Vehicle speed rates remain unchecked (as in by passive means) possibly resulting in unsafe pedestrian crossings. Pedestrians will continue to make informal paths possibly leading to unsafe routes, damage to existing landscape infrastructure and possible erosion.

**HAZARDOUS MATERIALS:**
None known.

**DESIGN STATUS:**
Full A/E design of renovations is required.

**ECONOMIC ANALYSIS:**
Addition of the described site improvements provides greatest risk avoidance and establish greater quality of life, which generally has been proven to enhance student and employee performance.
APPENDIX E – DD FORM 1390/1391

1. COMPONENT
   GAARNG

2. DATE
   TBD

3. INSTALLATION AND LOCATION
   Clay National Guard Center
   Georgia Army National Guard
   Marietta, Georgia

4. PROJECT TITLE
   CNGC-Site Improvements, Stormwater Management Improvements

5. PROGRAM ELEMENT

6. CATEGORY CODE

7. PROJECT NUMBER

8. PROJECT COST ($000)
   2099

9. COST ESTIMATES

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10. DESCRIPTION OF PROPOSED CONSTRUCTION:

   Execute a Stormwater Study and implement recommended improvements for two areas on CNGC, approximately 400-foot area along Atlantic Avenue and 500-foot swath east of JFHQ.

   Construct bioretention swales, tree boxes, retention areas and other low impact procedures to control water movement and storage in those areas.

11. REQUIREMENTS:

   Requirements are to be determined by the Stormwater Study.

   CURRENT SITUATION:

   There is some localized flooding at CNGC, including ponding water at low points. Aging condition of the existing impervious parking lots facilitates water sheeting across these surfaces. Parking lots also lack landscape, bioretention areas, or other man-made measures to control water flow and filter water back into ground. Lack of water management is a loss for the natural environment and does not replenish the ground water and aquifer.

   IMPACT IF NOT PROVIDED:

   Improving quality of life and maintaining a sustainable environment within the boundaries of CNGC require drainage improvements in the areas cited.

   HAZARDOUS MATERIALS:
   None known.

   DESIGN STATUS:
   Complete Stormwater Study and full A/E design of renovations.

   ECONOMIC ANALYSIS:
The cost of remediation of polluted surface water in bulk greatly exceeds installation costs of smaller, techniques applied closer to the source such as bioswales. Potential damage from uncontrolled rainwater to both nearby structures and the environment exceeds the preventative stormwater management measures that could be implemented.
1. COMPONENT: GAANG
2. DATE: TBD
3. INSTALLATION AND LOCATION:
   Clay National Guard Center
   Georgia Army National Guard
   Marietta, Georgia
4. PROJECT TITLE: CNGC-Site Improvements - Parking Lot Improvements
5. PROGRAM ELEMENT
6. CATEGORY CODE
7. PROJECT NUMBER
8. PROJECT COST ($000): 1189

9. COST ESTIMATES

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SIOH (5.7%)
TOTAL FUNDED COST: 1257

10. DESCRIPTION OF PROPOSED CONSTRUCTION:

   Repair parking lot north of Buildings 81 and 142, includes 9,289 sy of surface area and serves 239 POVs.

   Repair parking lot west of Building 70, affects 3,333 sy of surface area and serves 86 POVs.

   Repair parking lot north of Building 353, includes 5,788 sy of surface area and serves 149 POVs.

   Repair parking lot south of Building 407, includes 3,076 sy of surface area and serves 79 POVs.

   Repair parking lot between Buildings 53 and 54, includes 3,467 sy of surface area and serves 89 POVs.

11. REQUIREMENTS:

   Repairs include construction of paths across parking lots that continue pedestrian networks and may include painting the paths, change in surface texture, locating paths between bioswales between parking lanes.

   Repairs include bioretention areas/bioswales to receive stormwater runoff.

   Repairs include permeable paving, stand-slope or in combination with or as surfacing for the construction paths and bioswales.

   Repairs include shade trees.

REQUIREMENT:

The parking lot improvement project is justified in that reconfigured lots will provide safe paths for pedestrians, decrease potential for pedestrian
and vehicular conflict, provide shade from trees, and will reduce stormwater runoff. The decrease in impervious surfaces will also reduce heat island effect, particularly in the harsh summer months.

**CURRENT SITUATION:**

Existing parking lots represent large expanses of asphalt paving, which absorbs and reradiates heat during the hot summer months. The surfaces collect contaminants, which pollute surface water during rains and wash into collection streams further spreading the pollution. Sidewalks and other paths dead end into parking lots leaving pedestrians to cross in unmarked paths between parked cars or along the drives.

**IMPACT IF NOT PROVIDED:**

Existing non-sustainable, polluting and unsafe conditions will prevail, none of which support the mission to improve the quality of life at CNGC.

**HAZARDOUS MATERIALS:**
None known.

**DESIGN STATUS:**
Full Engineering design of renovations is required.

**ECONOMIC ANALYSIS:**
The cost of remediation of polluted surface water in bulk greatly exceeds installation costs of smaller, techniques applied closer to the source such as bioswales. Shade trees reduce heat island effects of parking lots, thereby reducing air conditioning loads in hot climates.
APPENDIX E – DD FORM 1390/1391

1. COMPONENT: GAARNG
2. DATE: TBD

3. INSTALLATION AND LOCATION:
   Clay National Guard Center
   Georgia Army National Guard
   Marietta, Georgia

4. PROJECT TITLE:
   CNGC-Site Improvements, Additional parking lots

5. PROGRAM ELEMENT:
6. CATEGORY CODE:
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7. PROJECT NUMBER:

8. PROJECT COST ($000):
   1349

9. COST ESTIMATES

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TOTAL PROJECT COST: 1276

SIOH (5.7%): 73
TOTAL FUNDED COST: 1349

10. DESCRIPTION OF PROPOSED CONSTRUCTION:

Provide:
1. Originally designed parking east of JFHQ (11,200 SY/288 cars)
2. New parking lot east of JFHQ in space available from reduced AT/FP standoffs (5,333 SY/137 cars)

11. REQUIREMENTS:

Construct new paved lots to accommodate the number of vehicles indicated and include pedestrian paths, permeable pavers, bioretention and shade trees.

REQUIREMENT:
This project is justified as it provides parking needed to meet demand. Additional justification includes safe paths for pedestrians, decreased potential for pedestrian and vehicular conflict, shade from trees, and introduction of bioretention areas and permeable paving to reduce stormwater runoff.

CURRENT SITUATION:
Additional parking is needed to support increase in users from relocation of units to CNGC to include MEDCOM. Proximate distance to the JFHQ will further serve CNGC.

IMPACT IF NOT PROVIDED:
Parking to serve JFHQ needs is inadequate and will result in lost time of personnel to search for parking when arriving at CNGC.

HAZARDOUS MATERIALS:
None known.

DESIGN STATUS:
Full Engineering design of renovations is required.

ECONOMIC ANALYSIS:
The lack of parking for JFHQ functions impacts conduct of the CNGC mission to be a premier regional training facility.
1. COMPONENT
   ARNG

2. DATE
   2018

3. INSTALLATION AND LOCATION
   INSTALLATION: Clay National Guard Center
   LOCATION: Marietta, GA
   INSNO: 13927
   0.87

5. FREQUENCY AND TYPE OF UTILIZATION
   Facility will be a consolidated multipurpose space for the maintenance, repair, and major overhaul of military aircraft. Aviation support to Clay National Guard Center activities and Units to be provided on a full-time basis, 260 days annually.

6. OTHER ACTIVE/GUARD/RESERVE INSTALLATIONS WITHIN 15 MILE RADIUS
   To be included in subsequent submittals

7. PROJECTS REQUESTED IN THIS PROGRAM
   CatCode  Project  Scope  Cost ($000)  Design Status
   21110     AVN Renovate South Side of Hangar 1  3,252 SM (35,000 SF)  TBD
   Start:     Compl:

8. STATE RESERVE FORCES FACILITIES BOARD RECOMMENDATION
   Facilities identified in item #6 have been examined by JSRCFB for possible joint use/expansion. The Board’s recommendation is unilateral construction.
   TBD
   (Date Validated)

9. LAND ACQUISITION REQUIRED
   None
   0
   (Number of Acres)

10. PROJECTS PLANNED IN NEXT FOUR YEARS
    CatCode  Project  Scope  Cost ($000)
    
    R&M Unfunded Requirement ($000):
    A site survey has been completed and the site is suitable for construction of the proposed project at the estimated cost indicated.

11. PERSONNEL STRENGTH AS OF: Date TBD
    
    Permanent
    Total  Officer  Enlisted  Civilian
    Authorized  441
    Actual  441

    Guard/Reserve
    Total  Officer  Enlisted
    N/A  N/A  N/A
    N/A  N/A  N/A
## FY2013 Guard and Reserve Military Construction

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<thead>
<tr>
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<th>ARNG</th>
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### 12. Reserve Unit Data

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Note: TPSN as listed in ASIP (SAMAS: as of 23 JUN 2011)

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<td><strong>Total</strong></td>
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### 13. Major Equipment and Aircraft

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<td>Rotary-wing aircraft</td>
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### 14. Outstanding Pollution and Safety Deficiencies ($000)

- Air Pollution
- Water Pollution
- Occupational Health and Safety

($000)
1. COMPONENT
ARNG

2. DATE
2018

3. INSTALLATION AND LOCATION
Clay National Guard Center
LOCATION: MARIETTA, GA
INSNO: 13927

4. PROJECT TITLE
RENOVATE SOUTHSIDE OF AIRCRAFT MAINTENANCE HANGAR #1

5. PROGRAM ELEMENT
0505896A

6. CATEGORY CODE
21110

7. PROJECT #
TBD

8. PROJECT COST ($000)
TBD

9. COST ESTIMATES

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<td>SUPPORTING FACILITIES</td>
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<td>SUBTOTAL</td>
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<td>SUPERVISION, INSPECTION AND OVERHEAD (6.5%)</td>
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<tr>
<td>TOTAL REQUEST (ROUNDED)</td>
<td>LS</td>
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</table>

10. DESCRIPTION OF PROPOSED CONSTRUCTION: Renovate 3,252 SM (35,000 SF) of Hangar 1 to meet requirements for the hangar floor area and specialized work areas; aviation administrative and personnel support functions to include: administrative and training area; operations; aviation life support equipment shop; maintenance administrative area; information technology space; locker rooms; break/assembly area; toilets/showers and; physical fitness area. Renovate existing GOV parking lot to be used for apron.

Supporting facilities include but are not limited to: water, sewer, electric, and natural gas services, curb, and gutter; security lighting; exterior communications; intrusion detection system; fire protection and alarm service; storm sewer system; sidewalks; site preparation, erosion control/grassing, landscaping, and signage. Antiterrorism / force protection measures will be incorporated into design, including maximum feasible standoff distances from roads, parking areas, and vehicle unloading areas, and, when standoff distance cannot be maintained, berms, heavy landscaping, and bollards to prevent access.

Air conditioning: Approximately 117 tons

11. REQUIREMENT: 3,252 SM (35,000 SF)  ADEQUATE: 0 SM (0 SF)  SUBSTANDARD: 3,252 SM (35,000 SF)

PROJECT: Construct Aircraft Maintenance Hangar

REQUIREMENT: This renovation project for aircraft maintenance Hangar 1 is necessary to meet aviation operational and maintenance support requirements for the assigned GAARNG aviation units/operations. The
### APPENDIX E – DD FORM 1390/1391

<table>
<thead>
<tr>
<th>1. COMPONENT</th>
<th>FY 2013 MILITARY CONSTRUCTION PROJECT DATA</th>
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<tbody>
<tr>
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<table>
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<th>3. INSTALLATION AND LOCATION</th>
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<td>Clay National Guard Center</td>
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<th>4. PROJECT TITLE</th>
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<tr>
<td>RENOVATE SOUTHSIDE OF AIRCRAFT MAINTENANCE HANGAR #1</td>
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</table>

<table>
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<tr>
<th>5. PROGRAM ELEMENT</th>
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</thead>
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<table>
<thead>
<tr>
<th>6. CATEGORY CODE</th>
<th>7. PROJECT #</th>
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<table>
<thead>
<tr>
<th>8. PROJECT COST ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBD</td>
</tr>
</tbody>
</table>

Total category code 21110 requirement for this installation is an aircraft maintenance hangar of 3,252 SM (35,000 SF). The facilities must comply with antiterrorism force protection standards. Facilities must integrate current U.S. Army and Army National Guard standards. There are no alternate facilities on the installation, either adequate or available, which could be used to completely satisfy this requirement.

**CURRENT SITUATION:** Hangar 1 is the existing aircraft maintenance hangar but was originally retrofitted to house the GAARNG and has not been adequately renovated to support the future number of assigned aircraft. Existing space layout is inefficient for the current mission, and facilities are exhibiting significant deterioration.

**IMPACT IF NOT PROVIDED:** If this project is not provided aviation operational and maintenance support for GAARNG aviation operations will be negatively impacted. Mission readiness of GAARNG aviation units will be severely compromised. Aviation operations equipment will continue to be inefficiently organized throughout Hangar 1, resulting in increased maintenance costs, inefficient use of time and lowering of soldier morale.

**ADDITIONAL:** This project has been coordinated with the installation’s AT/FP plan. Risk and threat analysis has been performed in accordance with DA Pam 190-51 and UFC 4-020-01, respectively. Only protective measures required by regulation and design guides for the protection of Federal property are required. This project meets the criteria/scope specified in NG PAM 415-12 (Draft), *Army National Guard Facility Allowances*, dated 01 June 2011. An economic analysis has been prepared and utilized in evaluating this project. Alternative methods of meeting this requirement have been explored during project development. This project is the only feasible option to meet the requirement.

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Joseph F. Jarrard  
Brigadier General, GAANG  
The Adjutant General  

---
APPENDIX F

GGTC GIS Data Requirements Report

The following pages provide the details of the Clay National Guard Center GISDRR.
## Summary of Recommendations

<table>
<thead>
<tr>
<th>Category</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boundary</td>
<td>No Recommendation, data is sufficient.</td>
</tr>
<tr>
<td>Base Map Data</td>
<td>Incidental data collection will be necessary.</td>
</tr>
<tr>
<td>Imagery</td>
<td>No Recommendation, data is sufficient.</td>
</tr>
<tr>
<td>Utilities</td>
<td>Targeted field data collection is necessary.</td>
</tr>
<tr>
<td>Building Conditions</td>
<td>Targeted field data collection is necessary.</td>
</tr>
<tr>
<td>Surrounding Area</td>
<td>Incidental data collection may be necessary.</td>
</tr>
<tr>
<td>Public Services</td>
<td>No Recommendation, data is sufficient.</td>
</tr>
<tr>
<td>Zoning Ordinances</td>
<td>Incidental data collection will be necessary.</td>
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<tr>
<td>Hydrology Study</td>
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<tr>
<td>Vegetative Coverage</td>
<td>Incidental data collection will be necessary.</td>
</tr>
<tr>
<td>Environmental Studies</td>
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<tr>
<td>Agency Agreements</td>
<td>Incidental data collection may be necessary.</td>
</tr>
<tr>
<td>Subsurface Conditions</td>
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<tr>
<td>Cultural Resources</td>
<td>Targeted field data collection is necessary.</td>
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### CNGC Boundary

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<td>Date Received</td>
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<td>Generating Agency</td>
<td>N/A</td>
</tr>
<tr>
<td>Owner</td>
<td>GAARNG</td>
</tr>
</tbody>
</table>

**Need Statement**

**Description of Quality/Accuracy Required**
Polygon file that follows the currently deeded property boundary.

**Findings**
Data Meets or Exceeds Expectations

**Existing data analysis**
Attribute table states that layer is the current deeded boundary.

**Specifics of Data Gaps**
No data gaps

**Recommendations**
No Recommendation, Data is Sufficient

**PROs**

**CONs**

**Justification**

**Decision**

**Motivation**

**Approver**

**Actions Needed**

**Due Date**
| Source | CH2MHILL/Dobbins AFRC, and GAARNG |
| Date Received | CH2MHILL/Dobbins AFRC: 1/26/2012, GAARNG: 12/29/2011 |
| Generating Agency | CH2MHILL/Dobbins AFRC, and GAARNG |
| Owner | CH2MHILL/Dobbins AFRC, and GAARNG |

### Need Statement

**Description of Quality/Accuracy Required**

Data should include all buildings, roads, sidewalks and significant vegetation as polygon layers with appropriate attribute information to define features. Topographic contours should be line file with elevation information.

### Findings

**Existing data analysis**

- Building footprints: Polygons with good attribution. Roads include:
  - Road area polygon layer with partial class attribution.
  - Two sets of road centerlines, one complete with good name attributes but poor geometry. Another incomplete with good geometry and some class attribution.
- Sidewalk areas: Detailed sidewalks are present.
- Topographic contours are absent and need to be developed.
- Significant vegetation may be covered by Areas of Flora Species layer.

**Specifics of Data Gaps**

- Road data may need to completed by combining elements of different sources. Topographic Contours are not present, will digitize from 1:24,000 USGS topographic maps.
- Updates to topography around bldg. 447 have not been incorporated.

### Recommendations

**Incidental Data Collection**

**PROs**

**CONs**

### Justification

### Decision

### Motivation

### Approver

### Actions Needed

### Due Date
## GIS Data Requirements Report

### CNGC Aerial Photography

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<td><strong>Date Received</strong></td>
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### Need Statement

**Description of Quality/Accuracy Required**

Imagery should be sufficient to zoom in to at least 1" = 200' scale.

### Findings

**Data Meets or Exceeds Expectations**

**Existing data analysis**

Both the Cobb static image and the Bing source exceed the accuracy required. Both are full-color in the visible spectrum.

**Specifics of Data Gaps**

Bing data is not current. Download from Google (Jan 2012).

### Recommendations

**No Recommendation, Data is Sufficient**

### PROs

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<table>
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### CONs

<p>| |</p>
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### Justification

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### Decision

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### Motivation

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### Approver

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### Actions Needed

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### Due Date

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<td>Generating Agency</td>
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</table>

**Need Statement**

Data should provide spatial location of all utilities as well as attribute data such as voltage, pipe size, pole heights, pole material, and any other pertinent utility information.

**Findings**

Data Below Expectations

Data provided from both sources:
- Communications: Voice & Misc. points.
- Electrical: Cable lines, generator points.
- Natural Gas: Gas lines, meters, valves, regulator reducers.
- Storm: Lines, open drainage, culverts, and inlets.
- Sanitary: Manholes, septic tanks, Force Mains, gravity line, service lines.
- Fuel: main lines and tanks.

**Existing data analysis**

Data provided from both sources:
- Communications: Voice & Misc. points.
- Electrical: Cable lines, generator points.
- Natural Gas: Gas lines, meters, valves, regulator reducers.
- Storm: Lines, open drainage, culverts, and inlets.
- Sanitary: Manholes, septic tanks, Force Mains, gravity line, service lines.
- Fuel: main lines and tanks.

**Specifics of Data Gaps**

Detailed attribution about physical characteristics are not present for all or most of these utility data. Data needing to be acquired or developed:
- Communication lines, meteorological/nav cable system.
- Electrical alternate feeder lines, substations.
- Gas data present.
- Storm data present.
- Sanitary data has two wastewater lines, one from each source. The duplicity will have to be assessed and assimilated.
- Water lines, hydrants, and meters present.
- Fuel data present.

**Recommendations**

Targeted Field Data Collection

**PROs**

**CONs**

**Justification**

**Decision**

**Motivation**

**Approver**

**Actions Needed**

**Due Date**
## GIS Data Requirements Report

### CNGC Building Conditions

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<td>GAARNG</td>
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</table>

### Need Statement

**Description of Quality/Accuracy Required**
The structure condition field should be filled in the GIS attribute table.

### Findings

**Data Below Expectations**

**Existing data analysis**
Out of 70 separate building polygon records, only 3 of these are filled with building conditions.

**Specifics of Data Gaps**
67 building records need to be updated.

### Recommendations

**Targeted Field Data Collection**

### PROs

### CONs

### Justification

### Decision

### Motivation

### Approver

### Actions Needed

### Due Date
<table>
<thead>
<tr>
<th>Source</th>
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<th>Owner</th>
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<td></td>
<td>CH2MHILL/Dobbins AFRC</td>
<td>CH2MHILL/Dobbins AFRC</td>
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</tbody>
</table>

**Need Statement**

**Description of Quality/Accuracy Required**

Data appears complete for entire Dobbins AFRC complex.

**Findings**

Data Below Expectations

**Existing data analysis**

Road area polygons and centerlines are covered throughout Dobbins extent. Additional centerlines with better attribution are covered through the surrounding region, although the geometry is poor.

- Land use is covered comprehensively throughout the Dobbins extent, but not readily available outside of the base.

**Specifics of Data Gaps**

May need to correct surrounding centerline geometry, or apply attributes to Clay centerlines. If land use is needed outside of Dobbins extent, may need to develop in-house or pursue another source of regional land use information.

**Recommendations**

Incidental Data Collection

**PROs**

**CONs**

**Justification**

**Decision**

**Motivation**

**Approver**

**Actions Needed**

**Due Date**
# GIS Data Requirements Report

## CNGC Availability of Public Services (Transportation, Lodging, Infrastructure etc.)

<table>
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<td>Date Received</td>
<td>N/A</td>
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<tr>
<td>Generating Agency</td>
<td>Georgia Regional Transportation Authority, Cobb County Department of Transportation, Gwinnett County GIS, Metropolitan Atlanta Rapid Transit Authority (MARTA), The Atlanta Regional Commission.</td>
</tr>
<tr>
<td>Owner</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Need Statement

**Description of Quality/Accuracy Required**

Bus routes and stops, MARTA rail and rail stations. Park and Ride Lots. All with proper attribution.

### Findings

**Data Meets or Exceeds Expectations**

**Existing data analysis**

Data downloaded for greater metropolitan area.

**Specifics of Data Gaps**

No data gaps.

### Recommendations

**No Recommendation, Data is Sufficient**

**PROs**

**CONs**

### Justification

**Decision**

**Motivation**

**Approver**

**Actions Needed**

**Due Date**
### GIS Data Requirements Report

#### CNGC Applicable Zoning Ordinances

<table>
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<tbody>
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<td>Cobb County GIS Department</td>
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<tr>
<td><strong>Owner</strong></td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### Need Statement

| Description of Quality/Accuracy Required | Zoning delineations in polygon form, originally designated through efforts by Cobb County planners. Attributes should include zoning code, and descriptions for each code either in the attributes or metadata. |

#### Findings

<table>
<thead>
<tr>
<th>Existing data analysis</th>
<th>Data Not Available</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specifics of Data Gaps</strong></td>
<td>Not available.</td>
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#### Recommendations

| Recommendations | Incidental Data Collection |

#### PROs

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#### CONs

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#### Justification

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#### Decision

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#### Motivation

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#### Approver

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#### Actions Needed

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#### Due Date

<p>| |</p>
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<th></th>
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</thead>
</table>
## GIS Data Requirements Report

### CNGC Hydrology (Wetlands delineations or national wetlands survey, streams and water bodies)

<table>
<thead>
<tr>
<th>Source</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date Created</strong></td>
<td>9/2010</td>
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<td><strong>Date Received</strong></td>
<td>1/26/2012</td>
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<tr>
<td><strong>Generating Agency</strong></td>
<td>CH2MHILL/Dobbins AFRC</td>
</tr>
<tr>
<td><strong>Owner</strong></td>
<td>CH2MHILL/Dobbins AFRC</td>
</tr>
</tbody>
</table>

### Need Statement

#### Description of Quality/Accuracy Required

Data should include National Wetlands Inventory data, detailed stream data with stream names and water bodies with names.

### Findings

Data Meets or Exceeds Expectations

### Existing data analysis

Local wetlands data, water bodies, and streams are present.

### Specifics of Data Gaps

No wetland polygons appear within the Clay installation boundary, although they are seen throughout the entire Dobbins complex. This assumes no wetlands are present inside Clay. Three (3) runoff areas are located on CNGC. Two near Bldg. 447 and 1 near bldg. 300.

### Recommendations

Incidental Data Collection

### PROs


### CONs


### Justification


### Decision


### Motivation


### Approver


### Actions Needed


### Due Date


### GIS Data Requirements Report

**CNGC Vegetative Cover, including habitat definition**

<table>
<thead>
<tr>
<th>Source</th>
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<tbody>
<tr>
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<td>9/2010, yet not all complete.</td>
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<td><strong>Date Received</strong></td>
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<td><strong>Generating Agency</strong></td>
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</tr>
<tr>
<td><strong>Owner</strong></td>
<td>CH2MHILL/Dobbins AFRC</td>
</tr>
</tbody>
</table>

**Need Statement**

**Description of Quality/Accuracy Required**
Homogeneous vegetative covering entire Clay facility, with adequate attribution detailing habitat types.

**Findings**
Data Below Expectations

**Existing data analysis**
Flora species polygon data identified but not attributed over the Clay facility. Forest Management Areas are provided, which could be used as a proxy.

**Specifics of Data Gaps**
Vegetation data does not homogeneously cover the entire base, and the flora species layer contains no attributes.

**Recommendations**
Incidental Data Collection

**PROs**

**CONs**

**Justification**

**Decision**

**Motivation**

**Approver**

**Actions Needed**

**Due Date**
<table>
<thead>
<tr>
<th><strong>GIS Data Requirements Report</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CNGC Environmental Studies or Management Plans</strong></td>
</tr>
<tr>
<td><strong>Source</strong></td>
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<tr>
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<td>Generating Agency</td>
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<tr>
<td>Owner</td>
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<tr>
<td><strong>Need Statement</strong></td>
</tr>
<tr>
<td>Description of Quality/Accuracy Required</td>
</tr>
<tr>
<td><strong>Findings</strong></td>
</tr>
<tr>
<td>Existing data analysis</td>
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<tr>
<td><strong>Specifics of Data Gaps</strong></td>
</tr>
<tr>
<td><strong>Recommendations</strong></td>
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<td><strong>PROs</strong></td>
</tr>
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<td><strong>CONs</strong></td>
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<td><strong>Justification</strong></td>
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<td><strong>Decision</strong></td>
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<td><strong>Motivation</strong></td>
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<td><strong>Approver</strong></td>
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<tr>
<td><strong>Actions Needed</strong></td>
</tr>
<tr>
<td><strong>Due Date</strong></td>
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</table>
### GIS Data Requirements Report

#### CNGC Agency Agreements (as applicable)

<table>
<thead>
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<td>N/A</td>
</tr>
<tr>
<td>Owner</td>
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</tbody>
</table>

#### Need Statement

**Description of Quality/Accuracy Required**

Easements and other property issues.

#### Findings

Data Meets or Exceeds Expectations

#### Existing data analysis

2 easements (power and right of way) to Cobb County located south of Hangar 1.

#### Specifics of Data Gaps

Referenced easement area is needed.

#### Recommendations

Incidental Data Collection

#### PROs

- 

#### CONs

- 

#### Justification

- 

#### Decision

- 

#### Motivation

- 

#### Approver

- 

#### Actions Needed

- 

#### Due Date

-
GIS Data Requirements Report

CNGC Subsurface Conditions (Soils and Geological)

<table>
<thead>
<tr>
<th>Source</th>
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<tr>
<td>Date Received</td>
<td>Soil: 11/26/2011, Geology: 2/7/2012</td>
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<tr>
<td>Generating Agency</td>
<td>Soil: CH2MHILL/Dobbins AFRC, Geology: Georgia Department of Natural Resources</td>
</tr>
<tr>
<td>Owner</td>
<td>Soil: CH2MHILL/Dobbins AFRC, Geology: N/A</td>
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</table>

<table>
<thead>
<tr>
<th>Need Statement</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Meets or Exceeds Expectations</td>
<td>Data Meets or Exceeds Expectations</td>
</tr>
<tr>
<td>Existing data analysis</td>
<td>Soil data covers the entire Dobbins extent and therefore covers the Clay facility. Complete attribution exists. Geology data is statewide and 1:500,000-scale.</td>
</tr>
<tr>
<td>Specifics of Data Gaps</td>
<td>No data gaps, unless scale of Geology data is not sufficient and data from a local survey is needed.</td>
</tr>
<tr>
<td>Recommendations</td>
<td>No Recommendation, Data is Sufficient</td>
</tr>
</tbody>
</table>

| PROs |
| CONs |

| Justification |
| Decision |
| Motivation |
| Approver |
| Actions Needed |
| Due Date |
## GIS Data Requirements Report

### CNGC Cultural Resources (designated historic structures or sites and archaeological features if applicable)

<table>
<thead>
<tr>
<th>Source</th>
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<td>CH2M HILL</td>
</tr>
<tr>
<td><strong>Owner</strong></td>
<td>CH2M HILL</td>
</tr>
</tbody>
</table>

### Need Statement

**Description of Quality/Accuracy Required**

Historic structures and sites and discovered archaeological finds, with adequate feature descriptions.

### Findings

**Data Not Available**

### Existing data analysis

Historic structures were developed for the greater Dobbins extent, however, no structures were either found or developed inside the Clay facility. Cultural surveys are currently underway in early 2012.

### Specifics of Data Gaps

Currently no historic structures or archaeological finds in Clay facility. Cultural surveys are currently underway in early 2012.

### Recommendations

**Targeted Field Data Collection**

### PROs

- 

### CONs

- 

### Justification

- 

### Decision

- 

### Motivation

- 

### Approver

- 

### Actions Needed

- 

### Due Date

- 

---

**CNGC Cultural Resources (designated historic structures or sites and archaeological features if applicable)**
### B. GIS Data Requirements Review - Instructions

**Data Collection Sources**  
The A/E will gather data from numerous sources, but will rely primarily on data provided by GAARNG GIS personnel. Prior to start of RPI validation work the A/E will work with the GAARNG to develop an RPI GIS Data Requirements Report (GISDRR) outlining the categories of data in the following pages and the quality/accuracy requirements necessary for successful completion of the RPI.

**Data Review**  
The A/E shall review the existing GAARNG GIS data, all available engineering drawings and other potential sources of spatial data available to the GAARNG, to identify data which can fulfill the requirements of the GISDRR.

**GIS Data Requirements Report**  
The A/E will prepare a GIS Data Requirements Report, which will validate existing site conditions data, and outline the specifics of any data gaps. Based on the findings of the GIS Data Requirements Report, the A/E will make recommendations for one or a combination of the following approaches to acquire the data necessary to fulfill the GISDRR in its entirety.

**Recommended Approach - Aerial**  
Aerial survey to deliver Ortho-rectified digital imagery of sites at a minimum resolution of 2 ft x 2 ft. Topographic Evaluation: Complete a topographic evaluation of entire property. Topographic evaluation to include 1 foot contours and spot elevations and site planimetrics (property boundary, buildings, paving, curbing, edge of paving, fencing, landscaping, other physical features, etc.). Establish a permanent benchmark onsite suitable to perform additional future evaluation work. Location of the benchmark shall be done in coordination with facility personnel. One paper copy of the evaluation certified by a State licensed land surveyor, and an electronic CADD drawing compatible with Autodesk v2006 shall be submitted.

**Recommended Approach - Topo**  
Extensive research of existing public and private domain data. Much spatial data exists including aerial photography and other base-map which will be needed during SDP and can be acquired at little or no cost.

**Recommended Approach - Research**  
Targeted Field data collection/verification

**Recommended Approach - Targeted Field**  
Targeted Field data collection/verification

**Recommended Approach - Incidental Collection**  
Incidental data collected during normal performance of the RPDAP

**Decision-Making Process**  
It will be up to the GAARNG to select an option to complete the GIS data requirements, such additional effort being the subject of further negotiations. Alternatively, the GAARNG may choose to complete the GISDRR data requirements via internal or other outside resources.
A. GIS Requirements:

1. **General**: GIS is a tool for the collection, display and analysis of spatial data. The A-E will implement GIS according to current army policy (DAIM-MD) which provides guidance regarding Enterprise GIS, GIS data and meta-data standards, coordinate system datum, data sharing, and data quality standards. GIS can link tabular and graphic data across program areas. Data collection for GIS might start with aerial photos, property surveys, and legal descriptions. AR 210-20 paragraph 1-4 I (9) requires a link between Real Property Inventory (RPI) and GIS data. All data collected for the GAARNG Real Property Development Plan (RPDP) will be presented in or be compatible with use in a GIS system.

2. **CADD Standard**: The A-E shall generally utilize the current version of the A-E/C CADD Standards, as they relate to the RPDP, to include drawing file naming conventions, level/layer conventions, drafting conventions, line types/styles/weights/colors, certain specific objects/symbols (symbology) on certain layer locations (as they relate to the GAARNG’s GIS requirements), pattern elements, and font types. The current version of the A-E/C CADD Standards for both AutoCAD and MicroStation are available at no charge for download at https://tsc.wes.army.mil/tsws_acad/TSWS_DownLoad.asp. A copy of all A-E/C CADD Standards components (for AutoCAD) will be provided on CD to the A-E. The GAARNG will furnish geo-referenced and geo-positioned coordinates for all site plans.

3. **GIS Standard**: A-E will submit plans in Microsoft Word 2003. Any maps created will be created with ArcGIS 9.3. The ArcMap project (.mxd) for each map, as well as all data displayed within the RPDP, must be provided as part of the deliverables. If any of the spatial data layers provided by the GAARNG appear inconsistent with what is observed at the site they must be updated to reflect current changes. The A-E will work with GAARNG CFMO GIS personnel to update the layer. Each new layer developed by the A/E will have complete Federal Geographic Committee (FGDC) compliant metadata in XML format. Each new layer must also be named and organized in accordance with the CADD/GIS Technology Centers Spatial Data Standards (SDS). GAARNG CFMO GIS personnel can provide information on the SDS. Any shapefiles created as part of this RPDP must be projected in **UTM, WGS84, Zones 16N through 17N, meters**.

4. **GIS Deliverables**: Deliverables of GIS data for the GISDRR and Site Development Plan will be provided in a file or Personal Geo-database format that is compatible with the Clients software and systems. These deliverables will also meet the current standards as established by NGB for their Common Installation Picture (CIP) and be SDSFIE compliant. Additional features that may be useful to the GAARNG will be discussed during the development of the GISDRR in order to identify the requirements for development during the conduct of the Site Development Plan.
Geographic Information Systems (GIS) Data Use and Development: The A-E will submit GIS data. All Figures in the EA will be deliverable in a geodatabase (.mdb) format and ARCGIS Map (MXD Format Files). This will include conversion of graphical hard copy reports, CADD data, on-line GIS data, and other information into GIS usable format. All GIS data converted shall be delivered upon project completion with the following specifications:

- **Format**: ESRI ARCGIS Personal Geodatabase ESRI ArcGIS 9.3.1 file - personal geodatabases or (.shp) files.
- **Projection**: UTM Zones 16N or 17N depending on location.
- **Datum**: NAD 83.
- **Spatial Accuracy Requirements**: Sub-meter at minimum.

1. Create Metadata that is Federal Geographic Data Committee (FGDC) compliant (http://www.fgdc.gov/metadata).
2. New Data created must adhere to SDSFIE 2.6 standards (http://www.sdsfie.org/).
3. Develop the following Figures/Maps in GIS for the EA, as appropriate:
   - Regional Location Map
   - Site Location Map showing approximate property boundaries and existing site layout and features (on current aerial photograph)
   - Proposed Site Layout (Action Alternatives)
   - Soils Map
   - Water Classification Map and Hydrology (water features, to include floodplains, surface waters, and any other relevant data)
   - Known locations of rare species and exemplary communities
   - Land Use/Zoning Districts – all locations
   - Other figures as relevant to the EA's analysis

The data layers shall follow ARNG protocol and be compatible with datasets currently in use by the GAARNG. Specific metadata will be provided for each data layer and should include spatial properties. GIS datasets shall be delivered in a compatible format (based on size of datasets) to be determined at the Kick-off Meeting.
APPENDIX G

Visioning and Management Minutes and Presentation

On 22-23 July 2013, a unit interview and visioning session was held with Georgia Army National Guard (GAARNG) to work towards establishing requirements and an overall vision for the CNGC. Meeting minutes and presentation slides are included in the following pages.
CNGC Site Development Plan

PREPARED FOR: LTC Boyer, LTC Deaton, LTC Fryman, LTC Head, MAJ Banister, MAJ Ellington, MAJ Henson, MAJ Polk, MAJ Tucker, MAJ Worden, CAPT Bell, CWS Wood, Ms. Dylan Curtis, Ms. Michelle Doyle, Ms. Emma Del Vento, Ms. Irene Nath

COPY TO: Mr. Frank Smith

PREPARED BY: Emma Del Vento

DATE: July 22 - 23, 2013

PROJECT NUMBER: W91278-10-D-0054-0022

Monday, 22 July 13
Bldg. 407
CNGC GARRISON (LTC Barry Deaton)

Existing Conditions

- A copy of the completed site visit questionnaire was provided
- LTC Deaton mentioned that a re-organization of the various units at Clay NGC was currently underway and provided a copy of the organization mission statement and a revised description of the various entities which would fall under CNGC Garrison
- Current Buildings Occupied (and function) – 407 (Garrison); 8 (VCC); 214 (security forces); 409 A&B; 53, 54, & 63 (billeting); and 354 (storage).
- Most of the 150 assigned tactical vehicles are stored in various areas off-site.
Issues and Concerns

- **Community requirements** - In an effort to provide additional educational opportunities for the community and generate revenue streams for Clay NGC, the NGB intends to host trainings, workshops, and conferences (with 100-140 attendees per event) for the guard and potentially extend this to federal agencies. Any warranted improvements to existing facilities that would assist in furthering these endeavors were requested.

- **Optimal placement of facilities on a given site** - There is a current deficiency in tactical parking areas onsite. One possible site for extra parking could be the portion of Richardson Road that is located within the limits of the installation.

201st RSG (HRF)

Existing Conditions

- A copy of the completed site visit questionnaire was provided
- The proposed task organization chart of the CMD group and vehicle list were provided
- Current Buildings Occupied (and function) – 30 (administrative/medical support) & 3 (headquarters). The command cell is currently relocating to building 408.
- The RTI split is scheduled to occur between October 1st and September 15th 2013. Additional detail is provided in the following section.

Issues and Concerns

- Building 30 is currently not climate controlled and has multiple tenants. It is recommended that opportunities for reconfiguration of the interior space be evaluated for additional storage and office areas. If the tenant load in building 30 were to be reduced, the 78th HRF could leave building 3 to fully occupy the building.

78TC, HHD

Existing Conditions

- Building 403 is about to become available for future occupancy, and the 78th TC intends to submit a bid of interest. Buildings 3, 408 and 403 would cover space requirements.

Issues and Concerns

- Equipment and vehicle parking is constrained.

RTI

- Chief Robertson joined in on the meeting with the 78th HRF to briefly describe some changes associated with the RTI reorganization/split. Additional unit meetings will be coordinated for a later date.

Existing Conditions

- The RTI split is scheduled to occur after September 15th 2013.
- They are expecting to pick up 1-2 more missions in 2015, which will require support facilities.

Follow-on items

- Additional coordination will occur for future unit interviews.
Tuesday, 23 July 13, Bldg 300
78th ATC/#2 AASF

Existing Conditions

- A copy of the completed site visit questionnaire and 78th ATC task org chart were provided
- Current Buildings Occupied (and function) – Hangar 1, Hangar 300, Hangar 312, Bldg 350 & 352.

Issues and Concerns

- Sustainability – lighting (electric bill/metering), drainage of airfield is suspected to be untreated, drainage pits not provided for fuel truck storage.
- Opportunities for development –
  - Currently, there are numerous containers being stored in the area adjacent to the aircraft parking area, which is reserved for fuel tank parking. It was noted during the meeting that there are pervious areas near building 300 that could be paved in order to provide a space for these to be relocated to. This area may have a utility easement over it.
  - The fuel truck area is presently not equipped with a containment pit, as required.
  - Access to the flight line from Hanger 1 is unrestricted. There are plans to provide a motorized vehicle access gate near the existing wash rack and key card access at priority doors within the building.
- Facility requirements – Hangars have been repurposed mainly through small projects and are not ideally suited to the 78ATC requirements.
  - There is a shortage of usable space within the Hangar 1 sheet metal shop area due to the presence of existing drainage trenches that were installed as a component of the foam suppression system. Foam suppression is not required for the current aircraft usage and the system has been disabled. Covering of the trenches was requested in order to reclaim these areas for workspace.
  - A/C parking requirements meet current need
  - A/C maintenance is sufficient although not optimally located between the hangars
  - Motorpool and GOV parking is critically undersized
  - Drill Hall and dining area are not available
  - Storage requirements are poorly met
  - POV parking needs become critical on training weekends

Follow-on items

- Follow-up with LTC Boyer regarding current vehicle list.

Other

- An operational planning team (G3) makes recommendations for future staffing and locations.
Clay National Guard Center Site Development Plan Visioning Session and Unit Interviews

21 January 2014

Agenda
- Existing Conditions
  - Units
  - Current Uses
  - Functional Areas
  - Surrounding Uses
  - Constraints and Opportunities
- Site Visit Results
- Site Development Plan Vision
- Next Steps

Current Use and Authorized Requirements
DRAFT

<table>
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<th>Unit</th>
<th>Total Use</th>
<th>Current Use</th>
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<tbody>
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<td>Actual</td>
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<tr>
<td></td>
<td></td>
<td>Unit Total</td>
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</table>

Additional Notes:
- Authorization for 76 HMF. 78 TC, and CPMD not included unless indicated as "CPMD Authorization".
- 193 (22) SF of access area (115"x100") included.
- Base 11" drainage not included.
Site Visit Results

- CNGC Garrison
- HRF (201 RSG)
- 78 TC (HHD)
- 78 ATC / #2 AASF
- RTI

Constraints and Opportunities

- Disadvantages:
  - Site is mostly built out
  - Limited GDV parking
  - AT FP building setback
- Opportunities:
  - Vacant facilities
  - REX
  - Boating area
  - Pool
  - Chapel
  - Undeveloped land
  - Low Reed Martin
- L-45 (213,000 SF)

CNGC Garrison

- Existing Conditions:
  - Reorganization underway
  - Most of the 150 assigned tactical vehicles are stored in various areas off-site
  - Buildings Occupied: 427 (Garrison); 8 (VCC); 214 (security forces); 53, 54, 63 (housing); and 364 (storage)
- Issues/Concerns:
  - Improve facilities to support training, workshops, and conferences
    - 100-140 attendees (3rd floor 53, 447 81 or 142)
    - NSB and federal agencies
    - Educational opportunities for the community
  - Generate revenue streams
  - Deficiency in tactical parking areas onsite - extra parking could be located on portion of Richardson Road within the installation

HRF (201 RSG)

- Existing Conditions:
  - Buildings Occupied - 30 (administrative/medical support), 3 (headquarters)
- Issues / Concerns:
  - Building 30 is not climate controlled and has multiple tenants
  - Reconfiguration of interior space should be evaluated for additional storage (150 pallets) and office areas
  - If the tenant load in building 30 were reduced, the 201st HRF could leave building 30 to fully occupy building 30 (tenants: universities)
**78 TC (HHC)**

- Existing Conditions
  - Buildings Occupied: 408, 655
- Issues / Concerns
  - Would like Building 403 which will be available soon; Buildings 408 and 403 would cover space requirements
  - Equipment and vehicle parking is constrained

**Program Needs and Findings**

- Conference center improvements
  - MED DET reallocation from Oglethorpe Armory
  - Additional or reorganized tactical vehicle equipment, and POV parking
  - HRF space inadequate (more equipment = Bldg 30, vacating Bldg 2 and accessing Bldg 400)
  - Chaplain may move from 447 to Chapel (Bldg 32 or 116 historic chapel)
  - Many open areas are required for stormwater management
- ATC/AASF
  - Aircraft bays may be unoccupied
  - Fuel truck parking area used for containers and no containment
  - Aircraft maintenance not in optimal location
  - No drilling and dining area
- RTI
  - MI Academy requires dedicated, secure space
  - Indoor Range for accreditation in the Atlanta metro area required
- FOB Training areas for comm exercises
  - Expecting 1 to 2 additional missions in 2015, which require support facilities
- Increased need for MWR to promote student QOL

**78 ATC / #2 AASF**

- Existing Conditions
  - Buildings Occupied: Hangars 1, 300, and 312; Buildings 350 and 352
- Issues / Concerns
  - Lighting (exterior and interior)
  - Drainage of asphalt is suspected to be unattended
  - Fuel truck area does not have required containment
  - Opportunities for development
  - Containers being stored adjacent to aircraft parking area reserved for fuel and parking, could move to area near hangar 269 (what is in containers? Can they be stored somewhere else?)
  - Access to the flight line from Hangar 1 is unattended. Plans in place to provide monitored vehicle access gate near wash rack and key card access at priority doors within the building
- Facility requirements
  - Hangars have been repurposed through small projects and are not fully added to the 78 ATC requirements
  - Drainage trenches in Hangar 1 are not required and should be covered to reclaim usable space in the metal shop
  - Drainage part of base suppression system not required for current use
  - A/C parking requirements meet current need
  - HVAC maintenance is sufficient although not optimally located between the hangars
  - Monitored and ID/I00 parking is critically understated
  - DHH and dining area are not available
- Storage requirements poorly met

**Opportunities**

- Land behind C-26 hangar (Bldg 312)
- Building 403
- Building 81
- Building 142
- Lockheed Martin campus
- Excess space: approximately 50,000 SF (initial numbers that need to be validated: 870,000 SF on CGMC with 830,000 SF)

**RTI**

- Existing Conditions
  - Buildings
    - 2 HQ and MI Academy
    - 50 DAFC
    - 71 OCS
    - 303 Signal Academy and 54
    - 400 Fitness Facility
    - 409 A&B Billets
- Issues / Concerns
  - MI Academy needs dedicated, secure space
  - Indoor Range for accreditation in the Atlanta metro area required
  - FOB Training area for comm. exercises
  - Expecting 1 to 2 additional missions in 2015, which require support facilities
  - Increased need for MWR to promote student QOL

**Visioning**

- MI Academy needs dedicated, secure space
- Indoor Range for accreditation in the Atlanta metro area required
- FOB Training area for comm. exercises
- Expecting 1 to 2 additional missions in 2015, which require support facilities
- Increased need for MWR to promote student QOL
Current Vision and Goals

A Joint Installation with preeminent facilities designed to meet the needs of the Joint Force Headquarters, tenant units, interagency and community partners and our individual Service Members and their families. Recognized as a leader in providing quality customer service, while caring for the environment and being good stewards of available resources.

Key Points from Goals:
- Maximize RTI Billing
- Meet AT/FP requirements
- Enhance Language Training Center (ML)
- Develop multi-use shared training facility
- Develop enhanced services – improve quality of life (MAF, ...)
- Develop simulations center (RTI and Aviation)
- Engage with community
- Maximize green space – initial development

Site Development Plan Vision
What does CNDC look like in the future?

- Current Vision key points:
  - Preeminent facilities
  - Quality customer service
  - Caring for the environment
  - Good stewards of available resources
- What should vision focus on?
  - JPHQs and meeting space to support (conference center)
  - Training Institute (RTI, sim center)
  - Aviation
- Assume current units remain and space is conserved to be prepared for mission changes
- Concept development options will answer:
  - What will be done with opportunities?
  - Do any constraints need to be mitigated or worked around?
  - What should facilities and streetscapes look like?

Next Steps:
- Unit interviews and usability walkthroughs – completed 30 Oct 13
- Provide comments on current Vision – 15 Nov 13
- Develop SDP vision for CNDC – Vision, Drivers, and Requirements – 15 Dec 13
- Validate space requirements and existing space use – 15 Dec 13
- Identify facility findings and needs – 15 Dec 13
- Develop concept plans – 15 Jan 14
- Concept Plan Charrette to determine selected future development plan – Feb 14
- Environmental Assessment of selected plan – Draft in Mar 14
- Preliminary SDP – Mar 14
- PDDC – Mar 14
- Pre-final SDP – Apr 14
- Final – SDP – Jun 14
APPENDIX H

Concept Development Session Minutes and Presentation

On 19 February 2014, a concept planning session was held to review existing and future facility conditions, and prioritizing development alternatives for the CNGC. The session included group discussions that allowed key leadership to review and discuss existing and future conditions and site development alternatives. Meeting minutes and presentation slides are included in the following pages.
Clay National Guard Center (CNGC) Site Development Plan Concept Development Charrette

Participants introduced themselves followed by a brief overview of the scope of this Site Development Plan (SDP) and Environmental Assessment (EA) project.

The planning assumptions were reviewed and updated as follows:

- **Units**
  - No new MTOE units with rolling stock will be planned to station at CNGC
  - CSMS/FMS and USPFO functions will not relocate to CNGC in the current configuration
  - 78 TC (HHD) relocating to Charlie Brown Airport when Atlanta Readiness Center completed
  - MEDCOM will relocate from Oglethorpe to CNGC
  - To the maximum extent possible, plan should not constrain potential future expansion of aviation mission at CNGC

- **Facilities**
  - No new facilities will be purchased for CNGC (i.e. Lockheed Martin campus)
  - Billeting currently has a low occupancy

The following concepts were presented with outcomes noted:

- **Aviation**: under space allowances with no drill hall or kitchen
  - Selected Alternative: share use of Bldg 60 (RTI DFAC) for kitchen and renovate Bldg 1 (hangar) southwest corner into multi-purpose open space (study required to determine best option to open up space); if Bldg 30 becomes available utilize this space
• **MEDCOM**: function would like to relocate to CNGC and will need administrative and SRP space
  o Selected Alternative: repurpose Buildings 81 (Exchange) and 142 (bowling alley) into SRP space that can be utilized as multi-purpose space (i.e. conference center) as well. Administrative functions could move into Bldg 408.

• **RTI**: overall space allowance is good although not allocated by type of use as defined by NGB (i.e. fitness center over allowance, barracks under allowance)
  o Selected Alternative: no change in current building assignments.

• **JFHQ**: under space allowance for administrative and multi-purpose space.
  o Selected Alternative: Renovate Bldg 63 into administrative space. Relocate Recruiting and Retention into Bldg 403. Utilize Buildings 81 and 142 for multi-purpose space when not utilized by MEDCOM.

• **Building Demolition**: the following buildings are considered candidates for demolition – Bldg 32

Future Development Sites (see attached map with corresponding numbers) were reviewed with the following results:

1. North of Hangar 1 (behind Bldg 3): reserve space for future aviation hangar to maintain flexibility to accept additional aircraft missions
2. Lockheed Martin open space: cleanup not complete; reserve area for horizontal construction only due to proximity to airfield and contamination (i.e. parking lot or aircraft parking ramp)
3. JFHQ lawn: due to changes in AT/FP requirements, this space is available and should be reserved for low impact development parking (i.e. permeable pavement, bioretention areas, and rain gardens)
4. Wooded area adjacent to Fitness Center: reserve space for outdoor recreation (i.e. fitness trail, confidence course, playground)
5. Former fuel storage area: cleanup not complete; reserve for future building construction
6. Halsey Avenue: improve streetscape
7. Parking Lot: improve lot with landscaped islands that provide shade and collect stormwater
8. Alternative Transportation at Main Gate: explore options to provide shelter for bus stop and bike sharing
9. Former pool area: reserve for future building construction

Attachment

1. Selected Presentation Slides
Clay National Guard Center Site Development Plan Concept Development Session

19 February 2014

Existing & Future Conditions: Unit and Facilities

Agenda
- Concept Presentation
- Concept Assessment
- Final Concept Determination
- Next Steps

Assumptions
- No new MTOE units will be planned to station at CNGC
- CSMS/FMS and USPFO functions will not relocate to CNGC
- HRF potentially migrating from CNGC to Kennesaw (or other location such as BSG) will vacate B3
- 78 HC (HHB) relocating to Charlie Brown Airport FY15 (predicted on Atlanta Readiness Center completion)
- Potential MEDCOM relocation from Oglethorpe to CNGC (driven by this
  relocation will be the CSMS/FMS and USPFO move from Confederate Ave.)
- Potential AASF relocation from Windermere to CNGC

Facilities
- No new facilities will be purchased at CNGC (Lockheed Martin campus)
- Billings currently has a low occupancy
- MI Academy to become sole occupant B2
**75 TC (HHD)**

- **Existing Conditions**
  - Buildings Occupied: 406, 655
- **Issues / Concerns**
  - Would like Building 403 which will be available soon; Buildings 406 and 403 would cover space requirements
  - Equipment and vehicle parking is constrained

**Program Needs and Findings**

- Conference center improvements
- MED DET relocation from Oglethorpe Armory
- Additional or reorganized tactical vehicle, equipment, and POV parking
- HRF space inadequate
- Chaplain may move from 447 to Chapel (Bidg 22 or 116 (historic chapel))
- Many open areas are required for stormwater management
- ATR/AASF
  - Ashfield drainage may be unneeded
  - Fuel truck parking area: used for containers and no containment
  - Aircraft maintenance not in optimal location
  - No drill hall and dining area
  - Require storage space
  - Flightline access unrestricted
- **RTI**
  - MI Academy requires dedicated, secure space
  - Indoor Range for accreditation in the Atlanta metro area required
  - FOB training area for comm exercises
  - Expecting 1 to 2 additional missions in 2015, which require support facilities
  - Increased need for MWR to promote student GOL
  - Reduced pedestrian path between buildings and into parking locations

**78 ATC / #2 AASF**

- **Existing Conditions**
  - Buildings Occupied: Hangars 1, 2, and 3 and buildings 309 and 302
- **Issues / Concerns**
  - Lighting (poor illuminating)
  - Dangers of aircraft is suspected to be unneeded
  - Fuel truck area does not have required containment
- **Opportunities for development**
  - Containers being stored adjacent to aircraft parking area needed for fuel tank parking could move to area near Hangar 200 (what is in containers? Can they be stored somewhere else?)
  - Access to the flight line from Hangar 1 is unrestricted (Please explain to provide unloossed vehicle access gainonous wash rack and key card access at front doors within the building)
- **Facility requirements**: hangars have been vacated through small projects and are not ideally suited to the 78 ATC requirements
  - Drainage near the Hangar 1 are not required and should be removed to reclaim usable space in current areas
  - Drainage part of plane suppression system not required for current use
  - ATR parking requirements meet current needs
  - ATR maintenance is sufficient although not optimally located between the hangars
  - Motorpool and GSO parking is greatly underused
  - Drill hall and dining area are not available
  - Storage requirements and space are needed

**Opportunities**

- Land behind C-26 hangar (Bidg 312)
- Building 403
- Building 81
- Building 142
- **Lockheed Martin campus**
- **Excess space**: approximately 50,000 SF (initial numbers that need to be validated: $70,000 SF on CSGC with $30,000 SF)

**RTI**

- **Existing Conditions**
  - Buildings
    - 2 HQ and MI Academy
    - 60 DFAC
    - 71 OCS
    - 353 Signal Academy and S4
    - 400 Fitness Facility
    - 409 A&B Bldgs
- **Issues / Concerns**
  - MI Academy needs dedicated, secure space
  - Indoor Range for accreditation in the Atlanta metro area required
  - FOB Training area for comm exercises
  - Expecting 1 to 2 additional missions in 2015, which require support facilities
  - Increased need for MWR to promote student GOL

**Visioning**
Current Vision and Goals

A Joint Installation with preeminent facilities designed to meet the needs of the Joint Force Headquarters, tenant units, interagency and community partners and our individual Service Members and their families. Recognized as a leader in providing quality customer service, while caring for the environment and being good stewards of available resources.

Key Points from Goals
- Maximize RTI Billing
- Meet AT/FP requirements
- Enhance Language Training Center (ML)
- Develop multi-use shared training facility
- Develop enhanced services - improve quality of life (MWR, ...)
- Develop simulations center (RTI and Aviation)
- Engage with community
- Maximize green space - infill development

Site Development Plan: Vision
What does CNOC look like in the future?

- Current vision key points
  - Preeminent facilities
  - Quality customer service
  - Caring for the environment
  - Good stewards of available resources
- What should vision focus on?
  - JFHQs and meeting space to support (conference center)
  - Training Institute (RTI, sim center)
  - Aviation
- Assume current units remain and space is conserved to be prepared for mission changes
- Concept development options will answer:
  - What will be done with opportunities?
  - Do any constraints need to be mitigated or worked around?
  - What should facilities and streetscapes look like?

Next Steps

- Unit interviews and facility walk throughs - completed Oct 13
- Provide comments on current vision - 15 Nov 13
- Develop SDP vision for CNOC - Vision, Drivers, and Requirements - 15 Dec 13
- Validate space requirements and existing space use - 15 Dec 13
- Identify facility findings and needs - 15 Dec 13
- Develop concept plans - 15 Jan 14
- Concept Plan Charrettes to determine selected future development plan - Feb 14
- Environmental Assessment of selected plan - Draft in Mar 14
- Preliminary SDP - Mar 14
- Final SDP - Jun 14
APPENDIX I

Preliminary Project Design Charrette – PPDC
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1. Project Planning Document Charrette Overview

1.1 General

A Project Planning Document Charrette (PPDC) has been conducted as a part of the Site Development Plan (SDP) for the Georgia Army National Guard (GAARNG) at the Clay National Guard Center (CNGC). The PPDC addressed renovations for billeting facilities and site improvements throughout CNGC to create a safer environment for employees, students and visitors. The goal of the PPDC is to support the SDP and establish key infrastructure elements necessary for the CNGC Mission:

“Ensure safe and secure environment for tenant units and activities. Provide outstanding customer service in environmental, temporary lodging, fitness center operations and facility management in order for tenant organizations to conduct their missions. Be a good neighbor and active leader in the community.”

Well designed, well maintained, functionally efficient facilities create environments that foster productivity, inspiration and learning while mentoring a sense of sustainability for available resources. As a part of the SDP, the GAARNG conducted this PPDC to evaluate and propose actions to upgrade existing facilities to current National Guard (NG) authorizations and standards in order to support the Regional Training Institute (RTI) and Garrison mission at CNGC.

1.2 Charrette Overview

A charrette was held over the dates of 12 and 13 November 2014, beginning with an In-brief by CH2M HILL (see Appendix A), including a day of information gathering with all attendees touring the buildings and sites under consideration, and concluding with an Out-brief presentation on November 13th. Following the Out-brief, DD Forms 1390/1391 were prepared (see Appendix F). Copies of the PPDC In-brief (see Appendix C), Out-brief, charrette agenda and DD Forms 1390/1391 are included in the Appendices.

The PPDC defined the scope for renovating three billeting facilities and general site improvements. Buildings 53, 54, and 63 renovations include upgrading to more typical hotel style rooms. Site improvements will upgrade streetscapes, pedestrian networks, and parking lots. Table 1.1, PPDC Projects Summary, provides an overview of the results of the PPDC.
<table>
<thead>
<tr>
<th>Project ID</th>
<th>Quantity/Unit of Measure</th>
<th>Project Construction Costs (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical Distribution System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demolition of overhead lines</td>
<td>2,070 LF</td>
<td>$17,077</td>
</tr>
<tr>
<td>Installation of underground power lines/network</td>
<td>2,070 LF</td>
<td>$158,000</td>
</tr>
<tr>
<td>Associated transformer work&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1 LS</td>
<td>$200,000</td>
</tr>
<tr>
<td><strong>Electrical Distribution System Subtotal</strong></td>
<td>--</td>
<td>$375,077</td>
</tr>
<tr>
<td><strong>Pedestrian Network</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Painting/re-painting crosswalks</td>
<td>280 LF</td>
<td>$5,250</td>
</tr>
<tr>
<td>New pedestrian paths/sidewalks</td>
<td>1,090 LF</td>
<td>$39,240</td>
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<tr>
<td>Street trees in tree boxes aprx. 30’ o.c.</td>
<td>36 EA</td>
<td>$24,300</td>
</tr>
<tr>
<td>Landscape planting associated with trees</td>
<td>1 LS</td>
<td>$6,540</td>
</tr>
<tr>
<td>Upgraded pedestrian paths/sidewalks</td>
<td>--</td>
<td>---</td>
</tr>
<tr>
<td>2-4’ widening of sidewalk pavement</td>
<td>6,500 LF</td>
<td>$234,000</td>
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<tr>
<td>Street trees in tree boxes aprx. 30’ o.c.</td>
<td>216 EA</td>
<td>$145,800</td>
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<td>Landscape planting associated with trees</td>
<td>1 LS</td>
<td>$39,000</td>
</tr>
<tr>
<td>Benches/seating</td>
<td>15 EA</td>
<td>$14,400</td>
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<td><strong>Pedestrian Network Subtotal</strong></td>
<td>--</td>
<td>$494,130</td>
</tr>
<tr>
<td><strong>Stormwater Management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stormwater Study (id locations to implement strategies)</td>
<td>1 LS</td>
<td>$50,000</td>
</tr>
<tr>
<td>Bioretention areas with native landscape (incl. some trees)</td>
<td>900 LF</td>
<td>$39,258</td>
</tr>
<tr>
<td><strong>Stormwater Management Subtotal</strong></td>
<td>--</td>
<td>$89,258</td>
</tr>
<tr>
<td><strong>Improved Parking Lots</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioretention strips with trees aprx. 30’ o.c.</td>
<td>2,000 LF</td>
<td>$65,017</td>
</tr>
<tr>
<td>Pedestrian paths through lots (painted)</td>
<td>2,000 LF</td>
<td>$72,000</td>
</tr>
<tr>
<td>Permeable pavers for 25% of parking lot area</td>
<td>56,100 SF</td>
<td>$853,893</td>
</tr>
<tr>
<td><strong>Improved Parking Lot Subtotal</strong></td>
<td>--</td>
<td>$990,910</td>
</tr>
<tr>
<td><strong>New Parking Lots</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioretention strips with trees aprx. 30’ o.c.</td>
<td>4,000 LF</td>
<td>$130,034</td>
</tr>
<tr>
<td>Pedestrian paths through lots (painted)</td>
<td>4,000 LF</td>
<td>$144,000</td>
</tr>
<tr>
<td>Permeable pavers for 25% of parking lot area</td>
<td>37,200 SF</td>
<td>$566,217</td>
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<tr>
<td><strong>New Parking Lots Subtotal</strong></td>
<td>--</td>
<td>$840,251</td>
</tr>
<tr>
<td><strong>Grand Total for Site Improvements</strong></td>
<td>--</td>
<td>$2,789,626</td>
</tr>
<tr>
<td><strong>Architecture</strong></td>
<td>SF</td>
<td>($000)</td>
</tr>
<tr>
<td>Building 53 Renovations</td>
<td>13,760</td>
<td>$2,219</td>
</tr>
<tr>
<td>Building 54 Renovations</td>
<td>18,195</td>
<td>$3,076</td>
</tr>
<tr>
<td>Building 63 Renovations</td>
<td>21,528</td>
<td>$2,723</td>
</tr>
</tbody>
</table>

<sup>1</sup> Assumed 2 transformers for every 60’ of transmission line @$2,898 ea. Installed

<sup>2</sup> Estimated. Final cost to be determine by scope of contracted consultant.
2. Site Improvements

2.1 Scope Description

A key component of this PPDC is to introduce site improvements that will resolve unsafe conditions and introduce sustainable development practices to support the existing mission and readiness of units assigned to GAARNG. These site improvements will establish a coordinated, cohesive environment, improving the quality of life for those living, training, working, and visiting Clay National Guard Center.

The PPDC establishes planning guides for implementing these sitework strategies, prioritized to support the Regional Training Institute activities, and supportive of the improvement of safety and quality of life issues across CNGC.

Preliminary cost estimates were completed for portions of work, shown as individual projects, and are described in Table 2.1, Preliminary Site Improvements Cost Summary. A detailed breakdown of the costs per site intervention are located in Appendix D entitled PPDC Site Cost Summary Table.

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Description</th>
<th>Project Construction Costs (2014 USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Distribution System</td>
<td>Upgrades along Halsey and Atlantic Avenues: - Demolition of overhead lines - Installation of underground power lines/network - Associated transformer work</td>
<td>$375,077</td>
</tr>
<tr>
<td>Pedestrian Network</td>
<td>Upgrades along Halsey and Atlantic Avenues &amp; connections between troop housing and the RTI and connection of Buildings 81 &amp; 142 to JFHQs: - Painted/re-painted crosswalks - Sidewalk improvements/widening or new sidewalks installed - Sustainable landscaping and infill street trees - Benches for informal seating areas</td>
<td>$508,530</td>
</tr>
</tbody>
</table>
TABLE 2.1
Preliminary Site Improvement Cost Summary

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Description</th>
<th>Project Construction Costs (2014 USD)</th>
</tr>
</thead>
</table>
| Stormwater Management | Introduction of low-impact development concepts to reduce stormwater runoff in selected areas:  
                          - Stormwater study to verify specific, optimal locations for Bioretention strategies  
                          - Projected implementation of strategies at JFHQ and along Atlantic Avenue          | $89,258                               |
| Parking Lot Improvements | Improved parking lots with defined pedestrian paths, permeable pavers (partial), and Bioretention areas to manage stormwater runoff. | $990,910                              |
| New Parking Lots      | New parking lots constructed on the previous Lockheed Fuel Farm site and completion of the parking lots originally designed for JFHQs and expansion of parking previously reserved for AT/FP standoff from JFHQ. | $1,920,172                            |

2.2 Site Improvements Overview

The current site, or outdoor, environment at CNGC could be improved to provide a better level of finish or approach for a Joint Forces Headquarters (JFHQ) location. The installation currently lacks a coordinated streetscape and landscape strategy, and a safe and connective pedestrian environment to link RTI resources across the campus, including the fitness, dining, community, lodging, and training areas at CNGC. Also, much of the privately-owned vehicle (POV) parking lots could be improved reduce stormwater runoff and the heat island effect.

Sidewalks currently exist along some streets, but in other areas pedestrians are forced to walk on the street or create their own paths through grassy areas, creating unsafe conditions when traversing the installation. Existing parking lots are comprised of large fields of pavement which does not typically include adequate conveyance measures to appropriately address stormwater runoff issues or meet current sustainability initiatives. This pavement also absorbs heat raising the ambient air temperature. The existing overhead electric lines and poles are not appropriately located to support the expanded pedestrian network, and impact the safety at the site. There are very few existing street trees, limited or no seating areas near gathering and training facilities, and existing landscaping is limited at the installation.

If the improvement projects outlined herein are not provided, service members and visitors will not have a safe, adequate environment to utilize connected existing assets and facilities. Such conditions will adversely impact the readiness of assigned GAARNG units and stand in contrast to the mission of CNGC, as outlined in Part 1 of this document.

A number of site improvement strategies have been studied in order to determine cost effective methods of achieving a coordinated, cohesive, safe, and sustainable environment at CNGC. These strategies constitute a menu of environmental interventions that can be phased over time to create complete streets and pedestrian environments that attract trainees to CNGC and support the mission of the units there.
Figure 2.1, *Overview of Site Improvements at Clay National Guard Center*, represents the various categories of interventions included as projects in the PPDC. These projects focus on creating proper connections between the facilities used by soldiers on a daily basis, thus providing the greatest impact upon improving the quality of life for those who serve, train, work, and visit CNGC.

### 2.2.1 Key Activities and Goals

A number of key activities were undertaken to establish reasonably necessary site improvements at CNGC. These activities were conducted during meetings at CNGC during November 2014. The following are key elements that established the scope of the PPDC effort:

- Observe and record existing site conditions throughout CNGC with particular emphasis on building conditions for assets that support the daily life of the soldier and their work at the RTI and in support of the JFHQ.
- Discussion of current usage patterns and site elements, including those elements that would improve the conduct of the missions at CNGC. These discussions included key stakeholders that manage, work, train, and lead the activities conducted at CNGC.
• Development of site improvement strategies that would meet the current inadequacies of the site, acknowledging that a safe, sustainable outdoor environment and connections between activities are important considerations for meeting the missions at CNGC.

• Development a parametric cost estimate to understand funding needed to implement the selected menu of site development strategies.

• Generation of DD Forms 1390/1391s.

• Provision of this PPDC report outlining the charrette activities and subsequent studies conducted to determine those projects needed at CNGC.

2.2.2 Review of Authorizations
CNGC requires POV parking for 90% of authorized personnel assigned to the installation. CNGC also requires additional spaces to support RTI students. Currently, there are 1,681 personnel assigned at CNGC, so 90% strength permits 1,513 parking spaces. The estimated maximum student load is 362 students. Table 2.2, Parking Authorizations, outlines these parking requirements.

Unit training assembly for the JFHQs also supports a parking requirement, but it falls well below the weekday requirement and thus does not add spaces to the total installation requirement. The drill strength is 214 personnel which would support 193 spaces or 6,755 SY of parking. If all functions at CNGC need to be accommodated at one time, this additional space would be required.

<table>
<thead>
<tr>
<th>Parking Type</th>
<th>Authorized Parking (cars)</th>
<th>Authorized Parking (SY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>POV Parking</td>
<td>1,513</td>
<td>52,955</td>
</tr>
<tr>
<td>Student Parking</td>
<td>362</td>
<td>12,670</td>
</tr>
<tr>
<td>JFHQ UTA Parking</td>
<td>193</td>
<td>6,755</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2,068</strong></td>
<td><strong>72,380</strong></td>
</tr>
</tbody>
</table>

2.3 Evaluation of Existing Facilities
Existing facilities were evaluated through interviews with key CNGC stakeholders and observation of conditions through site walks with CNGC leadership. The following sections outline the issues with the existing systems and environment so that appropriate future projects could be determined.

2.3.1 Existing Electrical Distribution System
The existing electrical distribution system consists of overhead lines and transformers primarily positioned along Halsey and Atlantic Avenues, the main streets and pedestrian paths at CNGC. Power poles and lines visually dominate the environment both upon approach from the entry gate at Atlantic Avenue, and along Halsey Avenue, both east and west of the main entry. These poles, and the lines to ground appurtenances, create an unsafe environment for those walking around CNGC.
Existing power lines dominate the landscape (view along Halsey Avenue) and create unsafe environments in their typical connections to the ground.

2.3.2 Existing Pedestrian Network

The existing pedestrian network at CNGC projects a character of having been established as needs warranted over time, however, it is one of the most important networks at CNGC due to the short walk between facilities used daily. The observations of CNGC stakeholders are that the lack of a comprehensive and continuous pedestrian network fuels the perception that facilities are located farther apart than they are.

Additions of sidewalks have been guided by needs as travel paths have become apparent through overuse. Four-foot wide sidewalks are dominant, and allow little room for pedestrians to pass each other safely, nor is this width adequate for people with mobility issues or using wheelchairs. Shade trees are placed in a disorganized manner and do not line sidewalks or streets in an organized fashion.

Though there is some landscaping, it was clearly developed on a project-by-project basis, and though well-cared for, remains uncoordinated. Seating areas, or gathering spaces, occur at random, however, the pedestrian paths, landscape, and outdoor furnishings related to the JFHQ are well-placed and coordinated, and provide a basis for further enhancing the campus environment at CNGC.

The condition of the streetscape and street furnishings along Halsey Avenue and in the heart of CNGC’s training functions are in need of significant upgrade to support students.
2.3.3 Existing Stormwater Management

Through interviews with stakeholders, the CH2M HILL team learned that there is some localized flooding at CNGC. In addition to ponding water at low points, the condition of the existing impervious parking lots facilitates water sheeting across these surfaces, as the parking lots tend to be very large and lack pervious surfaces within to manage stormwater. This lack of water management is a loss for the natural environment and replenishing the ground water and aquifer.

2.3.4 Existing Parking Resources

Though existing parking resources are located throughout CNGC and are proximately located to the various uses, the condition of the lot is not optimal. Of particular concern is the condition of the lots, including their large size and lack of stormwater management elements to assist with sheeting and ponding water on these highly-used surfaces. In addition, there are few defined or protected pedestrian paths providing safe travel to and from cars for pedestrians. In addition, without the presence of landscape or trees, the existing parking lots leave users without shade in the typical Georgia sun, and the unshaded, dark surfaces of the parking lot raise local temperatures due to the heat island effect.

2.4 Proposed Interventions

2.4.1 General

In general, site improvements are focused upon practical, implementable strategies that work to connect facilities at CNGC and better allow units to achieve their assigned missions. Creating a safe, secure, and coordinated environment at CNGC will make it a more attractive training location, and will allow units to achieve their missions within appropriate physical conditions.

Five categories of site interventions are targeted to improve CNGC:

- Upgrade Electrical Distribution System
- Complete Pedestrian Network
- Introduction of low-impact development and stormwater management standards
- Improve parking lots
- Construction of additional parking facilities to serve CNGC
2.4.2 Electrical Distribution System

Typically in current practice, power lines are buried underground in order to minimize power and network disruptions due to weather or other natural or man-made forces, and is seen as an important level of sustainability and best development practice.

In the case of CNGC, it is recommended that the electrical distribution system be buried along Halsey and Atlantic Avenues as an initial project at the installation. This project will require demolition of existing overhead lines, installation of lines underground, and associated transformer work. This project will also have to be carried out strategically in order to facilitate some network outages as power lines are transitioned.

As depicted in Figure 2.2, Electrical Distribution Upgrades, the project specifically recommends approximately 1,250 linear feet of power lines be relocated underground along Halsey Avenue, from the flag circle north of JFHQ to the westernmost hangar building. In addition, about 820 linear feet of power lines will be buried along Atlantic Avenue from the main gate to Building 407.

Burying the existing distribution system will provide safer, more secure electrical power to CNGC. In addition, the removal of overhead lines along these two key entry roads will improve the visual appearance upon entering CNGC, and will address safety considerations related to current power poles and lines extending to ground facilities related to walkability across the campus.

![Electrical Distribution Upgrades](image)
Figure 2.3, *Halsey Avenue Transformation*, illustrates the existing conditions along Halsey Avenue between Buildings 63 and 409 A-B today, and a view of potential conditions after placing power lines underground, upgrading the pedestrian network with wider sidewalks, and introducing new street lights and street trees as elements that screen dominant infrastructure elements, provide protection from cars, shade and refuge, and improvements to walkability and accessibility along one of the most used pedestrian routes at CNGC. The presence of the street trees and upgraded lighting also tends to calm traffic since it creates a seemingly narrower and more pedestrian-friendly street.
2.4.3 Pedestrian Network

Due to the walkable distance between the main facilities used by students in particular, pedestrian safety improvements along Halsey and Atlantic Avenues will greatly benefit most workers and visitors to CNGC on a daily basis.

The PPDC project regarding pedestrian network improvements calls for improving the existing sidewalks and paths, and providing additional sidewalks where needed to complete the network. Two specific areas of focus are connecting troop housing to the RTI (approximately 700 linear feet of sidewalk), as well as connecting Buildings 81 and 142, which are currently being renovated, to the JFHQ (approximately 390 linear feet of sidewalk). **Figure 2.4, Pedestrian Network Improvements,** illustrates the proposed upgrades.

In addition to new sidewalk connections, upgrades are called for along existing sidewalks in the form of widening those that are too narrow for people to easily pass each other, as well as introduction of street trees for additional landscaping and stormwater management characteristics. Sidewalk upgrades will be prioritized to connect RTI training facilities to the other aspects of everyday life, such as billeting, dining, and fitness areas in order to leverage frequently used facilities and current investments being made at CNGC.

The CNGC stakeholder group acknowledged that vehicles travel at a higher rate of speed along Halsey Avenue between Atlantic Avenue and the flag circle north of JFHQ. This is also the location of many of the facilities at CNGC, such as the JFHQ, new community spaces in Buildings 81 and 142, billeting, and dining facilities. In order to provide safer crossings of Halsey Avenue, and in turn helping to slow traffic, re-painting crosswalks with reflective materials, as well as potentially adding raised crosswalks in a few key locations, will aid in reminding drivers that they are in a walkable area.
In addition to linear sidewalk improvements, landscape elements will be used to improve frequent gathering spaces near popularly used facilities, such as community uses to be located in Buildings 81 and 142, dining facilities, and near the entrance to RTI training facilities. Currently, commuters to the campus were observed as walking to their cars to take phone calls, or having to stand and congregate during training breaks. By creating some spaces with area for seating and gathering, a greater sense of comradery and community can be achieved, particularly fostered between students at CNGC.

The pedestrian network upgrades are justified in that improving and completing the pedestrian network will provide safe paths that promote walking and deter visitors from moving cars across the campus. Improved streetscapes will also promote a sense of place, increasing CNGC’s attractiveness as a training destination, while serving the units located here.

2.4.4 Stormwater Management

CNGC is dominated by impervious surfaces due to its dense development and parking needed to serve the units, workers, and students, both on-campus and commuting. Parking lots were paved to optimize car storage, however, large swaths of paving can adversely affect the environment by increasing air temperatures and building performance in the summer sun, as well as causing water to pond or move at will, causing potential flooding and safety hazards.

One method commonly employed is to introduce stormwater management strategies in those areas where water movement and storage are damaging the overall environment. This PPDC project for introducing stormwater management measures at CNGC will be guided by a Stormwater Study which will determine specific optimal locations for bioretention strategies. In addition, and in response to input by CNGC stakeholders, areas of interest for further study were already identified since ponding is already occurring. Specifically, areas along both the east and west sides of Atlantic Avenue were cited as concerns, along with the area due east of the JFHQ. These are areas where immediate interventions will help with existing issues, although the recommended Stormwater Study will validate the best management practices (BMPs) for the long-term.

In this project, approximately a 400-foot area along parts of Atlantic Avenue and an approximately 500-foot long swath east of JFHQ are targeted for early interventions. Low-impact development concepts introduced in these areas will reduce stormwater runoff toward existing sidewalks and buildings, and will likely take the form of bioretention areas, introduction of tree boxes for street trees and tree lines, to manage water to benefit their roots, and introduction of native landscapes. Figure 2.5, Stormwater Management Improvements, targets some short-term areas for interventions.

Justification for this project provides immediate and long-term benefits to CNGC. Low-impact development (LID) strategies reduce stormwater runoff, allowing water to soak into the site. Encouraging this natural action will reduce erosion and potential for contaminants to leave the site untreated, while allowing stormwater to benefit on-site vegetation and replenish the aquifer.

Due to the climate in Georgia, as well as the long growing season, native landscapes requiring less maintenance, are recommended to manage stormwater, and to provide shade and improve and unite the visual appearance of CNGC. Additional background resources
to aid public work and as background for the eventual Stormwater Study, are provided in Appendix H, Native Landscape Information.

2.4.5 Parking Lot Improvements

Parking resources are a key component of the function of CNGC due to the number of units and workers on-site, as well as the number of on-campus and commuter students utilizing the various facilities on a daily basis. A number of comments have been made by the CNGC stakeholders that relate to concerns about pedestrian safety while at CNGC, and a number of those can be traced to the condition of the existing parking lots.

Due to the amount of impervious, or paved surfaces, at CNGC, upgrades to add defined pedestrian paths, bioretention areas, and even permeable paving, due to Georgia’s favorable climate, will aid in the condition of these areas, and will reduce pedestrian and vehicular conflict.

This project identifies a number of existing parking lots as candidates for safety and condition upgrades, as identified in the following list, with parking spaces assumed at 350 SF/car including parking lot drive lanes and circulation:

- **Parking lot north of Buildings 81 and 142 (9,289 SY/239 cars)** – Add pedestrian paths, permeable pavers and bioretention areas due to its large size and existing slope;
- **Parking lot west of Building 70 (3,333 SY/86 cars)** – Add permeable pavers and bioretention areas;
- **Parking lot north of Building 353 (5,778 SY/149 cars)** – Add permeable pavers and bioretention areas;
- **Parking lot south of Building 407 (3,067 SY/79 cars)** – Add permeable pavers and bioretention areas;
- Parking lot between Buildings 53 and 54 (3,467 SY/89 cars) – Add permeable pavers and bioretention areas.

The interventions are proposed in the following manner:

**Pedestrian paths** should link facilities and uses surrounding them. For example, in the case of the large parking area north of Buildings 81 and 142, the lot should be rebuilt so that defined pedestrian paths cross the lot to connect Buildings 81 and 142 to the Fitness Center, as well as Buildings 409 A-B. A continuation of the pedestrian network should run through parking zones in a logical manner, and can be defined by painting the paths, or locating them between bioswales between parking lanes.

**Bioretention areas**, also known as bioswales, should be used between rows of parked cars to handle the stormwater runoff before it washes into the paths and grassy areas at the edges of the parking lots. These bioretention areas are often defined by native plantings and trees that help clean the runoff of contaminants before it is released back into the groundwater. This sustainability practice is particularly important in parking lots due to the oils and other residues that leave cars and can damage the natural environment if not properly pre-treated.

**Permeable paving** is another intervention that significantly aids in managing water runoff, and is practical in the Georgia climate. Due to higher installation and maintenance costs, however, permeable paving is best used in targeted areas, such as at the front end of parking rows where planted bioretention areas cannot fit, or demarcating pedestrian paths throughout a parking lot. For these reasons, only 25% of parking lot areas were priced for potential use of permeable pavers so that the cost-benefit of this intervention is optimized.

**Figure 2.6, Parking Lot Improvements**, illustrates the parking areas that could most benefit from these strategies due to their size, existing condition, and the facilities they serve and can potentially connect.
The parking lot improvement project is justified in that reconfigured lots will provide safe paths for pedestrians, decrease potential for pedestrian and vehicular conflict, provide shade from trees, and will reduce stormwater runoff. The decrease in impervious surfaces will also reduce heat island effect, particularly in the harsh summer months.

Figure 2.7, *Atlantic Avenue Transformation*, illustrates the changed environment when bioretention areas line parking lots, and wider sidewalks, street trees, and landscape plantings line paths, creating a safer, and more hospitable and inviting environment along Atlantic Avenue at the entry to CNGC.

**FIGURE 2.7**

*Atlantic Avenue Transformation*

*Providing bioretention areas, featuring native plants that can slow water runoff from parking lots and cleanse water prior to its filtering into the ground, or the existing stormwater system, are assets that add to the environmental sustainability at CNGC.*
2.4.6 Parking Facilities Construction

Additional parking resources will assist CNGC to carry out its existing mission, as well as future missions. As shown in Figure 2.8, New Parking Lots, additional POV parking resources are proposed to the west of JFHQ, completing parking lots as originally designed, as well as introducing additional parking in the space due east of JFHQ made available by reduced AT/FP standoffs. In addition to the JFHQ area, there is an opportunity to increase GOV parking resources on the former Lockheed Fuel Farm site, just north of the Building 353 parking lot.

![FIGURE 2.8 New Parking Lots](image)

This project identifies new lots, and their sizes, in the following list, with parking spaces assumed at 350 SF/car including parking lot drive lanes and circulation:

- Originally designed parking west of JFHQ (11,200 SY/288 cars) - Create a new, paved lot for POV featuring defined pedestrian paths, permeable pavers and bioretention areas due to its large size and to connect the lot to the greater campus;

- New parking lot west of JFHQ in space available from reduced AT/FP standoffs (5,333 SY/137 cars) - Create a new, paved lot for POV featuring defined pedestrian paths, permeable pavers and bioretention areas due to its large size and immediate connection and use by JFHQ;

- New parking lot on former Lockheed Fuel Farm site (13,889 SY/357 cars) - Create a new, paved GOV vehicle lot featuring defined pedestrian paths, permeable pavers and bioretention areas due to its large size and to connect the lot to the greater campus.

This project will be justified by additional parking needed to meet future growth. Additional justification includes reconfigured lots to provide safe paths for pedestrians, decreased potential for pedestrian and vehicular conflict, shade from trees, and introduction of bioretention areas and permeable paving to reduce stormwater runoff. The decrease in impervious surfaces will also reduce heat island effect, particularly in the harsh summer months.
2.5 Facility Requirements

The following facility requirements were considered in determining site improvement projects included in this PPDC.

2.5.1 Force Protection

Unified Facilities Criteria (UFC) 4-010-01, Minimum Antiterrorism Standards for Buildings, establishes standards that provide minimum levels of protection against terrorist attacks for the occupants of all DoD inhabited buildings.

The parking standoff from unreinforced masonry buildings, such as billeting, to parking and/or roads within a controlled perimeter, such as that of CNGC, is eighty (80) feet. Existing parking lots being upgraded through sitework interventions, along with the construction of new parking lots, should institute this setback requirement. For both parking types, the pedestrian paths and bioretention strategies can be designed to occur in this setback area, taking advantage of this requirement while supporting the overall sustainable development of the parking lots.

2.5.2 Life Safety and Code Analysis

The primary life safety code issues to integrate during the design phase are requirements of the 2010 Americans with Disabilities Act (ADA) Standards for Accessible Design and the Architectural Barriers Act (ABA). These standards will be integrated during site design and can remedy any existing areas of concern.
3. Primary Facility

3.1 Architectural Scope

The PPDC targeted seven buildings identified in the Site Development Plan as key to the completion of the Regional Training Institute and full integration of its functions into the base infrastructure:

- Building 53, Existing Billeting and Officers’ Club: Major renovation proposed in PPDC; Renovation of Officers’ Club is not a part of this PPDC

- Building 54, Existing Billeting: Major renovation proposed in PPDC to convert nine units configured in a “quad” design to 34 single units plus one quad.

- Building 63, Existing Billeting: Recently renovated to current “1 + 1” design standard, which when combined with those of Buildings 409 A & B meet authorized space needs; proposed renovations include upgraded finishes, energy saving equipment upgrades.

- Building 81, General Purpose and Administrative Use: Currently under renovation, which when completed will establish suitable mixed use to satisfy authorized space for the foreseeable future.

- Building 142, General Purpose and Administrative Use: Currently under renovation, which when completed will establish suitable mixed use to satisfy authorized space for the foreseeable future.

- Buildings 409 A & B, Existing Billeting: Relatively new buildings of a “1 + 1” design, which when combined with the number of units in Building 63 satisfy space authorization for this type of unit for the foreseeable future.

Throughout the PPDC architectural renovations are organized according to each building with the work in each building being a single project.

Preliminary cost estimates for individual projects are shown in Table 3.1, Projects Cost Summary Table.
### 3.2 Architectural Overview

Current building supply does not provide suitable mix of billeting types nor acceptable level of finish to serve today’s NG. The architectural challenge of the PPDC is to transform existing billeting stock into preferred, updated, upgraded facilities that enhance the quality of life at CNGC.

#### 3.2.1 Goals
- Capture the requirements for future billeting needs.
- Observe and record existing building conditions and generate concept studies of renovations to bring existing facilities up to current code requirements and NG standards
- Develop a parametric cost estimate
- Generate DD Forms 1390/1391s
- Provide a PPDC report on the charrette results

#### 3.2.2 Primary Concerns and Obstacles
- Determination that the existing facilities can be upgraded to meet current and anticipated standards
- Determination that the existing facilities can meet current and proposed spatial needs
- Concern that the existing facilities can be reconfigured to provide required mix of billeting styles

---

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Unit Design Type</th>
<th>Number of Beds</th>
<th>Gross Building Area (SF)</th>
<th>Total Funded Costs ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building 53</td>
<td>Private Room with Bath</td>
<td>24(^1)</td>
<td>13,760</td>
<td>2,219</td>
</tr>
<tr>
<td>Building 54</td>
<td>Private Room with Bath</td>
<td>32(^2)</td>
<td>18,195</td>
<td>3,076</td>
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<tr>
<td>Building 63</td>
<td>“1+1” Design</td>
<td>26(^3)</td>
<td>21,528</td>
<td>2,723</td>
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<tr>
<td>Building 81</td>
<td>Building is currently being renovated and is not included in recommendations</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Building 142</td>
<td>Building is currently being renovated and is not included in recommendations</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Buildings 409 A &amp; B</td>
<td>“1+1” Design</td>
<td>80</td>
<td>40,803</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Notes**
1. Design option exists to add 2 rooms in lieu of existing offices for a total of 26
2. 32 private units plus one “quad” design unit that sleeps four. Count only includes private rooms.
3. Building includes management offices
• PPDC investigation is limited to the upgrade of existing buildings and does not consider new construction.

3.2.3 Review of Authorizations

Authorized billeting facilities to serve units at CNGC are summarized in Table 3.2, Billeting Rooms.

<table>
<thead>
<tr>
<th>Billet Design Type</th>
<th>Required Rooms</th>
<th>Existing Rooms</th>
<th>Room Deficit</th>
<th>PPDC Additional Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>“1+1” Design</td>
<td>236</td>
<td>80</td>
<td>156</td>
<td>26</td>
</tr>
<tr>
<td>Private</td>
<td>126</td>
<td>0</td>
<td>126</td>
<td>56</td>
</tr>
</tbody>
</table>

3.3 Evaluation of Existing Facilities

3.3.1 Building 53

This building is a two story facility with a layout that features a double loaded corridor extending as central spine down the length of the building accessing suite style units consisting of a living area, toilet/shower/vanity, and a bed room. The layout suffers from inefficient use of space, low utilized living rooms, and includes tight spaces that do not provide desired utility and cannot be navigated by a disabled person, dated colors and finishes. The second floor is only accessed by stairs, no elevator is provided.

The building HVAC system consists of two constant volume air handling units that utilize chilled water coils and heating hot water coils to provide outside air ventilation to the spaces. Each room has individual unit that utilize chilled water coils and heating hot water coils. The system is a two-pipe system and therefore cannot heat and cool simultaneously. The chilled water is provided by one air-cooled chiller. The heating hot water is provided by
one electric boiler. The HVAC system is controlled by a direct digital control system with programmable thermostats in each room.

The building domestic hot water system consists of one natural gas fired boiler connected to a 500-gallon storage tank. The plumbing fixtures are water conserving, low-flow type.

The building has 1200A Main Switchboard (MSB), 120/208V, 3PH, 4W service equipment fed from a pad mounted transformer located at the exterior of the building. The facility has combination of incandescent and fluorescent fixtures in the interior. The lighting system is controlled primarily by manual switch.

The building is monitored with conventional (zoned) fire alarm system with Mass Notification System (MNS).

Each unit is provided with CATV. Each sleeping unit has no telephone or wired internet connection. A Wi-Fi connection is available for internet access.

3.3.2 Building 54

The existing layout is two story building with an exterior walkway/balcony serving as access to “quad” units with four bedroom/bath combinations that feed off a common area. The first floor is currently undergoing mold remediation that appears to be fed by condensation on refrigerant lines concealed above the ceiling. Second floor is not experiencing that effect. This shared unit design is dated and unpopular with occupants. Second floor is only accessed by exterior stairs and no elevator is provided.

The building HVAC system consists of floor mounted package terminal air conditioners in each room that utilize chilled water coils and heating hot water coils. The chilled water is provided by one air-cooled chiller. The heating hot water is provided by two natural gas fired boilers. The HVAC system is controlled by manual controls at each unit.

The domestic hot water system consists of one natural gas fired boiler connected to a 500-gallon storage tank. The plumbing fixtures are water conserving, low-flow type.

The building has 600A Main Distribution Panel (MDP), 120/208V, 3PH fed, 4W service equipment from pad mounted service transformer located at the exterior of the building. Each quad unit has 100A, 120/208V, 3PH, 4W load center that feeds loads within the unit.
The facility has combination of incandescent and fluorescent fixtures in the interior. The lighting system is controlled primarily by manual switch.

The building is monitored with conventional (zoned) fire alarm system (FA) with Mass Notification System (MNS). The FA/MNS system is currently being upgraded.

Each unit is provided with CATV. It was observed that each sleeping unit has no telephone or wired internet connection. A Wi-Fi connection is available for internet access. This building houses Telecom Room that feeds Bldgs. 53, 63, 409A and 409B.

### 3.3.3 Building 63

Building 63 was renovated from original design into “1+1” style units served by a single-loaded corridor along the west wall. General condition of the facility is good. No architecturally functional improvements are needed at this time.

The HVAC system consists of split system air source heat pumps serving each apartment that utilize direct expansion coils. Outside air ventilation is ducted directly to each indoor fan coil unit. The HVAC system is controlled with programmable thermostats in each apartment.

The domestic hot water system consists electric hot water heaters for each apartment. The plumbing fixtures are water conserving, low-flow type.

The building has 1200A Main Switchboard (MSB), 120/208V, 3PH, 4W service equipment fed from pad mounted service transformer located at the exterior of the building. Each unit has 225A, 120/240V, 1PH load center that feeds loads within the unit. The facility has combination of incandescent and fluorescent fixtures in the interior. The lighting system is controlled primarily by manual switch.

The building is monitored with conventional (zoned) fire alarm system with Mass Notification System (MNS).

Each unit is provided with CATV. Each sleeping unit has no telephone or wired internet connection. A Wi-Fi connection is available for internet access.
3.3.4 Buildings 81 & 142
Substantial renovations are currently under construction. The renovations suitably address the need for administrative type space. Building was removed from consideration for future renovations. The HVAC and plumbing systems are currently being removed for building renovations.

3.3.5 Buildings 409 A & B
The most recently constructed buildings in the study. Room designs are current, suitably in compliance with standards and are not in need of changes. No functional improvements are needed at this time. Building was removed from consideration for current renovations. Long term maintenance of these facilities will involve replacement of finishes and upgrades to equipment.

The HVAC system consists of split system air source heat pumps serving each room that utilize direct expansion coils. Outside air is provided to the spaces by four split system air conditioners that utilize direct expansion cooling coils and electric heating coils. The HVAC system is controlled by programmable thermostats in each room.

The domestic hot water system consists electric hot water heaters for each apartment. The plumbing fixtures are water conserving, low-flow type.

The building 409B has 1200A Main Switchboard (MSB), 120/208V, 3PH fed from pad mounted service transformer located at the exterior of the building. The MSB provides power to building 409A. The facility has combination of incandescent and fluorescent fixtures in the interior. The lighting system is controlled by manual switch.

The building is monitored with addressable fire alarm system with Mass Notification System (MNS).

Each unit is provided with CATV. A Wi-Fi connection is available for internet access.

3.4 Proposed Renovations
3.4.1 General
Proposed building renovations are limited to interior renovation of existing space and cosmetic repairs/replacement of exterior components. Neither additions nor structural modifications of the buildings are a part of PPDC recommendations.

Mechanical systems shall be selected based on a Life Cycle Cost Analysis to provide energy efficient operation throughout the life of the facility. The systems identified in this report shall be considered during the analysis.

3.4.2 Minimal Cost Approach
Buildings 53 and 54 are structurally sound and could be fitted with new finishes and upgraded mechanical systems as minimal improvements but would retain inefficient space utilization and low customer satisfaction. The PPDC goal of improving quality of life and upgrades to current standards are not met by this minimal cost approach.
3.4.3 Architectural Recommendations

The descriptions below represent renovations to the buildings that more closely align with the goals of the PPDC. Concepts are limited to modifications achievable within the existing building footprints:

Building 53

Goal of Building 53 re-design is to improve utility and efficiency of the units by eliminating the living rooms, replacing inefficient HVAC systems, provide acceptable bath room facilities and render rooms accessible to individuals with disabilities. Existing building configuration, structure, dimensions, window locations are suitable for new unit design that accomplishes a “hotel” style, private room design consisting of a full bath room and bed room by relocating the corridor to an exterior wall and establish single side access to the rooms. The bed room design accommodates a queen size bed or multiple single beds along with wardrobe storage, desk, and dresser unit with wall mounted entertainment. The proposed renovations increases to 24 single units replacing 16 suite design units.

On both first and second floor, offices occupy the easternmost portion of the building. The proposed design shows an alternate that re-configures this space into private units on the second floor. If feasible to relocate current management functions, two additional units can be achieved on the first floor. The first floor unit option is not included in the room count as it is thought that some management space will be needed. Re-designed units meet accessibility standards.

The renovated floor plan is shown overlaid on the demolished plan in Appendix G.

The HVAC system shall be replaced and updated for a more efficient system. The fan coil units along with all piping shall be removed and replaced with a variable refrigerant flow system. Condensing units shall be installed to provide refrigerant to the individual room units. The two constant volume air handlers shall remain in place to provide outside air to the spaces. The electric boiler shall be replaced for a natural gas fired condensing boiler. The control system shall be upgraded to connect all new systems to existing direct digital control system. The local controls shall be connected to the base-wide control system.

The domestic hot water system shall remain in place. The system shall be confirmed to have adequate provisions to avoid legionella and provide adequate recirculation. All water distribution piping is assumed to be galvanized steel, if piping is found to be other materials it shall be replaced. Reduced pressure backflow preventers shall be added onto the incoming water service if not already in place.

Hotel room toilet/shower rooms will be provided with white vitreous china, wall or floor mounted, flush valve type water closets; self-rimming counter lavatories restrooms; and shower heads with thermostatic mixing valves. All water flow devices shall be water conserving, low-flow type. Polished, low-flow, proximity-actuated chrome faucets will be provided for lavatories. Dual-flush toilet flush valves shall be provided.

The existing electrical service shall remain. New efficient lighting fixtures shall be provided. Common area lighting shall be controlled by occupancy sensor. Each unit shall be provided with load center. The load center shall feed power to outlets, lighting and equipment within
that unit. New CATV, voice and data outlet shall be installed in each sleeping unit complete with cabling. The existing Wi-Fi connection shall be relocated for optimum coverage.

In compliance with UFC 3-600-01 and UFC 4-021-01, the upgrades to building 53 will require a fully automatic, hydraulically designed sprinkler system. This will include new incoming water supply, all valves, switches, monitoring devices, etc. designed and installed per all applicable codes.

The existing fire alarm and mass notification system will be upgraded. The upgraded fire alarm/ mass notification system will be UL listed, addressable, zoned, non-coded with full control, supervisory, alarm signal, display, and battery back-up in accordance with all applicable codes. System to be selected that is compatible with existing base alarm systems.

**Building 54**

Goal of Building 54 re-design is to improve utility and efficiency of the units by eliminating the multi-occupant “suite” unit designs, replacing inefficient HVAC systems, providing acceptable bath room facilities and render rooms accessible to individuals with disabilities. Complicating a re-design of Building 54 is the load bearing wall serving as a center spine extending the length of the building. Proposed new design minimizes cuts through this wall while allowing the configuration of single occupancy units. Each unit is entered from a small vestibule off of the walkway or balcony that provides some privacy, establishes a vestibule that enhances security and reduces air infiltration. The design accommodates a queen size bed along with wardrobe storage, desk, and dresser unit with wall mounted entertainment. The design replaces eight “quad” units with 32 private units and maintains one quad unit, as requested.

The HVAC system shall be replaced and updated for a more efficient system. The package terminal air conditioning units along with all piping shall be removed and replaced with a variable refrigerant flow system. Indoor fan coil units will be floor mounted and placed in the locations of the previous air conditioning units. Outside air ventilation will be provided directly through the new fan coil units. Condensing units shall be installed to provide refrigerant to the individual room units. A new direct digital control system shall be installed and connected to all HVAC units. The local controls shall be connected to the base-wide control system.

The domestic hot water system shall remain in place. The system shall be confirmed to have adequate provisions to avoid legionella and provide adequate recirculation. All water distribution piping is assumed to be galvanized steel, if piping is found to be other materials it shall be replaced. Reduced pressure backflow preventers shall be added onto the incoming water service if not already in place.

Hotel room toilet/shower rooms will be provided with white vitreous china, wall or floor mounted, flush valve type water closets; self-rimming counter lavatories restrooms; and shower heads with thermostatic mixing valves. All water flow devices shall be water conserving, low-flow type. Polished, low-flow, proximity-actuated chrome faucets will be provided for lavatories. Dual-flush toilet flush valves shall be provided.

The existing electrical service shall remain. New efficient lighting fixtures shall be provided. Common area lighting shall be controlled by occupancy sensor. Each unit shall be provided with load center. The load center shall feed power to outlets, lighting and equipment within
that unit. New CATV, voice and data outlet shall be installed in each sleeping unit complete with cabling. The existing Wi-Fi connection shall be relocated for optimum coverage.

In compliance with UFC 3-600-01 and UFC 4-021-01, the upgrades to building 54 will require a fully automatic, hydraulically designed sprinkler system. This will include new incoming water supply, all valves, switches, monitoring devices, etc. designed and installed per all applicable codes.

The building fire alarm system/MNS is currently being upgraded. The new fire suppression system will tie into the recently upgraded fire alarm system. It is assumed that any recent upgrades will comply with the most current code requirements. Additional modifications will be made as necessary to maintain code compliance.

**Building 63**

Renovations to Building 63 have strategically addressed the need to functionally update unit designs. As a part of the PPDC consideration is given to replacement of wear-and-tear items and those mechanical items that wear out over time. Recommended updates include flooring, base, paint, water and energy saving appliances and HVAC units.

The HVAC system shall be replaced and updated for a more efficient system. The indoor fan coil units along with the outdoor heat pumps units shall be removed and replaced for newer, efficient units. A new direct digital control system shall be installed and connected to all HVAC units. The local controls shall be connected to the base-wide control system.

The electric water heaters shall be removed and replaced with natural gas fired domestic hot water heaters. The system shall be confirmed to have adequate provisions to avoid legionella and provide adequate recirculation. All water distribution piping is assumed to be galvanized steel, if piping is found to be other materials it shall be replaced. Reduced pressure backflow preventers shall be added onto the incoming water service if not already in place.

Hotel room toilet/shower rooms will be provided with white vitreous china, wall or floor mounted, flush valve type water closets; self-rimming counter lavatories restrooms; and shower heads with thermostatic mixing valves. All water flow devices shall be water conserving, low-flow type. Polished, low-flow, proximity-actuated chrome faucets will be provided for lavatories. Dual-flush toilet flush valves shall be provided.

The existing electrical service shall remain. New efficient lighting fixtures shall be provided. Common area lighting shall be controlled by occupancy sensor. Each unit shall be provided with load center. The load center shall feed power to outlets, lighting and equipment within that unit. New CATV, voice and data outlet shall be installed in each sleeping unit complete with cabling. The existing Wi-Fi connection shall be relocated for optimum coverage.

In compliance with UFC 3-600-01 and UFC 4-021-01, the upgrades to building 63 will require a fully automatic, hydraulically designed sprinkler system. This will include new incoming water supply, all valves, switches, monitoring devices, etc. designed and installed per all applicable codes.

The existing fire alarm and mass notification system will be upgraded. The upgraded fire alarm/ mass notification system will be UL listed, addressable, zoned, non-coded with full
control, supervisory, alarm signal, display, and battery back-up in accordance with all applicable codes. System to be selected that is compatible with existing base alarm systems.

**Buildings 409 A & B**

No renovations are proposed as a part of the PPDC to Buildings 409 A and 409 B.

**Common Construction**

Common to each of the building, renovations generally include;

Demolition: Existing improvements to be removed include masonry partitions, miscellaneous metal fabrications, rough and finished carpentry, casework and countertops, sealants, insulation, doors, door frames, windows, access panels, metal stud partitions, flooring, carpeting, gypsum board, visual communications, signage, toilet accessories, blinds, floor mats.

Salvage: Re-usables such as fire extinguishers in usable conditions are to be salvaged, stored and re-installed. Other building materials may be determined to be re-usable and qualify for LEED credit. Existing building utility services are to remain and be re-used.

Patch and Repair: Building structure, enclosure and construction determined to remain are to be patched and repaired to provide suitable base for new construction.

Construction: Renovations to include, but may not be limited to, concrete patch and repair, cast-in-place concrete, concrete finishing, miscellaneous metal fabrications, metal railings, rough carpentry, finish carpentry, casework, solid surfacing, air barrier system, insulation, EIFS repairs, firestopping, joint sealants, steel doors and frames, wood doors, forced entry resistant components, windows, door hardware, glazing, metal stud partitions, gypsum board, flooring, carpeting, paints, visual communications specialties, interior signage, toilet accessories, fire extinguishers, window treatments, entrance floor mats, fire suppression and alarm system,

HVAC: Renovations to include, but may not be limited to, ductwork removal and repair, piping removal and repair, insulation repairs, new piping installed and new units installed.

Plumbing: Renovations to include, but may not be limited to, plumbing fixture removal and repair, piping removal and repair, domestic water system removal and repair, new low flow plumbing fixtures installed, and new domestic water systems installed.

Electrical: Renovations to include, but may not be limited to, concealing all work where possible. Where exposed work is required in finished areas, the contractor shall use surface raceway approved by the owner. All existing wiring which will not be made obsolete and which will be disturbed due to construction shall be restored to operating condition.

**3.5 Spatial Relationships**

All proposed floor plans are included in Appendix G.
3.6 Facility Requirements

3.6.1 Force Protection Requirements
Unified Facilities Criteria (UFC) 4-010-01, Minimum Antiterrorism Standards for Buildings establishes standards that provide minimum levels of protection against terrorist attacks for the occupants of all DoD inhabited buildings. Under this standard the three buildings are classified as Billeting located within a Controlled Perimeter and are afforded a Low Level of Protection. Standoff distances and other features of this standard apply to the design of renovations to the facilities.

3.6.2 Facility Design Criteria
The following design criteria will be utilized:

- ASHRAE 62.1, Ventilation for Acceptable Indoor Air Quality
- ASHRAE 90.1, Energy Standard for Buildings Except Low-Rise Residential Buildings
- UFC 1-200-01, General Building Requirements sets general criteria for the design and construction of government facilities and establishes use of consensus building codes and standards, and identifies key core UFC for the facilities.
- UFC 1-200-02, High Performance and Sustainable Building Requirements.
- UFC 3-101-01, Architecture
- UFC 4-720-01, Lodging Facilities

The buildings are standing and are currently in occupiable condition, served by utilities, water and sewer and telephone. No supporting facilities such as site work, roadway, parking, utility or infrastructure improvements are required. Each building must have an accessible route.

The renovations shall incorporate the following design concepts:

- The facility shall implement and meet criteria for LEED credits to obtain LEED Silver certification
- The facility shall incorporate energy conservation through the incorporation of roof and wall insulation
- The facility shall promote low maintenance by utilizing durable materials for construction
- The facility shall meet ABA requirements for all applicable areas.
- The facility shall incorporate antiterrorism force protection measures that comply with DoD Minimum Antiterrorism Standards for Buildings, latest edition

3.6.3 Life Safety and Code Analysis
3.6.4 Hazardous Materials

No hazardous materials report is available at the time of this writing. Prior to initiation of any or all of the proposed projects, an assessment and report on existing hazardous material contained in the existing, affected facilities. Renovations must not be started without a plan for abatement, containment or other remedy in accordance with acceptable practices.

3.6.5 Technical Criteria and Standards

The following technical criteria and standards will be utilized:

- NG Pam 415-12 Army National Guard Facilities Allowances
- DG 415-5 Army National Guard Facilities Information Design Guide
- DG 415-15 Army national Guard General Facilities Information Design Guide
- NGR 415-10 Army National Guard Military Construction
- WBDG Whole Building Design Guide
- NFPA 13 Standard for the Installation of Sprinkler Systems
- NFPA 24 Installation of Private Fire Service Mains and Their Appurtenances
- NFPA 25 Standard for Inspection, Testing and Maintenance of Water-Based Fire Protection Systems
- NFPA 70E Electrical Safety in the Workplace
- NFPA 72 National Fire Alarm and Signaling Code
- NFPA 90A Standard for the Installation of Air-Conditioning and Ventilating Systems
- FM Data Sheet 3-26 Fire Protection Water Demand for Nonstorage Sprinklered Properties
4. **DD Forms 1390/1391**

4.1 **Project Location**

Clay National Guard Center is located adjacent to Dobbins Air Reserve Base, Marietta Georgia, approximately 10 miles northwest of the city of Atlanta.
4.2 **Forms DD 1390/1391**

Standard forms DD 1390/1391 have been generated to support each renovation project as a stand-alone construction project and are based on conclusions reached in the supported SDP of which this PPDC is a part.

Forms DD 1390/1390 for Building 53, Building 54 and Building 63 are included in Appendix F.
APPENDIX J

Facility Condition Assessment – Hangar 1
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<td>3</td>
</tr>
<tr>
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<td>9</td>
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Hangar 1 Facility Condition Assessment

CH2M HILL conducted condition assessments of six Uniformat II building systems on 6 August 2015 in accordance with the Sustainment Management System (SMS) 9-point direct rating method. The systems assessed were exterior enclosure; roofing; interior construction; plumbing; heating, ventilation and air conditioning (HVAC); and electrical. A Level 3, direct-level assessment was conducted, meaning that the team conducted an actual walk through of the facility as opposed to higher level table-top assessments in Levels 1 and 2, yet not as detailed as a Level 4 assessment. The “direct-level” assessment refers to a visual inspection, as opposed to a “distress-level” assessment in which components are evaluated by their subcomponents, which often requires powering down equipment and removing panels and parts. The assessment team consisted of a senior registered architect and senior professional engineer with over 35 years of collective facilities experience.

Prior to beginning the on-site work, the assessment team requested available data such as maintenance records, recurring work program items, known maintenance issues, and other relevant background information. In addition, the CH2M Team interviewed the facility manager and other knowledgeable building representatives such as maintenance and operation shop technicians, to gain insight into the historical wellness of the facility, reliability of building systems, recent or planned repairs and replacements, equipment locations, and the impact of the preventive maintenance program for each system.

One building, Hangar 1 (117,443 SF), was assessed at the Georgia Army National Guard (GAARNG) site at Clay National Guard Center (CNGC), with data entered to the SMS worksheet located in Appendix A, Sustainment Management Systems Worksheet.

The overall value of Hangar 1, based on the assets inventoried, is $24.3 million. This total value is shown in Table 1, FCA Cost Summary. Costs were developed primarily from RS Means and Parametric Cost Engineering System (PACES) Cost Detail Report. When more specific costing was required, www.meanscostworks.com was used. Based on RS Means, the cost estimates include a 25% contractor fee for each facility and a 7% architect fee. An area cost factor of 0.90 was applied for Atlanta, Georgia. The escalation and area cost factors are from UFC 3-701-01, DoD Facilities Pricing Guide, and can be adjusted within the accompanying spreadsheet.

<table>
<thead>
<tr>
<th>Building Number</th>
<th>Building Name</th>
<th>RPUID</th>
<th>Area</th>
<th>FCA Building Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>00001</td>
<td>Building 1 – Hangar</td>
<td>80539</td>
<td>117,443 SF</td>
<td>$24,337,316</td>
</tr>
</tbody>
</table>
This inventory was also assessed for its condition using a five-tier scale. **Table 2, FCA Ratings Summary,** provides the results of the assessment based on the five tiers.

**TABLE 2**  
**FCA Ratings Summary**

<table>
<thead>
<tr>
<th>Building Number</th>
<th>Building Name</th>
<th>Green</th>
<th>Green/Amber</th>
<th>Amber</th>
<th>Amber/Red</th>
<th>Red</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>00001</td>
<td>Building 1 – Hangar</td>
<td>32</td>
<td>89</td>
<td>119</td>
<td>35</td>
<td>17</td>
<td>292</td>
</tr>
</tbody>
</table>

(By percentage)

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>Green</td>
<td>Equipment is in good condition and to continue with routine maintenance as needed</td>
</tr>
<tr>
<td>Green/Amber</td>
<td>Green/Amber</td>
<td>Equipment exhibiting minor deficiencies and in need of minor repair</td>
</tr>
<tr>
<td>Amber</td>
<td>Amber</td>
<td>Equipment exhibiting moderate deficiencies and in need of moderate repair</td>
</tr>
<tr>
<td>Amber/Red</td>
<td>Amber/Red</td>
<td>Equipment exhibiting moderate to severe deficiencies and in need of extensive repair and may need replacement</td>
</tr>
<tr>
<td>Red</td>
<td>Red</td>
<td>Equipment not functioning and in need of replacement</td>
</tr>
</tbody>
</table>

The table highlights that the building is overall in an “amber” condition. Assets in the amber range are considered the economic sweet spot. Items that are red have already failed and in need of significant investment to restore functionality. Items that are green are functioning adequately and not in need of investment above routine maintenance. The amber items, however, need investment to avoid them from degrading into a red, or failed, status. The cost of repairing an amber item to avoid failure is less expensive than the cost of replacing an item that has failed.

The primary ambers and reds, and their associated costs, are shown in **Table 3, Amber and Red Systems.** The total system value is the total cost to replace the system, not the cost to repair and bring the system up to a good condition. **Table 4, Project Estimates,** shows the estimated cost to repair the systems.

**TABLE 3**  
**Amber and Red Systems**

<table>
<thead>
<tr>
<th>System</th>
<th>System and Suggested Priority Actions</th>
<th>Total System Value¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>Replace office windows with fixed glass units.</td>
<td>$1,277,780</td>
</tr>
<tr>
<td>Doors</td>
<td>Replace door knobs with levers; adjust doors, frames, and hardware to properly latch and lock.</td>
<td>$57,120</td>
</tr>
<tr>
<td>Walls</td>
<td>Repair hole in Room 190 wall (6’ x 6’); repaint water stained walls in approximately 10 rooms.</td>
<td>$661,204</td>
</tr>
<tr>
<td>Floors</td>
<td>Replace approximately 10 missing VCT tiles; conduct professional carpet cleaning; install approximately 5 transition strips.</td>
<td>$910,183</td>
</tr>
<tr>
<td>Ceiling</td>
<td>Replace approximately 130 missing and damaged tiles.</td>
<td>$192,607</td>
</tr>
<tr>
<td>HVAC</td>
<td>Conduct balancing test and replace 2 x chillers.</td>
<td>$822,657</td>
</tr>
<tr>
<td>Electrical</td>
<td>Remove legacy components; identify electrical distribution to baffles in order to restore proper operation of the baffles.</td>
<td>$2,155,079</td>
</tr>
<tr>
<td>Roof</td>
<td>Repair roof leaks on north side lean-to; restore displaced gravel in 90’ x 15’ area on south side.</td>
<td>$1,037,022</td>
</tr>
</tbody>
</table>

¹The “Total System Value” costs reflect the cost of the particular system, not the cost of the suggested repairs. They should be viewed as an upper limit for costs of repair. For example, the $910,183 for floors is the cost of replacing all floor finishes, which is much higher than the cost of replacing 10 missing tiles, carpet cleaning, and installing missing transition strips.
The Table 4 actions are the top priority items recommended for inclusion in a repair project. The cost estimates are considered a Concept Screening or Class 5 estimate as defined by the American Association of Cost Engineering (AACE). It is considered accurate from +100% to -50%. The estimates, often referred to as a rough order of magnitude or conceptual estimate, are based on RS Means square foot costs, building construction costs, and mechanical cost data.

The last item in Table 4, Americans with Disabilities Act (ADA), is an addition from Table 3. ADA compliance is not a building system, but an important project for Hangar 1 in order to be code compliant and service all potential facility occupants. Table 5, Hangar 1 Project Costs, sum the totals from Table 4 and apply markups.

Approximately $3.7 million is needed to preclude Hangar 1 from further degradation. The following sections in this report provide additional details on the conditions observed in Hangar 1.

**TABLE 4**

**Project Estimates**

<table>
<thead>
<tr>
<th>System and Suggested Priority Actions</th>
<th>Class 5 Project Estimate</th>
<th>Cost Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows- replace older insulated glass panes and reseal all windows.</td>
<td>$1,022,224</td>
<td>80% of total system value; bay windows in hangar will likely not require replacement</td>
</tr>
<tr>
<td>Doors- replace door knobs with levers; adjust doors, frames, and hardware to properly latch and lock. Repair transoms and cracked glass.</td>
<td>$28,560</td>
<td>50% of total system value</td>
</tr>
<tr>
<td>Walls- repair hole in Room 190 wall (6' x 6'); repaint water stained walls in approximately 10 rooms.</td>
<td>$10,000</td>
<td>$1000 per room x 10 rooms</td>
</tr>
<tr>
<td>Floors- replace approximately 10 missing VCT tiles; conduct professional carpet cleaning; install approximately 5 transition strips.</td>
<td>$50,250</td>
<td>VCT: $15/VCT; Carpet: 25,000 SF x $2/SF; Transition Strips: $100</td>
</tr>
<tr>
<td>Ceiling- replace approximately 130 missing and damaged tiles.</td>
<td>$6,500</td>
<td>$50 x 130</td>
</tr>
<tr>
<td>HVAC- conduct balancing test and replace 2 chillers.</td>
<td>$210,000</td>
<td>RS Means prices balancing at ~$1000/ piece of equipment. Chillers priced at $100k each.</td>
</tr>
<tr>
<td>Electrical- remove legacy components; identify electrical distribution to baffles in order to restore proper operation of the baffles.</td>
<td>$10,570</td>
<td>RS Means prices removal of electrical wire at ~$9/ 100 LF</td>
</tr>
<tr>
<td>Roof- repair roof leaks on north side lean-to; restore displaced gravel in 90' x 15' area on south side.</td>
<td>$259,255</td>
<td>Assume 25% of total system value</td>
</tr>
<tr>
<td>ADA- Bring latrines 140A (unisex), 151 (men), and 152 (women) into full ADA compliance.</td>
<td>$3,000</td>
<td>Assume $1000 per latrine</td>
</tr>
</tbody>
</table>

**TABLE 5**

**Hangar 1 Project Costs**

<table>
<thead>
<tr>
<th>Cost</th>
<th>Contractor Fees (25%)</th>
<th>Architect Fees (7%)</th>
<th>Escalation Factor (1.066)</th>
<th>Adjustment Factor (0.90)</th>
<th>Total (with Escalation &amp; Adj)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,600,359</td>
<td>$400,089</td>
<td>$112,025</td>
<td>$1,706,943</td>
<td>$1,440,323</td>
<td>$3,659,381</td>
</tr>
</tbody>
</table>
General Observations

The Aviation Enclave at the Clay National Guard Center (CNGC) consists of five buildings as shown in the map below: 1, 300, 312, 350, and 352. Building 1 is the largest hangar for the Georgia National Guard and the focus of this report. Building 300 is the second largest hangar at 47,765 SF. Buildings 312 and 352 are smaller hangars and Building 350 is used to store ground support equipment and parts.

Hangar 1 was built in 1949 with sound structural integrity. The hangar has had numerous additions and renovations and was primarily used by the Navy and Marine Corps for about 60 years prior to the Army. CNGC moved into Hangar 1 from across the runway in 2008 as a tenant to Naval Air Station (NAS) Atlanta. In 2009 the roles reversed as the CNGC became the building owner and the Navy eventually moved out.

Additions to the hangar have been made through the years and are referred to as “lean-to’s” in older floorplans. The lean-to’s are on the north and south sides of the main hangar floor, are two stories, and mainly house administrative space. The south side lean-to is primarily used by four tenant units that work in the hangar on the second floor. The first floor on the south contains a combination of storage and administrative space. The north side administrative space is used by the full-time support staff whose mission is to support and train the four units. The State Aviation Officer (SAO) and his staff also work in offices in the north side lean-to.

Despite being nearly 70 years old, the building was impressively built and structurally sound. Because of its size and location it is often used for special events such as the recent change-of-command for the Adjutant General. This high level of visibility assists in providing a clean and freshly painted interior. However, the building does have defects that require significant attention, especially in the areas of heating, ventilating, and air conditioning (HVAC) and roof leaks. If left unchecked, these issues will exacerbate and degrade not only other building systems, but also the mission of the hangar itself.

There is currently no dedicated facility manager, but rather several staff who assist with work orders, answering questions, and helping troubleshoot challenges. While this staff does an incredible job, a facility of this size would greatly benefit from a dedicated, full-time facility manager. The sections that follow describe the building systems in more detail. Data was collected and assessments conducted on 28 July and 6 August 2015.
Architectural

A considerable number of windows do not function properly, do not close securely, and allow penetration of windblown rain and unconditioned air, which tends to overload the HVAC system. Windows should be replaced with fixed glass units unless there is a reason to achieve natural ventilation through the building. The windows into the Hangar bays do not require replacement.

The hangar doors generally work well and require servicing two to four times per year to work properly. There is a fail-safe switch on the hangar doors that ensures the smaller pedestrian doors are closed first before the hangar doors will move. Sometimes this switch does not work properly.

The building is occupied on an average day by approximately 75 personnel; 50-55 are full-time staff on the north side and approximately 20-30 on the south side. On a drill weekend there are approximately 350 personnel in the hangar. Many of the pedestrian doors require servicing. The main entry door does not properly latch when entering the building. The door to the secure avionics room will not properly secure.

From a 2009 renovation, interior finishes are generally in good condition except for the areas impacted by roof leaks.

Hangar 1 is not ADA compliant. There is no elevator and multiple other improvements are necessary to make the hangar ADA compliant.

Roof

A 2009-2010 project replaced the roof, gutters, and downspouts. However, there are significant leaks on the north and west sides of the building. Eleven areas were identified with leaks and many of the occupants in those spaces have collection buckets on the floor and have moved their desks to avoid dropping water. These spaces have damaged or broken ceiling tiles, damaged carpet, and water stains running down walls and in light fixtures. Several rooms have mold from the residual moisture. CFMO is aware of this pressing issue and working to find solutions. Based on discussions with hangar occupants, the materials used for the roof construction are sufficient, but the installation was not adequate. The contractor who installed the roof has since gone out of business. Water penetration of structures is often a problem that involves multiple envelope systems and the connections and joints between them for which the forensics alone is a considerable undertaking.
Mechanical

The HVAC system is comprised of four air handlers placed on the exterior of the facility, four roof-mounted units, and augmented by eight wall and window units. Occupants in the office spaces with window units commented on the units not providing sufficient air at a desired cold temperature and not properly regulating levels of humidity. Window units are usually short-term solutions and evidence of a poorly functioning main system. The system is not properly balanced resulting in chilled spaces with open windows and warmer spaces augmented with blowers, dehumidifiers, and fans.

One of the primary HVAC air handlers, on the flightline side of the building, has not worked properly since summer 2014. Despite being serviced in December 2014, it still does not blow sufficiently cool air. Large ceiling-mounted fans in the hangar space provide air flow, offering significant improvements to the condition of the aircraft maintenance activities taking place on the floor, often with open hangar doors. The manufacturer, Big Ass Fans, provides a full-service warranty that provides the level of service needed by the installation to ensure proper upkeep of assets. Such warranties should be emulated in the future.

There are 24 overhead unit heaters in the hangar to provide warmth in the cooler months. They are fueled by natural gas and when CNGC took ownership of the facility in 2009, only 20% of the unit heaters worked. Most of them now work due to maintenance and work orders the last five years and are tied to the hangar doors. If the doors open, the unit heaters automatically shut off to conserve energy.

The HVAC distribution systems on the north side of the hangar warrants replacement. The northwest mechanical room, accessed from the hangar floor, contains a legacy generator and older electrical panels. A small basement mechanical space, with exterior access from the southeast corner, contains two large compressors that service the pneumatic air in the hangar. The pneumatic air system works well, but does not maintain sufficient air pressure throughout the facility. This was an issue particularly for the metal shop in which the pneumatic air is used frequently. The system is serviced about every six months.

A ceiling-mounted air handler in a storage room on the south-side requires servicing. A current work order is in Prideweb to address the loud, screeching belts.

The north-side vault, which was likely used as an arms room in the past, needs ventilation. Mold is growing on the ceiling as a result of the lack of air flow.

Although fire protection is a separate UNIFORMAT building system from Mechanical, a quick observation is included here. Eight storage tanks augment the fire protection system within the hangar. They contain a corrosive material that would cause irreparable damage to the aircraft inside, which are priced at approximately $12M each. The circuit breakers for these tanks have been turned off in order to prevent an automatic discharge of this corrosive material. The fire marshal should be consulted to ensure there is adequate fire protection without the need for the tanks.
Electrical

The electrical system in Hangar 1 can be characterized as a chaotic network of wires. The power is sufficient, but its distribution is poor. The multiple renovations through the years have done little to remove old wiring, but have continued to add to the existing array of wires. Current building codes require removal of unused cabling. Insulation on the wires have been found to contribute to deadly smoke and vapors during a fire. Closets full of switchboards with wires that haven’t been used in years sit next to new energy management control systems. Old switchgear and panelboards pre-date the 1970s, some of which are no longer in use.

The hangar serviced Navy and USMC airframes, each with their own set of power requirements and components. The same was true for the Army aviation airframes as electrical components were again reconfigured to align with Army aircraft requirements, ensuring the right power was available in the right spaces.

The building is supported by a backup generator that feeds multiple buildings in the vicinity.

There are two access gates to control traffic to the flightline areas around Hangar 1. The gates are electronically controlled by CAC readers. The east gate works well but the west gate works approximately three out of four times and occasionally opens and closes itself. This poses a potential security risk to the flightline.

Exterior lighting has been upgraded to LEDs with small photovoltaic panels. The hangar has motion-detection lights and other lighting controls installed in 2013. Lights are generally in good condition, with the exception of dangling lights near a pedestrian door in the south-side storage area.

Due to the roof leaks on the northeast corner of the hangar, heavy rains result in conducting “lock-out, tag-out” procedures due to the water that flows down the side of the hangar wall and onto electrical outlets and components. Whenever there is a flicker in power, such as a large storm, the power momentarily goes off and back on, shutting down the HVAC units. CFMO has to reset the equipment to cycle it back on.

There are plenty of data ports and electrical outlets throughout the administrative spaces.

As occupants leave the building through an exterior pedestrian door, blue boxes on the wall allow occupants to disengage door locks quickly in the event of an emergency. The panels are extremely sensitive, causing an alarm to sound. The blue box system should be replaced or adjusted to reduce the sensitivities. At the same time, the system should be added to the installation’s Guardian system to trigger automatic alerts to responders and leaders.

*The electrical system in Hangar 1 consists of dated components (top) and newer panels (bottom).*
**Plumbing**

At the time of the assessment, a major sewer repair project was underway. The main sewer line became severely restricted, resulting in poor drainage and foul smells. As a result, the water fountains and latrines were not in use on the east side of the building. However, latrines were still inspected as part of the assessment.

Of the twelve latrines, five are male, five are female, and two are unisex. While many of the latrine fixtures are new, the latrines themselves would benefit from modernization to improve the overall appearance and finishes.

Water quality tests have demonstrated that the water is safe for consumption, though a brown tint, likely due to a high iron content, discourages many users.

Grading of the hangar floor is sufficient to allow runoff, but the floor drains often backup and stink. Tenants often add fresh water via hose to help reduce the stench and assist in flow. The current sewer construction along Halsey Avenue should prevent this problem from occurring in the future by unclogging line constrictions. The building contains adequate plumbing fixtures to meet occupant requirements according to International Building Codes (IBC).

![Three floor drain covers in the hangar bay, such as the one above, need to be replaced.](image)

**Accessibility**

**Toilet and Shower Facilities**

Toilet facilities were provided in Hangar 1 for both sexes, however neither provided proper accessibility design in accordance with current standards. Accessibility codes and standards have evolved and, in fact, 70 years ago did not exist. The facility does not provide fully accessible spaces according to today’s standards, though they likely met standards when constructed. ADA 604.8.1 states, “Wheelchair accessible compartments shall be 60 inches wide minimum measured perpendicular to the side wall, and 56 deep minimum for wall hung water closets.” Shower facilities were provided in Building 1 for both sexes, however neither provided proper accessibility design. Showers installed did not provide grab bars and seats required for transfer type stalls. ADA 608.3.1 states, “In transfer type compartments, grab bars shall be provided across the control wall and back wall to a point 18 inches from the control wall.” ADA 608.4 states, “A folding or non-folding seat shall be provided in transfer type shower compartments. The top of the seat shall be 17 inches minimum and 19 inches maximum above the finished floor.”

![This latrine, Room 151, offers a wheelchair accessible sink and shower. However, the soap dish is above the 40” limit.](image)

![Some showers do not have roll-in capability](image)

**Table 6, ADA Snapshot,** highlights the major areas of ADA compliance and deficiency within Hangar 1. The green areas indicate compliance while the red indicate a deficiency. Rooms 151 and 152 are the most ADA-compliant latrines and provide the only showers capable for wheel-chair roll-in. The unisex latrine, Room 140A, is also mostly ADA compliant.
Conclusion

The recent project sealing the windows on the north side of the hangar has resulted in fewer roof leaks, but some leaking still occurs due to improper roof installation. The north, and in particular northeast, portion of the roof should be repaired as quickly as possible to avoid further degradation of the ceiling, floor, and wall finishes. The rooms with current water damage require attention, ideally after the roof repairs are complete. The HVAC system across the building would benefit from a balancing test to ensure consistent heating and cooling. Currently, some areas require window units to augment cooling while some areas receive little to no distribution resulting in mold growth.

A whole building repair and renovation project is recommended for Hangar 1 focusing on the highest priority issues which includes replacing windows, renovating select areas of walls, floors, and ceilings, removing legacy electrical distribution components, balancing HVAC, replacing two HVAC chillers, repairing roof, and updating latrines to make ADA compliant. The total estimated cost is $3.7M. this could be programmed as one project or separated into phases by major system with the lower cost items being bundled into one project (doors, walls, floors, ceilings, electrical, and latrines).
### Level 1 - Maj Group

<table>
<thead>
<tr>
<th>Level 2 - Group</th>
<th>Level 3 - Individual Elements</th>
<th>Description</th>
<th>Condition</th>
<th>Quantity</th>
<th>Unit of Measure (UOM)</th>
<th>Rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Substructure</td>
<td>A10 Foundations</td>
<td>Slab on grade</td>
<td>Green/Amber</td>
<td>117443</td>
<td>SF</td>
<td>$27.33</td>
<td>$3,209,717.19</td>
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<tr>
<td></td>
<td>A1020 Special Foundations</td>
<td>NA</td>
<td></td>
<td>0</td>
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</table>
| | A1030 Slab on Grade | Reinforced concrete | Green/Amber | 117443 | SF | $- | $-
| | A20 Basement Construction | Slab on Grade | Reinforced concrete | Green/Amber | 117443 | SF | $- | $-

### B Shell

<table>
<thead>
<tr>
<th>Level 2 - Group</th>
<th>Level 3 - Individual Elements</th>
<th>Description</th>
<th>Condition</th>
<th>Quantity</th>
<th>Unit of Measure (UOM)</th>
<th>Rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>B10 Superstructure</td>
<td>B1010 Roof Construction</td>
<td>Steel beams, columns, and joists</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$8.83</td>
<td>$103,021.69</td>
</tr>
<tr>
<td></td>
<td>B1020 Roof Construction</td>
<td>See ISR. Roof panels; some leaks</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$8.83</td>
<td>$103,021.69</td>
</tr>
<tr>
<td></td>
<td>B20 Exterior Enclosure</td>
<td>CMU with brick facade, metal siding on hangar bay above ~20'</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$39.75</td>
<td>$668,359.25</td>
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<tr>
<td></td>
<td>B2020 Exterior Windows</td>
<td>Metal frame, single hung; efficiency and safety issue</td>
<td>Amber/Red</td>
<td>117443</td>
<td>SF</td>
<td>$10.88</td>
<td>$1,277,779.84</td>
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<td></td>
<td>B2030 Exterior Doors</td>
<td>Metal; roll-up in industrial area; metal double-sliding doors into hangar; horizontal-rolling hangar doors</td>
<td>Amber/Red</td>
<td>117443</td>
<td>SF</td>
<td>$8.58</td>
<td>$1,007,660.94</td>
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<td></td>
<td>B30 Roofing</td>
<td>Roof panels; See ISR</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$8.83</td>
<td>$1,037,021.69</td>
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### C Interiors

<table>
<thead>
<tr>
<th>Level 2 - Group</th>
<th>Level 3 - Individual Elements</th>
<th>Description</th>
<th>Condition</th>
<th>Quantity</th>
<th>Unit of Measure (UOM)</th>
<th>Rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>C10 Interior Construction</td>
<td>C1010 Partitions</td>
<td>CMU/Drywall</td>
<td>Amber/Red</td>
<td>117443</td>
<td>SF</td>
<td>$0.46</td>
<td>$54,023.78</td>
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<tr>
<td></td>
<td>C1020 Interior Doors</td>
<td>Hollow wood</td>
<td>Green/Amber</td>
<td>112</td>
<td>EA</td>
<td>$510.00</td>
<td>$57,120.00</td>
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<tr>
<td></td>
<td>C1030 Fittings</td>
<td>Toilet partitions, folding walls</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$0.27</td>
<td>$31,709.61</td>
</tr>
<tr>
<td></td>
<td>C20 Stairs</td>
<td>Steel (mezzanines); concrete (air ops area)</td>
<td>Amber</td>
<td>4</td>
<td>Flight</td>
<td>$12,275.00</td>
<td>$49,100.00</td>
</tr>
<tr>
<td></td>
<td>C3010 Wall Finishes</td>
<td>Plaster (air ops area); painted CMU; exposed metal siding and brick (hangar bay)</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$5.63</td>
<td>$661,204.09</td>
</tr>
<tr>
<td></td>
<td>C3020 Floor Finishes</td>
<td>Concrete (industrial); carpet (admin); linoleum (corridors)</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$7.75</td>
<td>$910,183.25</td>
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<tr>
<td></td>
<td>C3030 Ceiling Finishes</td>
<td>Acoustic panels (air ops); unfinished in bay</td>
<td>Green/Amber</td>
<td>117443</td>
<td>SF</td>
<td>$1.64</td>
<td>$191,608.52</td>
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<tr>
<td>Level 1 - Maj Group</td>
<td>Level 2 - Group</td>
<td>Level 3 - Individual Elements</td>
<td>Description</td>
<td>Condition</td>
<td>Quantity</td>
<td>Unit of Measure (UOM)</td>
<td>Rate</td>
</tr>
<tr>
<td>-------------------</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>D1000 Elevators &amp; Lifts</td>
<td>N/A</td>
<td>0</td>
<td>0</td>
<td>$ - $ -</td>
<td>$ -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D1200 Escalators &amp; Walks</td>
<td>Steep steps to basement; otherwise N/A</td>
<td>Amber</td>
<td>0</td>
<td>0</td>
<td>$ - $ -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D1300 Other Conveying Systems</td>
<td>Compressed air; extensive overhead cranes (multiple)</td>
<td>Amber</td>
<td>3</td>
<td>EA</td>
<td>$ 48,451.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D2000 Plumbing Fixtures</td>
<td>Water closet, floor mount (7); Urinal, wall hung (8); Lavatory, wall hung (12); Service sink, wall hung (4); Kitchen sink, double bowl (1); Water fountain, floor mounted (3); Water cooler, wheelchair type (2)</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$ 3.06</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D2000 Domestic Water Dist.</td>
<td>Gas fired heater (75 MBH); Gas fired heater (115 MBH); Electric water heater (50 gal)</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$ 0.71</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D2000 Sanitary Waste</td>
<td>Extensive system; no problem noted</td>
<td>Amber</td>
<td>0</td>
<td>0</td>
<td>$ - $ -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D2000 Rain Water Drainage</td>
<td>Steel; 6&quot; square down spouts; roof drains</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$ 0.56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D2000 Other Plumbing Systems</td>
<td>Several safety eye wash systems</td>
<td>Amber</td>
<td>4</td>
<td>EA</td>
<td>$ 828.00</td>
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<tr>
<td></td>
<td></td>
<td>D2000 Other HVAC Sys</td>
<td>Multiple backshop testing stations; most equipment removed and non-operational.</td>
<td>Amber</td>
<td>0</td>
<td>0</td>
<td>$ - $ -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D2000 Fire Protection</td>
<td>Admin space sprinkled, plus one electric room</td>
<td>Amber/Red</td>
<td>117443</td>
<td>SF</td>
<td>$ 21.60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D2000 Sprinklers</td>
<td>Admin space sprinkled, plus one electric room</td>
<td>Amber/Red</td>
<td>117443</td>
<td>SF</td>
<td>$ 21.60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D2000 Standspipes</td>
<td>Wet standpipe, 2&quot;</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$ 0.81</td>
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<tr>
<td></td>
<td></td>
<td>D2000 Other FP Systems</td>
<td>Control station; multizone; Manual pull stations (3); Bell signaling device</td>
<td>Amber</td>
<td>3</td>
<td>EA</td>
<td>$ 162.50</td>
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<tr>
<td></td>
<td></td>
<td>D3000 Electrical Service &amp; Dist.</td>
<td>Multiple panels throughout; new conduit evident; much old conduit as well.</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$ 7.48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D3000 Lighting &amp; Branch Wiring</td>
<td>Floor and high bay light fixtures throughout; all functional. Receipticles (low density); wall switches (2/1000 SF); Central AC power (2 watt); Misc power (2 watt)</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$ 10.30</td>
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<tr>
<td></td>
<td></td>
<td>D3000 Comm. &amp; Security</td>
<td>New servers and cable; old comm andn conduit</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$ 0.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D3000 Other Electrical Systems</td>
<td>Old remnants of building systems for backshops</td>
<td>Amber</td>
<td>117443</td>
<td>SF</td>
<td>$ 0.07</td>
</tr>
</tbody>
</table>
## Level 3 Condition Assessment - ASTM Uniformat II Classification for Building Elements (E1557-97)

### Location: Clay National Guard Center; Facility # 1; RPUID 80539

<table>
<thead>
<tr>
<th>Level 1 - Maj Group</th>
<th>Level 2 - Group</th>
<th>Level 3 - Individual Elements</th>
<th>Description</th>
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<th>Rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>E Equipment &amp; Furnishings</td>
<td>E10 Equipment</td>
<td>E1010 Commercial Equipment</td>
<td>Kitchenette in break room</td>
<td>Amber</td>
<td>1</td>
<td>EA</td>
<td>$1,645.00</td>
<td>$1,645.00</td>
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<tr>
<td></td>
<td>E1020 Institutional Equipment</td>
<td>NA</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>$-</td>
<td>$-</td>
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<tr>
<td></td>
<td>E1030 Vehicular Equipment</td>
<td>NA</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>$-</td>
<td>$-</td>
</tr>
<tr>
<td></td>
<td>E1090 Other</td>
<td>SCIF</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>$-</td>
<td>$-</td>
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<tr>
<td>E20 Furnishings</td>
<td>E2010 Fixed Furnishings</td>
<td>Kitchen cabinets; office partitions</td>
<td>Amber</td>
<td>50</td>
<td>EA</td>
<td>$58.50</td>
<td>$2,925.00</td>
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<td>E2020 Movable Furnishings</td>
<td>Typical admin furnishings</td>
<td>Amber</td>
<td>100</td>
<td>EA</td>
<td>$520.00</td>
<td>$52,000.00</td>
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</tr>
<tr>
<td>G Site</td>
<td>AT/FP violation</td>
<td>-</td>
<td>Amber/Red</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>$-</td>
<td>$-</td>
</tr>
</tbody>
</table>

### Condition Code Legend
- Green: Minor Deficiencies
- Yellow: Some Deficiencies
- Red: Significant Deficiencies
- Black: Deficiencies present significant obstacles
Georgia Army National Guard

SITE DEVELOPMENT PLAN

General Lucius D. Clay National Guard Center
Marietta, Georgia

Prepared by

CH2M HILL

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Atlanta, GA 30328
770-604-9095

Final
September 2015