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# Fort Stewart/HAAF

## REGIONAL GROWTH PLAN

**SUBMITTED TO** the Fort Stewart  
Growth Management Partnership

# Acknowledgements

The four counties of Bryan, Liberty, Long, and Tattnall and their 12 municipalities formed the Fort Stewart Growth Management Partnership (FSGMP) in April 2008 to develop a Regional Growth Management Plan (RGMP) that prepares the region for growth related to mission transformation at Fort Stewart and Hunter Army Airfield (HAAF).

The FSGMP is the result of an intergovernmental memoranda of understanding and it consists of representatives of 16 local governments in the Fort Stewart/Hunter Army Airfield region, as well as installation representatives. This document represents their collective blueprint to deliver quality services and to sustain the well-being and prosperity for current and future residents of the region.

This study was prepared with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the participating local government entities and stakeholders of the Fort Stewart/HAAF region and does not necessarily reflect the views of the Office of Economic Adjustment.

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Over the previous two decades, the population of the four-county Fort Stewart region increased by almost thirty percent, with more than 38,000 new residents drawn to the area's natural beauty and coastal character, as well as Fort Stewart and Hunter Army Airfield. Despite this robust growth, the Hinesville-Fort Stewart metropolitan statistical area remains among the smallest metropolitan areas in the country to host a major military installation. This comparatively smaller size leaves the region more vulnerable to the impacts of mission change and requires communities to prepare proactively for population increases and rising service demands.

Fort Stewart and Hunter Army Airfield (Fort Stewart/HAAF) are the home of the 3rd Infantry Division and serve as the Army's Premier Power Projection Platform on the Atlantic Coast. With 284,923 acres of land, Fort Stewart is also the largest installation east of the Mississippi River (See **Figure 1. Regional Context** on the following page). Due to initiatives such as Base Realignment and Closure (BRAC) and Grow the Army, the Department of Defense (DoD) announced that Fort Stewart/HAAF would receive additional troops, including the stationing of a 5th Brigade Combat Team (BCT) at the installation. The DoD reversed the decision to assign a BCT to Fort Stewart in June of 2009 (An analysis of the impacts of the BCT decision is contained in a separate report, *The Economic Impact Analysis of the 2009 Brigade Combat Team Cancellation at Fort Stewart, Georgia* available at [www.growfortstewart.com](http://www.growfortstewart.com)). Despite the cancellation, Fort Stewart/HAAF remains a vital link in the US Army's current and future, training, force projection and deployment requirements and will continue to grow as a result of mission transformation. By 2013, Fort Stewart/HAAF will add 4,341 personnel, including active military, civilian workers, and contractors.

Military-related growth is occurring within the context of overall change in the region. Coastal counties, such as Bryan and Liberty, are an increasingly appealing retirement location due to the area's warm climate, natural amenities and affordable cost of living. With proximity to the Port of Savannah and Port of Brunswick, as well as major interstates, the region has also emerged as a transportation and distribution hub for the State of Georgia. These factors have combined to increase the area's population and attract economic investment. According to US Census Bureau figures and current estimates, the four-county region grew from 93,352 people in 1990 to 131,389 in 2010, an increase of 29 percent. Population forecasts from the State of Georgia Office of Planning and Budget indicate that strong growth is very likely to continue. Forecasts call for an additional 72,483 people to settle in the region over the next two decades, bringing the total projected population of the four counties to almost 204,000.

Population growth alone creates various planning challenges for local communities by increasing demand for housing, public services, and infrastructure. But this growth is likely to occur in a context made more complex by issues such as increased sensitivity to protection of the environment, including the drinking water supply, the limited resources of smaller, predominantly rural communities to manage development impacts, and a constrained fiscal climate for many local governments.



Figure 1. Regional Context

To examine more closely specific resource areas, the team conducted one-on-one data gathering interviews or work sessions with six Advisory Committees, consisting of more than 90 representatives from the fields of education, health and behavioral care, child care, community planning, workforce development, economic development, emergency services, and utilities.

To address the impacts of expected military growth and the many inter-related factors that affect quality of life in the region, Liberty, Bryan, Long, and Tattnall Counties along with Fort Stewart/HAAF formed the Fort Stewart Growth Management Partnership. The Partnership includes one representative from each county and city in the region along with the Fort Stewart Deputy Garrison Commander and an official from the Georgia Military Affairs Commission. The staff of the Partnership consists of a Project Director and an Assistant Director.

The Partnership received a grant from the Office of Economic Adjustment in the Department of Defense in 2008 to conduct a regional plan to assess the impacts of military personnel increases and overall population growth in Liberty, Bryan, Long, and Tattnall Counties (See **Figure 2. Study Area** on the following page).

The Fort Stewart Regional Growth Plan (RGP) is the result of a year-long collaborative effort among local officials, area service providers, private sector interests, non-profit groups, and community residents to identify the steps necessary to prepare for population growth in the four counties, promote sustainable economic development, and maintain a high quality of life for military members and area families.

Throughout the planning process, the Partnership staff and planning team met regularly with the Fort Stewart Growth Management Executive Board and Partnership members, as well as a Technical Task Force. To examine more closely specific resource areas, the team conducted one-on-one data gathering interviews or work sessions with six Advisory Committees, consisting of more than 90 representatives from the fields of education, health and behavioral care, child care, community planning, workforce development, economic development, emergency services, and utilities. The Partnership also engaged the broader community through two rounds of public meetings, periodic newsletters, and a project web site ([www.growfortstewart.com](http://www.growfortstewart.com)).

The findings and recommendations of the RGP are organized into the following sections:

**Section 1 - Introduction** – gives an overview of growth assumptions and modeling tools used to assess regional impacts and quantify additional services needs

**Section 2 - Housing** – assesses the regional demand for housing

**Section 3 - Land Use** – evaluates the ability of cities and counties to manage the impacts of growth through sustainable land use practices

**Section 4 - Education** – assesses increased demand on the four public school districts in the region

**Section 5 - Public Services** – evaluates the need for increased adequate public water, wastewater treatment, and stormwater management capacity and identifies regional delivery strategies

**Section 6 - Workforce Development** – identifies strategies to diversify the regional economy and to prepare the workforce for jobs

**Section 7 - Health Care and Social Services** – evaluates the need for health care, child care, and human services

**Section 8 - Public Safety** – evaluates the need for increased emergency management and communication, fire protection, and law enforcement

**Section 9 - Transportation** – summarizes the results of the Three County Transportation Assessment prepared by RS&H for the Hinesville Area Metropolitan Planning Organization and the Fort Stewart Growth Management Partnership

**Section 10 - Implementation** – outlines recommended action steps by resource area

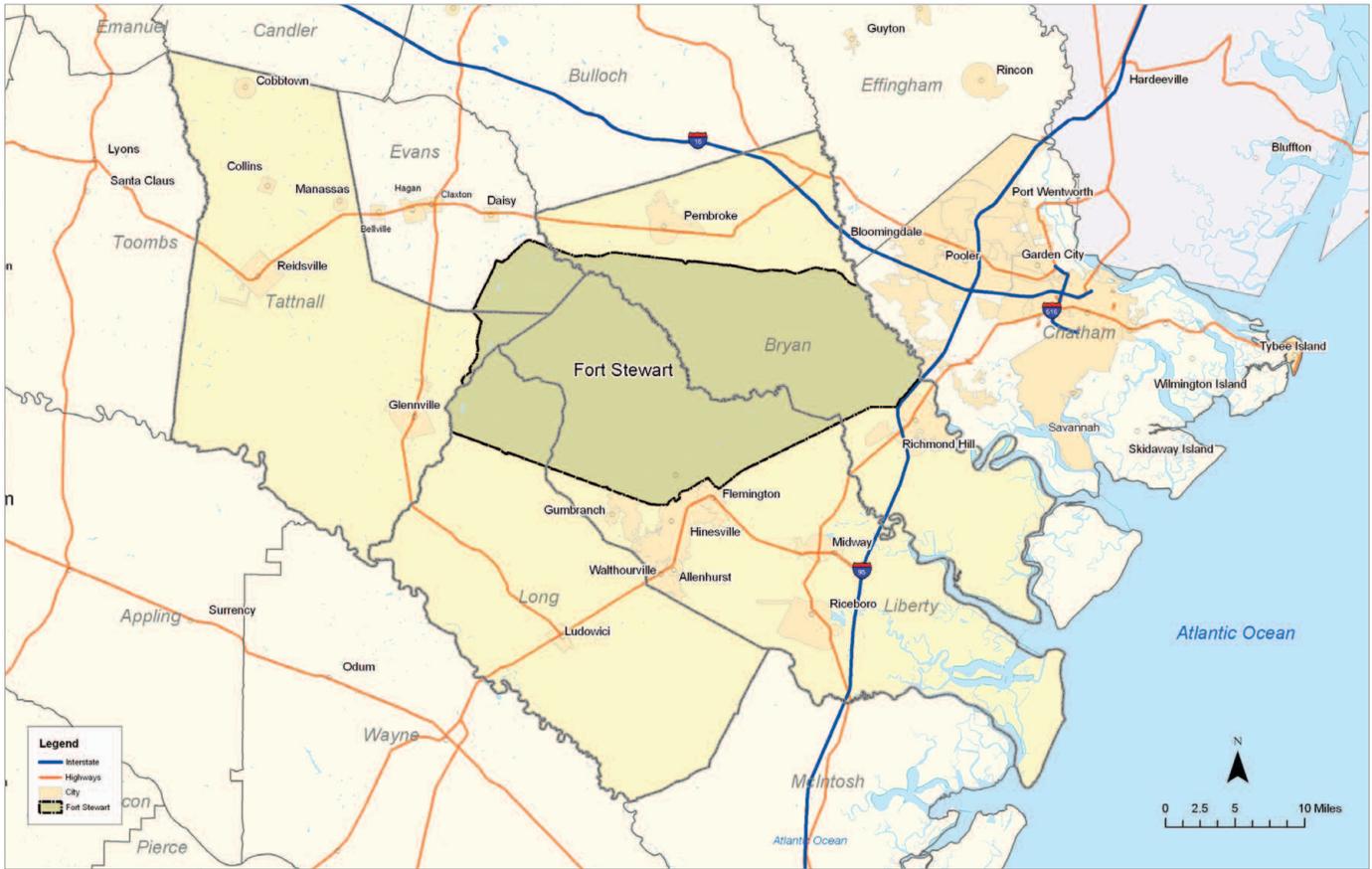


Figure 2. Study Area

The RGP also includes the following supporting Appendices, which contain more detailed information on technical studies and existing conditions:

- A. Existing Conditions Report
- B. Regional Growth Impact Analysis (REMI Model)
- C. Three County Transportation Assessment
- D. Social Infrastructure Analysis (SIF Model)

Below is a summary of the main RGP recommendations by resource area.

**Housing**

- Establish and maintain a Housing Trends and Growth Management Data Tracking system
- Create strategies to promote more physically compact development
- Increase regulations on developing housing in wetlands or other low-lying areas
- Hold developer/builder outreach forums to disseminate relevant information and findings from the regional growth management plan
- Survey active military personnel to better understand housing preferences
- Provide density bonuses and/or other financial incentives to increase localized multi-family housing
- Track and publish regional rental data

### Land Use

- Enhance land use regulations and create unified development codes for study partners
- Increase the use of regional and interlocal service planning models and agreements, especially in rapidly-growing areas just outside of incorporated areas
- Separate urban and rural landscapes through conservation subdivisions, agricultural policies and mixed use centers
- Continue to adopt land use compatibility measures around Fort Stewart/Hunter Army Airfield as part of ongoing Joint Land Use Study implementation
- Emphasize downtown revitalization and historic protection to reinforce sense of place
- Emphasize Complete and Lifelong Communities that are walkable, offer diverse housing types and open space/recreational amenities, and have proximity to retail and other services
- Protect open space and the environment by adopting low impact development standards and increase the supply of recreation facilities and park space to meet population growth
- Improve local planning capacity through the use of Geographic Information System (GIS) data, particularly in Long and Tattnall Counties

### Education

- Maintain strategic planning efforts by the local educational agencies
- Examine attendance zoning in Bryan and Liberty Counties
- Strengthen coordination between the school districts and Fort Stewart, particularly in Liberty County
- Monitor ongoing development, particularly in Long County, to understand the impacts of residential growth student enrollment
- Explore additional funding opportunities, including
  - Impact fees on residential development
  - Census of student populations to collect Federal Impact Aid funds
  - Coordination with State and Federal legislators to support educational funding

### Public Services

- Continue to collaborate on regional water planning
- Update infrastructure system inventories and master planning
- Analyze environmental impacts of well and septic usage
- Plan for solid waste capacity in the long-term
- Explore wastewater delivery strategies
- Conduct water reuse planning
- Evaluate surface water resources
- Reconcile development patterns with Utility Service Areas

### Workforce Development

- Create marketing strategy targeting local industries
- Identify potential company prospects on a quarterly basis
- Direct mail marketing material on training programs and ways the colleges can help train and recruit workers

- Conduct follow-up calls and contact with local industries to ensure awareness of programs and opportunities
- Routinely meet with industry leaders
- Conduct follow-up calls with local industries to keep abreast of their changing needs
- Create job fairs targeted to military spouses and dependents
- Create “Work Skills 101” program that teaches participants basic job skills, such as interview preparation, resume writing, and PC basics such as Microsoft Word, Excel, Internet and e-mail
- Assist dependents and spouses to obtain a Career Readiness Certificate (CRC)
- Provide incentives for commercial and/or industrial-based companies to locate in the region
- Align educational programs with skills of local workforce and needs of regional employers
- Update or conduct economic diversification studies in Bryan, Liberty, Long and Tattnall Counties
- Research and coordinate efforts on the potential of creating a distance-learning programs with Georgia’s major four-year institutions
- Incorporate work ethic classes into middle and high school curriculum
- Create a new “career academy” high school (partnership of public high schools and technical colleges)

#### **Health Care and Social Services**

- Address deficit of health care providers and adopt strategies to retain current providers
- Seek a TRICARE waiver to increase reimbursements
- Increase awareness of existing service providers operating in the study area
- Address continued demand for Head Start programs in all counties
- Define and implement service delivery strategies for increasing access for rural residents
- Increase after school/summer school programs
- Address needs of aging population
- Add child care facilities to meet population growth

#### **Public Safety**

- Formally adopt Mutual Aid Agreements
- Coordinate with Police and Fire Chiefs
- Implement alternative community safety strategies such as Crime Prevention through Environmental Design
- Coordinate on development projects that could affect designated Emergency Evacuation routes
- Plan for capital facility expansion and staffing increases commensurate with growth
- Reduce reliance on volunteer fire services in rural area
- Increase after school/summer programs
- Consider a regional approach to housing offenders
- Explore opportunities for the Liberty and Tattnall Sheriff Satellite Offices to use other police and fire facilities in the region as bases for satellite offices
- Consolidate Long County/Ludowici Public Safety Agencies

### Transportation

- Conduct an origin-destination survey for Fort Stewart employees including information about time of travel and alternatives to making the trip
- Conduct an origin-destination survey of commercial vehicle traffic entering Fort Stewart
- Conduct a survey of Liberty Transit riders and Fort Stewart residents and employees regarding quality of service of the transit system (after one year of service)
- Continue Liberty Transit startup
- Pursue the Army Mass Transportation Benefit Program to provide transit passes to Federal employees
- Study issues along eastern boundary including impact of new IBCT, potential designation of new commercial vehicle gate, proposed Flemington Loop, US 84 curve area, and Old Sunbury Road; Coordination with GDOT will be essential.
- Design and implement traffic operations strategies to address US 84 curve; pursue safety grant for improvements
- Coordinate 15th Street widening concept and Central Connector concept with Fort Stewart commercial vehicle gate designation, proposed defense roadway improvements, and Liberty County Board of Education plans for a new Middle School
- Add signage for non-permitted traffic entering Gate 1
- Promote Liberty Transit and Army Mass Transportation Benefit Program
- Pursue demand management strategies with Fort Stewart to reduce the peak hour traffic
- Study SR 144 going east into Bryan County from Fort Stewart to determine need and purpose for either road widening or passing lanes
- Assess operational improvements at SR 144 and I-95 interchange; coordinate impacts of commercial gate designation with Fort Stewart due to potential increases in truck traffic at this interchange in the future
- Assess maintenance issues at US 17 and I-95 interchange; resurface ramps as appropriate for commercial vehicle traffic
- Ensure road widening project concepts include access management strategies
- Conduct a county-wide transportation infrastructure assessment in Tattnall County to inventory the existing network of roadways, multi-modal facilities, aviation facilities, and pedestrian amenities in support of future transportation planning
- Increase the amount of roads that are paved and/or resurfaced annually in Tattnall County with an emphasis on incorporated areas and more quickly growing areas adjacent to the municipal boundaries of Glennville and Reidsville
- Implement the grant to upgrade facilities/services at the local airport in Tattnall County



The purpose of the Fort Stewart Regional Growth Plan is to prepare communities for continued growth from Fort Stewart/HAAF and to provide recommendations to individual jurisdictions, service providers, and the region overall on those actions necessary to meet increasing needs.

To assess the readiness of local governments to accommodate growth, the Fort Stewart Regional Growth Plan (RGP) posed a series of strategic questions. These guiding questions are listed below along with the methods of analysis and outreach used to generate critical input.

### 1. Where are we now?

- Baseline analysis, review of existing plans and studies, stakeholder interviews, Task Force and Advisory Committee meetings, public input

### 2. How much growth is coming and where is it going?

- REMI economic modeling, CommunityViz land use modeling, current transportation modeling, Task Force and Advisory Committee meetings

### 3. What are the gaps or stress points in our systems of service delivery?

- Social Infrastructure modeling, transportation modeling, Task Force and Advisory Committee meetings, public input

### 4. How do we enhance delivery to meet need and improve quality of life?

- Task Force and Advisory Committee meetings, public input

## Section Summary

This section gives an overview of the modeling techniques and community and stakeholder outreach activities used to establish how well the communities and service providers are meeting current needs and to project the intensity and location of population and job growth in the study area, as well as to measure additional service demands. The remainder of the sections in this document look more closely at specific resource areas to identify critical gaps and to develop recommendations for improving service delivery for military families, and current and future residents. The sections and appendices contain additional information on the models used to assess community impacts.

It should be emphasized that the modeling techniques used to project the amount of growth, determine its spatial patterns across the four counties, and assess likely increases in service needs are based on a wide range of assumptions and are influenced by a number of variables, such as the current state of the local, regional and national economies and troop strength at Fort Stewart. The planning context for defense communities in particular is often very fluid due to fluctuations in installation activities and Department of Defense initiatives. The RGP, therefore, should be used as a flexible and living framework to guide action in the years ahead. Communities, service providers, and stakeholders should continue to revisit findings as economic conditions and military mission change throughout the 20 year planning horizon of this study.



## REMI Policy Insight Model

Regional Economic Models, Inc. (REMI) of Amherst, MA developed a custom Policy Insight model to evaluate the economic impacts associated with installation expansion at Fort Stewart. This Policy Insight model was used to evaluate economic impacts related to Liberty, Bryan, Long, and Tattnall Counties on an individual basis. Throughout this section, the results are often expressed for the region, which consists of the four host communities, in addition to an area known as the “rest of state”, which includes the rest of Georgia. It is believed that nearly 100% of the growth impacts of Fort Stewart’s expansion will be captured with the region and State of Georgia. The distinguishing features of the REMI Policy Insight model are listed below:

- REMI developed a custom multi-regional economic and demographic forecast for the Fort Stewart Region communities. This dynamic year-by-year forecast represents the baseline, or no-build scenario. The REMI forecast extends to the year 2030.
- Policy Insight’s forecast was assembled at the county level using data from various U.S. government agencies, including the Bureau of Economic Analysis (BEA), the Bureau of Labor Statistics (BLS), the Department of Energy, Department of Defense (DoD), the Bureau of Census, and other public sources.
- The REMI model generates estimates for both DIRECT and INDIRECT impacts. Direct impacts for this analysis are expanded military operations: military personnel, on-post jobs, and on-post construction spending. The indirect impacts can be split into two groups: Intermediate and Induced. Intermediate impacts are essentially business to business purchases. Induced impacts are associated with increased regional disposable income resulting in a change in consumer spending.

It should be noted that the planning team used REMI output to project the number of non-military jobs created in the four counties from 2010 to 2030. REMI also produced an alternative population projection for the region. The subsequent sections of this document, however, use the State of Georgia Office and Planning and Budget (OPB) projection figures for purposes of assessing increases in service demand associated with population growth.

## Growth and Development Capacity Assumptions

Below is a summary of growth and development capacity assumptions used to answer the questions “Where are we now?” and “How much growth is coming?”

### Development Capacity

- In order to determine local development capacity, the planning team met with officials from each county to review existing and proposed development projects. In total, the team identified 67 separate residential subdivisions, totaling over 21,000 acres in Liberty, Bryan and Long Counties, but no subdivisions were identified for Tattnall County.
- The cumulative value of all subdivisions located in each county produced each county’s attractiveness score, or its potential to capture future growth. Liberty County achieved a value of 9,052 points from 17 subdivisions, representing 43% of all available points. Long County was second with 8,264 points from 31 subdivisions, followed by Bryan County with 3,674 points from 21 subdivisions and Tattnall County received no points due to its lack of subdivisions.

## Personnel Changes

- Between 2008 and 2013, Fort Stewart and Hunter AAF is projected to add approximately 3,083 full-time military personnel, 680 new civilian government employees, and 578 government contractor personnel. The total change is projected to equal 4,341 new personnel over six years. According to personnel numbers provided by the Fort Stewart Garrison Command, the peak employment year is planned for 2010, when new personnel exceed 4,800.

## Construction Spending

- Total construction spending is projected to equal over \$1.4 billion over the 2008-2013 expansion period. The peak spending year is scheduled for 2009, when construction activity will approach nearly a half billion dollars.

## Population Projections

- Over the 2010 to 2030 period, Georgia OPB projects that population within the Fort Stewart Region will increase from 131,389 to 204,232, or 72,843 new persons increase in population. This rate of growth would translate into an average annual rate of 2.8%. By way of comparison, the Fort Stewart Region grew by approximately 2.7% annually during the 1990s and 1.2% annually during the 2000s.
- By 2030, REMI Control Forecast projects that the region's population will increase by 27,237, for an average annual growth rate of 1.5%. Annual growth rates exceeding 1.0% are generally considered steady to strong.

## Employment Projections

- The REMI Model projects that as many as 7,984 jobs will be created by 2016 and 11,930 jobs by 2030. Private non-farm employment is projected to equal roughly 30% of all new jobs created by 2030, with the vast majority classified as government jobs.
- During the 2008 to 2013 period, construction-related employment accounts for between 45% and 90% of all new jobs in any given year, with the peak occurring in 2008 at 4,759 jobs. This surge in construction jobs is a direct result of construction spending at Fort Stewart/Hunter AAF, which equals \$1.4 billion during the 6-year period.

## CommunityViz

CommunityViz is a Geographic Information System (GIS) based model that allocates growth to parcels of land based on a series of user-defined assumptions. For purposes of the Fort Stewart Growth Plan, the planning team customized the CommunityViz platform to assess the attractiveness of land in the four-county region and to place new people and jobs according to market-driven factors and quality growth principles. This model assists the communities in answering the question "Where will growth go?"

For purposes of assessing land use impacts, the CommunityViz model assumed that the region would grow as aggressively as indicated in the OPB projections. The growth placed represents the addition of 72,843 people or an increase of 55 percent in the current four-county population over the next two decades. The CommunityViz/OPB growth scenarios assumes that the region will grow both as a result of mission expansion at the installation and underlying population increases.

The second step in the growth allocation process determines where new people and jobs will locate within the four counties. To assign future growth, the model removes vacant land that has natural or physical development constraints, such as wetlands or conservation status, producing a buildable lands

layer. The model then designates each parcel of land according to future land use categories that reflect the most recently adopted future land use map in each of the four counties.

CommunityViz then assigns people and jobs to parcels based on the land’s future land use designations, density assumptions and attractiveness scores. The Technical Appendix contains more details on model assumptions. The attractiveness rating for a parcel is a combined score that reflects the suitability of that parcel to accommodate future growth based on multiple variables. The model considers both market factors, such as the relative desirability of platted and proposed subdivisions in the region and consistency with quality growth principles, including proximity to infrastructure and built out areas.

As described in Section 2 on Housing, the region has a large inventory of existing or proposed subdivisions that could absorb all of the forecasted growth in the region over the next two decades. To predict patterns of residential choice among these options, CommunityViz relies on a subdivision gravity model to evaluate the relative market position of the 67 subdivisions identified in Bryan, Liberty, and Long Counties (Tattnall County does not have any proposed subdivisions). The subdivision gravity model scores each subdivision according to factors, such as land capacity, pricing, proximity to services, school performance, and military impact, including proximity to the installation gate and the current number of military workers in the community.

CommunityViz links with the subdivision gravity model through a series of “hot spots.” Hot spots are areas in which future growth is likely to occur due either to market-based factors or local government policies that guide investment to the designated area. Examples of hot spots include platted subdivisions, business parks or specially targeted infill development areas. The model assigns a higher score to parcels that fall within a hot spot.

The model then completes the growth allocation by placing people and jobs in sequence from higher to lower ranked parcels by county. For example, the highest ranked residential parcels receive households at the density specified until build out is achieved. The model then seeks out the next highest ranked parcel to place remaining households until all growth in the county is allocated.

## Social Infrastructure Model (SIF)

The planning team conducted a social infrastructure analysis using a proprietary model (Social Infrastructure model or SIF) that quantifies future needs of communities based on OPB population projection inputs combined with a comprehensive list of social infrastructure standards and targets. The analysis performs modeling for each county in the region in five-year phases over the 20-year study period, as shown in the tables below.

<b>Table 1.1 - Population Growth by Phase</b>					
	Phase 1	Phase 2	Phase 3	Phase 4	Total
	2010-2015	2015-2020	2020-2025	2025-2030	
<b>Bryan</b>	5,658	6,288	7,194	7,068	26,208
<b>Liberty</b>	9,997	6,803	7,708	7,373	31,881
<b>Long</b>	1,196	1,297	1,358	1,427	5,278
<b>Tattnall</b>	2,188	2,288	2,436	2,564	9,476
<b>Region</b>	<b>19,039</b>	<b>16,676</b>	<b>18,696</b>	<b>18,432</b>	<b>72,843</b>

	Phase 1	Phase 2	Phase 3	Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
<b>Bryan</b>	5,658	11,946	19,140	26,208
<b>Liberty</b>	9,997	16,800	24,508	31,881
<b>Long</b>	1,196	2,493	3,851	5,278
<b>Tattnall</b>	2,188	4,476	6,912	9,476
<b>Region</b>	<b>19,039</b>	<b>35,715</b>	<b>54,411</b>	<b>72,843</b>

Population changes and subsequent social infrastructure requirements were also estimated for the two most populous cities in the region, Hinesville and Richmond Hill, which are also projected to experience substantial growth over the study period. These population counts are included within the respective county counts (i.e. Liberty and Bryan Counties). As State population projections are only provided on a county level, projections for the cities of Hinesville and Richmond Hill were developed by analyzing the population within the city limits as generated through the land use model, CommunityViz.

	Phase 1	Phase 2	Phase 3	Phase 4	Total
	2010-2015	2015-2020	2020-2025	2025-2030	
<b>Hinesville</b>	2,307	1,514	1,827	1,751	7,399
<b>Richmond Hill</b>	830	1,122	1,520	1,660	5,132

	Phase 1	Phase 2	Phase 3	Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
<b>Hinesville</b>	2,307	3,821	5,648	7,399
<b>Richmond Hill</b>	830	1,952	3,472	5,132

Impacts generated solely from military growth were also modeled. US Army projections for military employment at Fort Stewart were multiplied by a factor of 1.55 to account for dependents and therefore represent total direct military-related population growth in the region. US Army projections are limited to the horizon year of 2013, as future military actions are unpredictable, making estimates for growth beyond 2013 difficult. The military projections also utilize a base year of 2007 (rather than 2010 used for regional projections) to capture the arc of the latest growth period on the installation. If a base year of 2010 was used for military projections, it would appear that military population is declining; using the base year of 2007, historic growth can be captured. Social infrastructure requirements generated from this data represent a snapshot of facility need, therefore, during a cycle of growth and give insight into the impacts of direct military growth in the near term. Impacts were modeled from 2007-2013 in two phases, based on the growth outputs below.



**Table 1.5 - Direct Military Population Growth (Including Dependents) *by Phase***

	Phase 1 2007-10	Phase 2 2010-13	Total
Fort Stewart	5,964	-1,186	4,479

**Table 1.6 - Direct Military Population Growth (Including Dependents) *Cumulative***

	Phase 1 2007-10	Phase 2 2010-13
Fort Stewart	5,964	4,779

All of the demand projections are based on the best evidence available at the time of this study. The demand predictions shown will therefore change if the underlying assumptions on population and facility standards also change. It is important that the social infrastructure recommendations set out in this document are reviewed on a regular basis as developments come forward and projections can be verified.

## Travel Demand Model

RS&H developed a three county travel demand model for this study, as well as the 2035 Hinesville Area Metropolitan Planning Organization Long Range Transportation Plan. The Transportation Section and Appendix contain additional detail on model assumptions and output.

## Partnership and Committee Outreach

In addition to baseline analysis and modeling, the planning team and Partnership staff met throughout the 12-month study process with the Partnership Board and Technical Task Force to review interim study findings, verify assumptions, and develop recommendations. The planning team also conducted one-on-one data collection interviews with area service providers and facilitated two rounds of work sessions with the Advisory Sub-Committees in November of 2009 and April of 2010. The Advisory Sub-Committees consisted of community officials, technical professionals, and service providers in the areas of education, health care/human services, public services, public safety, workforce development and land use/housing.

## Community Outreach

The Partnership staff conducted ongoing outreach to the four-county region throughout the year-long planning process. The planning team and staff also conducted two rounds of formal community briefings and meetings in Pembroke, Richmond Hill, Hinesville, Ludowici, and Glennville in October of 2009 and July of 2010 to gather input from the community and review the findings of the study.



## Section Summary

It was announced December 10, 2009 that approximately 1,043 military, civilian, and full time contractors are scheduled to arrive at Fort Stewart and Hunter Army Airfield through 2013. This growth will add to the regional demand for housing.

To help prepare for this growth, the planning team has compiled a list of recommendations that are as follows:

- Focus future housing development in and near established areas,
- Update and/or develop apartment complexes with a higher level of amenities,
- Increase diversity of rental housing stock, and
- Promote alternate tax-producing options to lessen dependence on local property taxes.

These recommendations, including specific action items, can be found in the following Recommendations Section.

## Growth and Assessment Analysis Findings

### Growth Analysis

The majority of population growth projected in the region by 2030 is focused in or close to established areas. This outcome is largely predicated on the availability of permitted and/or platted land in these areas and accessibility to major employment centers and the military installation. The following summaries describe the projected growth in each county.

#### Bryan County

Most of the population growth in Bryan County is projected to occur southeast of Fort Stewart. In fact, the areas with the greatest population in the northern portion of the County, near Pembroke and the intersection of Interstate 16 and Route 280, show relative stability in population densities. Comparatively, the City of Richmond Hill shows strong population increases during this time. Much of this increase can be attributed to accessibility to Savannah and the Interstate, as well as proximity to Fort Stewart.

#### Liberty County

Liberty County is projected to receive the greatest amount of new residents, which is due, in part, to the substantial inventory of available land permitted for residential development. Most of the growth in Liberty County is projected to occur in Hinesville and neighboring areas. Unlike the growth in and around Richmond Hill in Bryan County, Hinesville and the surrounding areas provide direct access to Fort Stewart. It is likely that much of the growth in these areas and subsequent housing demand is attributable to impacts related to military growth. In addition, the rapid turnover often experienced by military populations will likely have a substantial impact on the rental housing market.



## Long County

Population growth in Long County is projected to be concentrated in the northeast portion of the County. The population growth allocation maps in the Land Use section of this report show the growth is located north of Route 84 and near the eastern county line. While this growth projection greatly increases density in this part of the county, the area between this growth area and Ludowici further southwest along Route 84 is projected to remain largely rural and unaffected by regional population growth.

## Tattnall County

Tattnall County is projected to remain largely rural between 2010 and 2030 as population growth is modest and focused in Glennville. The lack of easy accessibility to major roadways and the entrance into Fort Stewart contribute heavily to the relative stability in population growth.

## Issues

### Development Occurring Outside of City Limits

The meetings and interviews conducted with county planners indicate that there has been scattered development. In Long County, all of the new and pipeline developments are occurring outside of Ludowici City limits. The developments are therefore not able to be connected to city sewer and water lines. The new developments are on septic tanks, which can often be overloaded or fail. This is a major concern of county officials; however there are minimal regulations or incentives in place that can encourage new subdivision connections to city utility lines.

### Development in Sensitive Areas

Many developments are occurring in sensitive areas. A great portion of Long County is wetlands or low-lying areas. There are minimal regulations to prevent development in these areas. It will be very important for the counties to take a look at developing regulations or incentives that will help guide development to desired locations.

### Minimal Diversity of Land Uses

The lack of retail and commercial uses in Long County and the resulting absence of a diverse tax base is making it increasingly difficult for this county to provide services to the growing population. Counties have had to raise taxes in the recent past in order to accommodate the growth. Having a more diverse tax base, which includes retail development, would help offset the increasing cost of providing public services.

### Minimal Diversity in Rental Housing Types

Although there is a large rental population in the region, especially in Liberty County, there does not appear to be a great diversity in the types of rental properties available. Most rental properties are single family homes. Although there are new apartments being built at Independence, there may be opportunity in the Fort Stewart Region for additional new apartment buildings that would be targeted to both military and natural population growth.

### Lack of Amenities

Many of the developments in the region lack a higher level of amenities. There are few apartment buildings with on-site managers or other amenities such as pools, computer centers, hardwood floors, etc. Although there are these types of apartments in the Savannah area, the rental properties in the Fort Stewart study area are generally older buildings equipped with the bare essentials.

Many developments in the study area are occurring in sensitive areas. Minimal regulations are in place to prevent development in these areas.



In terms of ownership, housing developments within Liberty, Long, and Tattnall Counties tend to meet just the minimum requirements. There are exceptions, such as such as Oak Crest in Liberty County, which has incorporated sidewalks and amenities such as pools into the development. Although Richmond Hill contains more up-scale developments, there may be demand in the market for this type of housing in the other three counties.

### **Housing Affordability**

It is important to note that the majority of incoming personnel will be enlisted soldiers. Enlisted soldiers at Fort Stewart receive a Basic Allowance for Housing (BAH) that ranges from \$889 for a single E-1 (\$1,052 for family E-1) to \$1,203 for a single E-9 (\$1,443 for family E-9). Research indicates that this housing allowance falls within the rent ranges for a unit in the higher-amenity new apartment developments within the Fort Stewart Region.

## **Recommendations**

### **Introduction**

The following recommendations are based on identified needs pertaining to regional housing options and issues expressed by local stakeholders involved in the planning process. Each recommendation is followed by multiple action items that address the need or issue.



## **Short-Term Recommendations**

### **Recommendation**

Given the close link between the military mission and housing demand, study partners should work with county and city officials to create a “living” graphic representation displaying the location and status of proposed developments. The process would also define a protocol for updating/maintaining the map, as well as making the public access widely available. The program could encompass all counties and jurisdictions or only those electing to participate. This service would enable the community and private developers to better monitor the housing needs associated with Fort Stewart in relation to the market inventory and reduce the risk of overbuilding as seen in the wake of the cancellation of the 5th brigade.

### **Action Items**

1. Establish and maintain a Housing Trends and Growth Management Data Tracking system

### **Recommendation**

Focus future housing development in and near established areas.

Many stakeholders interviewed for this study expressed concern over the way planned housing developments are scattered across the region. Developing housing in this manner will likely provide undue strains on public services due largely to proximity issues. It is stated anecdotally that the magnitude of permitted and platted subdivisions in the region follows limited regulations.

**Action Items**

1. Create Localized Development Strategies
2. Increase regulations on developing housing in wetlands or other low-lying areas
3. Hold developer/builder outreach forums to disseminate relevant information and findings from the regional growth management plan

**Long-Term Recommendations****Recommendation**

Update and/or develop apartment complexes with higher level of amenities. Although Richmond Hill contains more up-scale developments, there may be demand in the market for this type of housing in the other three counties.

**Action Items**

1. Survey active military personnel to better understand housing preferences.
2. Provide density bonuses and/or other financial incentives to increase localized multi-family housing.

**Recommendation**

Increase diversity of rental housing stock.

Although there is a large rental population in the region, especially in Liberty County, there does not appear to be a great diversity in the types of rental properties available. Most rental properties are single family homes.

**Action Items**

1. Track and publish regional rental data. Periodic reporting on the regional rental market will help real estate developers make more informed decisions about the size, location, and scale of new developments.



## Section Summary

As shown in the CommunityViz maps in this section, the military impact component of growth in the region will reinforce existing development patterns, drawing significant residential development to the Cities of Hinesville and Richmond Hill. Development, particularly when oriented around the installation, is also likely to accelerate the growth of unincorporated parts of Liberty County and eastern Long County.

Based on an analysis of existing policies and likely growth trends, the cities and counties of the Fort Stewart region will face an ongoing set of land use challenges, including

- Lack of consistency in key development standards, such as context or form-based design, mixed uses, conservation subdivisions, and utility provision to ensure a minimum level of quality across the region
- The need to coordinate more fully on issues related to annexation, adequate public service delivery, and design character as development spreads beyond municipal boundaries and established service areas
- A heightened risk of the blurring of rural and urban features and diminishment of natural systems resulting from unmanaged and rapid growth
- Lack of consistent emphasis on connected, mixed use communities and lifelong communities that allow residents to age in place
- The risk of strip commercial development and congestion negatively affecting the region's corridors, especially US 84 between Hinesville and Ludowici, Highway 196 through Gum Branch and US 17 and Highway 144 near Richmond Hill
- Some traditional business and residential cores struggle with inconsistent urban design and local governments lack the policy tools to require compatible architecture and building facade restoration within their historic districts
- The potential for significant future development in areas of the Army Compatible Use Buffer, especially south of the cantonment area and northwest of Richmond Hill and the ongoing need to implement Joint Land Use Study recommendations

Recommended strategies to address growth challenges include:

- Enhancing land use regulations and creating unified development codes for study partners
- Increasing the use of regional and interlocal service planning
- Separating urban and rural areas through conservation subdivisions, agricultural policies and mixed use centers
- Continuing to adopt land use compatibility measures around Fort Stewart/Hunter Army Airfield
- Emphasizing on downtown revitalization and historic protection
- Emphasizing Complete and Lifelong Communities
- Protecting open space and the environment
- Improving local planning capacity



# Growth and Assessment Analysis Findings

## Growth Analysis

To evaluate the land use impacts of growth generated by mission change at Fort Stewart, as well as natural baseline growth in the four-county region, the planning team assessed results from two sources:

- Mapping by the Coastal Regional Commission that identifies areas of special interest in Bryan, Liberty, and Long Counties; and
- CommunityViz model mapping, which places new residents and jobs within the four counties based on a series of land use and residential choice assumptions

## Areas Requiring Special Attention

The Areas Requiring Special Attention map reflects projected development patterns resulting from adopted local comprehensive plans in Bryan, Liberty and Long Counties. The purpose of the map is to evaluate the land use trends within the region and to identify those areas that warrant additional planning emphasis, such as:

- Areas where development could adversely affect significant natural or cultural resources;
- Areas where rapid development or change of land uses is likely, especially where the pace of development could outpace the availability of community facilities and services;
- Areas in need of redevelopment and/or significant improvements to aesthetics or attractiveness (including strip commercial corridors); and
- Areas with significant infill development opportunities.

These areas inform the recommendations described below and indicate the need for new land use and growth management tools designed to meet the challenges of growth in the Fort Stewart region.

## Areas of Significant Natural Resources

These areas consist of lands that are unique, environmentally fragile or economically significant to the coastal region, including historic, archaeological or cultural resources; prime farmland; marsh hammocks; aquifer recharge zones; public access and open space; dunes, rivers and adjacent wetland systems; and shore bird nesting areas. Various state and federal laws also mandate protection of critical natural areas.

## Areas of Rapid Development

These areas are quickly developing and thus require additional planning and coordination to ensure the adequacy of supporting public infrastructure and the protection of sensitive environmental resources.

## Areas with Significant Infill Development Opportunities

These areas are underused and typically feature declining site conditions that are inconsistent with the overall character of the community. Examples include congested and cluttered corridors, marginal shopping centers and strip malls, and distressed residential neighborhoods.

Figure 3.1 (larger versions of all maps in this section are available in the Map Book) shows Areas Requiring Special Attention in Bryan, Liberty, Long, and Tattnall Counties. The planning team began with spatial data developed by the Coastal Regional Commission as part of its 2010 Coastal Comprehensive Plan Update and slightly refined categories to reflect the additional feedback of study area partners. The figure also includes original analysis on environmentally sensitive areas and areas of significant infill for Tattnall County and its municipalities. The map illustrates many of the themes identified during the analysis of land use trends in the region. Hinesville and the US 84 corridor, along with Richmond Hill, will continue to anchor significant development in the years ahead. Highway-oriented development, including commercial, industrial and large-scale residential development, is likely to emerge in north Bryan County along I-16, and in eastern Liberty County and south Bryan

Figure 3.1. Regional Areas of Interest

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County along I-95, particularly south of Richmond Hill and east of Midway and Riceboro. Figure 3.1 also shows the environmental sensitivity of parts of south Long County, eastern Liberty County, south Bryan County and Tattnall Counties.

### CommunityViz – Population and Employment Growth 2010 to 2030

CommunityViz is a Geographic Information System (GIS) based model that allocates growth to parcels of land based on a series of user-defined assumptions. For purposes of the Fort Stewart Growth Plan, the planning team customized the CommunityViz platform to assess the attractiveness of land in the four-county region and to place new people and jobs according to market-driven factors and quality growth principles.

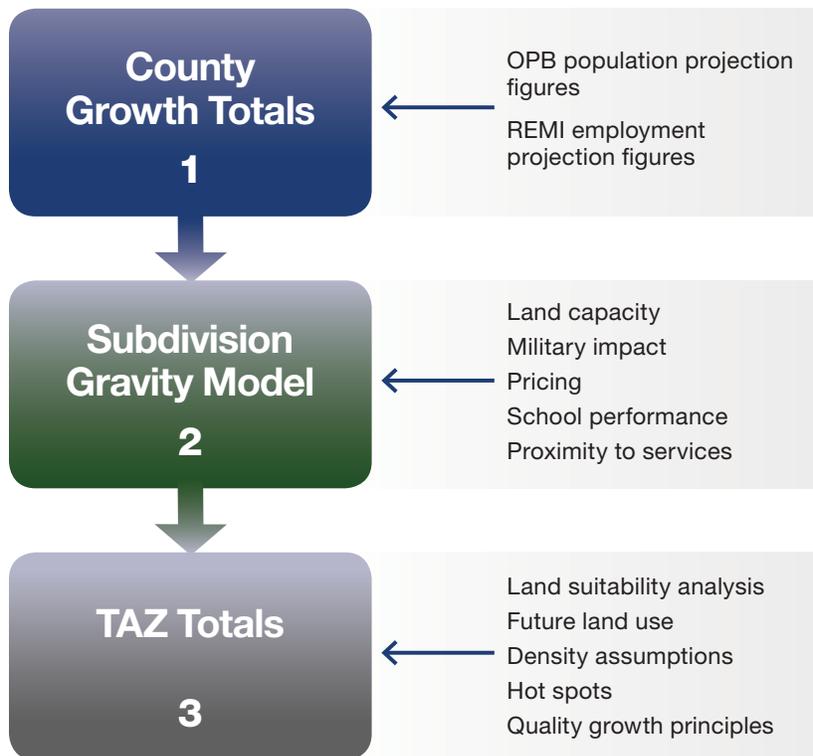
As shown in Figure 3.2, the first step in the growth allocation process is to forecast the number of new people and jobs arriving in the region by the 2030 horizon year. As discussed in Section 1, the planning team used an econometric model, REMI, to develop three growth scenarios for the Fort Stewart region:

- The Office of Planning and Budget (OPB) or state scenario, which replicates the growth trajectory of the State of Georgia projections prepared by the Carl Vinson Institute at the University of Georgia
- The REMI control scenario, which forecasts growth based on a series of local, state and national variables, including the external “shock” of mission growth at Fort Stewart; and
- The baseline growth scenario, which assumes no additional economic stimulus from mission change

For purposes of assessing land use impacts, the CommunityViz model assumed that the region would grow as aggressively as indicated in the OPB projections and, therefore, allocated the number of new residents and jobs shown in Tables 3.1 and 3.2. The growth placed represents the addition of 72,843 people or an increase of 55 percent in the current four-county population over the next two decades. As noted earlier, the CommunityViz/OPB growth scenarios assumes that the region will grow both as a result of mission expansion at the installation and underlying population increases.

For purposes of the Fort Stewart Growth Plan, the planning team customized the CommunityViz platform to assess the attractiveness of land in the four-county region and to place new people and jobs according to market-driven factors and quality growth principles.

Figure 3.2. CommunityViz Growth Allocation Process



**Table 3.1 - New Population and Housing Units, 2010 to 2030**

County	2010	2015	New People 2015	New People 2020	New People 2025	New People 2030	% Pop Growth 2010-2030
Liberty	61,940	71,937	9,997	16,800	24,508	31,881	51%
Bryan	33,326	38,984	5,658	11,946	19,140	26,208	79%
Long	11,893	13,089	1,196	2,493	3,851	5,278	44%
Tattnall	24,230	26,418	2,188	4,476	6,912	9,476	39%
<b>TOTALS</b>	<b>131,389</b>	<b>150,428</b>	<b>19,039</b>	<b>35,715</b>	<b>54,411</b>	<b>72,483</b>	<b>55%</b>

County	HH Size	2010	New HH 2015	New HH 2020	New HH 2025	New HH 2030
Liberty	2.93	21,139	3,412	5,734	8,365	10,881
Bryan	2.88	11,571	1,965	4,148	6,646	9,100
Long	2.88	4,129	415	866	1,337	1,833
Tattnall	2.60	9,319	842	1,722	2,658	3,645

**Table 3.2 - Employment Growth, 2015 to 2030**

County	2015	2020	2025	2030
Liberty	3,643	1,617	1,760	895
Bryan	1,679	745	811	413
Long	2,217	984	1,071	545
Tattnall	603	268	291	148

The second step in the growth allocation process determines where new people and jobs will locate within the four counties. To assign future growth, the model removes vacant land that has natural or physical development constraints, such as wetlands or conservation status, producing a buildable lands layer. The model then designates each parcel of land according to the future land use categories shown in **Figure 3.2**. The figure reflects the most recently adopted future land use map in each of the four counties. It should be noted that Liberty, Long, and Tattnall Counties will be updating their future land use maps as part of ongoing comprehensive planning and transportation planning studies.

CommunityViz then assigns people and jobs to parcels of land based on their future land use designations, density assumptions and attractiveness scores. The **Technical Appendix** will contain full detail on model assumptions. The attractiveness rating for a parcel is a combined score that reflects the suitability of that parcel to accommodate future growth based on multiple variables. The model considers both market factors, such as the relative desirability of platted and proposed subdivisions in the region and consistency with quality growth principles, including proximity to infrastructure and built out areas.

As described in **Section 2 on Housing**, the region has a large inventory of existing or proposed subdivisions that could absorb all of the forecasted growth in the region over the next two decades. To predict patterns of residential choice among these options, CommunityViz relies on a subdivision gravity model to evaluate the relative market position of the 67 subdivisions identified in Bryan, Liberty, and Long Counties (Tattnall County does not have any proposed subdivisions). The subdivision gravity

CommunityViz links with the subdivision gravity model through a series of “hot spots.” Hot spots are areas in which future growth is likely to occur due either to market-based factors or local government policies that guide investment to the designated area.

model scores each subdivision according to factors, such as land capacity, pricing, proximity to services, school performance, and military impact, including proximity to the installation gate and the current number of military workers in the community. A relatively high score indicates that a subdivision is well positioned in the market to attract future residents and thus build out more quickly than its competitors. Though some subdivisions are likely to develop at a faster rate, it is unrealistic to assume that the highest scoring subdivisions will absorb all growth before residential development occurs in lower rated areas. The model, therefore, sets a maximum capture rate for each subdivision for five year period, resulting in phased and more evenly spread growth among the region’s subdivisions. The model also assumes that not all future residential growth will occur within subdivisions and thus spreads some population, and all new residents in Tattnall County, to other areas based on the quality growth principles described below.

CommunityViz links with the subdivision gravity model through a series of “hot spots.” Hot spots are areas in which future growth is likely to occur due either to market-based factors or local government policies that guide investment to the designated area. Examples of hot spots include platted subdivisions, business parks or specially targeted infill development areas. The model assigns a higher score to parcels that fall within a hot spot. To promote consistency with quality growth concepts, the model also more highly rates those parcels that have proximity to roadways, municipal boundaries and built out areas. The intent of the assumptions is to produce more contiguous, compact development patterns throughout the region.

The model then completes the growth allocation by placing people and jobs in sequence from higher to lower ranked parcels by county. For example, the highest ranked residential parcels receive households at the density specified until build out is achieved. The model then seeks out the next highest ranked parcel to place remaining households until all growth in the county is allocated. Each county has a control total to ensure that it receives all of the new people and jobs as shown in **Tables 3.1 and 3.2.**

Based on the CommunityViz results, Figures 3.4 through 3.11 show population density (people per square mile) by transportation analysis zone (TAZ) or planning district for each county for the baseline year 2010 and final planning year 2030. The 2030 CommunityViz maps depict the current (2010) population plus new residents drawn to the region by 2030. Figures 3.12 through 3.15 show employment growth (one red dot equals 5 employees) between 2010 and 2030 by county. The 2030 employment maps only illustrate new employees added to the existing workforce over the next two decades.



#### Bryan County

Major residential growth areas in the county between 2010 and the horizon year 2030 include the City of Richmond Hill and unincorporated parts of Bryan County along I-95 and, to the north, near the I-16 corridor. Employment growth in the county is expected to cluster around I-95, I-16, and Highway 17 and to spread along Highways 199 and 280 through the City of Pembroke.



#### Liberty County

Liberty County will absorb the largest share of the projected population increase with significant core residential development around the City of Hinesville, Gum Branch, Allenhurst and Walthourville. The master planned communities in the eastern part of the county and the City of Midway will also draw new residents. Future jobs are heavily concentrated along Highway 84, particularly near I-95 and Hinesville, as well as near the City of Riceboro.



**Long County**

Long County will grow most quickly to the east near Liberty County, as well as near Ludowici, as its affordable subdivisions continue to draw new residents from the installation and other parts of the region. Stakeholders have already noted rapid growth in the county, especially relative to its smaller population base. The county will also see development at its far western edge near Highway 301. Jobs will cluster mostly along the main commercial and industrial corridor, Highway 84, and in proximity to the City of Ludowici.

**Tattnall County**

Tattnall County will experience most of its future residential and employment activity near the City of Glennville and the eastern parts of the county closest to Fort Stewart. The other municipalities of the county will also anchor some future housing and employment.

Figure 3.3 Regional Future Land Use

Figure 3.4. Bryan County Population Density, 2010

Figure 3.5. Bryan County Population Density, 2030

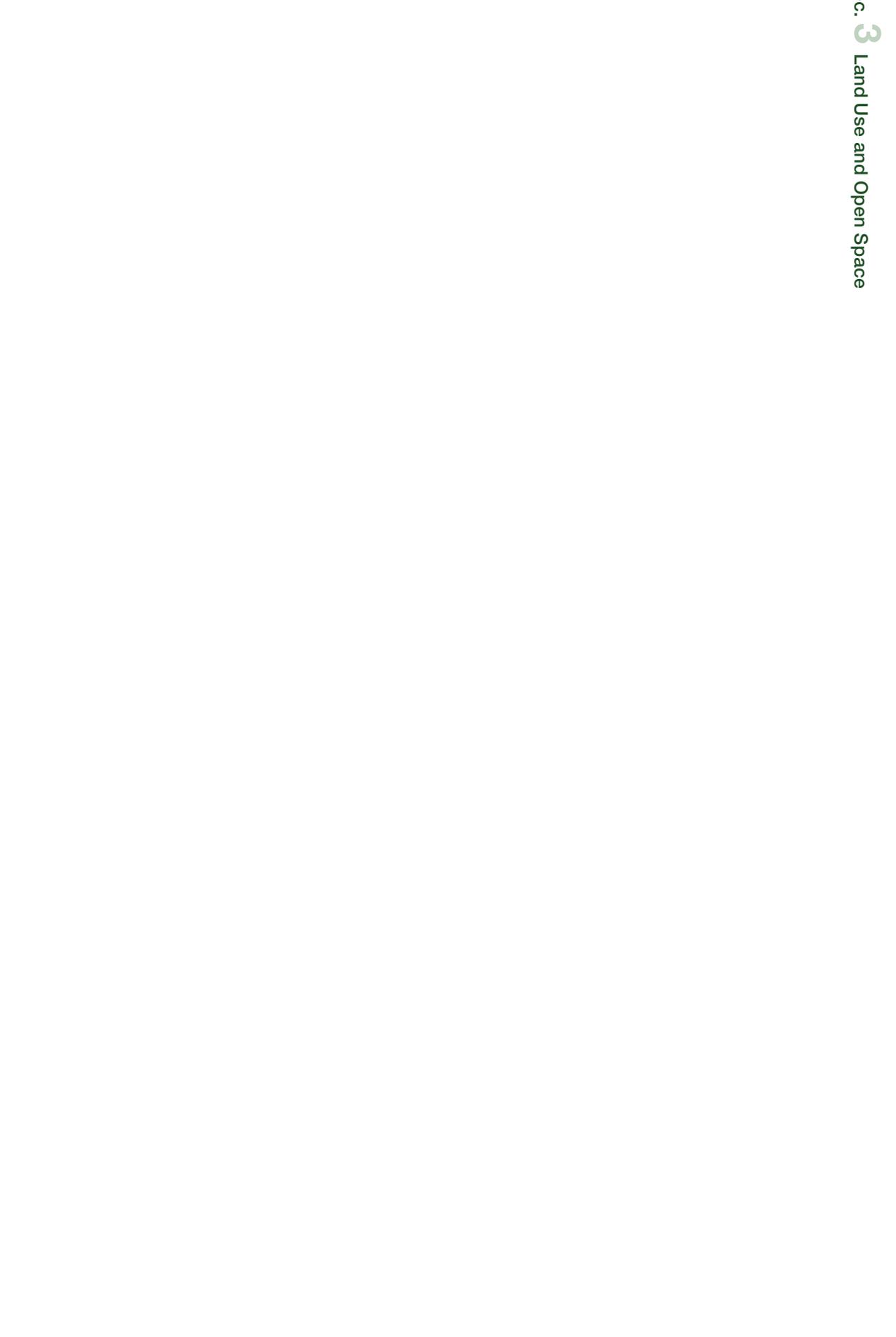


Figure 3.6. Liberty County Population Density, 2010

Figure 3.7. Liberty County Population Density, 2030

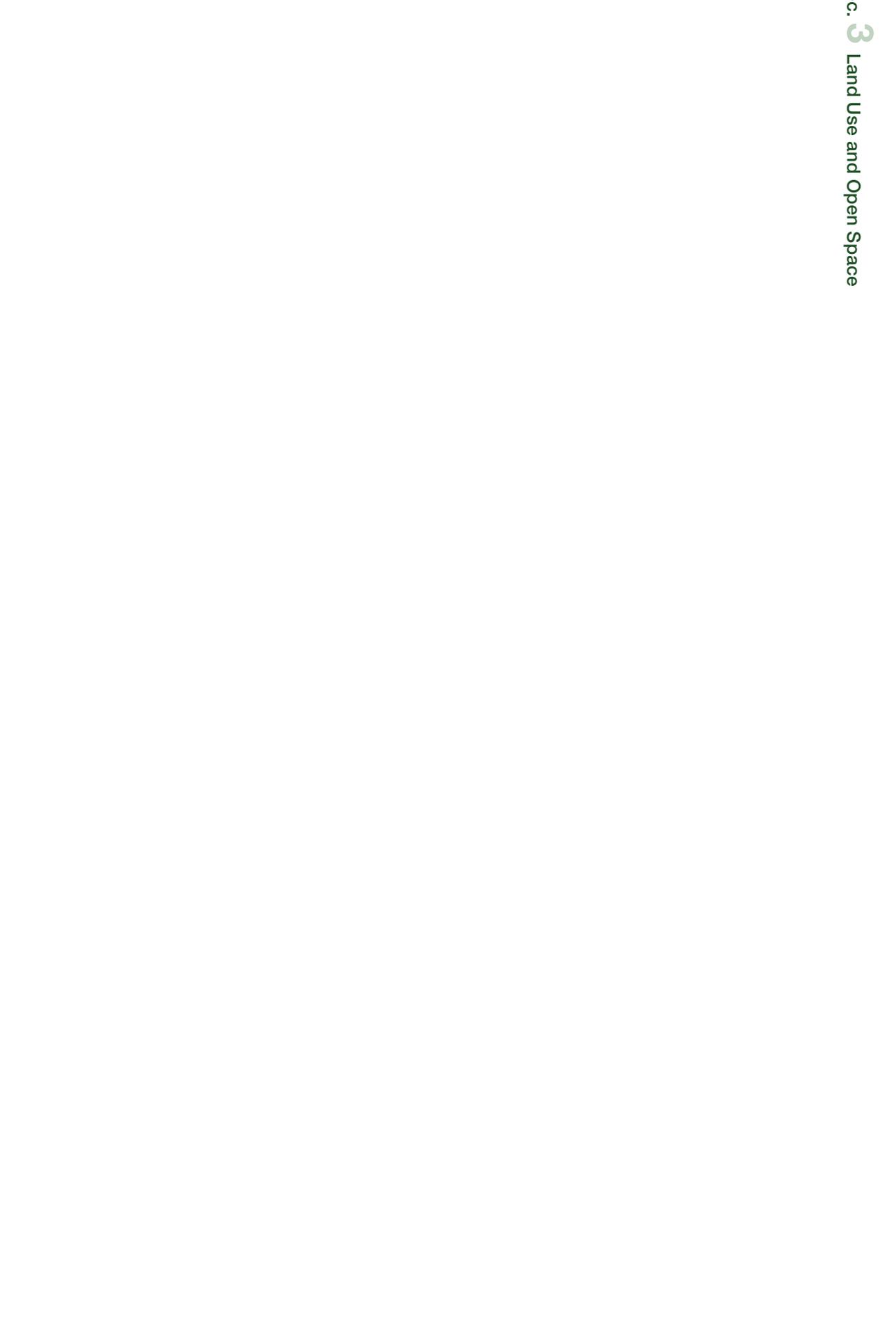


Figure 3.8. Long County Population Density, 2010

Figure 3.9. Long County Population Density, 2030



Figure 3.10. Tattnall County Population Density, 2010

Figure 23.11. Tattnall County Population Density, 2030



Figure 3.12. Bryan County Employment Change, 2010-2030

Figure 3.13. Liberty County Employment Change, 2010-2030



Figure 3.14. Long County Employment Change, 2010-2030

Figure 3.15. Tattnall County Employment Change, 2010-2030



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## Issues

The Regional Growth Plan (RGP) study area has seen robust population growth over the previous decade and trends such as mission expansion at Fort Stewart, interest in water- and marsh-front residential properties, as well as recent distribution and port-related employment investments are likely to support strong growth prospects as the development market revives. The OPB projects that an additional 72,000 people will locate to the area by 2030.

A review of the current regulatory environment indicates that the region's communities have taken major steps in recent years to expand their land use and planning capacity. Long County/Ludowici has adopted a Joint Land Development Code and other communities, such as Liberty County and its municipalities, have refined existing codes with context-specific zoning overlays and design guidelines to preserve local character. The cities and counties have also begun to plan jointly for growth as part of consolidated comprehensive plans. The Local Quality Growth Audits conducted by the Coastal Regional Commission also suggest that almost all of the counties and cities have at least adequate

zoning and subdivision regulatory authority to promote quality development and manage land use change. The communities, however, vary in their planning capacities and confront diverse development and land use contexts as summarized below.

1. Growth of large-scale master planned communities in environmentally sensitive areas – south Bryan and eastern Liberty County
2. Transformation of developed suburban areas into mature town and village centers – Richmond Hill
3. Revitalization and growth of traditional urban centers and historic downtowns – Hinesville, Ludowici, Midway, Glennville, Reidsville, Pembroke
4. Growth of smaller-scale residential subdivisions in environmentally sensitive areas – Long County, northern Bryan County, Tattnall County
5. Preservation of prime agriculture and forestry land – Long and Tattnall Counties

## Regional – Land Use

Based on an analysis of existing policies and likely growth trends, the cities and counties of the Fort Stewart region will face an ongoing set of land use challenges. As shown in the CommunityViz maps, the military impact component of growth in the region will draw significant residential development south of the installation in and around Hinesville and in the City of Richmond Hill.

### Land Use Regulations are Uneven in Quality

While several of the communities of the region have a strong regulatory framework, some local governments have a very limited ability to govern the intensity, character and location of future development. While adequate for previously slower growth profiles, codes that retain a focus on the basic separation of land uses and minimal environmental measures will no longer adequately protect sensitive resources from the impacts of rapid or scattered growth. Local governments, especially in Liberty, Bryan, and Long Counties, must have additional policies in place to guard against commercial and residential sprawl and environmental degradation. The community partners should strive for greater consistency in key development standards, such as context or form-based design, mixed uses, conservation subdivisions, and utility provision to ensure a minimum level of quality across the region.

### Rapid Growth and Development Exceed Local Planning Capacity in Some Areas

While cities will absorb most projected growth, adjacent exurban areas and the unincorporated parts of counties will accommodate new development. As development spreads beyond municipal boundaries and established service areas, communities must coordinate on issues related to annexation, adequate public service delivery, and design character.

### Dispersed Growth Patterns Erode Community Character and Degrade Natural Systems

One of the most common outcomes of unmanaged and rapid growth is the blurring of rural and urban features into a homogenized suburban setting that lacks context. As low density development spreads across the landscape, it can also consume areas of open space, disrupting existing views and interfering with the prime farmland and ecological and recreational functions of natural systems, such as wetlands. Communities should adopt zoning and development policies that reinforce the distinct qualities of place by preserving the rural landscape, directing denser, walkable urban forms into existing cores, and controlling the spread of commercial activity along corridors.

### Lack of Consistent Emphasis on Connected, Mixed Use Communities and Lifelong Communities

While some of the region's higher priced master planned communities include recreational facilities and open space, many of the study area's developing residential areas are housing-only enclaves that lack easy access to amenities, retail, and community services. Many of these limited-amenity subdivisions are on the periphery of the urban core in Long County and areas adjacent to the City of Hinesville. New residents, especially incoming military personnel, are often drawn to these areas because of less costly

housing and proximity to the installation. To capture quality growth, communities should place emphasis on encouraging or even requiring the “softer” elements of community identity, such as parks, gathering spaces, entertainment and retail.

Since the region’s population is aging overall and some of its housing market is oriented to retirees, communities should also incorporate Lifelong Communities concepts that promote housing and transportation options, encourage healthy lifestyles, and expand access to information and services.

### **Corridors Are Vulnerable to Strip Commercial Development and Congestion**

As shown in the CommunityViz maps, the region’s corridors, such as US 84 between Hinesville and Ludowici, Highway 196 through Gum Branch and US 17 and Highway 144 near Richmond Hill are highly likely to absorb additional residential and commercial development. These corridors function both as key mobility links in the region and as gateways to the surrounding communities. Stretches of these corridors, especially in the urban cores, suffer from heavy traffic volumes and inconsistent aesthetic conditions typified by strip commercial uses, large areas of surface parking, and frequent curb cuts. Communities should place emphasis on adding mixed use zoning districts to channel employment in urban centers and neighborhoods and away from the corridor-based patterns evident in Figures 3.11 and 3.12.

As described in Section 9 on Transportation and in the Transportation Appendix, the addition of personnel on the installation will affect existing circulation patterns and increase military-related traffic volumes on already strained roadways. While communities have taken some steps to improve access management and physical character, especially along US 84, all study partners should explore strategies to enhance urban form and site planning practices along their corridors.

### **Need to Strengthen Downtown Revitalization**

The historic downtowns of the region offer a distinctive contrast and appealing complement to the rural landscape and master planned communities seen through much of the study area. Regional partners should build on the physical assets and existing character of Hinesville, Pembroke, Ludowici, Glennville and Reidsville, positioning these historic districts as the heart of arts, culture, history, and destination services and retail. Enhanced downtowns can also play a key role in the region’s economic diversification strategy, capturing more sales revenue and generating the quality of life assets that draw new investment and workers. While many of the communities have shown renewed interest in enhancing the character and visibility of their downtowns, some traditional business and residential cores still suffer from inconsistent urban design and local governments lack the policy tools to require compatible architecture and building facade restoration within their historic districts.

### **Growth Near Fort Stewart**

The CommunityViz maps, which reflect both market-based trends and an emphasis on quality growth principles (especially compact urban form), illustrate the risk of significant future development in areas of the Army Compatible Use Buffer, especially south of the cantonment area and northwest of Richmond Hill. The Coastal Regional Commission (CRC) has actively engaged the local communities in the implementation of the Joint Land Use Study recommendations and many compatibility measures, such as memoranda of understanding and comprehensive plan guidance are in place. Local governments, especially in Liberty and Bryan County, should continue to collaborate with the CRC and Fort Stewart to strengthen land use policy that could be used to shift growth away from areas affected by military operations.

The sections below summarize specific growth issues affecting the individual communities of the region. The recommendations identified below are intended to address these challenges.

## **Bryan County (Unincorporated) – Land Use**

As shown in the CommunityViz (Figure 3.5) and Regional Areas of Interest map (Figure 3.1), most of



the growth in unincorporated Bryan County is anticipated to occur in the south due to the increased availability of water and wastewater services, enhanced transportation access, and the presence of large master-planned communities with marsh-front property and other attractive amenities. Areas of rapid growth or development interest are emerging around Belfast River Road and I-95 (pending construction of the proposed interchange), current agricultural areas of Black Creek, west of SR 280, and Oak Level Road east SR 144. Though the northern part of the county is more rural, it will also continue to see growth, particularly near Pembroke and Ellabell, and along the I-16 corridor.

The prevailing growth patterns in the county pose several risks, including the loss of open space and rural character, adverse environmental impacts, and the lack of mixed land uses in some emerging residential areas. Areas vulnerable to the impacts of dispersed growth include prime agricultural lands in the north, archaeological, cultural, and historic sites, and marshlands in southern Bryan County. Heavy reliance on septic systems throughout unincorporated areas also increases the environmental risks associated with system failure and degraded water quality.

Bryan County received an “Excellent” audit ranking in the Coastal Regional Commission’s assessment, indicating that its regulatory framework requires compliance with an array of quality growth concepts. However, the continued appeal of large-scale master planned communities, especially in the south, and the ongoing dependence on septic systems to accommodate some growth, indicates the need for conservation or cluster-based subdivision options and a long-term strategy for reducing septic use and

expanding access to centralized wastewater treatment services. The county recently formed a Water and Sewer Authority to plan for water and sewer delivery.

The county recognizes that the major market pull is for master-planned residential communities and marsh-front properties in its unincorporated areas. Continued growth outside of established urban service areas strains infrastructure and often results in higher costs for service delivery. The fragmented and scattered pattern of development across the county clearly highlights the importance of more formalized coordination among local governments as annexation, zoning, and infrastructure delivery decisions shape the county's built form.

Additionally, strong residential development in recent years has increased the demand for employment, retail, and other community services. The lack of mixed uses in many parts of the county separates residents from everyday needs and furthers dependence on the automobile to access goods and services. While the county's master planned projects tend to have more community amenities than other parts of the region, the county should explore opportunities to add open space and convenient retail and public facilities to developing sites.

Since the county residential market has strong appeal in the retirement market, site planning and design codes should emphasize Lifelong Communities principals, including walkability, easy access to retail and services, the inclusion of smaller, more affordable housing units, and public gathering spaces to promote social interaction. Physical connectivity is a critical, and currently missing, component in many planned developments that are either gated or have limited non-vehicular access. Residential areas and retail nodes should be better linked by a system of local and regional trails throughout the county.

### **Pembroke – Land Use**

The City of Pembroke faces some of the land use challenges seen in northern Bryan County, including dispersed growth patterns that could diminish its rural character and reinforce auto dependency. Areas particularly prone to linear commercial growth and heavy vehicular access include Highway 67 to Rogers Road and Highway 280 running east and west. Residential communities in newly annexed areas of the city or adjacent to city limits tend to feature low pedestrian orientation, low traffic volumes, and larger open spaces for recreation. The Coastal Regional Commission audit results suggest that Pembroke should continue to explore opportunities to incorporate community design and planning best practices, such as mixed use, walkability, context sensitive physical design, and open space preservation, into their existing regulations.

Downtown Pembroke continues to be the core of the community with a public realm that revolves around historic landmarks, civic and/or cultural activities, and a mixed use, pedestrian-oriented built form. The city recently reinforced its downtown identity through Phase 1 and 2 streetscaping along Highway 280 and has plans for additional park space and trails. However, no building design criteria are currently in place to protect the facades of structures that contribute significantly to the distinctive character of the historic district. Due to concern over the potential effects of the widening of Highway 280 on the downtown, community plans encourage alternative modes of transportation and a bypass that loops around the core. Several older neighborhoods adjacent to downtown Pembroke are in need of revitalization due to declining housing conditions.

### **Richmond Hill – Land Use**

Although unincorporated areas in south Bryan have grown rapidly, the City of Richmond Hill has also absorbed significant development. Limited wastewater treatment capacity has curbed growth in recent years, but the city has extended water and wastewater infrastructure to annexed land and plans to expand its wastewater treatment facility in preparation for proposed and anticipated growth. Richmond Hill and other nearby residential areas are likely to continue attracting military families and personnel from Fort Stewart and Hunter Army Airfield.

Areas of rapid development are emerging along Highway 17 and SR 144, as well as Richmond Hill

Plantation and areas southwest of the city. State Routes 17 and 144 are the major transportation corridors into the city and act as community gateways and links to regional greenways.

Given the ability of Richmond Hill's main corridors to attract both residential and commercial development, the city is at risk of growing in a very linear and conventional auto-dependent pattern. Richmond Hill's land use and development regulations received an "excellent" rating as part of the Coastal Regional Commission's audit. Though the zoning code currently separates commercial, residential, and industrial uses in every district, it encourages mixed uses, infill, and small lot development and conservation for land adjacent to the Ogeechee River. The city also adopted stringent land use measures to protect natural resources, such as floodplains and marsh lands. To enhance current planning capacity, the city should continue to emphasize mixed use components for large tracts of land, compact lot options, physical connectivity, open space protection, and form-based codes.

Unlike many of the other communities of the RGP study area, Richmond Hill lacks an historic downtown or urban core. Many of the residential neighborhoods in the city are also gated or physically separated, thus limiting opportunities to create broader networks of open spaces and accessible amenities. The "Henry Ford-era" buildings on Richard Davis Drive serve as an important historic resource and are representative of the community's distinctive character and culture. The city has added a Richmond Hill Historic Overlay District to protect architectural character within historic areas, but has not yet adopted specific regulations for the overlay. Richmond Hill continues exploring options to build a sense of place and establish organizing urban elements by re-interpreting "Henry Ford-era" architecture in new projects. Along with the existing city hall complex, the new courthouse, county recreation park and Green Creek Trail site on SR 144 creates a framework for community identity.

## Liberty County (Unincorporated) – Land Use

Like most Coastal Georgia counties, the population in Liberty County has increased steadily with growth expected to continue. The eastern portion of the county, in particular, has experienced strong development pressure related to the desire for amenity-based, marsh-front properties and large-scale employment opportunities, such as the Target Distribution Center in Midway, the Tradeport East Business Center and port-related industries. Rapid development has emerged around areas along the Medway River and the North Newport River; between I-95 and US 17; the Independence development of Hinesville; the Fraser development in Hinesville and Flemington; and the interchange area of US 84 and I-95 with portions in Midway.

If unmanaged, this east-ward growth orientation could pose a threat to the county's natural resources, such as extensive marshlands along the coast, sensitive plant and animal ecosystems, forest land, and quality green space. Various planning efforts have also cited the lack of parks and open space in the county.

The coastal quality growth audit rated the current county codes as adequate, suggesting that the county could explore additional opportunities for mixed uses, walkability, context sensitive physical design, small lot and cluster development, and open space preservation.

A primary planning challenge in the county is continued development outside of established urban service areas, particularly along the edges of the City of Hinesville and in smaller municipalities that lack infrastructure capacity. This fragmented growth pattern highlights the need for additional coordination in the delivery of public services and infrastructure.

Inconsistency in the built environment has also spurred new planning initiatives among Liberty County communities. The county and cities are collaborating to address physical design, infrastructure and land use issues through targeted area plans, such as the Gateway Sector Plan, intended to guide

Hinesville has also elevated its visibility as the urban core of the county through high quality streetscaping and public realm elements along Memorial Drive and Main Street.

development patterns around the I-95 and US 84 interchange and the US 84 Corridor Study. The US 84 corridor displays some visual clutter, underused strip commercial sites with excessive surface parking and heavy vehicular congestion.

### Hinesville – Land Use

The City of Hinesville is the urban core and anchor for most of the anticipated growth in Liberty County. As shown in Figure 3.7, the presence of planned subdivisions and adherence to more compact growth patterns could place significant future development within or adjacent to the city limits. Though the city has sufficient wastewater capacity to absorb this growth in the near term, longer-term issues related to maintaining service adequacy and coordinating delivery across multiple jurisdictions are likely to arise.

Hinesville has also elevated its visibility as the urban core of the county through high quality streetscaping and public realm elements along Memorial Drive and Main Street. The city is also exploring other strategies to reinforce its traditional downtown through major redevelopment opportunities, such as the public services complex on the old Liberty Hospital site at the intersection of US 84 and M L King. As noted earlier, major corridors in the city, such as US 84 corridor have uneven aesthetic character, underused commercial sites, and heavy traffic volumes. Hinesville's land use framework received an "excellent" rating as part of the Coastal Regional Commission's zoning audit, indicating that the city already has many innovative land use and growth management tools in place.

### Allenhurst – Land Use

Allenhurst is physically bounded by two other municipalities and unincorporated Liberty County, thus creating constraints on its geographic growth. The community has two major character areas to accommodate future growth: Developed Neighborhoods, which comprise most of the land in the city boundaries and the US 84 corridor. According to the results of the CommunityViz model, Allenhurst is well positioned to absorb significant residential development over the next two decades due to its proximity to Hinesville and the port and the presence of a major regional corridor. The city places emphasis on infill development opportunities, which can be used to build a stronger sense of place and identity in the community. Allenhurst, however, faces the ongoing, and likely increasing, challenge of coordinating water and wastewater delivery with the City of Hinesville.

According to the CRC quality growth audit, city land use regulations meet basic provisions for shaping sustainable and efficient land use patterns. The adequate rating, however, suggests that Allenhurst should explore opportunities, along with other Liberty County municipalities, to manage growth through best practice techniques, such as mixed uses, compact lots, and pedestrian form.

### Flemington – Land Use

As with Allenhurst, the City of Flemington is poised to receive residential and commercial growth due to ease of access from the installation and other parts of the study area. Though mostly residential, the city is diversifying its land use base and building a visible focal point for commercial uses along the US 84 corridor. Flemington's land use regulations slightly lag the coastal region in the use of best practices for growth management and environmental protection, indicating the need for stronger land use provisions.

### Gum Branch – Land Use

Trends and modeling results indicate that the City of Gum Branch is in the path of substantial residential growth spreading outward from the City of Hinesville and nearby master planned communities, such as Independence. Areas likely to anchor significant growth include Dairy Road and the Highway 196 corridor. The emerging growth pattern conflicts with the city's predominant low density character (less than 0.5 dwelling units per acre) and the desire to retain a rural and agricultural identity.

According to the CRC quality growth audit, city land use regulations feature adequate measures for

promoting sustainable and efficient land use patterns. Gum Branch, however, should explore additional opportunities to manage growth and protect open space and the rural landscape.

## Midway – Land Use

The City of Midway is an area of increasing residential interest due to nearby employment centers and proximity to Savannah. The community features a distinctive sense of place and notable historic and cultural elements, including a designated Preservation Corridor along Martin Road.

The Historic Midway Master Plan emphasizes quality growth principles to conserve and leverage these natural and historic resources; create mixed use centers (avoiding strip commercial development); and design well-connected street systems. The plan highlights opportunities to elevate the sense of place in Bacontown Village, the Historic Village, Midway Town Center, and to create a Gateway Corridor from I-95 along US 84 into the Town Center.

Though Midway’s land use and development regulations received an “excellent” rating as part of the Coastal Regional Commission’s audit, ongoing development continues to disrupt its wetlands and other ecological areas. The Master Plan recommends more rigorous protection of these sensitive areas through ordinances that prohibit alterations to floodways, floodplains, and wetlands and promote low-impact development in residential areas.

## Riceboro – Land Use

The City of Riceboro is rich in history, heritage, and scenic landscapes, particularly along EB Cooper Highway (SR 119), a designated Preservation Corridor. The community is undertaking a Master Plan for Future Growth and Development to prepare for population growth and to preserve its distinctive identity and culture.

According to the CRC quality growth audit, city land use regulations incorporate basic measures to shape sustainable and efficient land use patterns. Riceboro, however, should explore additional provisions that would accommodate future growth more compatible with its desired rural character and heritage tourism goals.

## Walthourville – Land Use

Most of the City of Walthourville consists of developed residential areas that follow an auto-dependent form. The city is well positioned to absorb a portion of Liberty County’s future residential and commercial growth due to the presence of US 84 and its proximity to rapidly emerging residential areas between Hinesville and eastern Long County. Rapid growth in and around the community will require additional coordination with the City Hinesville to deliver adequate public services.

The Coastal Regional Commission audit results suggest that Walthourville should enhance its adequate land use regulatory framework by exploring community design and planning best practices, such as mixed uses, walkability, context sensitive physical design, and open space preservation.

## Long County – Land Use

Land use patterns throughout Long County are fragmented and sparse, reflecting the lack of county-wide land use controls until 2008. The majority of non-residential land use is agriculture and forestry. Agricultural use is generally confined to north Long County due to land and soil suitability, while forestry occurs throughout the county. Commercial land uses have generally located where urban services are available, resulting in a concentration within the city limits of Ludowici. Though the City of Ludowici is the historic and physical core of the county and the sole area with access to urban public services, recent subdivision growth and ongoing development interest has focused on unincorporated areas, such as Rye Patch and Elim Church Road off of Highway 196.

As shown in Figure 3.9, the resulting pattern of sprawled development along the Long/Liberty County line



reflects the “spill over” effects from growth at Fort Stewart. Dispersed, scattered pockets of subdivision growth and heavy reliance of septic systems pose risks to environmentally sensitive areas of the county, including prime agricultural and forestry land, wetlands, and water recharge areas. The siting of residential subdivisions near agriculture also triggers compatibility issues with noise, smell and other nuisance factors associated with farming operations. Residential land uses, especially relatively dense mobile home communities have also become more prevalent in the north and northeastern portions of the county.

CRC quality growth audit results indicate that the county (and the City of Ludowici) are not fully equipped with the best regulatory tools to manage future growth. It should also be noted that the Long/Ludowici land use control framework is relatively early in its implementation and that the county/city’s regulatory capacity currently exceeds other rural inland communities in the use of land use and growth management tools.

### Ludowici – Land Use

Ludowici anchors most of Long County’s commercial and industrial activity, while only minor commercial uses are found in unincorporated areas. The city has all of the elements of a traditional downtown, including pedestrian-scale commercial buildings, connected streets, and the proximity of schools, public spaces, and institutional uses. However, the lack of a consistent and high quality public realm, such as streetscaping, signs and restored building facades detracts from the downtown’s sense

of place. Stakeholders from Long County have also expressed concern about the predominance of residential land uses and the need to better balance growth patterns by introducing additional revenue-generating commercial and industrial activities.

## Tattnall County – Land Use

Tattnall County has an extraordinarily diverse set of natural resources, including prime farmland, fields, forests, streams, and flood plains associated with the Altamaha River. Vidalia Sweet Onion and poultry production, as well as silviculture are significant components in the local economy. Tattnall County farm income ranks in the top five in the State of Georgia.

Although residential land use has concentrated in and around Glennville and Reidsville, housing outside of the cities tends to follow the availability of land, rather than adherence to an overall planning vision. Without county-wide land use planning, future growth will continue to emerge in scattered and less efficient patterns, placing more strain on infrastructure and potentially degrading valuable natural systems.

Glennville and Reidsville will continue to be the focus of future development in the county, though some residential growth is likely to occur north and northeast of Reidsville near U.S. 280/Georgia 121 and south along Georgia 147 near the airport, as well as south and east of Glennville. Commercial growth is expected to continue to concentrate in Glennville along U.S. 301 and in Reidsville along U.S. 280 West and Georgia 23 East. The smaller cities of Cobbtown, Collins and Manassas have experienced very limited recent development. The downtowns of Cobbtown, Collins, Glennville and Reidsville are an ongoing focus for redevelopment and revitalization efforts.

## Glennville – Land Use

Glennville is the urban core and center of development for the county, a role reinforced by the growth allocation modeling results. The city has taken recent steps to enhance its physical character through streetscaping along two blocks of its traditional commercial downtown and build a sense of place around the renovated Glenwanis Hotel and other historic building facades. Glennville currently does not have design guidelines or requirements to preserve the historic character of its core.

The city has had a zoning ordinance in place since 1983. The ordinance is based primarily on Euclidean zoning, with few allowances for mixed use or “smart growth” applications. In large part, the zoning tools that the city has adopted provide the ability to effectively manage growth by allowing the market to drive growth in certain areas while preserving existing character in others.

The zoning code sets out regulations for residential, commercial, light industrial, agricultural, and planned unit developments. While the Comprehensive Plan for Tattnall County states that downtown revitalization is a focus in Glennville, few tools in the City’s zoning ordinance help catalyze redevelopment. For example, mixed use is not allowed in any district. Planned unit development (PUD) districts allow for the greatest flexibility in the use and design of structures and land in the current code, yet have minimum lot sizes of 10 acres. In constrained settings such as downtown areas, assembling 10 acres to develop more innovative mixed use projects may prove challenging. Design overlays could also be considered to help set standards for the quality of development occurring along in downtown Glennville. In this sense, overlays can help shape the character of an area and spur economic development.

## Open Space and Recreation Demand

Recreation and open space are commonly viewed as integral components of sustainable communities, contributing to people’s quality of life. Not only do sports fields and parks provide opportunities for people to be physically active, they also help foster stronger interpersonal relationships, create a sense of community, and enhance overall physical health and wellbeing of communities.

A review of the region's Comprehensive Plans and other planning documents in the first phase of this study revealed that many small developments are encroaching on environmentally sensitive lands throughout the four-county area. A recurring theme in planning documents is also the desire for the preservation of rural character. Further, Tables 3.5 through 3.8 indicate that there is currently a shortfall in open space in the region, and many communities have expressed a desire for increased open space provision and enhanced amenities. To safeguard natural resources from development, and to provide needed green space for communities' recreation purposes, it is recommended that open space be purchased and protected for future use.

The demand for new open space and recreation facilities was generated through the use of categories and standards as set out in the National Recreation and Parks Association's Recreation, Park and Open Space Standards and Guidelines (1990). This analysis employs open space categories as defined in the NRPA guidelines (presented in Table 3.3 below). For recreation, this analysis focused on future need for swimming pools, baseball fields, and soccer fields as facilities commonly demanded by local populations, as advised by the Fort Stewart Growth Management Partnership.

<b>Table 3.3 - Open Space Definitions</b>	
<b>Type</b>	<b>Definition</b>
<b>Mini-Park</b>	Specialized facilities that serve a concentrated or limited population or specific group such as tots or senior citizens.
<b>Neighborhood Park/ Playground</b>	Area for intense recreational activities, such as field games, court games, crafts, playground apparatus areas, skating, picnicking, wading pools, etc.
<b>Community Park</b>	Area of diverse environmental quality. May include areas suited for intense recreational facilities, such as athletic complexes, or large swimming pools. May be an area of natural quality for outdoor recreation, such as walking, viewing, sitting, picnicking. May be any combination of the above, depending upon site suitability and community need.
<b>Regional/ Metropolitan Park</b>	Area of natural or ornamental quality for outdoor recreation, such as picnicking, boating, fishing, swimming, camping, and trail uses; may include play areas.

Table 3.4 sets out the standards used in this analysis to forecast recreation and open space requirements. The open space acreage standards used for modeling purposes represents mid-point in the range of acres per 1,000 population recommended by NRPA. For recreation projections, NRPA standards were converted to facilities per 1,000 population for ease of calculation.

<b>Table 3.4 - Recreation and Open Space Standards</b>		
<b>Type of Service</b>	<b>Standard (per 1,000 population)</b>	<b>Source</b>

Swimming Pools	0.05 facilities	Derived from NRPA standards, 1990
Baseball Fields	0.20 facilities	
Soccer Fields	0.10 facilities	
Mini-Park	0.38 acres	
Neighborhood Park/ Playground	1.50 acres	
Community Park	6.50 acres	
Regional/ Metropolitan Park	7.50 acres	

Based on the standards shown in the table above, the demand for recreation and open space is as follows. Demand arising from the Cities of Hinesville and Richmond Hill are provided for illustration purposes only, as Liberty County and Bryan County demand is inclusive of their requirements. Likewise, it is assumed the population at Fort Stewart will utilize facilities in the region; therefore, demand shown from this population is included in county totals.

**Table 3.5 - Bryan County Recreation and Open Space Demand Arising from New Population**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Recreation (number of facilities)				
Swimming Pools	0.3	0.6	1.0	1.3
Baseball Fields	1.1	2.4	3.8	5.2
Soccer Fields	0.6	1.2	1.9	2.6
Open Space (in acres)				
Mini-Park	2.2	4.5	7.3	10.0
Neighborhood Park/ Playground	8.5	17.9	28.7	39.3
Community Park	36.8	77.6	124.4	170.4
Regional/ Metropolitan Park	42.4	89.6	143.6	196.6
<b>Total Open Space</b>	<b>89.8</b>	<b>189.7</b>	<b>303.9</b>	<b>416.2</b>

**Table 3.6 - Liberty County Recreation and Open Space Demand Arising from New Population**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Recreation (number of facilities)				
Swimming Pools	0.5	0.8	1.2	1.6
Baseball Fields	2.0	3.4	4.9	6.4
Soccer Fields	1.0	1.7	2.5	3.2
Open Space (in acres)				

Mini-Park	3.8	6.4	9.3	12.1
Neighborhood Park/ Playground	15.0	25.2	36.8	47.8
Community Park	65.0	109.2	159.3	207.2
Regional/ Metropolitan Park	75.0	126.0	183.8	239.1
<b>Total Open Space</b>	<b>158.8</b>	<b>266.8</b>	<b>389.2</b>	<b>506.3</b>

Liberty County produced their Comprehensive Park and Recreation Master Plan (2004) which quantifies recommended open space provision, also by using NRPA standards, and suggests locations for new open space development. The Liberty County plan projects that 385 acres will ultimately be needed, whereas the analysis presented above recommends 506 acres. The differences can be attributed to varying planning horizons (2020 for Liberty County versus 2030 for this study) and the potential use of different population projections. Additionally, the Liberty County plan looked at different open space types in their plan. The analysis presented as part of this study shows standardized provision across all four counties, “treating all counties equally,” to understand the relative scale of open space need. It is ultimately recommended that each county undertake open space master plans like Liberty County’s; this analysis is meant to serve as a starting point for such detailed analysis on a more localized basis. In the case of Liberty County, this analysis underscores the need for an increased amount of park and open space to make up for its existing scarcity.

**Table 3.7 - Long County Recreation and Open Space Demand Arising from New Population**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Recreation (number of facilities)				
Swimming Pools	0.1	0.1	0.2	0.3
Baseball Fields	0.2	0.5	0.8	1.1
Soccer Fields	0.1	0.2	0.4	0.5
Open Space (in acres)				
Mini-Park	0.5	0.9	1.5	2.0
Neighborhood Park/ Playground	1.8	3.7	5.8	7.9
Community Park	7.8	16.2	25.0	34.3
Regional/ Metropolitan Park	9.0	18.7	28.9	39.6
<b>Total Open Space</b>	<b>19.0</b>	<b>39.6</b>	<b>61.2</b>	<b>83.8</b>

**Table 3.8 - Tattnall County Recreation and Open Space Demand Arising from New Population**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Recreation (number of facilities)				
Swimming Pools	0.1	0.2	0.3	0.5

Baseball Fields	0.4	0.9	1.4	1.9
Soccer Fields	0.2	0.4	0.7	0.9
Open Space (in acres)				
Mini-Park	0.8	1.7	2.6	3.6
Neighborhood Park/ Playground	3.3	6.7	10.4	14.2
Community Park	14.2	29.1	44.9	61.6
Regional/ Metropolitan Park	16.4	33.6	51.8	71.1
<b>Total Open Space</b>	<b>34.7</b>	<b>71.1</b>	<b>109.8</b>	<b>150.5</b>

**Table 3.9 - Hinesville Recreation and Open Space Demand Arising from New Population**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Recreation (number of facilities)				
Swimming Pools	0.1	0.2	0.3	0.4
Baseball Fields	0.5	0.8	1.1	1.5
Soccer Fields	0.2	0.4	0.6	0.7
Open Space (in acres)				
Mini-Park	0.9	1.5	2.1	2.8
Neighborhood Park/ Playground	3.5	5.7	8.5	11.1
Community Park	15.0	24.8	36.7	48.1
Regional/ Metropolitan Park	17.3	28.7	42.4	55.5
<b>Total Open Space</b>	<b>36.6</b>	<b>60.7</b>	<b>89.7</b>	<b>117.5</b>

NB: County demand for facilities and acreage is inclusive of city demand.

**Table 3.10 - Richmond Hill Recreation and Open Space Demand Arising from New Population**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Recreation (number of facilities)				
Swimming Pools	0.0	0.1	0.2	0.3
Baseball Fields	0.2	0.4	0.7	1.0
Soccer Fields	0.1	0.2	0.3	0.5
Open Space (in acres)				
Mini-Park	0.3	0.7	1.3	2.0
Neighborhood Park/ Playground	1.2	2.9	5.2	7.7
Community Park	5.4	12.7	22.6	33.4



Regional/ Metropolitan Park	6.2	14.6	26.0	38.5
<b>Total Open Space</b>	<b>13.2</b>	<b>31.0</b>	<b>55.1</b>	<b>81.5</b>

NB: County demand for facilities and acreage is inclusive of city demand.

Table 3.11 indicate the demand in recreational facilities and open space associated directly with the expected increase in the military population and their dependents.

<b>Table 3.11 - Fort Stewart Recreation and Open Space Demand Arising from New Population</b>		
	<b>By Phase 1</b>	<b>By Phase 2</b>
	<b>2007-2010</b>	<b>2010-2013</b>
<b>Recreation (number of facilities)</b>		
Swimming Pools	0.0	0.1
Baseball Fields	0.2	0.4
Soccer Fields	0.1	0.2
<b>Open Space (in acres)</b>		
Mini-Park	0.3	0.7
Neighborhood Park/ Playground	1.2	2.9
Community Park	5.4	12.7
Regional/ Metropolitan Park	6.2	14.6



<b>Total Open Space</b>	<b>13.2</b>	<b>31.0</b>
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NB: County demand for facilities and acreage is inclusive of Ft. Stewart demand.

## Recommendations

The section below highlights a series of general recommendations to prepare Bryan, Liberty, Long and Tattnall Counties and the municipalities for anticipated growth. The recommendations are intended to address:

- existing weaknesses and challenges that emerged through data collection and stakeholders interviews, as well as modeling analysis
- planning capacity and available resources of affected jurisdictions
- high growth impact areas

## Introduction to Regional Strategies

### Enhance Land Use Regulations and Create Unified Development Codes

The results of the CRC quality growth audit indicate that most communities in the region should overhaul or modify their land use regulations to align better with their desired vision and to incorporate the latest growth management policies and context sensitive design concepts. As communities revisit their codes, they should seek to combine separate regulations into a Unified Development Ordinance (UDO). The UDO framework comprehensively addresses issues of traditional zoning, subdivision development and environmental protection, reduces conflicts and redundancy, and creates an overarching framework for community growth.

While each community will have distinctive provisions, such as zoning overlays and land use categories that reflect particular features of the local area, partner governments should strive for consistency in meeting minimum uniform land use and development standards for sustainable community design and planning including:

- by-right mixed uses
- compact lots and affordable diverse housing types
- form-based or context-specific zoning overlays
- rural and open space preservation
- walkability and physical connectivity
- guidelines to ensure compatibility with historic areas
- environmental protection, including use of riparian buffers, designation of susceptible groundwater recharge areas, restrictions on septic tanks, and requirements for low impact development in areas of conservation interest

### Increase Use of Regional and Interlocal Service Planning

One of the major risks of rapid growth in the exurban and unincorporated parts of the region is the ongoing blurring of rural and urban boundaries, creating a homogenous pattern of suburban density residential development and commercial sprawl. Planned growth areas and interlocal agreements enable communities to prepare for phased, contiguous and orderly growth and the efficient provision of public services. Accommodating future development and public investments within an explicitly drawn planned growth boundary supports several complementary goals, including directing development pressure back toward mature communities, reducing the costs of infrastructure, protecting the rural character and environmental resources of the counties, and guiding growth away from impact areas near Fort Stewart. Communities should continue to pursue joint planning models, such as Liberty County Consolidated Planning Commission, as well as increase the use of interlocal service agreements to address water and wastewater infrastructure delivery issues across city and county boundaries.

### Separate Urban and Rural Areas

Unmanaged growth in scattered low density patterns could erode the existing agricultural and silviculture base and detract from the scenic qualities that make the region an appealing place for new residents and retirees.

Communities should embrace new zoning and development policies that reinforce distinct qualities and highlight the transition between urban cores, residential areas, and the rural landscape. Key tools to preserve rural and urban landscapes include:

- the creation of urban growth and infill development areas
- the identification of new activity centers and mixed use areas
- the preservation of strategic open space networks
- farmland protection strategies, such as agricultural easements
- corridor access management and land use plans
- conservation-oriented subdivision policies
- Transfer of Development Rights (TDR) and Purchase of Development Right (PDR) programs

### Agricultural Protection

Policies that preserve farming and reduce conflicts between agricultural and non-agricultural land uses can counteract the strong pressure to convert farmland into housing and encourage positive outcomes, such as local food production, open space and rural character conservation, and a viable agricultural sector.

Tools that can strengthen the long-term viability of the agricultural base include conservation easements, purchase/transfer of development rights, and agricultural zoning with minimum lot sizes of more than 25 acres. Agricultural use notices and minimum buffer requirements for new non-agriculture development adjacent to designated agricultural lands can also mitigate impacts of dissimilar uses in proximity.

Policies should include:

- A requirement that a potential purchaser of property near farming or the developer of residential property in such an area be notified of the impacts, such as pesticide use, controlled burns, noise lights, or odor that result from agricultural operations; and
- The requirement for a buffer between new residential developments and adjoining agricultural uses; A setback distance of 200' is frequently cited within the literature reviewed, but there is no hard evidence that 200' is the optimal separation; appropriate buffers depend upon the unique mix of topography, weather patterns, commodity and uses at the particular site.

### Conservation Subdivisions

Conservation or cluster subdivisions can also preserve the rural landscape, while accommodating new residential subdivisions. This process encourages homes to cluster in one area of the property and preserves the remaining land in a conservation easement or protective covenant. Such preserved land must remain free of development and used for purposes such as agriculture, wildlife, and open spaces.

Conservation-based subdivision design requires developers to follow a four-step process:

1. Identify the environmentally and culturally significant resources that exist on the site; examples may include unsuitable soils, stream buffers, wildlife habitat, or archeological sites. These resources form the unbuildable portion of the site and must be protected through measures such as landscape buffering. Often these features can be incorporated as natural or recreational amenities that add value to the land and generate buyer interest.
2. Identify the potential development areas on the site; building envelopes should be chosen to minimize the impact to the visual, natural and cultural resources identified in the first planning step; housing sites are in turn laid out within the designated building envelope; since conservation design



does not require uniform lot spacing or larger minimum lot sizes, houses can be clustered within the envelop to maximize the housing yield.

3. Identify the street and trail network that can connect housing sites.
4. Add housing lot lines with sufficient land area to accommodate septic tanks and wells as necessary.

This simple design approach limits developers to building homes only on the most suitable part of the land, while setting aside open spaces and maintaining the natural appearance of the landscape. Conservation communities typically preserve about 30 to 60 percent of the total site area with land protected in perpetuity under easements held by a third party conservation entity. These communities may also organize around a distinct village center with small scale amenities, such as convenience retail.

In addition to protecting the landscape, conservation based regulations can promote the rural aesthetic qualities of the area by replicating the character of the coastal area and rural south through design guidelines.

#### **Mixed Use Centers and Villages**

Mixed use centers and villages can take on many forms, but their common characteristics include compact development and higher densities, a mix of housing, retail and office or employment uses, and a pedestrian-oriented system of sidewalks, trails, and traditional main streets.

#### **Corridors**

The high traffic volumes and good visibility of significant transportation corridors naturally attract commercial activity. A failure to manage individual development, however, can result in a congested and

unsightly environment marked by poorly connected commercial sites that stretch along the roadway. Perhaps the most critical step in preserving the physical character of the region is to shape vehicular-oriented development along its key corridors through the adoption of specialized zoning overlay districts and subdivision regulations.

Regulation to guide growth along corridors should emphasize two components: access management; and quality physical design and site planning principles.

Access management is a traffic engineering tool to achieve the safe and efficient flow of vehicles along a roadway, which ensuring adequate access to private property with road frontage. The general principles include:

- Sight distance – ensuring an adequate view of the roadway ahead and approaching intersections to allow for safe stopping
- Turn lanes – promoting the use of deceleration/acceleration lanes to accommodate speed changes, the storage of turning vehicles or left turn bays
- Medians – installing non-traversable medians (a raised or depressed median that cannot be crossed) to provide physical controls of left turns and crossing maneuvers
- Traffic signals – spacing of signals to maintain an efficient progression of speeds and maximum flow of vehicles
- Driveway location and design – establishing a minimum distance between access points and promoting shared driveways for businesses and connectivity among adjoining parcels
- Right-of-way acquisition – ensuring adequate access rights through the purchase of fee simple title to parcels or entire tracts of land

While the safe movement of vehicles along the corridor is critical, an emphasis on access control is not sufficient. Any adopted corridor overlay should also promote appropriate design character and the preservation of the area's scenic qualities. These guidelines should carefully distinguish between more urban corridors and the rural, open space qualities of other roadways.

Design oriented elements within a zoning overlay should include:

- Regulation of uses – limiting or prohibiting the presence of heavy industrial or outdoor storage facilities that may detract from visual character of the area
- Landscaping - requiring a landscape development plan and preservation of existing vegetation and open space; corridors should incorporate as much of a green buffer as possible to enhance the visual experience of drivers
- Screening - screening of parking and service areas, loading docks, truck parking, outside storage and dumpster areas (for example, through the use of a minimum 8' high opaque screen; or earth berms and/or landscaping dense enough to create a year-round opaque screen); planting "islands" in the parking lot area at a spacing of every 120' or every four (4) parking rows can also break up the monotony of large paved surface areas
- Sign control - restrictions in off-premises advertising signs and promotion of low-standing, monument signs; limitations on the size and number of individual business identification signs; the use of consistent and integrated directional signs for regional amenities
- Set-backs - requirements for minimum building set-backs to maintain a green buffer – approximately 50 feet along urban corridors and 100 feet along rural corridors
- Building form - requirements for appropriate architectural treatment of structures - Structures designed with an "architectural feel" that blends with the overall visual character of the urban or rural context—natural materials, neutral colors,
- Density at Intersections – increase density and promote mixed uses at key intersections to vary the rhythm of development along the corridor and create open spaces; denser and compact

developments focused around intersections will also support more walkable and pedestrian-friendly environments

The four-county region includes a rich and varied network of green resources, such as wetlands, streams, rivers, coastal hammocks, marshes, waterways, dunes, forests, scenic views, and prime farmlands.

### **Continue to Adopt Land Use Compatibility Measures around Fort Stewart/Hunter Army Airfield**

Following completion of the 2005 Fort Stewart/Hunter Army Airfield (FS/HAAF) Joint Land Use Study (JLUS), the Coastal Regional Commission coordinated implementation efforts with study partners and engaged the local communities in adopting land use and communication measures to promote compatibility around the installations.

Early implementation efforts focused mainly on conservation. The State of Georgia adopted a Land Conservation Program (GLCP) in 2006. Fort Stewart Fish and Wildlife staff have partnered with the Georgia Department of Natural Resources to leverage Department of Defense funding as part of the Army Compatible Use Buffer program. The goal is to purchase conservation easements on land near the post, thus reducing the risk of future encroachment, while protecting environmentally sensitive areas.

In December 2006, FS/HAAF, in conjunction with The Conservation Fund and the National Association of Counties, hosted a two-day Compatible Land Use Planning Workshop to develop Memoranda of Understanding (MOUs) that support implementation. Fifty-one city and county elected officials, planning commission members, local government staff members, regional planning representatives, Land Trust professionals and officials from FS/HAAF participated in the workshop.

Fort Stewart/Hunter Army Airfield, state and regional partners and local communities have adopted various JLUS recommendations, including:

- The GLCP placed 201 acres of forestland in Liberty County under a conservation easement with a \$300,000 grant matched by the ACUB program.
- Installation of variable message boards to alert motorists on Highways 144 and 119.
- Inclusion of an Air Installation Compatibility Overlay within the Chatham County- Savannah Tricentennial Plan.
- Designation of a Consolidated Public Affairs Office liaison for local governments.
- Hosting of Open house and tour events.
- Participation in Regional Information Sharing Forum and Community Showcase.
- Adoption of MOUs by surrounding cities and counties.

### **Military Influence Zoning Overlay**

As communities update their codes, they should adopt military influence zoning districts for those areas within the noise contours and Army Compatible Use Buffer associated with Fort Stewart. This planning district explicitly recognizes the potential for land use encroachment and specifies development intensities and land uses that are compatible with nearby military training operations. The district should also include any additional provisions related to joint consultation with Fort Stewart/Hunter Army Airfield, real estate disclosure, outdoor lighting regulations, sound attenuation, height restrictions or other standards intended to protect mission viability. Overlays should focus on those areas near the post that are vulnerable to significant growth, including Gum Branch and areas northwest of Richmond Hill near Highway 144 and I-95.

### **Continue Emphasis on Downtown Revitalization and Strengthen Historic Protection**

Regional partners should build on the physical assets and existing character of the traditional downtowns, such as Hinesville, Pembroke, Ludowici, Midway, and Glennville, positioning these central business districts as the heart of arts, culture, history, and destination services and retail. In addition to the ongoing streetscaping efforts, communities should explore downtown master plans and development standards that promote compatible architectural design and building façade renovations in areas of historic character.



**Examples of actions to strengthen the downtowns include:**

- Encourage a more vibrant and entertainment-oriented mix of uses, including coffee shops, spas, boutiques, specialty retail, restaurants
- Promote housing above downtown retail and the conversion of historic buildings into housing to create round-the-clock energy
- Encourage additional dense downtown housing units, such as apartments, townhomes or zero-lot line houses
- Focus on streetscape improvements and landscaping to enhance the physical character of the downtowns and create a comfortable pedestrian environment
- Use traffic calming elements
- Create stronger pedestrian linkages around the core areas of the downtowns
- Create mechanisms to promote local historic preservation and rehabilitation of existing structures in accordance with Secretary of the Interior standards
- Implement some form of an architectural review to oversee both renovations and new construction in and adjacent to the downtowns to ensure visual compatibility; as part of this process a Design Review Board would grant owners a Certificate of Appropriateness after the review of proposed exterior changes or new construction plans
- Create outdoor dining and gathering spaces in downtown that are readily accessible to pedestrians and close to other activities, such as shopping or a park
- Encourage civic buildings and recreational facilities to be located downtown.

**Emphasize Complete and Lifelong Communities**

For those communities and residential areas that do not have traditional downtowns the focus should be on creating activity centers that include pedestrian-oriented areas, parks, community gathering spaces, entertainment and retail. These elements build community identity and add sense of place.

Since the region is aging overall and some of its housing market is oriented to retirees, communities should also incorporate Lifelong Communities concepts, including walkability, easy access to retail and services, smaller, more affordable housing units, and public gathering spaces to promote social interaction.

**Protect Open Space and the Environment**

The counties and cities of the Fort Stewart region have access to a diverse set of fragile resources, including historic, archaeological or cultural resources; prime farmland; marsh hammocks; aquifer recharge zones; public access and open space; dunes, rivers and adjacent wetland systems; and shore bird nesting areas. These resources perform critical ecological functions, add value to nearby land and increase the residential appeal of communities. Many of the study partners have strong environmental and open space measures in place, but the tools below could strengthen the capacity of regional governments to preserve open space and natural systems, while accommodating growth.

**Septic System Planning**

Septic systems are generally an environmentally sound method for on-site wastewater treatment when properly designed, sited, constructed, and maintained. However, as dispersed growth patterns continue in sensitive areas of the region, the risk of septic failure and the associated hazards of ground and surface water contamination increase. Communities with heavy reliance on septic system can reduce potentially adverse environmental impacts by taking the following actions:

- evaluating soil conditions as part of their land use planning to determine which areas are conducive to septic systems
- planning for the extension of sewer lines to areas experiencing high septic system failure rates
- requiring ongoing maintenance contracts for all alternative and mechanical septic systems for the life of the system
- educating owners about septic system operation and maintenance

- increasing the minimum design criteria for septic systems
- requiring larger minimum lot sizes for septic systems in critical areas, such as drinking water supply watersheds
- adopting a local ordinance to manage the use of private decentralized wastewater systems

#### **Environmental Protection**

All communities of the region should adopt Part V Environmental standards related to water supply watersheds, groundwater recharge areas, wetlands, and river corridors in their zoning codes. These planning criteria are minimum standards established as part of the Georgia Planning Act and the Mountains and River Corridors Protection Act and are intended to protect vital resources. (The criteria are listed in Rules of Georgia Department of Natural Resources Environmental Protection Division, Chapter 391-3-16, Rules for Environmental Planning Criteria)

#### **Greenprint the Region**

The concept of green infrastructure embraces those natural lands, working landscapes and other open spaces that preserve ecosystem functions and generate visual, recreational, transportation, and economic benefits for people. The four-county region includes a rich and varied network of green resources, such as wetlands, streams, rivers, coastal hammocks, marshes, waterways, dunes, forests, scenic views, and prime farmlands. The region should continue to pursue a coordinated approach to identifying critical green resources, as well as promoting regional recreation opportunities, including hiking, fishing, biking, camping, hunting and canoeing.

In cooperation with regional and state partners, the city and county governments should inventory and map greenbelts, wildlife corridors, parks, trails, and natural undeveloped land. These assets should be viewed as part of a broad, integrated system and linked with other planning efforts including recreation, water, and transportation plans. The resulting maps should also inform open space set-asides as new subdivisions are laid out.

#### **Enhance Local Planning Capacity**

As noted earlier, the local communities of the region vary greatly in their ability to manage expected growth. Rapid development can quickly outpace planning processes that are less mature and underfunded. While Regional Commissions should continue to house Geographic Information System (GIS) functions and offer technical assistance, local governments should have in-house access to basic GIS data to support ongoing land use and development decisions.

## **Short-Term**

### **Bryan County**

#### **Update Zoning And Subdivision Regulations**

Based on the CRC's quality audit, Bryan County land use regulations received an excellent rating. Table 3.12 identifies additional provisions that the county should explore in the short-term to enhance its ability to promote sustainable growth patterns. A particular focus should be to:

- Establish a traditional neighborhood or compact-lot, mixed use zoning district
- Adopt a conservation subdivision ordinance
- Adopt farmland protection policies
- Adopt Part V environmental planning criteria
- Adopt measures to reduce reliance of septic systems and improve septic performance through required ordinance provisions
- Adopt a military influence zoning district for areas around Fort Stewart

**Table 3.12 - Update of Land Use Management Policies and Tools, Bryan County**

Category	Recommended Action
<b>Agricultural Preservation</b>	Increase R/A minimum lot size to more than 10 acres
<b>Innovative Zoning</b>	Establish zoning districts that allow the by-right mixing of residential and commercial uses (not as part of a Planned Unit Development) Establish a traditional neighborhood development Remove minimum acreage requirement for a PUD and/or mixed-use zoning district Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses
<b>Historic Preservation</b>	Adopt historic preservation guidelines or requirements Establish overlay and/or zoning districts to encourage the continuation of historic/existing development patterns
<b>Walkability and Compact Development</b>	Increase allowable residential densities Establish minimum densities in areas suitable for growth Limit maximum block length consistent with walkability standards
<b>Housing</b>	Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD
<b>Community Character</b>	Adopt form-based codes Establish streetscape design along with pedestrian amenities and public rights-of-way Require the planting of shade trees along new streets and within parking lots
<b>Connectivity and Transportation</b>	Require the principal entrance of a structure to face a pedestrian-oriented public space Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements Require bicycle facilities
<b>Environmental Protection and Open Space</b>	Require continuous buffers along streams, rivers and water bodies beyond state criteria Limit development on marsh hammocks Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible Incorporate Part V environmental planning criteria
<b>Intergovernmental Cooperation</b>	Establish a joint city/county planning entity to review and/or approve development proposals
<b>Local Government Survey</b>	Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development

**Implement County-Wide Green Infrastructure Plan**

Bryan County and its municipalities should continue to implement the 2007 Bicycle & Pedestrian Plan and combine these efforts into a broader initiative to prepare a green infrastructure plan for the county. The plan should identify all critical natural, historic, cultural, archeological, and recreation resources to support the planning of local and regional trail systems, connected networks of open space, eco-tourism, and conservation subdivisions.

**Corridor Land Use Management and Access Management – Highway 17**

Bryan County, in cooperation with Richmond Hill and Liberty County and its municipalities, should

conduct a corridor study for US Highway 17. As shown in CommunityViz maps, this corridor is likely to anchor significant commercial and residential activity in the years ahead. The corridor plan should emphasize an appropriate transition from residential to commercial uses, landscape and design standards for commercial properties, protection of historic and scenic elements and gateway features.

## Pembroke

Based on the CRC's quality audit, Pembroke land use regulations received a sub-adequate rating. Table 3.13 identifies additional provisions that the city should explore in the short-term to enhance its ability to attract quality growth and sustain community appeal. A particular focus should be to:

- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments
- Increase open space set-asides in new residential subdivisions
- Adopt a military influence zoning district for those areas south of downtown and just north of the installation boundary

Category	Recommended Action
<b>Agricultural Preservation</b>	Increase R/A minimum lot size to a minimum of 10 acres
<b>Innovative Zoning</b>	Remove minimum acreage requirement for a PUD and/or mixed-use zoning district Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses
<b>Walkability and Compact Development</b>	Increase allowable residential densities Establish minimum densities in areas suitable for growth
<b>Housing</b>	Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD Remove minimum required floor area for single family dwellings
<b>Community Character</b>	Adopt form-based codes Establish streetscape design along with pedestrian amenities and public rights-of-way Require the planting of shade trees along new streets and within parking lots
<b>Connectivity and Transportation</b>	Require the principal entrance of a structure to face a pedestrian-oriented public space Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements Require multiple roadway access points for large subdivisions Encourage and/or require internal streets to be designed as a connected street network Require sidewalks or multiuse trails within new residential subdivisions Require the installation of sidewalks along existing public streets abutting development Require inter-parcel pedestrian/sidewalk connections between adjacent developments, where compatible Require bicycle facilities Require traffic impact studies

**Table 3.13 - Update Zoning And Subdivision Regulations, City of Pembroke**

Category	Recommended Action
<b>Environmental Protection and Open Space</b>	<ul style="list-style-type: none"> <li>Establish a zoning district that requires a minimum open space ratio (i.e., percentage of land area within each development that must be open space)</li> <li>Require continuous buffers along streams, rivers and water bodies beyond state criteria</li> <li>Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site</li> <li>Require native species of vegetation to be planted in redeveloped sites</li> <li>Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible</li> <li>Require set-asides for recreational and open space for subdivisions</li> <li>Establish by-right conservation or cluster subdivisions</li> <li>Require the use of a community wastewater or public sewer system for large subdivisions</li> </ul>
<b>Intergovernmental Cooperation</b>	Establish a joint city/county planning entity to review and/or approve development proposals
<b>Local Government Survey</b>	Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development

To assist in identifying the core’s historic assets and distinctive characteristics, Pembroke should undertake a downtown master plan. The goals of the plan should be to ensure that future infrastructure improvements and development decisions are consistent with the desired vision for downtown as a traditional, mixed use, pedestrian-oriented center.

**Downtown Revitalization/Historic Preservation Strategies**

In addition to its ongoing streetscaping and park planning efforts in downtown, the City of Pembroke should focus on enhancing its core through development standards that promote compatible architectural design and building façade renovation guidelines that regulate color, façade, awnings and other exterior elements. The city should create a Design Review Board, Historic Preservation Commission or similar advisory body to review proposed exterior changes or new construction plans to ensure that they complement the surrounding context.

To assist in identifying the core’s historic assets and distinctive characteristics, Pembroke should undertake a downtown master plan. The goals of the plan should be to ensure that future infrastructure improvements and development decisions are consistent with the desired vision for downtown as a



traditional, mixed use, pedestrian-oriented center. The plan should also include adjacent residential areas that may be experiencing some physical decline and establish strategies to redevelop and revitalize these older areas. The city should also continue to advocate for a loop road alternative in the event of a Highway 280 road widening to reduce the impact of increased capacity and traffic volumes on the downtown.

### Strengthen Internal Planning Capacity

While the Coastal Regional Commission (CRC) will continue to house GIS functions and perform major mapping tasks for the smaller local governments of the region, the city should collaborate with the CRC to develop the latest spatial information related to critical natural areas, historic resources, existing and future land uses, and infrastructure and to integrate reader technologies. The use of ArcReader or interactive pdfs (geo-referenced) would enable communities without in-house GIS to access important planning information as part of everyday decision-making.

## Richmond Hill

Based on the CRC's quality audit, Richmond Hill's land use regulations received an excellent rating. Table 3.14 identifies additional provisions that the city should explore in the short-term to promote sustainable growth patterns. A particular focus should be to:

- Require higher densities and increased housing diversity in core areas
- Adopt form-based codes or design guidelines to promote a consistent sense of place and attract quality development, particularly along Highway 17 and Highway 144
- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments and where possible retrofit older areas with pedestrian links and park space
- Adopt a military influence zoning district for areas around Fort Stewart

Category	Recommended Action
<b>Agricultural Preservation</b>	Increase R/A minimum lot size to a minimum of 10 acres
<b>Historic Preservation</b>	Adopt historic preservation guidelines or requirements Adopt overlay and/or zoning districts to encourage the continuation of historic/existing development patterns
<b>Innovative Zoning</b>	Remove minimum acreage requirement for a PUD and/or mixed-use zoning district Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses
<b>Walkability and Compact Development</b>	Increase allowable residential densities Establish minimum densities in areas suitable for growth Limit maximum block length consistent with walkability standards
<b>Housing</b>	Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD Remove minimum required floor area for single family dwellings
<b>Community Character</b>	Adopt form-based codes Establish streetscape design along with pedestrian amenities and public rights-of-way Require the planting of shade trees along new streets and within parking lots

**Table 3.14 - Update Zoning And Subdivision Regulations, City of Richmond Hill**

Category	Recommended Action
<b>Connectivity and Transportation</b>	<p>Require the principal entrance of a structure to face a pedestrian-oriented public space</p> <p>Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements</p> <p>Reduce on-site spaces in places where on-street/ shared parking is available, transit is available and/or the surrounding area is pedestrian oriented</p> <p>Require the installation of sidewalks along existing public streets abutting the development</p> <p>Require inter-parcel pedestrian/sidewalk connections between adjacent developments</p> <p>Require bicycle facilities</p>
<b>Environmental Protection and Open Space</b>	<p>Adopt a tree and/or landscape ordinance</p> <p>Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site</p> <p>Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible</p> <p>Establish by-right conservation or cluster subdivisions</p>
<b>Intergovernmental Cooperation</b>	<p>Establish a joint city/county planning entity to review and/or approve development proposals</p>
<b>Local Government Survey</b>	<p>Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development</p>

**Build Sense of Place**

Since the City of Richmond Hill does not have a traditional downtown, its primary challenge is to create sense of place through the retrofit of older areas and the design of new commercial and residential buildings. The city should conduct a downtown master plan that focuses on mature residential neighborhoods and commercial nodes around the intersection of Highways 17 and 144. The plan should result in a pattern book that establishes elements of the desired Ford-era architectural look and site planning and design techniques that reinforce the surrounding context. The city should then incorporate these elements into an architectural and design overlay ordinance to shape a consistent high quality character throughout the area. Richmond Hill should also aggressively continue its efforts to build a critical mass of activity by adding civic spaces and uses, greenway connections and pedestrian links, park spaces and high quality commercial areas to the core.

**Liberty County**

Based on the CRC’s quality audit, Liberty County land use regulations received an adequate rating. Table 3.15 identifies additional provisions that the county should explore in the short-term to enhance their ability to attract quality growth and sustain community appeal. A particular focus should be to:

- Establish a traditional neighborhood or compact-lot, mixed use zoning district
- Adopt a conservation subdivision ordinance
- Adopt farmland protection policies
- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments
- Increase open space set-asides in new residential subdivisions
- Implement countywide design standards or overlay districts to guide the development and attract quality growth

- Adopt a military influence zoning district for those areas just south of the installation boundary

<b>Table 3.15 - Update Zoning And Subdivision Regulations, Liberty County</b>	
<b>Category</b>	<b>Recommended Action</b>
<b>Agricultural Preservation</b>	Increase R/A minimum lot size to a minimum of 10 acres
<b>Historic Preservation</b>	Adopt historic preservation guidelines or requirements Adopt overlay and/or zoning districts to encourage the continuation of historic/ existing development patterns
<b>Innovative Zoning</b>	Establish a traditional neighborhood development (TND) zoning district Remove minimum acreage requirement for a PUD and/or mixed-use zoning district Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses
<b>Walkability and Compact Development</b>	Establish minimum densities in areas suitable for growth
<b>Housing</b>	Allow multiple housing types within single zoning districts Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD Remove minimum required floor area for single family dwellings
<b>Community Character</b>	Adopt form-based codes Establish streetscape design along with pedestrian amenities and public rights-of-way
<b>Connectivity and Transportation</b>	Require the principal entrance of a structure to face a pedestrian-oriented public space Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements Reduce on-site spaces in places where on-street/ shared parking is available, transit is available and/or the surrounding area is pedestrian oriented Require the installation of sidewalks along existing public streets abutting the development Require interparcel pedestrian/sidewalk connections between adjacent developments Require bicycle facilities Permit non-arterial/collector roadway widths narrower than 30 feet by right
<b>Environmental Protection and Open Space</b>	Require continuous buffers along streams, rivers and water bodies beyond state criteria Limit development on marsh hammocks, where applicable Require native species of vegetation to be planted in redeveloped sites Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible Require set-asides for recreational and open space for subdivisions Establish by-right conservation or cluster subdivisions
<b>Local Government Survey</b>	Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development

To address this risk of inconsistent quality, the county and its municipalities should update their land use regulations as part of a Unified Development Ordinance (UDO).

### **Create Unified Development Ordinance (and all municipalities)**

Given its proximity to Fort Stewart and significant housing supply, Liberty County is very likely to absorb the highest amount of new development in the shortest timeframe. Since it includes unincorporated areas of rapid growth and smaller municipalities with less comprehensive land use regulations, the county is susceptible to future development typified by uneven design character, environmental sensitivity, and infrastructure adequacy. To address this risk of inconsistent quality, the county and its municipalities should update their land use regulations as part of a Unified Development Ordinance (UDO). The UDO should establish minimum standards to channel growth toward areas suitable for development, direct growth away from environmentally sensitive resources and areas critical to the current and future mission of Fort Stewart, and promote county-wide aesthetics.

### **Corridor Land Use Management and Access Management – Highway 17**

Liberty County, in cooperation with Midway and Riceboro, and Bryan County and its municipalities should conduct a corridor study for US Highway 17. As shown in CommunityViz maps, this corridor is likely to anchor significant commercial and residential activity in the years ahead. The corridor plan should emphasize a compatible transition from residential to commercial uses, landscape and design standards for commercial properties, protection of historic and scenic elements and gateway features.

### **Revisit US Highway 84 Corridor Study**

The US 84 corridor displays some areas of visual clutter, underused strip commercial sites with excessive surface parking and heavy vehicular congestion. The county and the Cities of Hinesville and Midway have collaborated on a corridor study to preserve character and enhance aesthetics along US 84. The communities should revisit the plan in light of the increasing growth potential for the corridor shown in the CommunityViz maps and include Long County as a study partner to examine impacts of the eastward spread of residential and commercial activity.

### **Implement a County-Wide Green Infrastructure Plan**

The county and its municipalities should continue to identify all critical natural, historic, cultural, archeological, and recreation resources as part of a county-wide green infrastructure plan to support trail systems, connected networks of open space, eco-tourism, and conservation subdivisions.

This plan would also coordinate open space and conservation planning techniques for member jurisdictions with an emphasis on supporting the continued implementation of the JLUS recommendations within the county's portion of the Army Compatible Use Buffer.

### **Coordinate Infrastructure Planning**

As noted earlier, growth in exurban areas adjacent to Hinesville or in smaller cities with limited infrastructure capacity will continue to strain public service delivery and reduce the efficiency and environmental sensitivity of physical systems. The county and municipalities should fully coordinate infrastructure planning and integrate plans from multiple providers to create a coherent strategy for service delivery. Land use maps should also reflect coordinated infrastructure planning and delineate areas proposed for the orderly and rational expansion of public services as part of a joint master land use development plan for high growth areas.

## **Hinesville**

Based on the CRC's quality audit, the City of Hinesville has the most robust land use regulatory framework (a rating of excellent) in the region with a particularly strong set of policies to shape quality growth in the downtown. Table 3.16 identifies additional provisions that the city should explore in the short-term to build on their existing land use tools. A particular focus should be to:

- The pedestrian retrofitting of established residential, commercial and institutional areas by adding pedestrian amenities, sidewalks, trails and bicycle access
- Increase the flexibility of residential districts to accommodate compact and diverse housing types
- Adopt a military influence zoning district for those areas just south of the installation boundary

<b>Table 3.16 - Update Zoning And Subdivision Regulations, City of Hinesville</b>	
<b>Category</b>	<b>Recommended Action</b>
<b>Innovative Zoning</b>	Remove minimum acreage requirement for a PUD and/or mixed-use zoning district
<b>Walkability and Compact Development</b>	Allow for residential densities (dwelling units per acre) that contribute to walkability, community and conservation Establish minimum densities in areas suitable for growth
<b>Housing</b>	Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD Remove minimum required floor area for single family dwellings
<b>Community Character</b>	Adopt form-based codes Establish streetscape design along with pedestrian amenities and public rights-of-way
<b>Connectivity and Transportation</b>	Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements Reduce on-site spaces in places where on-street/ shared parking is available, transit is available and/or the surrounding area is pedestrian oriented Require the installation of sidewalks along existing public streets abutting development Require interparcel pedestrian/sidewalk connections between adjacent developments Require bicycle facilities Require traffic impact studies for large developments
<b>Environmental Protection and Open Space</b>	Require continuous buffers along streams, rivers and water bodies beyond state criteria Require native species of vegetation to be planted in redeveloped sites Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible Require the provision of publicly-accessible parks and recreation areas for large developments
<b>Local Government Survey</b>	Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development

### **Downtown Revitalization/Redevelopment Strategies**

Though the city already has a series of zoning overlays and guidelines to promote compatible development in the downtown, it should also conduct an overall downtown master plan to inventory the core's historic assets and design elements and to coordinate an overall strategy that aligns economic development, planning, infrastructure and design efforts. The plan should also include adjacent residential and commercial areas along US 84, Highway 119, and General Stewart Way and establish strategies to promote infill development and redevelopment of these areas.

### **Greyfield Redevelopment Opportunities**

If the region is to grow in a sustainable pattern then the City of Hinesville should serve as a major anchor for population growth and commercial investment. Though development continues in edge master planned communities, the city could also absorb considerable growth through infill and redevelopment activity. Greyfields, which include old, obsolete and abandoned retail and commercial sites, as well as large surface parking lots in older strip malls represent an excellent opportunity to add denser housing and retail products to the urban market. These sites can be especially effective at accommodating mixed income developments and affordable housing units. The city should begin the process of promoting infill by conducting an inventory of available brownfield, greyfield and surface lot sites and vacant buildings. Hinesville could also adopt policies that facilitate redevelopment on challenging sites by fast-tracking the planning and zoning process, providing regulatory relief from ordinance requirements, and offering financial incentives like tax abatement or beautification grants.

### **Coordinate Infrastructure Planning**

The county and municipalities should fully coordinate infrastructure planning and integrate plans from multiple providers to create a coherent strategy for service delivery. Land use maps should also reflect coordinated infrastructure planning and delineate areas proposed for the orderly and rational expansion of public services.

## Allenhurst

Based on the CRC’s quality audit, Allenhurst’s land use regulations received an adequate rating. Table 3.17 identifies additional provisions that the county should explore in the short-term to enhance its ability to attract quality growth and sustain community appeal. A particular focus should be to:

- Participate with the county in implementing design standards or overlay districts to guide development and attract quality growth, especially along US 84
- Establish a traditional neighborhood or compact-lot, mixed use zoning district
- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments
- Coordinating planned growth areas and infrastructure delivery with Liberty County and the City of Hinesville

**Table 3.17 - Update Zoning And Subdivision Regulations, City of Allenhurst**

Category	Recommended Action
<b>Agricultural Preservation</b>	Increase R/A minimum lot size to a minimum of 10 acres
<b>Historic Preservation</b>	Adopt historic preservation guidelines or requirements Adopt overlay and/or zoning districts to encourage the continuation of historic/ existing development patterns
<b>Innovative Zoning</b>	Establish a traditional neighborhood development (TND) zoning district Remove minimum acreage requirement for a PUD and/or mixed-use zoning district Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses
<b>Walkability and Compact Development</b>	Establish minimum densities in areas suitable for growth
<b>Housing</b>	Allow multiple housing types within single zoning districts Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD Remove minimum required floor area for single family dwellings
<b>Community Character</b>	Adopt form-based codes Establish streetscape design along with pedestrian amenities and public rights-of-way
<b>Connectivity and Transportation</b>	Require the principal entrance of a structure to face a pedestrian-oriented public space Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements Reduce on-site spaces in places where on-street/ shared parking is available, transit is available and/or the surrounding area is pedestrian oriented Require the installation of sidewalks along existing public streets abutting the development Require interparcel pedestrian/sidewalk connections between adjacent developments Require bicycle facilities Permit non-arterial/collector roadway widths narrower than 30 feet by right

<b>Table 3.17 - Update Zoning And Subdivision Regulations, City of Allenhurst</b>	
<b>Category</b>	<b>Recommended Action</b>
<b>Environmental Protection and Open Space</b>	Require continuous buffers along streams, rivers and water bodies beyond state criteria Require native species of vegetation to be planted in redeveloped sites Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible Require set-asides for recreational and open space for subdivisions Establish by-right conservation or cluster subdivisions
<b>Local Government Survey</b>	Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development

## Flemington

Based on the CRC's quality audit, Flemington's land use regulations received a sub-adequate rating. Table 3.18 identifies additional provisions that the city should explore in the short-term to enhance its ability to attract quality growth and sustain community appeal. A particular focus should be to:

- Participate with the county in implementing design standards or overlay districts to guide development and attract quality growth, especially along US 84
- Establish a traditional neighborhood or compact-lot, mixed use zoning district
- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments
- Increase the flexibility of residential districts to accommodate compact and diverse housing types
- Build a sense of place in the community core and at the emerging commercial node along US 84

<b>Table 3.18 Update Zoning And Subdivision Regulations, City of Flemington</b>	
<b>Category</b>	<b>Recommended Action</b>
<b>Agricultural Preservation</b>	Increase R/A minimum lot size to a minimum of 10 acres
<b>Historic Preservation</b>	Adopt historic preservation guidelines or requirements Adopt overlay and/or zoning districts to encourage the continuation of historic/existing development patterns
<b>Innovative Zoning</b>	Establish a traditional neighborhood development (TND) zoning district Remove minimum acreage requirement for a PUD and/or mixed-use zoning district Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses
<b>Walkability and Compact Development</b>	Establish minimum densities in areas suitable for growth
<b>Housing</b>	Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD
<b>Community Character</b>	Adopt form-based codes Establish streetscape design along with pedestrian amenities and public rights-of-way

Table 3.19 identifies additional provisions that the city should explore in the short-term to enhance its ability to attract quality growth and sustain community appeal.

<b>Table 3.18 Update Zoning And Subdivision Regulations, City of Flemington</b>	
<b>Category</b>	<b>Recommended Action</b>
<b>Connectivity and Transportation</b>	Require the principal entrance of a structure to face a pedestrian-oriented public space Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements Reduce on-site spaces in places where on-street/ shared parking is available, transit is available and/or the surrounding area is pedestrian oriented Limit maximum block length consistent with walkability standards Encourage and/or require internal streets to be designed as a connected street network Require the installation of sidewalks along existing public streets abutting the development Require interparcel pedestrian/sidewalk connections between adjacent developments Require bicycle facilities Permit non-arterial/collector roadway widths narrower than 30 feet by right
<b>Environmental Protection and Open Space</b>	Requires continuous buffers along streams, rivers and water bodies beyond state criteria Require native species of vegetation to be planted in redeveloped sites Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible Require set-asides for recreational and open space for subdivisions Establish by-right conservation or cluster subdivisions
<b>Local Government Survey</b>	Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development

### Gum Branch

Based on the CRC’s quality audit, land use regulations in the City of Gum Branch received an adequate rating. Table 3.19 identifies additional provisions that the city should explore in the short-term to enhance its ability to attract quality growth and sustain community appeal. A particular focus should be to:

- Participate with the county in implementing design standards or overlay districts to guide development and attract quality growth, especially along Highway 196
- Establish a traditional neighborhood or compact-lot, mixed use zoning district
- Adopt zoning overlays to promote the continuation of historic patterns of growth in the community
- Adopt a conservation subdivision ordinance
- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments
- Coordinate planned growth areas and infrastructure delivery with Liberty County and the City of Hinesville
- Identify planned growth areas north and west of the city (including Dairy Road) and south toward Rye Patch Road and adopt a joint master land use development plan with Liberty County
- Adopt a military influence zoning district for those areas just south of the installation boundary

<b>Table 3.19 - Update Zoning And Subdivision Regulations, City of Gum Branch</b>	
<b>Category</b>	<b>Recommended Action</b>
<b>Agricultural Preservation</b>	Increase R/A minimum lot size to a minimum of 10 acres
<b>Historic Preservation</b>	Adopt historic preservation guidelines or requirements Adopt overlay and/or zoning districts to encourage the continuation of historic/ existing development patterns
<b>Innovative Zoning</b>	Establish a traditional neighborhood development (TND) zoning district Remove minimum acreage requirement for a PUD and/or mixed-use zoning district Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses
<b>Walkability and Compact Development</b>	Establish minimum densities in areas suitable for growth
<b>Housing</b>	Allow multiple housing types within single zoning districts Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD Remove minimum required floor area for single family dwellings
<b>Community Character</b>	Adopt form-based codes Establish streetscape design along with pedestrian amenities and public rights-of-way
<b>Connectivity and Transportation</b>	Require the principal entrance of a structure to face a pedestrian-oriented public space Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements Reduce on-site spaces in places where on-street/ shared parking is available, transit is available and/or the surrounding area is pedestrian oriented Require the installation of sidewalks along existing public streets abutting the development Require interparcel pedestrian/sidewalk connections between adjacent developments Require bicycle facilities Permit non-arterial/collector roadway widths narrower than 30 feet by right
<b>Environmental Protection and Open Space</b>	Require continuous buffers along streams, rivers and water bodies beyond state criteria Require native species of vegetation to be planted in redeveloped sites Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible Require set-asides for recreational and open space for subdivisions Establish by-right conservation or cluster subdivisions
<b>Local Government Survey</b>	Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development

## Midway

Like Hinesville, the City of Midway has one of the strongest sets of land use regulations among the region's municipalities and received a ranking of excellent according to audit results. Table 3.20 identifies additional provisions that the city should explore in the short-term to build on their existing land use tools. A particular focus should be to:

- Establish a traditional neighborhood development (TND) zoning district

- Adopt zoning overlays and historic preservation ordinances to protect the scenic quality of the community, particularly along Martin Road and Highway 17
- Continue to implement the recommendations of the Historic Midway Master Plan to develop the town center, Historic Midway Village, and additional mixed use centers
- Continue to implement the recommendations of the Gateway Sector Plan study
- Increase the flexibility of residential districts to accommodate compact and diverse housing types
- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments

**Table 3.20 - Update Zoning And Subdivision Regulations, City of Midway**

Category	Recommended Action
<b>Historic Preservation</b>	<p>Adopt historic preservation guidelines or requirements</p> <p>Adopt overlay and/or zoning districts to encourage the continuation of historic/ existing development patterns</p>
<b>Innovative Zoning</b>	<p>Establish a traditional neighborhood development (TND) zoning district</p> <p>Remove minimum acreage requirement for a PUD and/or mixed-use zoning district</p> <p>Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses</p>
<b>Walkability and Compact Development</b>	<p>Establish minimum densities in areas suitable for growth</p>
<b>Housing</b>	<p>Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD</p>
<b>Community Character</b>	<p>Adopt form-based codes</p> <p>Establish streetscape design along with pedestrian amenities and public rights-of-way</p>
<b>Connectivity and Transportation</b>	<p>Require the principal entrance of a structure to face a pedestrian-oriented public space</p> <p>Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements</p> <p>Reduce on-site spaces in places where on-street/ shared parking is available, transit is available and/or the surrounding area is pedestrian oriented</p> <p>Require the installation of sidewalks along existing public streets abutting the development</p> <p>Require interparcel pedestrian/sidewalk connections between adjacent developments</p> <p>Require bicycle facilities</p> <p>Permit non-arterial/collector roadway widths narrower than 30 feet by right</p> <p>Limit maximum block length consistent with walkability standards</p> <p>Encourage and/or require internal streets to be designed as a connected street network</p>

<b>Table 3.20 - Update Zoning And Subdivision Regulations, City of Midway</b>	
<b>Category</b>	<b>Recommended Action</b>
<b>Environmental Protection and Open Space</b>	<p>Establish one or more zoning districts that require a minimum open space ratio (i.e., percentage of land area within each development that must be open space)</p> <p>Require continuous buffers along streams, rivers and water bodies beyond state criteria</p> <p>Require native species of vegetation to be planted in redeveloped sites</p> <p>Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site</p> <p>Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible</p> <p>Require set-asides for recreational and open space for subdivisions</p> <p>Establish by-right conservation or cluster subdivisions</p> <p>Incorporate Part V environmental criteria</p>
<b>Local Government Survey</b>	Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development

## Riceboro

Based on the CRC's quality audit, land use regulations in the City of Riceboro received an adequate rating. Table 3.21 identifies additional provisions that the city should explore in the short-term to enhance its ability to attract quality growth and sustain community appeal. A particular focus should be to:

- Participate with the county in implementing design standards or overlay districts to guide development and attract quality growth, especially along Highway 17
- Establish a traditional neighborhood or compact-lot, mixed use zoning district
- Adopt zoning overlays to promote the continuation of historic patterns of growth in the community
- Adopt a conservation subdivision ordinance
- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments
- Identify planned growth areas to the north, east, and south, such as Hampton Island along I-95 and the South Newport interchange and adopt a joint master land use development plan with Liberty County
- Enhance environmental protection measures, including limiting development in marsh hammocks and protecting and promoting Gullah Geechee sites, LeConte Woodmanston and other heritage-based amenities

<b>Table 3.21 - Update Zoning And Subdivision Regulations, City of Riceboro</b>	
<b>Category</b>	<b>Recommended Action</b>
<b>Agricultural Preservation</b>	Increase R/A minimum lot size to a minimum of 10 acres
<b>Historic Preservation</b>	<p>Adopt historic preservation guidelines or requirements</p> <p>Adopt overlay and/or zoning districts to encourage the continuation of historic/existing development patterns</p>
<b>Innovative Zoning</b>	<p>Establish a traditional neighborhood development (TND) zoning district</p> <p>Remove minimum acreage requirement for a PUD and/or mixed-use zoning district</p> <p>Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses</p>



Table 3.21 - Update Zoning And Subdivision Regulations, City of Riceboro	
Category	Recommended Action
Walkability and Compact Development	Establish minimum densities in areas suitable for growth
Housing	Allow multiple housing types within single zoning districts Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD Remove minimum required floor area for single family dwellings
Community Character	Adopt form-based codes Establish streetscape design along with pedestrian amenities and public rights-of-way

Table 3.21 - Update Zoning And Subdivision Regulations, City of Riceboro	
Category	Recommended Action
<b>Connectivity and Transportation</b>	<p>Require the principal entrance of a structure to face a pedestrian-oriented public space</p> <p>Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements</p> <p>Reduce on-site spaces in places where on-street/ shared parking is available, transit is available and/or the surrounding area is pedestrian oriented</p> <p>Require the installation of sidewalks along existing public streets abutting the development</p> <p>Require interparcel pedestrian/sidewalk connections between adjacent developments</p> <p>Require bicycle facilities</p> <p>Permit non-arterial/collector roadway widths narrower than 30 feet by right</p>
<b>Environmental Protection and Open Space</b>	<p>Require continuous buffers along streams, rivers and water bodies beyond state criteria</p> <p>Limit development on marsh hammocks, where applicable</p> <p>Require native species of vegetation to be planted in redeveloped sites</p> <p>Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site</p> <p>Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible</p> <p>Require set-asides for recreational and open space for subdivisions</p> <p>Establish by-right conservation or cluster subdivisions</p>
<b>Local Government Survey</b>	<p>Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development</p>

## Walthourville

Based on the CRC's quality audit, land use regulations in the City of Walthourville received an adequate rating. Table 3.22 identifies additional provisions that the city should explore in the short-term to enhance its ability to attract quality growth and sustain community appeal. A particular focus should be to:

- Participate with the county in implementing design standards or overlay districts to guide development and attract quality growth, especially along Highway 84
- Establish a traditional neighborhood or compact-lot, mixed use zoning district
- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments
- Coordinate planned growth areas and infrastructure delivery with Liberty County and the City of Hinesville

Table 3.22 - Update Zoning And Subdivision Regulations, City of Walthourville	
Category	Recommended Action
<b>Historic Preservation</b>	<p>Adopt historic preservation guidelines or requirements</p> <p>Adopt overlay and/or zoning districts to encourage the continuation of historic/ existing development patterns</p>

**Table 3.22 - Update Zoning And Subdivision Regulations, City of Walthourville**

Category	Recommended Action
<b>Innovative Zoning</b>	<ul style="list-style-type: none"> <li>Establish a traditional neighborhood development (TND) zoning district</li> <li>Remove minimum acreage requirement for a PUD and/or mixed-use zoning district</li> <li>Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses</li> </ul>
<b>Walkability and Compact Development</b>	<ul style="list-style-type: none"> <li>Establish minimum densities in areas suitable for growth</li> </ul>
<b>Housing</b>	<ul style="list-style-type: none"> <li>Allow multiple housing types within single zoning districts</li> <li>Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD</li> <li>Remove minimum required floor area for single family dwellings</li> </ul>
<b>Community Character</b>	<ul style="list-style-type: none"> <li>Adopt form-based codes</li> <li>Establish streetscape design along with pedestrian amenities and public rights-of-way</li> </ul>
<b>Connectivity and Transportation</b>	<ul style="list-style-type: none"> <li>Require the principal entrance of a structure to face a pedestrian-oriented public space</li> <li>Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements</li> <li>Reduce on-site spaces in places where on-street/ shared parking is available, transit is available and/or the surrounding area is pedestrian oriented</li> <li>Require the installation of sidewalks along existing public streets abutting the development</li> <li>Require interparcel pedestrian/sidewalk connections between adjacent developments</li> <li>Require bicycle facilities</li> <li>Permit non-arterial/collector roadway widths narrower than 30 feet by right</li> </ul>
<b>Environmental Protection and Open Space</b>	<ul style="list-style-type: none"> <li>Require continuous buffers along streams, rivers and water bodies beyond state criteria</li> <li>Require native species of vegetation to be planted in redeveloped sites</li> <li>Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site</li> <li>Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible</li> <li>Require set-asides for recreational and open space for subdivisions</li> <li>Establish by-right conservation or cluster subdivisions</li> </ul>
<b>Local Government Survey</b>	<ul style="list-style-type: none"> <li>Develop an inventory of vacant sites and buildings that are available for redevelopment and/or infill development</li> </ul>

The goals of the plan should be to ensure that future infrastructure improvements are consistent with the desired vision for the downtown as a traditional, mixed use, pedestrian-oriented center and to spark infill retail development that can diversify the county's tax base.

### Long County

Long County and the City Ludowici adopted a Land Development Code (LDC) in 2008. While the quality growth audit rates the LDC as adequate, the city and county are still very early in the application of their land use control framework. The section on long-term recommendations identifies additional measures that the city/county can explore to build on their existing recommendations. The recommended near-term actions summarized below are intended to assist Long County in adapting to significant short-term growth, particularly along the US 84 corridor.

Though the adoption of land use regulations is recommended as a long-term action, Tattnall County should conduct workshops to build support for growth management strategies and to explore the feasibility of alternative forms of zoning appropriate for rural communities.

### **Strengthen Internal Planning Capacity**

While the Coastal Regional Commission (CRC) will continue to house GIS functions and perform major mapping tasks for the smaller local governments of the region, the county/city should collaborate with the CRC to develop the latest spatial information related to critical natural areas, historic resources, existing and future land uses, and infrastructure and to integrate reader technologies. The use of ArcReader or interactive pdfs (geo-referenced) would enable communities without in-house GIS to access important planning information as part of everyday decision-making.

### **Revisit US Highway 84 Corridor Study**

Liberty County and its cities have collaborated on a corridor plan to preserve character and enhance aesthetics along US 84. Long County should join the communities in revisiting the plan to examine impacts of the eastward spread of residential and commercial activity and extend further south.

### **Septic System Planning and Infrastructure Planning**

Given the dispersed growth patterns emerging in Long County, the community is at increased risk of adverse environmental impacts, including septic system failure. The county should begin a concerted set of policies to reduce reliance on septic systems and plan for infrastructure extensions in the rapidly growing eastern portion of the county.

### **Conduct a Small Area Study for the Rapidly Growing Portion of the County**

This study should examine infrastructure capacity, transportation issues and public service adequacy for the rapidly-growing portion of the county that shares a border with Liberty County.

## **Ludowici**

### **Downtown Revitalization/Historic Preservation Strategies**

The City of Ludowici should undertake a downtown master plan to identify the core's historic assets and distinctive characteristics. The goals of the plan should be to ensure that future infrastructure improvements are consistent with the desired vision for the downtown as a traditional, mixed use, pedestrian-oriented center and to spark infill retail development that can diversify the county's tax base. The plan should also include adjacent residential areas that may be experiencing some physical decline and establish strategies to redevelop and revitalize these older areas. To supplement this effort, the city should actively pursue grant funds to implement streetscaping and public realm design improvements in the traditional commercial area and establish compatible architectural design and building façade renovation guidelines that regulate color, façade, awnings and other exterior elements.

## **Tattnall County**

### **Assess Feasibility of County-Wide Land Use Regulation**

Growth outside of the county's municipalities will continue to be relatively modest, but even limited development when it emerges in a very dispersed and uncoordinated pattern can impair natural resources and detract from rural character. Though the adoption of land use regulations is recommended as a long-term action, Tattnall County should conduct workshops to build support for growth management strategies and to explore the feasibility of alternative forms of zoning appropriate for rural communities. The Georgia Department of Community Affairs (DCA) has developed templates for alternatives to conventional zoning that simplify land use management techniques and minimize administrative requirements. The DCA templates include provisions for:

- environmental protection
- subdivisions and land development
- performance-based regulations that do not use a map
- based restrictions that do not use a map
- special growth management techniques, including rural clustering
- regulations to implement character areas

### **Strengthen Internal Planning Capacity**



While the Heart of Georgia Altamaha Regional Commission (HOGARC) will continue to house GIS functions and perform major mapping tasks for the smaller local governments of the region, the county and cities should collaborate with the CRC to develop the latest spatial information related to critical natural areas, historic resources, existing and future land uses, and infrastructure and to integrate reader technologies. The use of ArcReader or interactive pdfs (geo-referenced) would enable communities without in-house GIS to access important planning information as part of everyday decision-making.

### Coordinate Infrastructure Planning

The county and municipalities should fully coordinate infrastructure planning and integrate plans from multiple providers to create a coherent strategy for service delivery. Land use maps should also reflect coordinated infrastructure planning and delineate areas proposed for the orderly and rational expansion of public services.

## Glennville

### Update Land Use Regulations

The City of Glennville zoning ordinance is based primarily on Euclidean zoning or the strict separation of land uses, with few allowances for mixed use or quality growth applications. The zoning code sets out regulations for residential, commercial, light industrial, agricultural, and planned unit developments. Though downtown revitalization is a major focus, few tools in the city's zoning ordinance help catalyze redevelopment. For example, mixed use is not allowed in any district. Planned unit development (PUD) districts allow for the greatest flexibility in the use and design of structures and land in the current code, yet have minimum lot sizes of 10 acres. In constrained settings such as downtown areas, assembling 10 acres to develop more innovative mixed use projects may prove challenging. Design overlays could also be considered to help set standards for the quality of development occurring along in downtown Glennville. In this sense, overlays can help shape the character of an area and spur economic development. The city should explore additional measures to enhance the downtown and

accommodate quality growth on its periphery by focusing on the following land use techniques:

- Establish a traditional neighborhood or compact-lot, mixed use zoning district
- Adopt an architectural and design overlay ordinance to protect downtown historic character and develop building façade renovation guidelines that regulate color, façade, awnings and other exterior elements.
- Adopt a conservation subdivision ordinance for subdivisions on the periphery
- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments
- Coordinate planned growth areas and infrastructure delivery with Tattnall County

### **Downtown Revitalization/Historic Preservation Strategies**

Along with its streetscaping project, the City of Glennville should undertake a downtown master plan to identify the core's historic assets and distinctive characteristics. The goals of the plan should be to ensure that future infrastructure improvements are consistent with the desired vision for the downtown as a traditional, mixed use, pedestrian-oriented center and to spark infill retail development that can diversify the county's tax base. The plan should also include adjacent residential areas that may be experiencing some physical decline and establish strategies to redevelop and revitalize these older areas.

## **Long-Term**

### **Bryan County and Municipalities**

#### **Create Unified Development Ordinance (and all municipalities)**

The county and its municipalities should explore opportunities to combine updated land use regulations into a Unified Development Ordinance (UDO). The UDO should encourage growth in compliance with minimum uniform land use and development standards for all local governments and promote county-wide aesthetics.

#### **Explore a Joint City/County Planning Entity**

Bryan County and its municipalities should examine opportunities to formalize their cooperation through a Consolidated Planning Commission that could assist in coordinating the development review process, evaluate performance and services, plan for growth areas, and share planning information.

#### **Corridor Land Use Management and Access Management – SR 196, SR 119, and US 280**

Bryan County, in cooperation with Liberty County and its municipalities, should conduct corridor studies for US Highway 280 and Highways 196 and 119. The corridor plans should emphasize a smooth transition from residential to commercial uses, landscape and design standards for commercial properties, protection of historic and scenic elements and gateway features.

### **Liberty County and Municipalities**

#### **Corridor Land Use Management and Access Management – SR 196 and SR 119**

Liberty County, in cooperation with Bryan County and its municipalities, should conduct corridor studies for Highways 196 and 119. The corridor plans should emphasize a buffered transition from residential to commercial uses, landscape and design standards for commercial properties, protection of historic and scenic elements and gateway features.

### **Long County**

Based on the CRC's quality audit, Long/Ludowici's land use regulations received an adequate rating. Table 3.23 identifies additional provisions that the county/city should explore in the long-term to enhance

their ability to attract quality growth and sustain community appeal. A particular focus should be to:

- Establish a traditional neighborhood or compact-lot, mixed use zoning district
- Adopt overlay and/or zoning districts to encourage the continuation of historic/existing development patterns, particularly in the downtown
- Enhance the overall connectivity, walkability, and pedestrian orientation of new residential subdivisions and commercial developments
- Establish by-right conservation or cluster subdivisions

**Table 3.23 - Update Zoning And Subdivision Regulations, Long County/Ludowici**

Category	Recommended Action
<b>Agricultural Preservation</b>	Increase R/A minimum lot size to a minimum of 10 acres (not in city limits)
<b>Historic Preservation</b>	Adopt historic preservation guidelines or requirements Adopt overlay and/or zoning districts to encourage the continuation of historic/existing development patterns
<b>Innovative Zoning</b>	Establish a traditional neighborhood development (TND) zoning district Encourage a minimum percentage of PUD and/or mixed-use zoning districts to include commercial uses
<b>Walkability and Compact Development</b>	Establish minimum densities in areas suitable for growth Allow for residential densities that contribute to walkability, community and conservation
<b>Housing</b>	Require a mix of residential types (either variety of lot size or mix of single family / multifamily) in TND, mixed use district or PUD Remove minimum required floor area for single family dwellings
<b>Community Character</b>	Adopt form-based codes Establish streetscape design along with pedestrian amenities and public rights-of-way
<b>Connectivity and Transportation</b>	Require the principal entrance of a structure to face a pedestrian-oriented public space Require multiple roadway access points for large subdivisions Require the provision of interparcel connections between subdivisions and commercial developments Encourage and/or require internal streets to be designed as a connected street network Require sidewalks or multi-use trails are required within new residential subdivisions Includes maximum parking ratios (i.e., a cap on the number of parking spaces that can be built in a particular development) in addition to minimum parking requirements Reduce on-site spaces in places where on-street/ shared parking is available, transit is available and/or the surrounding area is pedestrian oriented Require the installation of sidewalks along existing public streets abutting the development Require bicycle facilities Develop a bike/pedestrian plan

A variety of factors will influence the quantity and form which provision of recreation and open space will ultimately take across the four-county region, including availability of suitable land and development and maintenance costs.



Table 3.23 - Update Zoning And Subdivision Regulations, Long County/Ludowici	
Category	Recommended Action
Environmental Protection and Open Space	Require continuous buffers along streams, rivers and water bodies beyond state criteria
	Require native species of vegetation to be planted in redeveloped sites
	Require the planting of shade trees along new streets and within parking lots
	Establish a formal process (such as a point system) that allows a higher density of development in exchange for land conservation on and/or off-site
	Require developers to connect open spaces and greenways to existing destinations and open space reservations, where possible
	Require set-asides for recreational and open space for subdivisions
	Establish by-right conservation or cluster subdivisions
Require the use of a community wastewater system for large subdivisions	

**Corridor Land Use Management and Access Management – US Highway 301**

Long County, in cooperation with Tattnall County, should conduct a corridor study for Highway 301. The corridor plan should emphasize the transition from residential to commercial uses, landscape and design standards for commercial properties, protection of historic and scenic elements and gateway



features, and tourism promotion.

## Tattnall County

### Adopt County-Wide Land Use Regulation

After assessing the feasibility of a land use regulatory mechanism, the county should seek to adopt a simplified conventional zoning alternative that would enable the protection of natural resources, the provision of efficient service delivery, and the prevention of land use conflicts

### Corridor Land Use Management and Access Management – US Highway 301

Tattnall County, in cooperation with Long County, should conduct a corridor study for Highway 301. The corridor plan should emphasize the transition from residential to commercial uses, landscape and design standards for commercial properties, protection of historic and scenic elements and gateway features and tourism promotion.

## Open Space and Recreation

Based on the above analysis, the recreation facilities and open space acreage likely to be required by the region by 2030 is as shown in Table 3.24 below. It is important to note, however, that NRPA's standards for provision are meant to be guidelines for implementation. A variety of factors will influence the quantity and form which provision of recreation and open space will ultimately take across the four-county region, including availability of suitable land and development and maintenance costs. It may make sense, for example, for the four counties to work together to understand the best locations

for regional parks to best serve the whole population, rather than individual counties providing separate facilities. Additionally, if demand during a certain phase does not warrant the construction of an entire new facility, it is advisable to examine alternatives to cope with the increased pressure existing facilities may face due to population growth. Expansion of either the physical space at these facilities or services offered there, or even extended hours of operation, could help during periods of transition.

**Table 3.24 - Recreation and Open Space Delivery Recommendation, 2010-2015**

	Recommended Provision	Comments
<b>Bryan</b>	<ul style="list-style-type: none"> <li>• 1 baseball field</li> <li>• 90 acres open space</li> </ul>	Demand not adequate for new soccer field provision; potential need to expand services at existing facility. Not adequate demand for a swimming pool.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>• 2 baseball fields</li> <li>• 1 soccer field</li> <li>• 159 acres open space</li> </ul>	Demand not adequate for swimming pool provision.
<b>Long</b>	<ul style="list-style-type: none"> <li>• No new recreation provision</li> <li>• 19 acres open space</li> </ul>	Demand not adequate for new recreation facilities.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>• No new recreation provision</li> <li>• 35 acres open space</li> </ul>	Demand not adequate for new recreation facilities.

NB: Demand arising from Hinesville included in Liberty County total; demand from Richmond Hill included in Bryan County total; demand from Ft. Stewart spread among the region.

**Table 3.25 - Recreation and Open Space Delivery Recommendation, 2015-2020**

	Recommended Provision	Comments
<b>Bryan</b>	<ul style="list-style-type: none"> <li>• 1 baseball field (2 total)</li> <li>• 1 soccer field</li> <li>• 100 acres open space (190 acres total)</li> </ul>	Swimming pool demand increases but still does not warrant a new facility.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>• 1 baseball field (3 total)</li> <li>• 108 acres open space (267 acres total)</li> </ul>	Services at existing swimming pool and soccer field facilities may need to be increased to satisfy demand, though no new facilities should be required.
<b>Long</b>	<ul style="list-style-type: none"> <li>• No new recreation provision</li> <li>• 21 acres open space (40 acres total)</li> </ul>	Demand not adequate for new recreation facilities.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>• No new recreation provision</li> <li>• 36 acres open space (71 acres total)</li> </ul>	Demand not adequate for new recreation facilities; however services at existing baseball facilities should be expanded.

NB: Demand arising from Hinesville included in Liberty County total; demand from Richmond Hill included in Bryan County total; demand from Ft. Stewart spread among the region.

**Table 3.26 - Recreation and Open Space Delivery Recommendation, 2020-2025**

	Recommended Provision	Comments
<b>Bryan</b>	<ul style="list-style-type: none"> <li>• 1 swimming pool</li> <li>• 1 baseball field (3 total)</li> <li>• 114 acres open space (304 acres total)</li> </ul>	Possible need of expansion of services at existing baseball and soccer fields (in addition to new baseball field).



## Section Summary

Educational resources within the study area are exceptionally well coordinated and prepared for growth associated with increases in troops and the overall populations. The challenge facing each district will be financially constrained budgets and the inability to move forward with capacity projects necessary to support new students.

The study area supports four public school districts (Bryan, Liberty, Long, and Tattnall) and each faces capacity challenges in the near term – ranging from system-wide need for growth to a local unit need for space – and each must continue to take steps to accommodate growing populations of students.

## Growth and Assessment Analysis Findings

### Existing Conditions

During the past five years, Bryan and Long County School Districts have seen increases in student population of approximately twenty percent (20%). Tattnall County School District's growth during that same period was observed at approximately ten percent (10%). Student populations in Liberty County Schools declined approximately ten percent (10%) during that period despite the cumulative enrollment at the high school level remaining generally constant. While each district requires unique strategic planning to address short-term and long-term issues, all districts will be required to undertake some action to accommodate future growth.

### Bryan County

Bryan County Schools consist of nine education facilities that include five elementary schools, two middle schools and two high schools. The facilities segregate the elementary grades into primary schools for the early years and elementary for the later years of elementary learning.

The schools in south Bryan County have seen significant growth during the past five years; however, the majority of the school population increases in the region are attributable to the growth in the Richmond Hill service area (approximately 1,109 of the 1,175 student noted above). Table 4.2 shows the net change in school enrollments as well as the current number of portable classrooms in use at each location, with the majority of both being located in the Richmond Hill service area of the district.

In the fall of 2009 the local educational agency (LEA) began construction of a new 210,000 square foot middle school in Richmond Hill, to accommodate 93 new classrooms for 1,600 students. The facility is expected to open for the 2011-2012 school year and will replace the existing middle school. The existing structure is forecasted to become the 9th grade facility to relieve the growth pressures at Richmond Hill High School. Doing so would alleviate the growth pressures in that portion of the LEA in the near term, although it is likely that additional facilities will be necessary to address overcrowding issues at the elementary level.



**Table 4.1 - Bryan County School Enrollment, 2005 to 2010**

Bryan County Schools	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Bryan County Elementary School*	375	375	381	429	479	462
Bryan County High School*	514	518	524	510	519	518
Bryan County Middle School*	443	414	432	422	383	408
Dr. George Washington Carver Elementary School	646	626	693	725	770	826
Lanier Primary School*	409	442	437	423	425	419
Richmond Hill Elementary School	619	682	720	772	825	852
Richmond Hill High School	1224	1280	1296	1392	1455	1538
Richmond Hill Middle School	953	982	1063	1098	1167	1213
Richmond Hill Primary School	664	682	693	720	787	786
<b>BRYAN COUNTY SCHOOL DISTRICT</b>	<b>5847</b>	<b>6001</b>	<b>6239</b>	<b>6491</b>	<b>6810</b>	<b>7022</b>

Source: FSGMP, 2009 - "North Bryan" schools are labeled with an asterisk (\*)

**Table 4.2 - Bryan County Net Change in School Enrollment**

	Change 2004-2005 to 2009-2010	Portable Classrooms
Bryan County Elementary School*	87	2
Bryan County High School*	4	8
Bryan County Middle School*	(135)	0
Dr. George Washington Carver Elementary School	180	0
Lanier Primary School*	10	0
Richmond Hill Elementary School	233	0
Richmond Hill High School	314	26
Richmond Hill Middle School	260	6
Richmond Hill Primary School	122	0
<b>BRYAN COUNTY SCHOOL DISTRICT</b>	<b>1175</b>	<b>42</b>

Source: FSGMP, 2009 - "North Bryan" schools are labeled with an asterisk (\*)

## Liberty County

Liberty County Schools consist of 13 education facilities that include eight elementary schools, three middle schools and two high schools. Ten of the schools are located within the City of Hinesville.

The district has seen a general decline in the overall enrollment and at each of the specific units. Such a decline indicates adequate physical space to accommodate increased student enrollment resulting from troop assignments or general population growth.

Some school service geographic areas, however, contain few or no development projects, while others have significant pipeline development and can be expected to generate future students, when completed. Specifically, the school aged children projected in the proposed development in the Liberty and Waldo Pafford Elementary school service areas exceed the available capacity of the facilities.

The existing middle schools and high schools have adequate physical capacity to accommodate growth well into the future.

**Table 4.3 - Liberty County Enrollment 2004-2010, by Facility**

Liberty County Schools	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Bradwell Institute	1886	1931	1864	1880	1935	1883
Button Gwinnett Elementary School	629	561	517	560	581	534
Frank Long Elementary School	623	589	596	580	627	608
Jordye Bacon Elementary School	511	517	470	549	582	472
Joseph Martin Elementary School	609	570	574	535	525	538
Lewis Frasier Middle School	842	894	849	893	916	902
Liberty County High School	1255	1286	1293	1305	1246	1204
Liberty Elementary School	745	779	716	651	696	664
Lyman Hall Elementary School	556	554	512	584	623	498
Midway Middle School	917	843	881	803	780	708
Snelson-Golden Middle School	1092	1098	1045	940	843	740
Taylors Creek Elementary School	732	674	668	633	638	674
Waldo Pafford Elementary School	645	636	614	529	535	563
<b>LIBERTY COUNTY SCHOOL DISTRICT</b>	<b>11042</b>	<b>10932</b>	<b>10599</b>	<b>10442</b>	<b>10527</b>	<b>9988</b>

Source: FSGMP, 2009

**Table 4.4 - Liberty County Enrollment 2004-2010, by Level of Education**

Liberty County Schools	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Elementary School	5050	4880	4667	4621	4807	4551
Middle School	2851	2835	2775	2636	2539	2350
High School	3141	3217	3157	3185	3181	3087
<b>LIBERTY COUNTY SCHOOL DISTRICT</b>	<b>11042</b>	<b>10932</b>	<b>10599</b>	<b>10442</b>	<b>10527</b>	<b>9988</b>

Source: FSGMP, 2009

## Long County

The Long County School LEA is the smallest in the region, consisting of three facilities: an elementary school serving kindergarten through 3rd grade (K-3), a middle school serving 4th grade to 8th grade (4-8), and a high school that serves 9th grade through 12th grade (9-12).

There are currently six portable classrooms in use at the elementary school and ten used at the Middle School. In accordance with the Educational Facilities Construction Plan, the LEA's student projections predict continued increases in enrollments into the future.

The district has begun work on a six classroom expansion to the Elementary School, as well as an expansion to its cafeteria. However, this expansion will merely enlarge the facility to accommodate the existing student enrollment numbers. Based upon the current projected enrollment in FY 2010, the elementary school will continue to be undersized to support the student population.

The majority of the new development is located in the northwest portion of the county. If current development trends continue, the growth could warrant consideration of a second elementary school in that portion of the district. The LEA also projects the construction of a new 122,550 square foot high

school to open in 2013-2014, subject to the approval of the State funding plan and other local funding sources. The new facility will allow a reallocation of space by shifting grades to create a 6th to 8th grade Middle School in the existing High School structure, allowing a proportionate shift in the lower grades to reoccupy available space and reduce dependency on portable classrooms.

**Table 4.5 - Long County Enrollment 2004-2010, by Facility**

Long County Schools	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Long County High School	538	546	539	602	629	674
Smiley Elementary School	695	702	719	783	863	842
Walker Middle School	818	797	805	819	902	925
<b>LONG COUNTY SCHOOL DISTRICT</b>	2051	2045	2063	2204	2394	2441

Source: FSGMP, 2009

**Table 4.6 - Long County Changes in Enrollment 2004-2010, by Facility & Portable Classrooms**

	Change 2004-2005 to 2009-2010	Portable Classrooms
Long County High School	130	0
Smiley Elementary School	147	6
Walker Middle School	107	10
<b>LONG COUNTY SCHOOL DISTRICT</b>	384	16

Source: FSGMP, 2009

## Tattnall County

Tattnall County Schools consist of seven education facilities that include three elementary schools, three middle schools and a high school. Table 4.7 shows the annual enrollment at each school.

The district has seen moderate growth in enrollment during the period examined and the trend is expected to increase into the near term. There are no portable classrooms within the district and no existing capacity challenges at any of the specific units. The district is observed to have several facilities that are projected to reach capacity in the near term (3-4 years) and should be monitored to ensure proactive solutions are defined.

**Table 4.7 - Tattnall County Enrollment 2004-2010, by Facility**

Tattnall County Schools	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Collins Elementary School	285	288	289	288	309	306
Collins Middle School	156	161	121	133	135	145
Glennville Elementary School	620	626	630	676	689	746
Glennville Middle School	321	303	311	310	331	327
Reidsville Elementary School	536	571	609	628	642	657
Reidsville Middle School	317	311	291	259	291	283
Tattnall County High School	920	897	885	918	903	966
<b>TATTNALL COUNTY SCHOOL DISTRICT</b>	3155	3157	3136	3212	3300	3430

Source: Tattnall County Board of Education & FSGMP, 2009

## Private Schools

There are seven private schools operating within the study area with enrollment ranging from 10 students to 280 students and a cumulative total of approximately 500 students. An additional 500 students residing in the study area attend private schools outside the four-county region.

## Department of Defense Schools

The Department of Defense Domestic Dependant Elementary and Secondary School (DDESS) operates three elementary schools on-post at Fort Stewart, for those dependants living on-post and attending kindergarten to 6th grade (K-6). Students in higher grades attend middle school or high school at the designated Liberty County School District facility.

Both Britton and Diamond provide 33 classrooms, while Kessler has 24 classrooms. DDESS is currently beginning the design process for a new elementary school of 450 students to support the existing schools and provide space for further expansion if necessary. Construction should start in one year and take two years to complete. DDESS is also planning for future replacement of Britton ES and Diamond ES in approximately four to five years, but this still awaits congressional approval and funding, and thus is subject to change.

	Sep-07	Sep-08	Jan-09	Mar-10
<b>Britton Elementary School</b>	740	755	775	659
<b>Diamond Elementary School</b>	704	764	757	738
<b>Kessler Elementary School</b>	496	558	532	468
<b>FORT STEWART SCHOOLS</b>	1940	2077	2064	1865

Source: DDESS Facility Engineering & FSGMP, 2010

## Educational Facilities Capacity Summary

The Existing Conditions report (a summary of which is provided above) described the current availability of education facilities in the study area. While some schools are already at capacity and/or use mobile classrooms to accommodate students, several have spare capacity which new populations can utilize. The capacities of these schools (in 2009) are summarized in the tables below. For the purpose of this analysis, the use of mobile classrooms was considered to be a capacity issue, as ideally no students would be housed in temporary buildings. Student populations in mobile classrooms, then, were counted towards capacity need. Schools not listed did not report any capacity issues. Any known school development projects are also listed in terms of capacity. Capacity information for Fort Stewart schools was unavailable at the time of writing and so has not been figured into this analysis.

	Extra Capacity	Needed Capacity	Source
<b>North Bryan County (including City of Pembroke)</b>			Bryan County School System Local Facilities Plan & FSGMP, 2009.
<b>Lanier Primary</b>	-	92	
<b>Bryan County Elementary</b>	-	115	Calculation of student spaces based on available classrooms multiplied by GA Dept of Education maximum class size.
<b>Bryan County High School</b>	-	64	
<b>South Bryan County (including City of Richmond Hill)</b>			
<b>Richmond Hill Primary</b>	-	299	
<b>Richmond Hill Elementary</b>	-	184	
<b>George Washington Carver Elementary</b>	46	-	
<b>Richmond Hill Middle School</b>	-	630	
<b>Richmond Hill High School</b>	32	-	

Table 4.10 - Bryan County - Upcoming School Projects		
	Extra Capacity	Notes/Source
New Richmond Hill Middle School	1,600	To replace existing middle school; expected to open 2011-12. With existing capacity at the middle school at 1,213 and current need at 630 places above capacity, the total need is 1,843 student places. This indicates an additional 243 middle school places will still be needed. Source: FSGMP; AECOM calculations
Richmond Hill Elementary School	-	Will become 9th grade facility to relieve pressure at Richmond Hill High School. Source: FSGMP

Table 4.11 - Liberty County School Capacity (Student Places)			
	Extra Capacity	Needed Capacity	Source
Greater Liberty County			Liberty County Board of Education & FSGMP, 2009. Capacity calculation based on functional high capacity minus regular enrollment.
Liberty County Elementary School (Midway)	98	-	
Midway Middle School (Midway)	242	-	
Liberty County High School (Unincorporated)	954	-	
City of Hinesville			
Bradwell Institute (High School)	265	-	
Button Gwinnett Elementary School	141	-	
Frank Long Elementary School	148	-	
Jordye Martin Elementary School	177	-	
Joseph Martin Elementary School	115	-	
Lewis Frasier Middle School	245	-	
Lyman Hall Elementary School	105	-	
Snelson-Golden Middle School	446	-	
Taylor's Creek Elementary School	122	-	
Waldo Pafford Elementary School	134	-	

Table 4.12 - Long County School Capacity (Student Places)			
	Extra Capacity	Needed Capacity	Source
Smiley Elementary School	-	125	Long County Board of Education & FSGMP, 2009. Capacity calculation based on functional capacity minus regular enrollment.
Walker Middle School	-	230	

Table 4.13 - Long County - Upcoming School Projects		
	Extra Capacity	Notes/Source
Expansion of Elementary School	Additional 6 classrooms (equating to approximately 138 student places)	To accommodate current enrollment overages. Source: Long County School System. Approximation of student places based on average elementary classroom size.
High School - New Construction	725	Long County High School currently at capacity. Middle and high schools currently combined in one facility. New high school will be separate facility, yielding 3 facilities total. When new high school is built, middle school will expand to take up vacated high school classrooms. Grades 4-5 (considered part of middle school in Long County) will move into existing classrooms occupied by grades 7-8, relieving current capacity issues with middle school. To open in 2013-14 depending on availability of funding. Source: FSGMP, Long County School Sytem.

Table 4.14 - Tattnall County School Capacity (Student Places)			
	Extra Capacity	Needed Capacity	Source
Collins Elementary School	14	-	Tattnall County Board of Education & FSGMP, 2009. Capacity calculation based on functional capacity minus regular enrollment.
Collins Middle School	25	-	
Glennville Elementary School	-	26	
Glennville Middle School	43	-	
Reidsville Elementary School	3	-	
Reidsville Middle School	87	-	
Tattnall County High School	14	-	

Table 4.15 - Summary of Existing Student Places, Capacity/Demand			
	Extra Capacity	Needed Capacity	Notes
Bryan County			
Primary/Elementary	46	690	Middle school need takes into consideration existing enrollment (1,213) and additional demand (630), plus planned facility capacity (1,600), which yields remaining need of 243 places
Middle	-	243	
High	32	64	
Liberty County			
Elementary	1040	-	-
Middle	933	-	
High	1219	-	

	Extra Capacity	Needed Capacity	Notes
Long County			
Elementary	-	-	No apparent capacity issues; new construction planned to satisfy current need.
Middle	-	-	
High	-	-	
Tattnall County			
Elementary	17	26	-
Middle	155	-	
High	14	-	

These population projections were modeled in relation to standards for service provision. In addition to calculating the raw number of students anticipated as a result of growth, the number of classes needed to accommodate the students was deduced based on average class sizes across all four study area counties.

## Growth Analysis

An analysis of future demand for educational programs and facilities was undertaken based on OMB population forecasts and existing standards of service (see Section 7 for further detail on the analysis process). As with all social infrastructure, future demand for educational facilities is based on changes in population. Tables 4.16 through 4.22 consequently show the likely future demographic population profile arising from new populations moving into and being born in the region by age cohorts, particularly important when modeling future impacts on education and childcare. The analysis includes population figures for all four counties in the region and the cities of Hinesville and Richmond Hill. The figures for Liberty County (containing Hinesville) and Bryan County (containing Richmond Hill) are inclusive of their respective cities' populations. Growth arising from Fort Stewart alone is also presented below.

For the purpose of this analysis, these population figures have been adjusted to account for military children seeking education (and child care) on post, rather than in the community. The population numbers below, therefore, reflect gross population by age cohort minus military dependents of the same age cohort. As education on post is only offered up to 6th grade – meaning subsequent grade levels will go off-post for educational needs – only ages 3 through 11 have been adjusted to reflect military impact.

These population projections were modeled in relation to standards for service provision. In addition to calculating the raw number of students anticipated as a result of growth, the number of classes needed to accommodate the students was deduced based on average class sizes across all four study area counties. Students were broken down into classes to understand school provision in an incremental way. For example, a new school would not be called for if only three new classes of elementary school children were anticipated during a certain period of growth; however, providing a portable classroom or school extension (if the example numbers were larger) might be an appropriate recommendation in the interim.

Grades/Ages	Phase 1	Phase 2	Phase 3	Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Pre-K (3-4)	539	728	945	1251
Primary/Elementary School (5-10)	1658	3056	3542	4134
Middle School (11-13)	153	1412	1775	1955
High School (14-17)	234	397	235	2564

NB: Military children have been subtracted from gross population figures. Bryan County figures inclusive of Richmond Hill population counts.

<b>Table 4.17 - Liberty County Population Growth (Cumulative) - Children</b>				
Grades/Ages	Phase 1	Phase 2	Phase 3	Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Pre-K (3-4)	983	1139	1331	1665
Primary/Elementary School (5-10)	3021	4995	5274	5757
Middle School (11-13)	262	2284	2623	2676
High School (14-17)	406	453	3466	3477

NB: Military children have been subtracted from gross population figures. Liberty County figures inclusive of Hinesville population counts.

<b>Table 4.18 - Long County Population Growth (Cumulative) - Children</b>				
Grades/Ages	Phase 1	Phase 2	Phase 3	Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Pre-K (3-4)	161	192	225	290
Primary/Elementary School (5-10)	494	862	906	1005
Middle School (11-13)	19	391	450	464
High School (14-17)	37	48	595	603

NB: Military children have been subtracted from gross population figures.

<b>Table 4.19 - Tattnall County Population Growth (Cumulative) - Children</b>				
Grades/Ages	Phase 1	Phase 2	Phase 3	Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Pre-K (3-4)	318	365	418	534
Primary/Elementary School (5-10)	977	1672	1724	1886
Middle School (11-13)	29	757	857	871
High School (14-17)	60	66	1134	1131

NB: Military children have been subtracted from gross population figures.

<b>Table 4.20 - Hinesville Population Growth (Cumulative) - Children</b>				
Grades/Ages	Phase 1	Phase 2	Phase 3	Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Pre-K (3-4)	146	134	141	219
Primary/Elementary School (5-10)	703	1412	1303	1320
Middle School (11-13)	(66)	809	856	788
High School (14-17)	44	(30)	1234	1120

NB: Military children have been subtracted from gross population figures.

<b>Table 4.21 - Richmond Hill Population Growth (Cumulative) - Children</b>				
Grades/Ages	Phase 1	Phase 2	Phase 3	Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Pre-K (3-4)	129	157	200	273
Primary/Elementary School (5-10)	396	707	792	927
Middle School (11-13)	9	320	393	430
High School (14-17)	21	33	520	561

NB: Military children have been subtracted from gross population figures.

<b>Table 4.22 - Fort Stewart Population Growth (Cumulative) - Children</b>		
Grades/Ages	Phase 1	Phase 2
	2007-2010	2010-2013
Pre-K (3-4)	1416	1668
Primary/Elementary School (5-11)	177	333

As each county in the region approaches education differently, standards used regarding average class sizes varied from county to county. In Liberty, Long, and Tattnall Counties, average class sizes were directly supplied by the school districts. In other cases, enrollment figures were divided by the number of available classrooms to yield class sizes. In instances where no local standard for average class size was available, the State of Georgia’s Department of Education maximum class sizes were used. The standards ultimately used to generate classroom demands will be presented in the Technical Appendix.

## Future Public School Demand

Demand for public school places was calculated using the population projections above and the service standards presented in the Technical Appendix. A discounting factor of 2.74% (calculated by FSGMP based on original research) was applied for those students likely to seek education at private schools. Surplus capacity at schools was also taken into consideration to produce net demand for school places. Finally, net demand for student places was divided by average classroom sizes, presented in the



Technical Appendix, to yield the number of new classrooms required to meet the needs arising from the new population. The resulting number of new student places and classrooms required to accommodate future growth are presented in the tables below.

A description of delivery options to meet this demand is provided at the end of this section in Tables 4.28-4.31.

**Table 4.23 - Bryan County Public School Demand Arising from New Population**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
<b>Primary/Elementary School</b>				
Primary/Elementary School Places (gross)	1658	3056	3542	4134
Primary/Elementary School Places (net)	2257	3617	4089	4664
Primary/Elementary School Classes	83	133	153	177
<b>Middle School</b>				
Middle School Places (gross)	153	1142	1775	1955
Middle School Places (net)	392	1616	1969	2144
Middle School Classes	13	55	67	73
<b>High School</b>				
High School Places (gross)	234	397	2359	2564
High School Places (net)	260	418	2326	2526
High School Classes	8	13	73	79

NB: Net calculation = gross model outputs - private school places - spare capacity + current need. Figures are inclusive of demand arising from Richmond Hill.

**Table 4.24 - Liberty County Public School Demand Arising from New Population**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
<b>Elementary School</b>				
Elementary School Places (gross)	3021	4995	5274	5757
Elementary School Places (net)	1898	3818	4090	4559
Elementary School Classes	191	286	300	327
<b>Middle School</b>				
Middle School Places (gross)	262	2284	2623	2676
Middle School Places (net)	(678)	1289	1618	1670
Middle School Classes	(35)	69	86	89
<b>High School</b>				
High School Places (gross)	406	453	3466	3477
High School Places (net)	(824)	(778)	2152	2163
High School Classes	(26)	(24)	67	68

NB: Net calculation = gross model outputs - private school places - spare capacity + current need. Figures are inclusive of demand arising from Hinesville.

**Table 4.25 - Long County Public School Demand Arising from New Population**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
<b>Elementary School</b>				
Elementary School Places (gross)	494	862	906	1005
Elementary School Places (net)	481	838	881	977
Elementary School Classes	24	37	39	43
<b>Middle School</b>				
Middle School Places (gross)	19	391	450	464
Middle School Places (net)	19	380	437	452
Middle School Classes	1	14	16	17
<b>High School</b>				
High School Places (gross)	37	48	595	603
High School Places (net)	36	47	578	587
High School Classes	1	2	21	21

NB: Net calculation = gross model outputs - private school places - spare capacity + current need.

**Table 4.26 - Tattnall County Public School Demand Arising from New Population**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
<b>Elementary School</b>				
Elementary School Places (gross)	977	1672	1724	1886
Elementary School Places (net)	960	1636	1686	1843
Elementary School Classes	49	79	81	89
<b>Middle School</b>				
Middle School Places (gross)	29	757	857	871
Middle School Places (net)	(127)	582	679	692
Middle School Classes	(5)	25	29	30
<b>High School</b>				
High School Places (gross)	60	66	1134	1131
High School Places (net)	45	51	1089	1086
High School Classes	1	2	34	34

NB: Net calculation = gross model outputs - private school places - spare capacity + current need.

**Table 4.27 - Fort Stewart School Demand Arising from New Population**

	By Phase 1	By Phase 2
	2010-2015	2015-2020
Elementary School		
Elementary School Places (gross)	177	333
Elementary School Places (net)	172	324
Elementary School Classes	8	15

NB: Net calculation = gross model outputs - private school places. At the time of writing, capacity at Department of Defense schools was not available; therefore this information has not been included in the analysis.

## Recommendations

### Introduction

The school districts monitor enrollment constantly to ensure that an accurate census of the student population is aligned with state funding programs. Population growth, through natural increases and from additional military assigned to Fort Stewart, will create near-term capacity issues in the public school systems for all four of the districts. As the districts and communities grow in the future during a time of financial constraint, each district needs to ensure that the spaces within its existing facilities are optimized to serve future student populations.

### Short-Term

#### Bryan County

##### Maintain Strategic Planning

The Richmond Hill portion of the district's service area operates over capacity in all levels and the numerous pipeline developments that will consume the limited amount of surplus capacity created by current construction in the short term. The district's recent strategic planning efforts forecast continued growth patterns and propose the construction of new facilities and the replacement of aging structures to serve the population. Continuing the diligent planning efforts the district has employed in recent years will be critical to the success of their future capital planning programs.

##### Examine Attendance Zoning

Currently, the district maintains a primary school and elementary school in each service area (north and south) to serve all students in the defined grades (K-2; 3-5 in North Bryan and K-1, 2-3, and 4-5 in Richmond Hill). The district should explore adjusting the student attendance to K-5 in a single facility and rely upon attendance zones to determine enrollment patterns. The resultant outcome could reduce transportation costs in the Richmond Hill area and allow for future building construction (for new schools) to occur in geographic areas driven by demand, rather than concentrated in the urban core.

#### Liberty County

##### Attendance Zone Analysis

The district has made adjustments to the attendance zones to balance the enrollment at its facilities to account for minor changes in the populations. However, future development patterns project significant growth in a limited number of attendance zones, which has the potential to create capacity problems in those schools, while space at other facilities goes under-utilized. The known pipeline developments in the region would allow for the district to formulate proactive plans to adjust zones based on

specific development milestones. The district needs to work closely with county planners to remain knowledgeable about active development projects and geographic locations.

### **Stronger Coordination with Fort Stewart is Needed**

While it is not possible to predict where incoming soldiers will choose to reside, based on historical trends a significant percent will elect to reside in close proximity to the base. Military dependents living off-base and those attending 7-12th grades residing on-base attend the community public schools. The district needs to continue its efforts to be notified of incoming or outgoing personnel/dependence early enough to respond appropriately and ensure that adequate services exist to meet the needs of dependant students.

## **Long County**

### **Maintain Strategic Planning**

The district operates at or over capacity in all levels and the numerous pipeline developments that will consume the limited amounts of surplus capacity created by current construction in the short term. The district's recent strategic planning efforts forecast continued growth patterns and propose the construction of new facilities and the replacement of aging structures to serve the population. Continuing the diligent planning efforts the district has employed in recent years will be critical to the success of their future capital planning programs.

### **Monitor Ongoing Development**

The majority of the new development is located in the northwest portion of the county. If current development trends continue, the growth could warrant consideration of a second elementary school in that portion of the district. The district needs to work closely with county officials to remain knowledgeable about active development projects and geographic locations.

## **Tattnall County**

### **Maintain Strategic Planning**

While there are not defined capacity issues within the existing facilities, and there are a limited number of pipeline developments, the majority of the facilities within the district are approaching physical capacity. The district needs to continue its proactive planning efforts to ensure solutions exist to manage future populations

## **Long-Term**

### **Funding**

Districts with growing student bodies face greater funding burdens because of the lag between enrollment reporting and budget allocations based on those enrollment figures. All districts face continued budget scrutiny as federal and state contributions continue to decline. Districts need to explore all available means to support funding needs that should include:

- Impact Fees on new residential development
- Diligent census of student populations to collect Federal Impact Aid funds
- Coordination with State and Federal legislators to support educational funding

### **Class Size and Student-Teacher Ratios**

Each district should examine their current classroom enrollment and student to teacher ratios and determine if adjustments can be made to support future populations without adding physical capacity. The "maximum" classroom size varies within the study area and, in some instances, the same levels

within a district. Upon completion of the short-term capacity analysis projects, the districts need to determine if adjustment in size and student to teacher ratios can assist in managing capacity challenges

Based on the above analysis, the number of classrooms likely to be required by new growth occurring in the region by 2030 is summarized in the series of tables below. More detailed discussions will need to be undertaken with local Boards of Education to understand delivery mechanisms and how facilities may be built to satisfy future need.

<b>Table 4.28 - Education Delivery Recommendation, 2010-2015</b>		
	<b>Recommended Provision</b>	<b>Comments</b>
<b>Bryan</b>	<ul style="list-style-type: none"> <li>• 83 primary/elementary school classes</li> <li>• 13 middle school classes</li> <li>• 8 high school classes</li> </ul>	The high number of primary/elementary school classes needed accounts for correcting current capacity deficits at existing schools, including phasing out mobile classrooms so students are housed in permanent school facilities. Realistically, construction of new facilities, however, may have to cross into the next phase as well. For middle schools, even with the construction of a new facility, it appears another 243 places will be needed by the end of this phase to cope with demand.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>• 191 elementary school classes</li> <li>• No middle school classes</li> <li>• No high school classes</li> </ul>	The Existing Conditions report done as part of this study lists a number of schools in Liberty County with spare capacity, thus new middle and high school populations arising during this phase should be able to be absorbed into existing facilities. Still, high population growth for K-5 children and relatively low class sizes yield the need for a significant number of new elementary school classes.
<b>Long</b>	<ul style="list-style-type: none"> <li>• 24 elementary classes</li> <li>• 1 middle school class</li> <li>• 1 high school class</li> </ul>	Stronger growth in the K-5 age groups generates the need for several new elementary classes.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>• 49 elementary classes</li> <li>• No middle school classes</li> <li>• 1 high school class</li> </ul>	Existing capacity in Tattnall County's middle school absorbs demand arising from growth during this phase. Stronger growth in the K-5 age groups generates the need for several new elementary classes.
<b>Fort Stewart</b>	<ul style="list-style-type: none"> <li>• 7 elementary school classes</li> </ul>	Growth arising from military children generates the need for 7 elementary school classrooms in the 2010-2013 phase of growth for Fort Stewart. Based on population figures supplied by the military and the standard of provision described above, the need for an additional 8 classrooms would have arisen between 2007 and 2010. If demand from this period has not been satisfied, the 7 classrooms required for this period may increase. However, the need for expanded space may be decreased if capacity at existing facilities exists.

**Table 4.29 - Education Delivery Recommendation, 2015-2020**

	Recommended Provision	Comments
<b>Bryan</b>	<ul style="list-style-type: none"> <li>50 primary/elementary school classes (133 total)</li> <li>42 middle school classes (55 total)</li> <li>5 high school classes (13 total)</li> </ul>	Continued strong growth in K-5 age groups yields the need for more new primary/elementary school classes. As the previous phase's K-5 children begin to age, they generate the need for additional middle school classes.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>95 elementary school classes (286 total)</li> <li>69 middle school classes</li> <li>No high school classes</li> </ul>	Continued strong growth in K-5 age groups yields the need for more new primary/elementary school classes. As the previous phase's K-5 children begin to age, they generate the need for additional middle school classes. Growth in the high school-aged population remains low.
<b>Long</b>	<ul style="list-style-type: none"> <li>13 elementary school classes (37 total)</li> <li>13 middle school classes (14 total)</li> <li>1 high school class (2 total)</li> </ul>	The population trends for Long County mirror those of Liberty County: relatively strong growth in elementary-aged children; demand for middle school classes grows as children age; and high school-aged growth remains low.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>30 elementary school classes (79 total)</li> <li>25 middle school classes</li> <li>1 high school class (2 total)</li> </ul>	The population trends mirror those for other counties, generating the need for relatively high numbers of elementary and middle school classes but low demand for high school classes.

**Table 4.30 - Education Delivery Recommendation, 2020-2025**

	Recommended Provision	Comments
<b>Bryan</b>	<ul style="list-style-type: none"> <li>20 primary/elementary school classes (153 total)</li> <li>12 middle school classes (67 total)</li> <li>60 high school classes (73 total)</li> </ul>	Younger population growth begins to slacken and teenaged population growth increases in this phase, generating the need for 60 new high school classes.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>14 elementary school classes (300 total)</li> <li>17 middle school classes (86 total)</li> <li>67 high school classes</li> </ul>	As with Bryan County, Younger population growth begins to slacken and teenaged population growth increases in this phase, generating the need for 67 new high school classes.
<b>Long</b>	<ul style="list-style-type: none"> <li>2 elementary school classes (39 total)</li> <li>2 middle school classes (16 total)</li> <li>19 high school classes (21 total)</li> </ul>	Long County follows similar population trends for youth as cited for Bryan and Liberty Counties.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>2 elementary school classes (81 total)</li> <li>4 middle school classes (29 total)</li> <li>32 high school class (34 total)</li> </ul>	Tattnall County follows similar population trends for youth in all other counties.

<b>Table 4.31 - Education Delivery Recommendation, 2025-2030</b>		
	<b>Recommended Provision</b>	<b>Comments</b>
<b>Bryan</b>	<ul style="list-style-type: none"> <li>• 24 primary/elementary school classes (177 total)</li> <li>• 6 middle school classes (73 total)</li> <li>• 6 high school classes (79 total)</li> </ul>	Younger population growth remains relatively strong as older school-aged population growth stabilizes.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>• 27 elementary school classes (327 total)</li> <li>• 3 middle school classes (89 total)</li> <li>• 1 high school class (68 total)</li> </ul>	Younger population growth remains relatively strong as older school-aged population growth stabilizes.
<b>Long</b>	<ul style="list-style-type: none"> <li>• 4 elementary school classes (43 total)</li> <li>• 1 middle school class (17 total)</li> <li>• No new high school classes</li> </ul>	Relatively low growth across all school-aged cohorts generates little need for additional educational facilities.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>• 8 elementary school classes (81 total)</li> <li>• 1 middle school class (30 total)</li> <li>• No new high school classes</li> </ul>	Relatively low growth across all school-aged cohorts generates little need for additional educational facilities.



## Section Summary

Liberty and Long County do not have adequate public water capacity to serve future growth populations associated with pipeline developments. While Bryan County can meet the capacity needs of the current pipeline units, it will face long-term challenges and capacity shortage without adding more capacity. Tattnall County, through the public utility service areas associated with Glennville and Reidsville, are well positioned to meet the needs of growth projections. Consistent with the recommendations of the Coastal Regional Commission's Summary Report<sup>1</sup> on infrastructure an integrated approach to resolve capacity issues is recommended for future consideration.

Expansions to the physical capacity of the waste water treatment facility in Hinesville, along with the proposed expansion in Richmond Hill, will support growth in the long-term. Glennville and Reidsville have the ability to support future growth through their existing capacity. However, the area continues to permit urban-intensity development outside the utility service areas, resulting in currently undefined environmental impacts due to past and future reliance on private wells, septic tanks, and lack of programmatic comprehensive storm water management plan.

## Growth and Assessment Analysis Findings

### Growth Analysis

As shown in the CommunityViz maps in Section 3 on Land Use, the military impact component of growth in the region will reinforce existing development patterns, drawing significant residential development to the Cities of Hinesville and Richmond Hill. Development, particularly when oriented around the installation, is also likely to accelerate the growth of unincorporated parts of Liberty County and eastern Long County. The emerging land use pattern in the region highlights the need to develop coordinated services strategies to deliver adequate public infrastructure in rapidly growing exurban areas.

### Issues

#### Water<sup>2</sup> - Regional

The water supply options in Coastal Georgia have become more limited in recent years due to the moratorium placed on the Upper Floridan aquifer, a vast underground reservoir of water that has been the primary source of water in the coastal area for over 100 years. In regards

<sup>1</sup> "Coastal Georgia Water, Sewer, and Stormwater inventory summary report," (October 26, 2009) prepared by Thomas and Hutton for the Coastal Regional Commission (related to Bryan, Liberty, and Long County information)

<sup>2</sup> Ibid.



to Upper Floridan withdrawal limits, the Management Plan identified three regions (Sub-Regions 1, 2 & 3) for different levels of regulation. Sub-Region 1 is further split into two sub-regions. Sub-Region 1 – Red Zone (which occurs outside the study area), allows no additional withdrawals above actual 2004 withdrawals and a subsequent reduction required by the end of 2008 of five million gallons per day (mgd). Liberty and Bryan Counties are included in Sub-Region 1 - Yellow Zone, which allows step increases in the use of the Upper Floridan aquifer to an additional 5 mgd above actual 2004 withdrawals (approximately 15.3 mgd) within the Yellow Zone until 2008, which has been achieved. Long County is within Sub-Region 4 which, at this time has no further restrictions other than determining alternative water sources that are not feasible, and documentation of performing a water conservation plan, alternative water supply feasibility study, reuse feasibility study, and other leak detection/meter calibration requirements (required of each sub-region).

Tattnall County is located in Sub-Region 3 and is required to adhere to the special coastal conditions defined in “Coastal Georgia Water & Wastewater Permitting Plan for Managing Salt Water Intrusion”, published by the State Environmental Protection Division in June 2006. Sub-Region 3 does not have restrictions related to water withdrawal in the Upper Floridan aquifer at this time. This allows for unlimited potential growth in Tattnall County.

Like wastewater, the stormwater systems differ from jurisdiction to jurisdiction. Many municipalities in the area do not have adequate mapping of their stormwater pipes and ditches, which makes it difficult to maintain these systems, and could result in flooding problems.

## Wastewater and Stormwater - Regional

Wastewater systems in the region also vary. A large portion of the region still uses septic systems for wastewater treatment. A comprehensive analysis of the impacts of extensive reliance on the tanks is needed to understand the effects and define the capacity of the area to support the continued use of septic tanks. An analysis of the impacts of septic tank use is needed to formulate measures that ensure minimal environmental damage.

Like wastewater, the stormwater systems differ from jurisdiction to jurisdiction. Many municipalities in the area do not have adequate mapping of their stormwater pipes and ditches, which makes it difficult to maintain these systems, and could result in flooding problems. The majority of the municipalities within the study area do have stormwater ordinances, which are more stringent than state and federal guidelines. However, if the community does not have a local stormwater ordinance, state and federal regulations apply.

## Solid Waste Management - Regional

Regionally, the majority of the solid waste collected in the study area arrives at the Broadhurst Environmental Landfill (BEL), located in Screven, Wayne County. Haulers serving Liberty, Long, and Tattnall County, along with unincorporated Bryan County and the City of Pembroke ultimately rely upon the BEL as the disposal site. In addition to three counties in the study area which the BEL serves, the facility accommodates solid waste from an additional ten counties in southeast Georgia. The facility has provided assurance of capacity for the near future (8-12 years), in accordance with the horizon years defined in the applicable Solid Waste Management Plan.

The State Department of Community Affairs noted in the 2008 “Disposal and Capacity Report” (revised in July 2009) that the BEL had remaining permitted capacity until 2019. John Simmons, the general manager of the BEL facility, noted in a 2006 interview in Georgia Trend Magazine that “Only a small portion of the [1,420-acre landfill] site has been put to use and an additional 340 acres [is available],” estimating the life capacity of the facility at approximately 60 years.<sup>3</sup>

The City of Richmond Hill relies upon the Superior Landfill and Recycling Center in Savannah as its ultimate disposal site. The November 2008 “Solid Waste Management Plan for Bryan County, the City of Pembroke, and the City of Richmond Hill” includes an assurance letter from the facility to accept the municipalities’ waste needs through 2018. The State Department of Community Affairs noted in the 2008 “Disposal and Capacity Report” (revised in July 2009) that the facility has a remaining permitted

<sup>3</sup> Ibid.



capacity until 2015.

### Natural Gas-Electricity-Telecommunications - Regional

There is adequate capacity to meet future service needs for gas, electric, and telecommunication demand.

#### Bryan County

Approximately 57% of the county's residents live outside the municipal boundaries of Pembroke and Richmond Hill. While there are some public utility services available to residents in the unincorporated portions of the county, the majority of the residents outside the cities rely upon wells and septic systems for residential services. The State OPB population projections correlate to an additional 1,965 new units by 2015 and a total of 9,100 units by 2030. The current pipeline projects are not exclusively located within the existing service areas and will rely on private wells and septic systems for residential services.

Bryan County operates two small water systems, one in the northern portion of the county that includes the Interstate Centre industrial park, and one in the southern portion at Genesis Pointe, a large-tract residential development. Both systems are new and in good condition. The county currently has 0.55 million gallons per day (mgd) of permitted groundwater withdrawal capacity and the available capacity to serve approximately 780 equivalent residential units (ERUs). The southern facilities will include a new well constructed and operated by the City of Savannah (the County will



operate and maintain the distribution system). The available capacity can serve roughly 1,750 future (ERUs).

Bryan County operates a 0.04 mgd wastewater treatment facility in Interstate Centre with present usage of approximately 0.006 mgd from 10 commercial/industrial customers. Available capacity is approximately 115 Equivalent Residential Units (ERUs). The system uses package plant trickling filter technology, a holding pond, irrigation pump station and a four-acre land application site. It is in good condition. On the south end, the county has constructed a 0.2 mgd aerated lagoon/holding lagoon facility with land application in the Genesis Pointe development. At the present time, there are no users on the system with a capacity to serve 670 ERUs.

## Pembroke

The City of Pembroke provides water to city residents and is in the process of adding storage capacity. Pembroke can serve an additional 230 ERUs under its existing operating conditions. The City of Pembroke provides sanitary sewer service inside the city limits. The city has the available capacity to serve approximately 750 additional equivalent residential customers.

## Richmond Hill

Richmond Hill provides water service to roughly 4,700 customers with a permitted withdrawal capacity of 3.28 mgd from three Upper and one Lower Floridan aquifer wells. The city has the available capacity to serve roughly 6,400 additional ERUs. The City of Richmond Hill provides sanitary sewer service inside the city limits.

The city operates a 1.5 mgd aerated lagoon followed by overland flow and constructed wetland polishing. Discharge of this system is to Elbow Swamp, a tributary of Sterling Creek. Existing flows are 1.2 mgd or the equivalent of 80% of permitted capacity (1,000 ERU remaining capacity), thereby creating the need for expansion. The city considers expansion a top priority and is in the planning

stages for doubling the capacity of the facility in the next few years. Richmond Hill has plans to extend its collection system to areas within its service delivery area that are currently not served or are served by individual septic systems.

## Liberty County

Approximately 36% of the county's residents live outside the incorporated boundaries of a city. The majority of the population resides in the City of Hinesville, the largest urban area within the study area. The residents within the county's urban communities have access to public sewer and drinking water services (other than Gum Branch).

The previous elements of the study defined approximately 5,041 new units within the county currently under development. The State OPB population projections correlate to an additional 3,412 new units by 2015 and a total of 10,811 by 2030. The current pipeline projects are not exclusively located within the existing service areas and will rely on private wells and septic systems for residential services.

The majority of the municipal capacity within the county is within the City of Hinesville service area (discussed below), resulting in little availability of public services to support growth outside the urban core of the city. The Liberty County Development Authority (LCDA) has permit capacity to support growth of non-residential development, while Interstate Paper has permitted capacity for water withdrawal in support of its unique business needs. While the capacity of those entities has been acknowledged in the overall analysis, it is assumed that the permit thresholds associated with Interstate Paper will be required to support the needs defined for the entity. The LCDA service area does extend beyond the limits of the industrial development campuses, but a portion of that capacity will be needed for non-residential growth.

## Hinesville

Hinesville is the only municipality in the county with existing capacity available to serve growth, approximately 1,700 ERU, but the majority of that capacity is needed to serve the build-out of those pipeline projects already underway. Additional water will be required to serve the build-out population envisioned as Hinesville's share of the future growth.

The 2006 completion of the waste water treatment facility added significant capacity to the city's infrastructure system and should be adequate to serve the city throughout the long-term growth years.

## Long County

Approximately 86% of the county's residents live outside the Ludowici municipal boundaries (and service area) and rely upon wells and septic systems for residential service. The city has the capacity to serve approximately 2,000 additional units related to public water under the existing permit, but lacks the physical capability to draw the permit maximum threshold at this time. The city has remaining capacity within their sewage treatment facility to serve approximately 400 additional units. The County and city do not have mapping or planning information for storm utilities.

The previous elements of the study defined approximately 1,163 new units within the county currently under development.

The State OPB population projections correlate to an additional 415 new units by 2015 and a total of 1,833 by 2030, nearly 64% of which is represented by existing pipeline developments. The city water utility has the capacity under their current permit to meet this need, provided that the well operating mechanisms are optimized to withdraw the maximum permit allowance. The city's sewer system could handle only a fraction of the capacity needed to serve this growth. While the value exceeds the available capacity of the city's sewer system, nearly all of the existing pipeline units, as well as those units anticipated to meet the OPB population projections, are proposed outside the city limits and utility service area and are expected to rely upon private or satellite utility systems.

## Tattnall County

Approximately 62% of the county’s residents live outside of the municipal boundaries and rely upon wells and septic systems for residential service. The county does not provide public water or sanitary sewer. The Cities of Glennville and Reidsville are the only communities in the county with service capacity adequate to support future customers expected in the current growth projections. Cobbtown, a community of approximately 300 residents and 140 dwelling units located at the northern limits of the county, has capacity to serve an additional 200 ERU’s worth of new development. The county recently adopted a stormwater management plan.

The State OPB population projections correlate to an additional 842 new units by 2015 and a total of 3,645 by 2030. The comprehensive utility capacity in the municipalities can serve this growth, provided the development is located within proximity to the existing service areas.

# Recommendations

## Introduction

The “Coastal Georgia Water, Sewer, and Stormwater Inventory Summary Report,” (October 26, 2009), prepared under the direction of the Coastal Regional Commission of Georgia, contains numerous observations and recommendations regarding system improvements and consistency with Federal and State requirements that should be implemented. While some of the recommendations noted herein mirror those defined in the report, communities need to review the report and create strategic planning efforts to recognize all the needs identified.

## Short-Term

### Regional Water Planning Collaboration

Water supply and service delivery challenges will occur in the study area without the implementation of an integrated resource approach. Absent such a collaborative effort, each agency would need the same level of coordination to reach goals common to all members. An integrated approach will allow the communities within the counties an opportunity to participate in the planning and development of long-term efforts. The counties, along with the installation, operating as a single integrated entity for purposes of water planning would have the ability to combine resources towards a sustainable regional approach.

Water supply options in Coastal Georgia have become more limited in recent years due to the moratorium placed on the Upper Floridan aquifer, the primary source of water. Approximately seventy percent (70%) of the active duty soldiers and nearly all of the civilian employees and contractors rely upon the local community for housing options. As the communities absorb this demand, along with the non-military related growth, utility capacities are becoming strained. Bryan and Liberty Counties support the highest level of military related population and both are in an area which is limited through state environmental regulations in their ability to extract increased groundwater to meet future demands.

The availability and accessibility of public services should be used as a factor in determining the location of new development. The plan would address the applicable source, distribution, storage, and treatment elements, as well as funding opportunities for initial establishment and ongoing expansion for the region and as integrated entity. The plan would extend the work completed under the RGMP public services element to create regional implementation strategies that define extensions of and/or improvements to water (in conjunction with other land use and transportation factors) to guide and entice future development to locate in areas that would: (1) Promote efficient delivery of public services for the regional area, (2) Coordinate growth sectors away from sensitive (e.g. valuable and vulnerable) natural, historic and cultural areas, and (3) Supplement the regional economic development strategies to

Bryan and Liberty Counties support the highest level of military related population and both are in an area which is limited through state environmental regulations in their ability to extract increased groundwater to meet future demands

ensure new businesses have readily accessible adequate utilities.

The plan will provide for a logical method for delivering sustainable public water to existing and also currently un-serviced portions of the region and a defensible rationale for conservation and preservation regulations in other areas. The plan could also be used to address the dedicated water service requirement of the ISO ratings, to reduce insurance costs for homeowners/business located outside the existing service areas.

### **Update Inventories and Master Planning**

Each community needs to ensure the infrastructure system is up to date and available for inclusion into the regional or county Geographic Information Systems networks. This task is intended to include not only the underground pipe location and sizes but also service conveyance channels and other appurtenances necessary to manage the system. The availability and accessibility of accurate information is critical to not only address development related issues, but is the critical component of the baseline information needed to formulate strategic management goals and programmatic maintenance objectives.

### **Analyze the environmental impacts of well and septic usage**

Rural portions of the study area have relied on septic tanks as a means to serve developments. A comprehensive analysis of the impacts of extensive reliance on the tanks is needed to understand the



effects and define the capacity of the area to support the continued use of septic tanks, if any capacity still exists. An analysis of the impacts of septic tank use is needed to formulate measures that ensure minimal environmental damage. In understanding the existing level of impacts and future capacity for continued reliance, communities will be able to make more knowledgeable decisions related to the intensity of development/density and geographic locations appropriate for continued usage.

The lack of public water and sewer service outside the incorporated boundaries acts as a limiting factor in the types and amount of growth the counties will experience. By not expanding service areas beyond current limits, counties are curtailing growth potential. Some counties reported this deliberate measure to curb sprawl outside the core areas, while others see this as a deficiency to rectify to help accommodate population growth.

## Long-Term

### Solid Waste Capacity

Each community needs to begin to examining solid waste management beyond the current horizon year to ensure future capacity is secured to manage future needs. This is an excellent opportunity for collaboration between governments to employ regional economies of scale and efficiency.

### Reconcile Development Patterns with Utility Service Areas

Bryan, Liberty, and Long Counties have and will continue to experience growth pressure in areas that are not planned or lack ready access to public infrastructure. While not applicable to the cities, each county, including Tattnall County, needs to look at the proposed development patterns and target those areas that can be reasonably served with public services through existing or identifiable expansion to networks for growth.

### Evaluate Surface Water Resources

Conduct a regional assessment of the rivers in the study area to identify those that could support year-round or at least seasonal water withdrawals for water supply purposes. In the cases where only seasonal withdrawals appear feasible, investigate opportunities for surface water impoundments or reservoirs for seasonal water storage.

### Wastewater Delivery Strategies

Subsequent to the environmental analysis of capacity issues associated with septic use, the counties need to formally adopt future service areas that are planned for central sewer versus septic tanks. Similar to water, the primary criteria for this assessment will likely be the density of planned growth as defined by the future land use & zoning information. To ensure long-term sustainability, each county should then assess the options for where treatment facilities need to be located to manage existing community resources relying on septic systems.

There will be locations that continue to rely on septic tank usage. The county should ensure that recommendations regarding the future usage correlate to the finding on environmental sustainability and the service delivery strategy related to the capacity and parameters of such usage.

### Water Reuse Planning<sup>4</sup>

Reuse of reclaimed water (treated wastewater effluent) will be a critical component of the planning strategy for coastal Georgia. Two basic criteria for a successful reuse program are: 1) Use the lowest suitable quality water for each given demand. 2) Maximize reuse such that it completely offsets a potable water demand. Reuse is often considered only for irrigation with reclaimed water versus potable water. However, there are several other elements of reuse that should be considered.

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<sup>4</sup> Ibid.

- Irrigation reuse
- Indirect potable reuse
- Industrial reuse
- Groundwater recharge
  
- Environmental enhancement
- Stormwater reuse
- Reuse within buildings – i.e. gray water systems

Each city/county needs to review the opportunity to reduce overall opportunity to provide for water needs that can be served without obligation of potable sources. The city of Hinesville is reusing water from its treatment facilities to provide irrigation water and shares this resource with Fort Stewart. In addition to opportunities within the community service area, additional opportunities among adjoining communities/jurisdictions may exist.





## Section Summary

In general, the region's workforce is positioned to meet the needs of lower to semi-skilled occupations in a mostly white collar work setting. In recent years, with the development of the Tradeport Business Park in Midway, a warehouse/distribution cluster has started to develop that has attracted large regional and national retail operators. This has created a demand for people with experience in modern automated distribution centers. The regional presence of more technically-oriented production or knowledge-based industries is modest, but the region desires to diversify its economy and labor force to support these higher-level employers. Currently, the region's education, workforce, and training programs are preparing workers that have basic skill levels, but lack technical proficiency or advanced degrees.

The partial exception to this rule involves retired Fort Stewart personnel still living in the region. This workforce is highly coveted and in demand by many employers who are seeking capable and reliable workers. The region's success in attracting different industry will depend in part on its ability to produce larger numbers of workers with strong fundamental work skills, reliability and the capacity to learn complex tasks. The working relationship between local technical colleges and industry leaders is variable depending on the employer, but can be improved to be more responsive to changing industry needs, as well as emerging employment opportunities.

Recommendations for enhancing the regional workforce include:

- Ensuring the workforce has the basic skills necessary for obtaining and holding local industry jobs,
- Increasing marketing of technical training programs and certificates to industry leaders,
- Strengthening the diversity and availability of education programs in the region,
- Increasing job recruitment opportunities and job training opportunities for military spouses and dependents, and
- Maintaining communication with local industries and continuing to meet their needs.

These recommendations, including specific action items, can be found in the following Recommendations Section.

## Assessment Analysis Findings

### Issues

As the population of Fort Stewart continues to grow in the future, it is likely that many dependents of the new personnel will have a need to seek employment. The same is true for the region's civilian population. Having employment training programs and career enhancement opportunities, as well as understanding the needs of local area employers is pivotal in preparing for this increase in demand.



Interviews with industry representatives indicate that the retired military have basic work skills often lacking in the rest of the workforce and they actively try and recruit this segment of the population.

## Basic Skills of Labor Force

Multiple interviews with technical college representatives and industry leaders alike have indicated that many in the civilian workforce should improve basic work skills and work ethic to maintain competitiveness in the workplace. Basic work skills such as daily attendance and arriving on-time have been noted as problems by both employers and technical colleges. To address this problem, there is a work ethic component in all of the technical college courses. However, there may need to be more focused attention at earlier ages, such as middle school or high schools.

On the other hand, employers indicate that the military retiree workforce is considered very desirable by many local employers. The time spent in the military produces workers that follow direction; have an attention to detail; value commitment; and possess a strong work ethic. Interviews with industry representatives indicate that the retired military have basic work skills often lacking in the rest of the workforce and they actively try and recruit this segment of the population.

However, currently there is no mechanism outside of Fort Stewart to target military retirees or to assess their skills sets for the private employment market.

## Teacher Recruitment

The technical colleges have noted that there are some programs where it is difficult to recruit teachers. If an adequate teacher is not found, the program could be dropped from the offerings. It can be difficult to find teachers for the more highly technical training programs, such as machine tooling, because there is not a large pool of local people with the skills and experience to teach the class to choose from. Therefore, it is often necessary to recruit teachers from outside the area and the positions are not always able to be filled.

## Meeting Industry Needs

The technical colleges have economic development outreach departments that coordinate and communicate directly with regional industries. However, it has been mentioned that the technical colleges and programs have not always meet the “on-the-ground” needs of local industries in an effective manner. Discussions with industry leaders have mentioned that in the past it was sometimes difficult maintaining communication with the economic department liaisons.

It should be noted that industry leaders have stated that the technical colleges have recently become much more communicative and effective at meeting specific training needs of their companies. Some of the more recent and successfully utilized programs offered by the technical colleges include free on-site retraining of technical positions (such as fork-lift operators), offering free management and supervisor courses, and partnering with companies on certification programs. As a whole, industry leaders have mentioned having a currently very positive and effective relationship with the technical colleges.

The Department of Labor has received mixed reviews from industry leaders. While some have successfully utilized the GeorgiaWork\$ and other job recruitment programs, others have mentioned that the Department of Labor has not maintained communication or site visits with their companies. It will be imperative for the Department of Labor to maintain communication with all local industries in order to strengthen the growing workforce of the area.

## Technical Training Program Marketing

Some industry employers we spoke with do not realize that there are some programs offered at the technical colleges that may be beneficial to their companies. Also, some industry leaders did not believe that certain new programs, such as the Warehouse Certificate program, were marketed very well to the unemployed workforce. Although the technical colleges market programs through newspapers, radio, and billboards, it may be necessary to create a more strategic marketing effort to specifically target those who would be likely to enroll in the training programs.



A more focused marketing strategy to area industries may also be beneficial. Examples of target marketing include identifying potential company prospects on a quarterly basis and direct mailing information on training programs and ways the colleges can help train and recruit workers. Follow-up calls and contacts will be necessary in order to make sure local industries are aware of the programs and opportunities available to their companies.

### Job Fairs

The Army Career and Alumni Program (ACAP) offers job fairs that are usually held twice a year (during non-deployment years). The target audience of the job fairs is transitioning soldiers, who have finished their enlistment term. However, dependents of military personnel are welcome to attend. There are typically 75 to 100 businesses that attend, and companies in attendance run the gamut from retailers like Walmart, to banks, military contractors and state and federal agencies.

Interviews with ACAP representatives indicate that it becomes difficult to hold job fairs during deployment periods. In fact, the last job fair was held in 2008. The next job fair will likely be held in spring or summer of 2011, when the troops are due back from deployment.

Although there is a Family Employment Readiness program offered by Fort Stewart, there is not a job fair held specifically for military spouses. Such a job fair would be an asset that military spouses can utilize once they have moved to the Fort Stewart area. Similar to the welcoming events, it is recommended that job fairs, which would be open to the general public but held at Fort Stewart, be staggered over time in order to reach all of the rounds of relocated spouses. Before holding such an event, it would be necessary to identify and target specific employers, for example hospitals, education facilities, and child care facilities.



## Creation of Military Spouse Employment Programs

Army Community Services at Fort Stewart offer the Family Employment Readiness services. These services are similar to those found at the Georgia Department of Labor Career Centers and include career coaching, job search assistance, access to computers, and free classes and workshops. However, it may be possible to create other programs and training opportunities targeted specifically to military spouses.

The Fort Stewart public entities, schools, and Workforce Investment Board may want to consider partnering to create a “Military Spouse Training Grant,” similar to what another military community in Fort Lee, Virginia has started offering. This grant was funded by a partnership between the regional Planning District Commission, the local community colleges, and the Virginia Workforce Network. Unlike the other training programs, the Military Spouse Training Grant primarily targets spouses of military personnel, particularly entry-level military spouses that are unemployed or under-employed. The “Work Skills 101” and Career Readiness Certificate are the two main programs funded under this grant (described in more detail below). There are no qualifiers or income restrictions and the programs are open to all military spouses who are US citizens or have the right to work. In addition to training and employment assistance, the \$200,000 grant also provides free child-care and transportation services to military spouses so they can more easily access the training classes.

- **“Work Skills 101”**  
“Work Skills 101” is a 2-week training program that teaches participants basic job skills such as interview preparation, resume writing, and PC basics such as Microsoft Word, Excel, Internet and e-mail. Each 2-week training session can accommodate a maximum of twenty students and all classes are held at the local community college. As of report writing, enrollment has averaged twelve students per class.
- **Career Readiness Certificate (CRC)**  
As mentioned previously, the Career Readiness Certificate is a nationally recognized certificate that is obtained by passing the WorkReady examination. Once the certificate is received, the military spouse can use it as an attachment to their resume to show employers that they are proficient in basic job skills. To prepare and study for the WorkReady test, the Military Spouse Training Grant provides funding for the distribution of WorkReady on-line and print curriculum material. The on-line curriculum is available to the military spouse for one-year. Those entering the “Work Skills 101” course are automatically given the WorkReady curriculum to help the participant study for the WorkReady test if they should desire to take it.

# Recommendations

## Introduction

The following recommendations reflect the issues as discussed above. They are arranged into short and long-term strategies.

## Short Term Action Items

### Awareness of Technical Training Programs

Some industry employers we spoke with do not realize that there are some programs offered at the technical colleges that may be beneficial to their companies.

- Action 1** Create marketing strategy targeting local industries
- Action 2** Identify potential company prospects on a quarterly basis
- Action 3** Direct mail marketing material on training programs and ways the colleges can help train and recruit workers
- Action 4** Follow-up calls and contact with local industries to ensure awareness of programs and opportunities

### Meeting Industry Needs

The technical colleges and Georgia Department of Labor conduct economic development outreach and coordinate and communicate directly with regional industries. It is imperative that communication is maintained between local industries, technical colleges, and the GA Department of Labor.

- Action 1** Routinely meet with industry leaders
- Action 2** Follow-up calls with local industries to keep abreast of their changing needs

### Military spouse and Dependent Job Opportunities

The Army Career and Alumni Program (ACAP) offers job fairs that are usually held twice a year (during non-deployment years). The target audience of the job fairs is transitioning soldiers, who have finished their enlistment term. Dependents of military personnel are welcome to attend. However, there is not a job fair held specifically for military spouses. In addition, Family Employment Readiness Services offer career coaching, job search assistance, etc. However, it may be possible to create other programs and training opportunities targeted to military spouses.

- Action 1** Create job fairs targeted to military spouses and dependents
- Action 2** Create “Work Skills 101” program. This is a two-week program that teaches participants basic job skills, such as interview preparation, resume writing, and PC basics such as Microsoft Word, Excel, Internet and e-mail
- Action 3** Assistance with helping dependents and spouses obtain a Career Readiness Certificate (CRC). Once the certificate is received, the military spouse can use it as an attachment to their resume to show employers that they are proficient in basic job skills.

### Economic Diversification

Economic diversification is needed throughout the four-county Fort Stewart region to ensure adequate military spouse employment opportunities and to maintain quality of life. Long and Tattnall Counties have attracted military and non-military families from Fort Stewart because of relatively lower cost of living and small town character. However, these two counties need commercial and industrial

Our goal is that the study area shares in an integrated balance of sustainable economic development initiatives to complete a Comprehensive Economic Development Strategy (CEDS), which will serve as the guidance for business recruitment and the source of additional grants and funding opportunities.



diversification in order to grow the tax base to support the additional residents, as well as provide job opportunities for spouses and family members of Fort Stewart personnel.

The updates to the economic diversification studies in Bryan and Liberty Counties, along with the completion of diversification studies in Long and Tattnall Counties will support the implementation of development strategies that leverage existing regional economic resources and help attract compatible and diverse businesses to invest in local communities. Our goal is that the study area shares in an integrated balance of sustainable economic development initiatives to complete a Comprehensive Economic Development Strategy (CEDs), which will serve as the guidance for business recruitment and the source of additional grants and funding opportunities. The Partnership staff will work to support the task through local coordination efforts among stakeholders and elected officials in the counties.

In addition to conducting studies, the communities should promote alternate tax-producing land uses to lessen dependence on local property taxes. The lack of retail and commercial uses in Long County and a tax base with limited diversity is making it increasingly difficult for this county to provide services to the growing population. Counties have had to raise taxes in the recent past in order to accommodate the growth. Having a more diverse tax base, which includes retail development, would help offset the increasing cost of providing public services.

**Action 1** Provide incentives for commercial and/or industrial-based companies to locate in the region.

**Action 2** Align educational programs with skills of local workforce and needs of regional employers.

**Action 3** Update or conduct economic diversification studies in Bryan, Liberty, Long and Tattnall Counties

## Long Term Action Items

### Advanced Degree Educational Opportunities

Currently, the region's education, workforce, and training programs are preparing workers that have basic skill levels, but lack technical proficiency or advanced degrees. The immediate Fort Stewart region is not well served by colleges and universities offering four-year baccalaureate degrees or post graduate and doctoral degrees. Most of the higher level college institutions are located just outside of

the Fort Stewart Region in Savannah. In addition, the State of Georgia's major four-year institutions (i.e., University of Georgia, Georgia Tech, Georgia Southern, etc.) do not have a major presence within the region and do not offer distance learning opportunities through local technical colleges.

**Action 1** Research and coordinate efforts on the potential of creating a distance-learning programs with Georgia's major four-year institutions

### Basic Skills of Labor Force

Multiple interviews with technical college representatives and industry leaders alike have indicated that many in the civilian workforce do not have basic work skills or a strong work ethic. Basic work skills such as daily attendance and arriving on-time have been noted as problems by both employers and technical colleges. To address this problem, there is a work ethics component in all of the technical college courses. However, there may need to be more focused attention at earlier ages such as middle school or high schools.

**Action 1** Incorporate work ethic classes into middle and high school curriculum

**Action 2** Create a new "career academy" high school (partnership of public high schools and technical colleges)



## Section Summary

The planning team conducted an analysis to determine the amount of social infrastructure required to support anticipated growth in the Fort Stewart region to 2030 based on the state Office of Planning and Budget (OPB) figures. As growth strains existing social infrastructure resources, such as schools, physicians, open space, recreation facilities, and emergency services, the communities of the region should plan for expanded services from the outset to sustain quality of life and maintain efficient and effective delivery systems.

For the purpose of this study, social infrastructure is defined as the following services and facilities:

- Education: primary, elementary, middle, and high schools;
- Child care: Pre-K programs, childcare learning centers, group day care homes, and family day care homes;
- Health care: physicians (federal and non-federal), dentists, acute care (federal and non-federal, in terms of hospital beds), and nursing homes;
- Leisure: swimming baseball fields, soccer fields, and swimming pools;
- Open space: mini-parks, neighborhood parks/playgrounds, community parks, and regional/metropolitan parks; and
- Emergency services: police stations, police officers, fire stations, and firefighters.

Descriptions for social infrastructure items are arranged topically and can be found in sections, as follows:

- Child care - Section 7, Health Care and Social Services
- Health care - Section 7, Health Care and Social Services
- Education – Section 4, Education
- Leisure - Section 3, Land Use and Open Space
- Open space - Section 3, Land Use and Open Space
- Emergency services - Section 8, Public Safety

A summary of all recommended social infrastructure provisions can be found in the Technical Appendix.

This section (Section 7) specifically addresses needs related to health care and child care. The overall health care infrastructure in the region is not adequate to provide services to a national standard for the existing population. The shortage of providers in the community creates challenges for efficient services, continuity of care, and quality care. In the absence of a stronger network of providers, population growth will widen the existing service gap. This challenge is exacerbated by Winn Army Community Hospital's (WACH) shortage and direction to send non-active duty eligible patients to the local community network for services.

Access to medical and social service providers will continue to be a challenge to the local community unless steps are taken to increase awareness and access to the providers.



Community resources outside the urban core are limited to non-existent, failing to provide ease of service to the majority of the population living in less populated areas. Recent transit services by the Coastal Regional Commission aid in addressing these needs, but more work is necessary to create a service delivery strategy that ensures convenient access to all those in need.

The child care network appears adequate to serve community needs into the future, provided that commensurate increases in providers occur with additional populations. Availability of space with existing providers, coupled with planned expansion of the installation network, provides the capacity needed into the near-term. Nearly thirty percent (30%) of the Liberty County providers support the non-traditional hours required by active duty personnel.

## Growth and Assessment Analysis Findings

### Growth Analysis

The planning team conducted a social infrastructure analysis using a proprietary model (Social Infrastructure model or SIF) that quantifies future needs of communities based on OPB population projection inputs combined with a comprehensive list of social infrastructure standards and targets. (See Section 2 for further detail on population projections.) The analysis performs modeling for each county in the region in five-year phases over the 20-year study period, as shown in the tables below.

**Table 7.1- Population Growth - by Phase**

	Phase 1	Phase 2	Phase 3	Phase 4	Total
	2010-2015	2015-2020	2020-2025	2025-2030	
<b>Bryan</b>	5,658	6,288	7,194	7,068	26,208
<b>Liberty</b>	9,997	6,803	7,708	7,373	31,881
<b>Long</b>	1,196	1,297	1,358	1,427	5,278
<b>Tattnall</b>	2,188	2,288	2,436	2,564	9,476
<b>Region</b>	<b>19,039</b>	<b>16,676</b>	<b>18,696</b>	<b>18,432</b>	<b>72,843</b>

**Table 7.2- Population Growth – Cumulative**

	Phase 1	Phase 2	Phase 3	Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
<b>Bryan</b>	5,658	11,946	19,140	26,208
<b>Liberty</b>	9,997	16,800	24,508	31,881
<b>Long</b>	1,196	2,493	3,851	5,278
<b>Tattnall</b>	2,188	4,476	6,912	9,476
<b>Region</b>	<b>19,039</b>	<b>35,715</b>	<b>54,411</b>	<b>72,843</b>

Population changes and subsequent social infrastructure requirements were also estimated for the two most populous cities in the region, Hinesville and Richmond Hill, which are also projected to experience substantial growth over the study period. These population counts are included within the respective county counts (i.e. Liberty and Bryan Counties). As State population projections are only provided on a county level, projections for the cities of Hinesville and Richmond Hill were developed by analyzing the

The planning team conducted a social infrastructure analysis using a proprietary model (Social Infrastructure model or SIF) that quantifies future needs of communities based on OPB population projection inputs combined with a comprehensive list of social infrastructure standards and targets.

population within the city limits as generated through the land use model, CommunityViz (see Section 3 for further detail).

**Table 7.3 - Hinesville and Richmond Hill Population Growth - by Phase**

	Phase 1	Phase 2	Phase 3	Phase 4	Total
	2010-2015	2015-2020	2020-2025	2025-2030	
Hinesville	2,307	1,514	1,827	1,751	7,399
Richmond Hill	830	1,122	1,520	1,660	5,132

**Table 7.4 - Hinesville and Richmond Hill Population Growth - Cumulative**

	Phase 1	Phase 2	Phase 3	Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Hinesville	2,307	3,821	5,648	7,399
Richmond Hill	830	1,952	3,472	5,132

Impacts generated solely from military growth were also modeled. US Army projections for military employment at Fort Stewart were multiplied by a factor of 1.55 to account for dependents and therefore represent total direct military-related population growth in the region. US Army projections are limited to the horizon year of 2013, as future military actions are unpredictable, making estimates for growth beyond 2013 difficult. The military projections also utilize a base year of 2007 (rather than 2010 used for regional projections) to capture the arc of the latest growth period on the installation. If a base year of 2010 was used for military projections, it would appear that military population is declining; using the base year of 2007, historic growth can be captured. Social infrastructure requirements generated from this data represent a snapshot of facility need, therefore, during a cycle of growth and give insight into the impacts of direct military growth in the near term. Impacts were modeled from 2007-2013 in two phases, based on the growth outputs below.

**Table 7.5 - Direct Military Population Growth (Including Dependents) - by Phase**

	Phase 1	Phase 2	Total
	2007-10	2010-13	
Fort Stewart	5,964	-1,186	4,479

**Table 7.6 - Direct Military Population Growth (Including Dependents) - Cumulative**

	Phase 1	Phase 2
	2007-10	2010-13
Fort Stewart	5,964	4,779

All of the demand projections are based on the best evidence available at the time of this study. The demand predictions shown will therefore change if the underlying assumptions on population and facility standards also change. It is important that the social infrastructure recommendations set out in this document are reviewed on a regular basis as developments come forward and projections can be verified.

## Issues

### Health Care

#### EXISTING SERVICE ISSUES

The Existing Conditions report outlined current capacity and service ratios across many health care sectors in the region, including information on hospital care, doctors, dentists, and nursing homes – both for military recipients and the wider public.

#### Medical Services

Overall, there is a shortage in Primary Care Physicians (PCP) within the study area. As shown in Table 7.7, Liberty, Long, and Tattnall Counties are all currently in need of PCPs.

For the purpose of this analysis, FSGMP derived information on the deficit of doctors from American Medical Association (AMA) standards. For comparison's sake, the AMA's category of doctors who are in "family practice" is considered to align with doctors who are identified in this study as "primary care physicians." The figures presented below exclude both Federal providers and those residents eligible for Army care.

	<b>Current Number of Providers</b>	<b>Surplus/Deficit</b>	<b>Source</b>
<b>Bryan</b>	13	+4	FSGMP, 2010, as derived from American Medical Association standards.
<b>Liberty</b>	3	-9	
<b>Long</b>	0	-4	
<b>Tattnall</b>	6	-1	

NB: A positive number signifies a surplus; a negative number signifies a deficit.

Along with unmet demand, the shortage in physician supply creates ancillary issues, such as delays in the waiting area of the physicians and long lag times between requests for appointments and the actual date of scheduling.

One element of the shortage that is not clearly defined in Table 7.7 is the geographic allocation of the office locations. Providers typically locate within the densely populated area, and as is the case in Liberty County, within proximity to the hospital. As a result, communities such as Pembroke and the smaller municipalities in Liberty County support few of the providers, requiring residents of those communities to travel for basic services.

In discussions with the stakeholders, recruiting and retention for both federal and non-federal facilities continues to be a challenge in Liberty County.

Patients in the four-county region choose regional medical facilities outside of the study area either out of necessity (because the specialty is not provided) or convenience. However, the current level of PCP physicians (214, equating to 89 doctors per 1,000 population) in the Chatham County area is also slightly below the state average (1:1,000), straining the community's ability to handle the overload of patients from within the study area.

### TRICARE

TRICARE is the healthcare program serving active duty service members, National Guard and Reserve members, retirees, their families, survivors and certain former spouses worldwide. As a major component of the Military Health System, TRICARE brings together the healthcare resources of the uniformed services and supplements them with networks of civilian healthcare professionals, institutions, pharmacies and suppliers to provide access to high quality healthcare services, while maintaining the capability to support military operations. Essentially, TRICARE is a supplementary form of insurance coverage for military personnel and their families, which allow them access to a private healthcare provider located off-base.

According to the information from the 2009 Data Command Survey, Table 7.8 shows that active duty personnel and retirees eligible for TRICARE services reside predominately in the study area (approximately 64%), as well as Chatham County. Please note that the data on family members was not clearly available and, therefore, was not included in the table.

The Partnership has noted that a small percentage of physicians practicing in the community accept TRICARE as a method of insurance coverage, limiting the options available to those without convenient access to installation medical facilities. Therefore, TRICARE acceptance is low in the local community. There is a need for additional providers that accept TRICARE as a coverage option.

	Bryan	Liberty	Long	Tattnall	Chatham	Others
<b>TriCare Residents</b>	2,274	13,710	832	364	7,391	2,236
<b>Percent of all Eligible TriCare Patients Living in County</b>	8.438%	51.143%	3.104%	1.358%	25.571%	8.386%

Source: Fort Stewart Directorate of Public Works; FSGMP, 2010

While active duty soldiers rely on the facilities available on the installation, military dependants and other eligible TRICARE members living in the community may choose, or are required to utilize, civilian medical facilities, which may be in closer proximity to their residences. The Partnership has noted that a small percentage of physicians practicing in the community accept TRICARE as a method of insurance coverage, limiting the options available to those without convenient access to installation medical facilities. Therefore, TRICARE acceptance is low in the local community. There is a need for additional providers that accept TRICARE as a coverage option.

	Bryan	Liberty	Long	Tattnall
<b>Physicians all Specialty</b>	71	97	3	38
<b>Those accepting TRICARE</b>	19	41	3	2
<b>Percent accepting TRICARE</b>	26.76%	42.27%	100.00%	5.26%
<b>Primary Care Providers</b>	27	27	3	7
<b>PCP accepting TRICARE</b>	9	11	3	2
<b>Percent PCP accepting TRICARE</b>	33.33%	40.74%	100.00%	28.57%

Source: FSGMP, 2010

### Dentists

There is also a shortage of general dentistry professionals within the study area. All counties report a supply of dental care providers less than the state and national ratios. Long County lacks a single provider. Similar to the discussion related to PCP physicians, the distribution of office locations in the most populated areas creates greater demands for smaller cities and rural areas. Further research into existing capacity for dentists could help reveal trends which would ultimately impact delivery options in the future.

## Nursing Homes

There are a limited number of nursing home facilities in the study area: Three (3) of the counties within the study area have only one facility, and Tattnall County has two (2) facilities. The GA Home Health Care Agency (Reidsville) and the St. Joseph's Candler Home Health Care (Hinesville) are the only agencies in the study area that offer providers for in-home care. The Partnership was not able to locate assisted living facilities (for elderly or special needs patients) within the study area. The locations of the nursing home facilities for which information was obtained are listed below.

- Bryan County: Bryan County Health & Rehab Center, 127 Carter Street, Richmond Hill, GA 31324
- Liberty County: Woodlands Health Care LLC, 652 North Coastal Highway, Midway, GA 31320
- Long County: Coastal Manor, 82 Industrial Park Highway 84, Ludowici, GA 31316
- Tattnall County: 1) Tattnall Healthcare Center, 142 Memorial Drive, Reidsville, GA 30453; 2) Glenvue Nursing Home, 721 North Main Street, Glennville, GA 30427

As shown in Table 7.10, Long and Tattnall Counties have a substantial existing surplus in nursing home beds, especially considering the size of the local population being served in relation to the number of nursing home beds provided.

	Current Number of Beds	Surplus/Deficit	Source
<b>Bryan</b>	100	+3	FSGMP, 2010.
<b>Liberty</b>	137	+26	
<b>Long</b>	108	+43	
<b>Tattnall</b>	252	+62	

NB: A positive number signifies a surplus; a negative number signifies a deficit.

The two most populous counties in the region (Bryan and Liberty) have experienced an increase in the elderly population cohorts over the past twenty (20) years. Table 7.11 displays the observed population data for those aged sixty-five (65) and older.

	% of Population Over 65		
	1990 Census	2000 Census	2009 Census Estimate
<b>Bryan</b>	7.1%	7.3%	7.4%
<b>Liberty</b>	3.7%	3.9%	5.9%
<b>Long</b>	8.5%	5.8%	8.3%
<b>Tattnall</b>	13.4%	11.2%	12.0%

Source: United States Census

While the elderly population is generally increasing, the need for additional nursing home beds in the future will be reduced due to an existing surplus of nursing home beds in the region. Future need is discussed more fully later in this section.

### Standards of Service

To generate levels of future health care needs, existing levels of service were applied to anticipated population growth. In general, comparatively low existing standards of provision indicate an inherent need for services in a particular sector. Conversely, high standards of provision, particularly above State averages, sometimes equate to an overprovision of services.

The following tables present the standards that were used in the modeling process to generate health care need arising from population growth to 2030. In some instances, standards were derived by calculating the number of facilities (such as hospital beds) by the existing population. In other cases, State averages were used when a local standard of provision could not be calculated. Source information is provided for each standard used.

<b>Table 7.12 - Regional Health Care Standards</b>		
<b>Type of Service</b>	<b>Standard (per 1,000 population)</b>	<b>Source/Notes</b>
<b>All Specialty Physicians</b>		
Bryan	2.02	FSGMP, 2010 (excluding Federal doctors).
Liberty	1.28	
Long	0.19	
Tattnall	1.57	
<b>Primary Care Physicians (PCPs)</b>		
Bryan	0.83	FSGMP, 2010. The standard represents all non-Federal providers and population not eligible for TRICARE (i.e. military recipients have been discounted).
Liberty	0.60	
Long	0.21	
Tattnall	0.29	
<b>Hospital Beds</b>		
Bryan	0.52	Calculated based on FSGMP research: number of hospital beds in region divided by regional population, excluding military recipients (2009). More detailed research of service areas not only of hospitals within the study area but also in neighboring counties may alter this standard.
Liberty		
Long		
Tattnall		
<b>Dentists</b>		
Bryan	0.28	FSGMP, 2010. *Adequate information was not available to calculate Long County's service ratio for dentists; therefore the State average was used.
Liberty	0.22	
Long	0.50*	
Tattnall	0.13	
<b>Nursing Home Beds</b>		
Bryan	3.07	Calculated based on FSGMP research: number of nursing home beds in the county divided by total county population (2009).
Liberty	2.20	
Long	8.83	
Tattnall	10.29	

<b>Table 7.13 - Fort Stewart Health Care Standards</b>		
<b>Type of Service</b>	<b>Standard (per 1,000 population)</b>	<b>Source/Notes</b>
All Specialty Physicians	3.45	Calculation derived from number of Federal physicians at Winn Army Community Hospital (WACH), Tuttle, and Hawks by number of military recipients
Primary Care Physicians (PCPs)	1.36	Calculation derived from number of WACH and Hawks PCPs divided by number of military recipients
Hospital Beds	3.17	Calculation derived from number of WACH beds divided by number of military recipients
Dentists	0.50*	*No Fort Stewart-specific service ratios available or able to be calculated based on available data; GA State Averages were used (see Table 7.9).
Nursing Home Beds	4.20*	

For comparison's sake, Table 7.14 below lists Georgia state averages for standards of provision. In most instances, local standards fall well below state averages; however, military provision often surpasses state averages. Long and Tattnall Counties are different in the case of nursing home bed provision, however. Each county has an unusually large supply of nursing home beds, yielding large service ratios that go well beyond the State average. In contrast, their service standards for other care, such as specialty physicians in Long County and dentists in Tattnall County, fall substantially below the State average, as well as service standards for Bryan and Liberty Counties. Future iterations of the modeling process could generate a picture of need based on these increased standards of provision should local governments wish to improve service delivery in any sector.

<b>Table 7.14 - Georgia State Average Health Care Standards</b>		
<b>Type of Service</b>	<b>Standard (per 1,000 population)</b>	<b>Source/Notes</b>
All Specialty Physicians	2.4	Kaiser Family Foundation: <a href="http://statehealthfacts.org">statehealthfacts.org</a>
Primary Care Physicians (PCPs)	1.0	
Hospital Beds	2.7	
Dentists	0.5	
Nursing Home Beds	4.2	

**FUTURE NEED**

Based solely on existing standards for health care provision and OPB population projections described above, the gross demand for health care services and facilities based on is shown below in Tables 7.15-7.19.

Delivery, however, must take into consideration net demand – accounting for surplus and deficit supplies. This analysis is presented at the end of this section in Tables 7.39-7.42.

**Table 7.15 - Bryan County Health Care Demand (Gross) Arising from New Population - Cumulative**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
All Specialty Physicians	11.4	24.1	38.7	52.9
Primary Care Physicians (PCPs)	4.7	9.9	15.9	21.8
Hospital Beds	2.9	6.2	10.0	13.6
Dentists	1.6	3.3	5.4	7.3
Nursing Home Beds	17.4	36.7	58.8	80.5

**Table 7.16 - Liberty County Health Care Demand (Gross) Arising from New Population - Cumulative**

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
All Specialty Physicians	12.8	21.5	31.4	40.8
Primary Care Physicians (PCPs)	6.0	10.1	14.7	19.1
Hospital Beds	5.2	8.7	12.7	16.6
Dentists	2.2	3.7	5.4	7.0
Nursing Home Beds	22.0	37.0	53.9	70.1



<b>Table 7.17 - Long County Health Care Demand (Gross) Arising from New Population - Cumulative</b>				
	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
All Specialty Physicians	0.2	0.5	0.7	1.0
Primary Care Physicians (PCPs)	0.3	0.5	0.8	1.1
Hospital Beds	0.6	1.3	2.0	2.7
Dentists	0.6	1.2	1.9	2.6
Nursing Home Beds	10.6	22.0	34.0	46.6

<b>Table 7.18 - Tattnall County Health Care Demand (Gross) Arising from New Population - Cumulative</b>				
	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
All Specialty Physicians	3.4	7.0	10.9	14.9
Primary Care Physicians (PCPs)	0.6	1.3	2.0	2.7
Hospital Beds	1.1	2.3	3.6	4.9
Dentists	0.3	0.6	0.9	1.2
Nursing Home Beds	22.5	46.1	71.1	97.5

<b>Table 7.19 - Fort Stewart Health Care Demand (Gross) Arising from New Population - Cumulative</b>		
	By Phase 1	By Phase 2
	2007-2010	2010-2013
All Specialty Physicians	20.6	16.5
Primary Care Physicians (PCPs)	8.1	6.5
Hospital Beds	18.9	15.1
Dentists	3.0	2.4
Nursing Home Beds	25.1	20.1

## Social Service Providers

### Greater awareness and access to available human service providers is needed

There is a need to raise awareness of available human service providers and to ensure that those in need of the services can access the providers. During the course of the analysis, staff had challenges in making contact and coordinating with numerous agencies that provide services to needed populations. Patrons with fewer resources likely face a greater challenge in accessing those agencies that provide necessary services.

Concurrent with the challenges associated with coordinating with the agencies, a stronger means of physical access is necessary to ensure that clients can obtain needed services. The majority of the service providers are located within the urban core of the communities, such as Hinesville, Pembroke-Richmond Hill, Glennville, and Reidsville. However, the populations they serve are distributed throughout the counties, creating transportation issues with getting to service providers.

## Child Care and Early Education

### Head Start Programs are in High Demand

The Georgia Head Start Association, Inc. (GHSA) is a statewide non-profit organization whose mission is to enhance the capability of local Head Start programs to deliver quality comprehensive services to children and their families. GHSA represents the 30 Head Start and Early Head Start agencies in the State of Georgia that provide these services to over 24,000 low-income preschool children from birth through five-years-old and their families. Despite a drop in the demand for child care services associated with the current deployment cycle, the “Head Start” programs are functioning at full capacity with a waiting list in all four counties, suggesting a greater demand for the program.

### Child Care Demands Will Continue to Rise

Overall, the region has an adequate number of child care facility providers to meet current demands, but will require commensurate growth in the industry to support growing populations. However, existing spare capacity should be absorbed before new facilities are provided. Providers in Long County are most strained and may require additional providers before the other communities.

A variety of child care options is currently available in the region, catering to different age groups in different settings. The Georgia Department of Early Care and Learning (DECAL) administers the Georgia Pre-K Program, licenses child care centers, home-based child care, and several other programs targeted to maintain the welfare of children. The programs administered by DECAL fall into one of the following four categories, as listed in Table 7.20. Fort Stewart also offers child care options on post, which sometimes vary slightly from the typical child care options in the rest of the region. These special cases are recognized in the table below.

	<b>Ages Served</b>	<b>Definition</b>
<b>Pre-K Programs</b>	3-4 years	Offered at local public schools or through child care learning centers. Usually operate on the regular school system calendar for the length of a typical school day.
<b>Child Care Learning Centers</b>	0-17 years	Operated by a person, corporation, or institution. Licensed for 19 or more children.
<b>Group Day Care Homes</b>	0-17 years	Operated by a person, corporation, or institution. Licensed for 7-18 children.
<b>Family Day Care Homes</b>	0-17 years	Operated in a private residential home. For 3-6 children.
<b>Fort Stewart Child Care Development Centers</b>	0-5 years	
<b>Fort Stewart School-aged Program</b>	6-12 years	Operates for full days during school holidays and vacations. Provides recreational and educational activities before and after school.
<b>Fort Stewart Youth and Teen Center</b>	13-18 years	

A variety of child care options is currently available in the region, catering to different age groups in different settings. The Georgia Department of Early Care and Learning (DECAL) administers the Georgia Pre-K Program, licenses child care centers, home-based child care, and several other programs targeted to maintain the welfare of children.

As discussed in the section on child care in the Existing Conditions report, child care is well-utilized in most of the study area, with most facilities reporting capacity at around 78% (although Tattnall County’s enrollments were considerably lower). The Existing Conditions report details licensed capacity for child care facilities in each county. However, for the purpose of this analysis, existing spare capacity is most

critical to understand how and when new demand for child care might be absorbed in the future. Table 7.21 presents existing capacity for these child care facilities. For Fort Stewart, expansion to existing facilities is planned to occur in 2010. This additional capacity is listed in Table 7.22.

<b>Table 7.21 - Existing Capacity (Open Slots) of Child Care Facilities</b>				
	<b>Child Care Learning Centers</b>	<b>Group Day Care Homes</b>	<b>Family Day Care Homes</b>	<b>Source</b>
<b>Bryan County</b>	291	7	6	FSGMP, 2009
<b>Liberty County</b>	514	7	69	
<b>Long County</b>	10	0	9	
<b>Tattnall County</b>	109	11	17	
NB: Information was unavailable for Pre-K facilities				

<b>Table 7.21 - Existing Capacity (Open Slots) of Child Care Facilities</b>			
	<b>Pre-K Facilities</b>	<b>Facilities for School-aged Children</b>	<b>Source</b>
<b>Fort Stewart</b>	288	144	FSGMP, 2009
NB: Information was unavailable for Youth and Teen facilities			

The tables below illustrate child care demand arising from population increases in the number of children in the region. Demand is based on a set of service ratios developed from the current number of facilities and enrollment. A more detailed explanation of methodology, including service standards, will be included in a Technical Appendix. The first table shows future demand for Pre-K programs for each county. Because baseline information was made available to allow a calculation, Fort Stewart's Pre-K needs are described in terms of capacity and facility needs (rather than simply the number of programs required). The subsequent tables show gross demand for child care slots (i.e. raw numbers generated from the model) and net demand, taking into consideration existing spare capacity at facilities, as illustrated in Tables 7.21 and 7.22 above. Net demand is then converted into the number of facilities which will be required, based on the average facility capacities shown above.

<b>Table 7.23 - Child Care Demand Arising from New Population – Pre-K Programs</b>					
	By Phase 1	By Phase 2	By Phase 3	By Phase 4	
	2010-2015	2015-2020	2020-2025	2025-2030	
<b>Bryan County</b>	1.1	1.4	1.9	2.5	
<b>Liberty County</b>	4.0	4.6	5.4	6.8	
<b>Long County</b>	0.3	0.3	0.4	0.5	
<b>Tattnall County</b>	0.5	0.6	0.7	0.9	



**Table 7.24 - Bryan County Child Care Demand Arising from New Population - Slots**

		By Phase 1	By Phase 2	By Phase 3	By Phase 4
		2010-2015	2015-2020	2020-2025	2025-2030
Child Care Learning Centers	Gross	258	533	819	981
	<b>Net</b>	<b>0</b>	<b>500</b>	<b>819</b>	<b>981</b>
Group Day Care Homes	Gross	8	16	24	29
	<b>Net</b>	<b>1</b>	<b>16</b>	<b>24</b>	<b>29</b>
Family Day Care Homes	Gross	7	15	23	28
	<b>Net</b>	<b>1</b>	<b>15</b>	<b>23</b>	<b>28</b>

**Table 7.25 - Bryan County Child Care Demand Arising from New Population - Facilities**

		By Phase 1	By Phase 2	By Phase 3	By Phase 4
		2010-2015	2015-2020	2020-2025	2025-2030
Child Care Learning Centers		0	4.3	7.1	8.5
Group Day Care Homes		0.1	1.0	1.5	1.8
Family Day Care Homes		0.2	2.5	3.8	4.7

<b>Table 7.26 - Liberty County Child Care Demand Arising from New Population - Slots</b>					
		By Phase 1	By Phase 2	By Phase 3	By Phase 4
		2010-2015	2015-2020	2020-2025	2025-2030
Child Care Learning Centers	<i>Gross</i>	339	612	872	977
	<b><i>Net</i></b>	<b>0</b>	<b>437</b>	<b>872</b>	<b>977</b>
Group Day Care Homes	<i>Gross</i>	8	15	21	24
	<b><i>Net</i></b>	<b>1</b>	<b>15</b>	<b>21</b>	<b>24</b>
Family Day Care Homes	<i>Gross</i>	69	124	177	198
	<b><i>Net</i></b>	<b>0</b>	<b>124</b>	<b>177</b>	<b>198</b>

<b>Table 7.27 - Liberty County Child Care Demand Arising from New Population - Facilities</b>					
		By Phase 1	By Phase 2	By Phase 3	By Phase 4
		2010-2015	2015-2020	2020-2025	2025-2030
Child Care Learning Centers		0	3.5	7.0	7.9
Group Day Care Homes		0.1	0.8	1.2	1.3
Family Day Care Homes		0	20.7	29.5	33.0

<b>Table 7.28 - Long County Child Care Demand Arising from New Population - Slots</b>					
		By Phase 1	By Phase 2	By Phase 3	By Phase 4
		2010-2015	2015-2020	2020-2025	2025-2030
Child Care Learning Centers	<i>Gross</i>	15	31	46	52
	<b><i>Net</i></b>	<b>5</b>	<b>31</b>	<b>46</b>	<b>52</b>
Group Day Care Homes	<i>Gross</i>	6	12	18	20
	<b><i>Net</i></b>	<b>6</b>	<b>12</b>	<b>18</b>	<b>20</b>
Family Day Care Homes	<i>Gross</i>	7	15	21	24
	<b><i>Net</i></b>	<b>0</b>	<b>13</b>	<b>21</b>	<b>24</b>

<b>Table 7.29 - Long County Child Care Demand Arising from New Population - Facilities</b>					
		By Phase 1	By Phase 2	By Phase 3	By Phase 4
		2010-2015	2015-2020	2020-2025	2025-2030
Child Care Learning Centers		0.1	0.7	1.0	1.2
Group Day Care Homes		0.3	0.7	1.0	1.1
Family Day Care Homes		0	2.2	3.5	4.0

Table 7.30 - Tattnall County Child Care Demand Arising from New Population - Slots					
		By Phase 1	By Phase 2	By Phase 3	By Phase 4
		2010-2015	2015-2020	2020-2025	2025-2030
Child Care Learning Centers	<i>Gross</i>	39	79	115	130
	<i>Net</i>	0	9	115	130
Group Day Care Homes	<i>Gross</i>	11	23	33	37
	<i>Net</i>	0	23	33	37
Family Day Care Homes	<i>Gross</i>	17	33	48	54
	<i>Net</i>	0	33	48	54

Table 7.31 - Tattnall County Child Care Demand Arising from New Population - Facilities					
		By Phase 1	By Phase 2	By Phase 3	By Phase 4
		2010-2015	2015-2020	2020-2025	2025-2030
Child Care Learning Centers		0	0.1	1.8	2.0
Group Day Care Homes		0	1.3	1.8	2.1
Family Day Care Homes		0	5.5	8.0	9.0

Table 7.32 - Fort Stewart Child Care Demand Arising from New Population - Slots			
		By Phase 1	By Phase 2
		2007-2010	2010-2013
Pre-K	<i>Gross</i>	15	31
	<i>Net</i>	5	31
Facilities for School-aged Children	<i>Gross</i>	6	12
	<i>Net</i>	6	12

\* Facilities for school-aged children are being constructed with future capacity of 144 slots; no growth indicated, however, for this phase

## Recommendations

### Introduction

There is an existing need to supplement the local communities' medical infrastructure with additional physicians, dentists, and primary care providers and increase the percentage of physicians accepting TRICARE. Increased awareness of social service programs and transportation to those programs are also necessary to improve access, particularly for residents in outlying parts of the study area.

## Short-Term

### **Immediate action needs to be devoted to addressing the service deficit of providers in the short-term and to retain providers that do locate to the area.**

The Liberty County Health Department has coordinated a local planning group comprised of community leaders that acts as an informal county-wide coordinating entity. The group can serve as a model for other counties to emulate and once in place, create a larger-regional entity that can address needs throughout the study area.

The local and federal medical providers need to create a regional strategy for recruiting physicians to the area that might include cooperation with larger provider networks in Chatham County for those specialties that cannot be supported by local needs alone.

There may be an opportunity for the Liberty Regional Medical Center to collaborate with or consolidate under the larger networks associated with the Savannah medical facilities. Local officials and the hospital authority should review this potential strategy as a means to increase the presence and access to primary care physician and other physician needs.

There are opportunities available under several federal provisions through the National Defense Authorization Act for FY 2010 (P.L. 111-84) that allow joint military and non-military medical providers to collaborate and provide services. LRMC and The Doctor's Hospital of Tattnall County should coordinate with WACH to determine if this type of arrangement can be implemented locally. There are specific examples of this successful coordination at Fort Drum, New York; Yuma Proving Grounds, Arizona, and on a provider-specific basis at Fort Stewart/Fraser Center.

### **Seek a TRICARE waiver to increase reimbursements**

The level of reimbursement is often a disincentive for providers to participate. However, TRICARE will permit waivers that increase reimbursement rates through either a "network" basis (if availability of an adequate number and mix of qualified health care providers in a network in a specific locality is not found) or "locality" basis (if access to specific health care services is severely impaired). The local authorities or entities (such as those proposed above) can submit requests for waivers

### **There is a need to increase awareness of the service providers located in the study area**

Access to service providers requires knowledge of the provider. The study area should coordinate an effort with local governments, service providers and Fort Stewart staff to assemble a single document that introduces the service amenities and local providers as a tool for newly assigned Fort Stewart troops/staff. The document would also be available for local realtors or other private entities that interact with new residents of the community.

### **There is a continued demand for Head Start programs in all Counties**

Local officials and service providers should coordinate with the State Program Managers at Georgia Head Start Association to explore the expansion of local facilities to meet demands.

The local and federal medical providers need to create a regional strategy for recruiting physicians to the area that might include cooperation with larger provider networks in Chatham County for those specialties that cannot be supported by local needs alone.

## Long-Term

### Define and implement service delivery strategies for increasing access from rural areas

The medical and social service providers in the area are located in the predominately urban areas of the county, creating both a distribution shortage and access challenge for those patrons located outside of the urban core. The communities need to concurrently look towards solutions that bring providers to the rural area, rural patrons to the urban location of the providers and combinations of both. Cooperative efforts with school districts, an agency that serves nearly all school-aged children in the communities may help to address these needs.

### Increase after school/summer programs

Common to multiple elements, there is need for an increased presence in after-school and youth activities. Activities need not be recreationally oriented, but could also focus on educational and social issues addressing teenage concerns.

### An aging population will need additional resources

While it is accurate to note that the general population cohorts define a young community, the historical trend is that those populations over age sixty-five (65) have increased in recent years and can be expected to continue increasing in future years. The community currently has limited resources to allow for aging in place or full life cycle care. The limits on aging in place and care opportunities create a displacement of those seniors that require convalescent or nursing care as a component of daily life.

### Add child care facilities with future growth

The series of tables below shows the demand for child care in the Fort Stewart region based on the above analysis. Recommendations on the provision of facilities is based on the net number of children requiring care and the average size of facilities in terms of capacity, as presented in Tables 7.21-32 above. More detailed discussions with service providers should take place to formulate delivery option strategies to help successfully satisfy child care demand.

	<b>Recommended Provision</b>	<b>Comments</b>
<b>Bryan</b>	<ul style="list-style-type: none"> <li>1 Pre-K program</li> </ul>	Demand for Child Care Learning Centers is absorbed by existing capacity, requiring no new facilities. Spare capacity in existing facilities satisfies minimal demand for Group and Family Day Care Home slots. An appropriate location for the Pre-K program should be identified.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>4 Pre-K programs</li> </ul>	Demand for Child Care Learning Centers is absorbed by existing capacity, requiring no new facilities. Spare capacity in existing facilities satisfies demand for Group and Family Day Care Home slots. An appropriate location for the Pre-K program should be identified. Appropriate locations for the Pre-K programs should be identified.
<b>Long</b>	<ul style="list-style-type: none"> <li>No new child care provision</li> </ul>	Minimal demand for Child Care Learning Centers is absorbed by existing facilities. Demand not adequate for new Pre-K programs or Group / Family Day Care Homes.

Table 7.33 - Child Care Delivery Recommendation, 2010-2015		
	Recommended Provision	Comments
Tattnall	<ul style="list-style-type: none"> <li>No new child care provision</li> </ul>	All demand for child care is absorbed by existing facilities. Demand not adequate for new Pre-K programs.
Fort Stewart	<ul style="list-style-type: none"> <li>No new child care provision</li> </ul>	As explained above, Fort Stewart's growth was calculated in phases different from the counties so that the spike in growth on base occurring from 2007 -2013 could be captured. Phase 1 (2007-2010) growth, therefore, can be seen as historic need, whereas Phase 2 (2010-2013) represents future need. Projecting forward, extra capacity will be needed for 38 Pre-K children in existing facilities, though the bulk of demand is absorbed by the planned construction of another Pre-K facility. No new facilities/ capacity is required for school-aged children. In fact, no significant growth is anticipated in the relevant age groups.

Table 7.34 - Child Care Delivery Recommendation, 2015-2020		
	Recommended Provision	Comments
Bryan	<ul style="list-style-type: none"> <li>4 Child Care Learning Centers</li> <li>1 Group Day Care Home</li> <li>2 Family Day Care Homes</li> </ul>	Remaining capacity at existing Child Care Learning Centers will be filled, yet further demand calls for 4 new Child Care Learning Centers. Demand not adequate for additional Pre-K program.
Liberty	<ul style="list-style-type: none"> <li>3 Child Care Learning Centers</li> <li>20 Family Day Care Homes</li> </ul>	Due to a high proportion usage of Child Care Learning Centers and Family Day Care Homes and increasing population, many new facilities will be required during this phase. No new Group Day Care Homes required. Added pressure will be placed on existing Pre-K programs; extra capacity should be sought at existing facilities.
Long	<ul style="list-style-type: none"> <li>2 Family Day Care Homes</li> </ul>	Additional demand will be placed on existing Child Care Learning Centers and Group Day Care Homes, but no new facilities are warranted. Demand not adequate for additional Pre-K program.
Tattnall	<ul style="list-style-type: none"> <li>1 Group Day Care Home</li> <li>5 Family Day Care Homes</li> </ul>	Minimal demand for a Child Care Learning Center. Demand not adequate for additional Pre-K program, though extra capacity should be sought at existing facilities.

Table 7.35 - Child Care Delivery Recommendation, 2020-2025		
	Recommended Provision	Comments
<b>Bryan</b>	<ul style="list-style-type: none"> <li>3 Child Care Learning Centers (7 total)</li> <li>1 Family Day Care Home (3 total)</li> </ul>	Extra demand from previous phase plus additional growth warrants the need for 3 new Child Care Centers. Added pressure will be placed on existing Pre-K programs; extra capacity should be sought at existing facilities.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>1 Pre-K program (5 total)</li> <li>4 Child Care Learning Centers (7 total)</li> <li>1 Group Day Care Home</li> <li>9 Family Day Care Homes (29 total)</li> </ul>	Demand from previous phase plus increased growth warrants the development of 4 new Child Care Learning Centers.
<b>Long</b>	<ul style="list-style-type: none"> <li>1 Child Care Learning Center</li> <li>1 Group Day Care Home</li> <li>1 Family Day Care Center (3 total)</li> </ul>	Adequate demand is realized for a new Child Care Learning Center and a new Group Day Care Home. Demand not adequate for additional Pre-K program.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>1 Child Care Learning Center</li> <li>3 Family Day Care Homes (8 total)</li> </ul>	One new Child Care Learning Center will be required, plus additional demand will need to be absorbed in existing facilities. Demand only slightly increases for Pre-K programs and Group Day Care Homes, still placing pressure on existing facilities.

(Long County) Demand is not strong enough to warrant new doctors, hospital beds, or dentists. Although population is increasing, the current rates of provision are low for Long County, yielding demand which may not accurately reflect true need.

Table 7.36 - Child Care Delivery Recommendation, 2025-2030		
	Recommended Provision	Comments
<b>Bryan</b>	<ul style="list-style-type: none"> <li>1 Pre-K program (2 total)</li> <li>1 Child Care Center (8 total)</li> <li>1 Family Day Care Home (4 total)</li> </ul>	One additional Child Care Center is warranted, and additional pressure will be placed on existing facilities as well. Pressure is added to existing Group and Family Day Care Home facilities, yet no new facility is warranted. Demand is sufficient for a new Pre-K program, plus the need to seek additional capacity at existing programs.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>1 Pre-K program (6 total)</li> <li>4 Family Day Care Homes (33 total)</li> </ul>	Additional capacity will be needed in existing Child Care Learning Centers, though no new additional facility is warranted. No additional Group Day Care Homes required. Demand is sufficient for a new Pre-K program, plus the need to seek additional capacity at existing programs.
<b>Long</b>	<ul style="list-style-type: none"> <li>1 Family Day Care Home (4 total)</li> </ul>	Demand not adequate for additional Pre-K program nor additional Child Care Learning Centers or Group Day Care Homes. One additional Family Day Care Home will be needed.

Table 7.36 - Child Care Delivery Recommendation, 2025-2030		
	Recommended Provision	Comments
Tattnall	<ul style="list-style-type: none"> <li>• 1 Child Care Learning Center (2 total)</li> <li>• 1 Group Day Care Home (2 total)</li> <li>• 1 Family Day Care Home (9 total)</li> </ul>	Demand increases to warrant the addition of new facilities. Growth is nearly adequate for a new Pre-K program yet still falls short; additional capacity needs to continue to be sought at existing facilities.

### Add health care professionals and facilities with future growth

The following tables describe a phased approach to delivering health care to accommodate population growth, taking into consideration the surplus/deficit of PCPs and nursing home beds which currently exists in the area. The recommendations therefore represent net demand for health care services and facilities.

Table 7.37 - Health Care Delivery Recommendation, 2010-2015		
	Recommended Provision	Comments
Bryan	<ul style="list-style-type: none"> <li>• 11 specialty physicians</li> <li>• 2 hospital beds</li> <li>• 1 dentist</li> <li>• 14 nursing home beds</li> </ul>	Currently Bryan County has a surplus of 4 PCPs; this surplus should be able to absorb new growth in the first phase. A current surplus of 3 nursing home beds is absorbed by new growth, yet demand will still require 14 additional nursing home beds.
Liberty	<ul style="list-style-type: none"> <li>• 12 specialty physicians</li> <li>• 15 PCPs</li> <li>• 5 hospital beds</li> <li>• 2 dentists</li> </ul>	A significant number of PCPs is needed to accommodate new growth and an existing deficit. An existing surplus of 26 nursing home beds absorbs the demand for 17 beds arising from growth, so no new provision is recommended.
Long	<ul style="list-style-type: none"> <li>• 4 PCPs</li> </ul>	Demand is not strong enough to warrant new doctors, hospital beds, or dentists. Although population is increasing, the current rates of provision are low for Long County, yielding demand which may not accurately reflect true need. However, 4 PCPs are recommended to make up for a current deficit. An existing surplus of 43 nursing home beds absorbs the demand for 10 beds arising from growth, so no new provision is recommended. Sensitivity testing using other standards of provision nearer State averages might help approximate real requirements to satisfy demand.

Table 7.37 - Health Care Delivery Recommendation, 2010-2015		
	Recommended Provision	Comments
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>• 3 specialty physicians</li> <li>• 1 PCP</li> <li>• 1 hospital bed</li> </ul>	As with Long County, Tattnall County's current provision rates are low in certain sectors, namely for PCPs and dentists. Because of these low rates of provision, adequate demand does not exist for new PCPs or dentists. An existing surplus of 62 nursing home beds absorbs the demand for 12 beds arising from growth, so no new provision is recommended. However 1 PCP is recommended to make up for a current deficit.
<b>Fort Stewart</b>	<ul style="list-style-type: none"> <li>• 16 specialty physicians</li> <li>• 6 PCPs</li> <li>• 15 hospital beds</li> <li>• 2 dentists</li> <li>• 20 nursing home beds</li> </ul>	The demand for doctors and hospital beds is for those located in Federal facilities. Dentist and nursing home bed need will need to be supplied in the community.

Table 7.38 - Health Care Delivery Recommendation, 2015-2020		
	Recommended Provision	Comments
<b>Bryan</b>	<ul style="list-style-type: none"> <li>• 13 specialty physicians (24 total)</li> <li>• 5 PCPs</li> <li>• 4 hospital beds (6 total)</li> <li>• 2 dentists (3 total)</li> <li>• 19 nursing home beds (33 total)</li> </ul>	With surplus PCP capacity absorbed in the first phase of growth, new demand generates the need for 5 additional PCPs.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>• 9 specialty physicians (21 total)</li> <li>• 4 PCPs (19 total)</li> <li>• 3 hospital beds (8 total)</li> <li>• 1 dentist (3 total)</li> <li>• 11 nursing home beds</li> </ul>	Demand for 15 nursing home beds is partially absorbed in surplus capacity so that only 11 nursing home beds are required.
<b>Long</b>	<ul style="list-style-type: none"> <li>• 1 hospital bed</li> <li>• 1 dentist</li> </ul>	Current standards of provision indicate that no specialty physicians or PCPs are needed at this time. Demand for 11 nursing home beds is absorbed in surplus capacity so that no new provision is required.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>• 4 specialty physicians (7 total)</li> <li>• 1 PCP</li> <li>• 1 hospital bed (2 total)</li> </ul>	No dentists are required under current standards of provision. Demand for 23 nursing home beds is absorbed in surplus capacity so that no new provision is required.

Table 7.39 - Health Care Delivery Recommendation, 2020-2025		
	Recommended Provision	Comments
Bryan	<ul style="list-style-type: none"> <li>• 14 specialty physicians (38 total)</li> <li>• 6 PCPs (11 total)</li> <li>• 4 hospital beds (10 total)</li> <li>• 2 dentists (5 total)</li> <li>• 22 nursing home beds (55 total)</li> </ul>	With surplus PCP capacity absorbed in the first phase of growth, new demand generates the need for 5 additional PCPs.
Liberty	<ul style="list-style-type: none"> <li>• 10 specialty physicians</li> <li>• 4 PCPs (23 total)</li> <li>• 4 hospital beds (12 total)</li> <li>• 2 dentists (5 total)</li> <li>• 16 nursing home beds (27 total)</li> </ul>	Demand for 15 nursing home beds is partially absorbed in surplus capacity so that only 11 nursing home beds are required.
Long	<ul style="list-style-type: none"> <li>• 1 hospital bed (2 total)</li> </ul>	Current standards of provision indicate that no specialty physicians or PCPs are needed at this time. Demand for 11 nursing home beds is absorbed in surplus capacity so that no new provision is required.
Tattnall	<ul style="list-style-type: none"> <li>• 3 specialty physicians (10 total)</li> <li>• 1 PCP (3 total)</li> <li>• 1 hospital bed (3 total)</li> <li>• 9 nursing home beds</li> </ul>	No dentists are required under current standards of provision. Demand for 23 nursing home beds is absorbed in surplus capacity so that no new provision is required.

Table 7.40 - Health Care Delivery Recommendation, 2025-2030		
	Recommended Provision	Comments
Bryan	<ul style="list-style-type: none"> <li>• 14 specialty physicians (52 total)</li> <li>• 6 PCPs (17 total)</li> <li>• 3 hospital bed (13 total)</li> <li>• 2 dentists (7 total)</li> <li>• 22 nursing home beds (77 total)</li> </ul>	-
Liberty	<ul style="list-style-type: none"> <li>• 9 specialty physicians (40 total)</li> <li>• 5 PCPs (28 total)</li> <li>• 4 hospital beds (12 total)</li> <li>• 2 dentists (7 total)</li> <li>• 17 nursing home beds (44 total)</li> </ul>	-

<b>Table 7.40 - Health Care Delivery Recommendation, 2025-2030</b>		
	<b>Recommended Provision</b>	<b>Comments</b>
<b>Long</b>	<ul style="list-style-type: none"> <li>• 1 specialty physician</li> <li>• 1 PCP (5 total)</li> <li>• 1 dentist (2 total)</li> <li>• 3 nursing home beds</li> </ul>	Only 1 specialty physician is required over the entire study period. Current standards of provision alone would have yielded the need for only 1 PCP over the 20-year study time period. However, due to an existing noted shortage, the total number of PCPs required increased to 5. Demand for hospital beds is not adequate to warrant any additional provision. Demand for 12 nursing home beds is partially absorbed in surplus capacity so that only 3 nursing home beds are required by the end of the study period.
<b>Tattnell</b>	<ul style="list-style-type: none"> <li>• 4 specialty physicians (14 total)</li> <li>• 1 hospital bed (4 total)</li> <li>• 1 dentist</li> <li>• 26 nursing home beds (35 total)</li> </ul>	No further PCP provision is generated based on current standards, yielding the total need for only 3 PCPs over the study period. Only 1 dentist total is required by 2030.



## Section Summary

Public safety involves the prevention of and protection from events that could endanger the well-being of the general public, such as crimes or disasters (natural or human-caused). Crises are not constrained by jurisdictional boundaries, requiring agencies in the region to maintain close links so that stresses to one agency do not negatively affect nearby communities. The individual counties and municipalities have planning mechanisms in place to address individual needs and coordinate, as needed, on joint efforts.

Overall, the public safety network in the study area is operating well. The majority of key issues and recommendations focus on maintaining the high level of service by addressing funding challenges and increasing delivery efficiency and ensuring sufficient staffing, and an adequate inventory of facilities and equipment as the population increases.

## Existing Conditions

### Emergency Management and Communication

Generally, the emergency management agencies in the study area reported that service is adequate and request for support for their mission is well received by policy makers and elected officials. During the course of the analysis, three areas of concern were noted:

- Traffic congestion continues to increase in urban centers and on main arterials during peak hours, having the potential to create significant conflicts if a response is required.
- Emergency communication systems are an ever-evolving technology with implementation costs that require reinvestment over periods of time. Ensuring that each agency and county maintains compliance with the Federal Communication Commission requirements, as well as supplying each member of all response teams (dispatchers, officers, firefighters, and paramedics), can create sizeable expenditures and investments. Directors require diligent research to ensure maximum effectiveness with minimal expenditures.
- In the event of an evacuation, maintaining clear and adequate evacuation route corridors is critical. Most directors cited experience in the 1990's, particularly the evacuation associated with Hurricane Floyd, and the lessons learned for implementation in future events.

### Fire

The analysis revealed that the primary issues related to fire service and protection are as follows:

- Fire service and protection is correlated to response time. As development continues to occur outside core urban limits, service ranges of responders are stretched, potentially lengthening response times.
- Several of the chiefs interviewed noted concerns relating to funding for stations, personnel, and training during a period of declining revenues. Recent changes have eliminated



districts not owned by governments from cost recovery of certain activities; agencies continue to experience increases in the gap between revenues and expenditures.

- In addition to creating response time concerns, development in rural portions of the county and outside of the urban core have lacked a dedicated water source for fighting fires, requiring some responders to bring the water necessary to respond to fires.
- The use and reliance of volunteer forces to respond is common throughout the study area. However, as populations increase in size and density, many of the areas will be compelled to provide manned service areas to ensure adequate protection and coverage is available.
- Insurance Services Office Inc. (ISO) Ratings in portions of the study area are high (an ISO rating of 9 or 10) and create increases in insurance costs to homeowners.

## Law Enforcement

Public safety is often one of the most expensive services for a municipal government to provide and several of the chiefs interviewed expressed concern about maintaining existing budgets and personnel in a declining revenue environment.

- Public safety is often one of the most expensive services for a municipal government to provide and several of the chiefs interviewed expressed concern about maintaining existing budgets and personnel in a declining revenue environment. Additionally, as communities continue to grow, the number of service providers must increase. The ability to increase staff to maintain adequate staffing levels for future growth is equally challenging.
- Several chiefs expressed a concern regarding the lack of resources to complete/provide crime prevention programs.
- Several chiefs in smaller jurisdictions cited the decline or lack of organized juvenile after school activities as a source of increases in disruptive behaviors.
- There is a need for remote/satellite law enforcement offices in the study area counties to ensure adequate response times and create more efficiency. The lack of decentralization in some agencies will be exacerbated as development and density outside the core areas continue to increase.
- Some agencies are experiencing increased costs related to housing prisoners in other jurisdictions, particularly if the facilities are located outside the county.
- Local police forces perform many of the same functions as the County Sheriff. For those communities with smaller forces and overlapping functions, cost savings might be realized through the consolidation of departments as a joint agency.
- County Sheriff staffing levels are well below national trends and service ratios. Sheriff's Departments have the larger geographical area to cover. The service areas are disconnected and have a widely dispersed population density. Growth outside core areas into rural portions of the study area counties creates a greater service burden on smaller units.

## Growth and Assessment Analysis Findings

### Growth Analysis

To help meet future demand, requirements for police officers, full-time firefighters, and fire stations due to anticipated growth in the region were calculated. Information pertaining to standards for emergency services provision (which is critical to quantifying future need) is difficult to obtain, as each locality approaches fire, police, and ambulance services differently. Standards for provision were calculated, however, using information supplied by service providers as part of this study's Existing Conditions report. Based on this data, current standards were derived by comparing existing supply (of, say, fire stations) to the population served (say, of Richmond Hill) to produce a service ratio. Because data was incomplete for a number of services, only future demand for police officers, fire stations, and full-time (i.e. not volunteer) firefighters was able to be calculated. (A more complete summary of the modeling process used to generate the figures below can be found in Section 7.)

For this analysis, it was assumed that current levels of service will be maintained into the future. However, should municipalities develop new standards, perhaps for increased levels of service, the SIF model can easily be adapted to yield alternative demand scenarios. While alternative standards supplied by the Bureau of Justice Statistics (BJS) office could be used to generate police officer demand, local levels of provision were modeled to provide a picture of future requirements at today's levels of service. For Liberty, Long, and Tattnall Counties, whose current levels of provision are lower than the BJS ratios, these standards might serve as a benchmark for future levels of service.

The demand for emergency services personnel and facilities is shown in the following tables. More detailed explanation of calculations, including standards for emergency services provision, will be included in a Technical Appendix.

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Police Officers	11.3	23.8	38.1	52.2
Fire Stations	2.0	4.2	6.7	9.2
Full-time Firefighters	0.7	1.4	2.3	3.1

NB: Bryan County demand is exclusive of Richmond Hill demand.

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Police Officers	12.3	20.7	30.1	39.2
Fire Stations	2.5	4.2	6.1	8.0
Full-time Firefighters	4.1	6.9	10.0	13.1

NB: Bryan County demand is exclusive of Richmond Hill demand.

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Police Officers	1.4	2.8	4.4	6.0
Fire Stations	0.6	1.2	1.9	2.6
Full-time Firefighters	0.9	1.8	2.8	3.9

	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Police Officers	3.3	6.8	10.4	14.3
Fire Stations	0.4	0.9	1.4	1.9
Full-time Firefighters	0.8	1.7	2.6	3.5

<b>Table 8.5 - Hinesville Emergency Services Demand Arising from New Population</b>				
	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Police Officers	6.3	10.5	15.5	20.3
Fire Stations	0.2	0.3	0.4	0.5
Full-time Firefighters	3.3	5.5	8.2	10.7

<b>Table 8.6 - Richmond Hill Emergency Services Demand Arising from New Population</b>				
	By Phase 1	By Phase 2	By Phase 3	By Phase 4
	2010-2015	2015-2020	2020-2025	2025-2030
Police Officers	2.4	5.7	10.2	15.0
Fire Stations	0.2	0.6	1.0	1.5
Full-time Firefighters	0.6	1.4	2.5	3.7

Delivery options for personnel and facilities are described in Tables 8.7 through 8.10 at the end of this section.

# Recommendations

## Introduction

Overall, the public safety network in the study is operating well. The majority of key issues and recommendations focus on maintaining the high level of service by addressing funding challenges and increasing delivery efficiency and ensuring sufficient staffing, and an adequate inventory of facilities and equipment as the population increases.

## Short-Term

### Formally Adopt Mutual Aid Agreements

The agencies within the study area identified past experience in joint operations and assistance on an as-needed basis as examples of cooperative efforts among neighboring agencies. Changes in political leadership, population growth, or another extraneous variable may affect future cooperative efforts that have not been formally identified. Smaller communities and responders rely upon these mutual aid circumstances to ensure service is delivered to their constituents. Agencies need to coordinate with the applicable city or county leadership team to formally adopt mutual aid agreements to solidify the response.

### Coordination with Emergency Evacuation Routes

Each county needs to ensure that coordination with emergency management officials is maintained related to developments or events that affect defined evacuation routes. As long-term growth, pre-planned construction, or other foreseeable events occur, county leaders and community planners need to define a protocol for coordinating with emergency management officials and proactively formulating contingency plans.



### Coordinate with Police and Fire Chiefs

Each county and city needs to ensure continued coordination between development tracking and public safety staffing levels is integrated, maintaining the agency's ability to proactively plan for increasing in staffing commensurate to population growth.

### Financial and Capital Facility Planning

Most police agencies are currently understaffed (in comparison to National Service ratio guidelines) to serve the existing populations. The population growth expected in the short-term comes at a time when local, regional, state (and national) funding challenges exist resulting from the economic downturn. The addition of public safety positions that require 24-hour, 7 days of week staffing creates additional burdens on governments not associated with other staffing increases. Maintaining adequate response vehicles and facilities is a capital intensive program, requiring significant advanced planning. Leaders need to establish plans to ensure the ability to provide increases in staff, equipment, and facilities is defined and in place prior to the population growth occurring. The Liberty County "Regional Fire Master Plan" is an existing example of the baseline reporting needed to support this effort.

### Crime Prevention

The economic downturn has reduced resources to operate community programs and preventive education. One mechanism that is available to communities that requires no cost beyond existing staffing is the implementation of "Crime Prevention Through Environmental Design" (CPTED) strategies. CPTED is a multi-disciplinary approach involving planners/engineers, law enforcement officials and developers/builders to identify and avoid creating conditions (such as areas of poor lighting or obstructed views) that are conducive to criminal behavior. Influencing the design or amending the development regulations to avoid the creation of such conditions will contribute to an increase in public safety. Local planning leaders need to engage public safety officials to implement CPTED strategies for new developments and identify existing problem areas that could be resolved through future work programs.

## Long-Term

### Reduce Reliance on Volunteer Fire Services

While some of the cities and portions of counties within the study area are served by professional fire fighters, the majority of the area is served by volunteer forces. As populations and development

increase and require more responders, continued reliance on a volunteer force will result in response delays. County leadership needs to begin a strategic planning effort to look at transitioning to a permanent response team in key areas of their jurisdictions.

### **Reduce ISO Ratings**

There are portions of the study area, as a result of a lack of a dedicated water supply and response times of personnel, that experience ISO ratings of 9 or 10, creating a financial burden for taxpayers through higher insurance premiums. Concurrent with plans to reduce reliance on the volunteer force, the leadership should also make decisions to locate response teams in areas that have the ability to improve ISO ratings for communities. This effort should also be coordinated with the regional water planning efforts related to the distribution of public water resources.

### **Recruit More After School/Summer Programs**

Numerous police chiefs noted a correlation between disruptive activities by school-aged offenders and periods of the year when school is not in session and suggested that the lack of organized activities focused on this cohort may be a contributing factor. While noted in previous sections, it is appropriate to define the need for an increased presence in after school and youth activities to help address this element. Activities need not be recreationally oriented but could also focus on educational and social issues addressing teen concerns.

### **Regional Prisoner Housing**

Housing locally incarcerated prisoners is a labor and resource intensive activity. The community leaders should consider a regional approach to housing offenders to reduce expenditures/investments on services that can be managed to a greater efficiency for all agencies. The approach is appropriate not only for communities within a county but among the counties within the study area.

### **Liberty and Tattnall Sheriff Satellite Offices**

The Liberty and Tattnall County Sheriff s have a significantly large jurisdictional area, interspersed with incorporated cities, yet maintain the major administrative and functional spaces within locations not geographically central to their service areas. There is a need for satellite stations, perhaps through agreement with city police or fire departments, which would allow for the deputies to establish bases of operation closer to the outer reaches of their service areas. Provisions would allow for greater response time and increased coverage (in lieu of period of transition back to the main facilities).

### **Consolidate Long County/Ludowici Public Safety Agencies**

The potential exists to reduce expenses and increase efficiency by consolidating the operation of the Sheriff's office and Police Department into a single agency. The operational needs of both agencies result in redundant services, the volume and need for which could be consolidated into a single operation without impacts to either agency. While the city police department exceeds the service ratio recommendations (officers/population), the Sheriff's office currently provides the lowest ratio of officers per population in the study area. Consolidation would increase the presence of law enforcement in the community and provide increased levels of service, response, and coverage.

### **Increase Staffing and Facilities Commensurate with Expected Population Increases**

Tables 8.7 through 8.10 show the level of emergency services likely to be required in the region by 2030 based on assumptions about current levels of service. It is important to note that this is one option for delivery as the population grows. Opportunities for service consolidation, joint facility planning, and community-based crime prevention programs as described above can also address increasing demand for public safety. More detailed discussions with service providers will need to be carried out in the future to understand service areas and populations served. Delivery strategies related to siting of future

One mechanism that is available to communities that requires no cost beyond existing staffing is the implementation of "Crime Prevention Through Environmental Design" (CPTED) strategies. CPTED is a multi-disciplinary approach involving planners/engineers, law enforcement officials and developers/builders to identify and avoid creating conditions (such as areas of poor lighting or obstructed views) that are conducive to criminal behavior.

facilities, equipment purchasing, and identifying funding streams for hiring, construction and operation also need to be developed in consultation with service providers.

<b>Table 8.7 - Emergency Services Delivery Recommendation, 2010-2015</b>		
	<b>Recommended Provision</b>	<b>Comments</b>
<b>Bryan</b>	<ul style="list-style-type: none"> <li>• 11 police officers</li> <li>• 2 fire stations</li> </ul>	There is not enough demand for even 1 full-time firefighter, even though there is demand for 2 fire stations. The current service ratio for full-time firefighters is low for Bryan County. This could indicate that 1) the firefighting force is comprised mostly of volunteer firefighters or 2) the population is currently under-served.
<b>Liberty</b>	<ul style="list-style-type: none"> <li>• 12 police officers</li> <li>• 2 fire stations</li> <li>• 4 full-time firefighters</li> </ul>	-
<b>Long</b>	<ul style="list-style-type: none"> <li>• 1 police officer</li> </ul>	Demand for a new fire station is not adequate, yet pressure will be put on existing facilities due to population growth. A new full-time firefighter is not yet warranted but additional volunteer support may be.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>• 3 police officers</li> </ul>	Demand for a new fire station is low. A new full-time firefighter is not yet warranted but additional volunteer support may be.
<b>Hinesville</b>	<ul style="list-style-type: none"> <li>• 6 police officers</li> <li>• 3 full-time firefighters</li> </ul>	Only 2 fire stations currently serve Hinesville's population, yielding a low service ratio and no demand for a new station, yet 3 new firefighters are required.
<b>Richmond Hill</b>	<ul style="list-style-type: none"> <li>• 2 police officers</li> </ul>	Demand is low for a new fire station but relatively higher for a new full-time firefighter. Volunteers may be needed to help relieve pressure.

NB: Demand arising from Hinesville excluded from Liberty County total; demand from Richmond Hill excluded from Bryan County total

<b>Table 8.8 - Emergency Services Delivery Recommendation, 2015-2020</b>		
	<b>Recommended Provision</b>	<b>Comments</b>
<b>Bryan</b>	<ul style="list-style-type: none"> <li>• 12 police officers (23 total)</li> <li>• 2 fire stations (4 total)</li> <li>• 1 full-time firefighter</li> </ul>	-
<b>Liberty</b>	<ul style="list-style-type: none"> <li>• 8 police officers (20 total)</li> <li>• 2 fire stations (4 total)</li> <li>• 2 full-time firefighters (6 total)</li> </ul>	Demand nearly warrants the addition of another full-time firefighter. More volunteer firefighters might need to be identified to relieve pressure.
<b>Long</b>	<ul style="list-style-type: none"> <li>• 1 police officer (2 total)</li> <li>• 1 fire station</li> <li>• 1 full-time firefighter</li> </ul>	Demand nearly warrants the addition of another full-time firefighter. More volunteer firefighters might need to be identified to relieve pressure.

<b>Table 8.8 - Emergency Services Delivery Recommendation, 2015-2020</b>		
	<b>Recommended Provision</b>	<b>Comments</b>
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>• 3 police officers (6 total)</li> <li>• 1 full-time firefighter</li> </ul>	A new fire station is nearly warranted. Capacity may start to be reached at existing facilities.
<b>Hinesville</b>	<ul style="list-style-type: none"> <li>• 4 police officers (10 total)</li> <li>• 2 full-time firefighters (5 total)</li> </ul>	Demand remains low for a new fire station.
<b>Richmond Hill</b>	<ul style="list-style-type: none"> <li>• 3 police officers (5 total)</li> <li>• 1 full-time firefighter</li> </ul>	-
NB: Demand arising from Hinesville excluded from Liberty County total; demand from Richmond Hill excluded from Bryan County total		

<b>Table 8.9 - Emergency Services Delivery Recommendation, 2020-2025</b>		
	<b>Recommended Provision</b>	<b>Comments</b>
<b>Bryan</b>	<ul style="list-style-type: none"> <li>• 15 police officers (38 total)</li> <li>• 2 fire stations (6 total)</li> <li>• 1 full-time firefighter (2 total)</li> </ul>	-
<b>Liberty</b>	<ul style="list-style-type: none"> <li>• 10 police officers (30 total)</li> <li>• 2 fire stations (6 total)</li> <li>• 4 full-time firefighters (10 total)</li> </ul>	Pressure should be relieved on full-time firefighters as adequate provision should be reached in this phase. Recommend hiring early and throughout the phase.
<b>Long</b>	<ul style="list-style-type: none"> <li>• 2 police officers (4 total)</li> <li>• 1 full-time firefighter (2 total)</li> </ul>	Recommend hiring full-time firefighter early in phase. Demand nearly warrants the addition of another full-time firefighter by the end of the period. More volunteer firefighters might need to be identified to relieve pressure. Capacity may be begin to be reached at existing fire stations as population nearly demands the addition of a new facility.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>• 4 police officers (10 total)</li> <li>• 1 fire station</li> <li>• 1 full-time firefighter (2 total)</li> </ul>	-
<b>Hinesville</b>	<ul style="list-style-type: none"> <li>• 5 police officers (15 total)</li> <li>• 3 full-time firefighters (8 total)</li> </ul>	Demand remains low for a new fire station.
<b>Richmond Hill</b>	<ul style="list-style-type: none"> <li>• 5 police officers (10 total)</li> <li>• 1 fire station</li> <li>• 1 full-time firefighter</li> </ul>	-
NB: Demand arising from Hinesville excluded from Liberty County total; demand from Richmond Hill excluded from Bryan County total		



**Table 8.10 - Emergency Services Delivery Recommendation, 2025-2030**

	Recommended Provision	Comments
<b>Bryan</b>	<ul style="list-style-type: none"> <li>• 14 police officers (52 total)</li> <li>• 3 fire stations (9 total)</li> <li>• 1 full-time firefighter (3 total)</li> </ul>	-
<b>Liberty</b>	<ul style="list-style-type: none"> <li>• 9 police officers (39 total)</li> <li>• 2 fire stations (8 total)</li> <li>• 3 full-time firefighters (13 total)</li> </ul>	-
<b>Long</b>	<ul style="list-style-type: none"> <li>• 2 police officers (6 total)</li> <li>• 1 fire station (2 total)</li> <li>• 1 full-time firefighter (3 total)</li> </ul>	Phasing of new fire station and firefighter recommended early in phase to relieve pressure on existing facilities. By the end of the phase, demand for another new firefighter increases.
<b>Tattnall</b>	<ul style="list-style-type: none"> <li>• 4 police officers (14 total)</li> <li>• 1 full-time firefighter</li> </ul>	A new fire station is nearly warranted by the end of the phase. Facilities may start to reach capacity by 2030.
<b>Hinesville</b>	<ul style="list-style-type: none"> <li>• 5 police officers (20 total)</li> <li>• 2 full-time firefighters (10 total)</li> </ul>	Based on current levels of provision, no new fire stations are warranted by 2030, yet the firefighting force will add 10 new full-time members. Expansion of a facility – depending on where firefighters are added – may be called for.
<b>Richmond Hill</b>	<ul style="list-style-type: none"> <li>• 5 police officers (15 total)</li> <li>• 1 full-time firefighter (3 total)</li> </ul>	-

NB: Demand arising from Hinesville excluded from Liberty County total; demand from Richmond Hill excluded from Bryan County total



## Section Summary

The purpose of this section is to summarize existing transportation analyses for the Fort Stewart region and to identify mobility issues, challenges, and opportunities in support of detailed transportation recommendations. Analysis for the four-county region includes the results of the Three County Transportation Assessment conducted by RS&H in support of the Fort Stewart Regional Growth Plan (included as a separate technical appendix), as well as findings from a review of Tattnall County plans and interviews with county stakeholders.

This section summarizes the transportation planning component for the three-county subarea of Liberty, Long, and Bryan Counties, included in the RS&H report, and identifies additional measures to address transportation needs Tattnall County.

## Growth and Assessment Analysis Findings

### Growth Analysis for Bryan, Liberty, and Long Counties

Future year traffic volumes were developed with the HAMPO/GMP regional travel demand model. The previous HAMPO model area was expanded to include Bryan County and parts of Effingham, Bulloch, and Chatham Counties in order to meet the Growth Management Partnership analysis needs. Appendix A Travel Demand Model Documentation contains details regarding the coding and validation of the model.

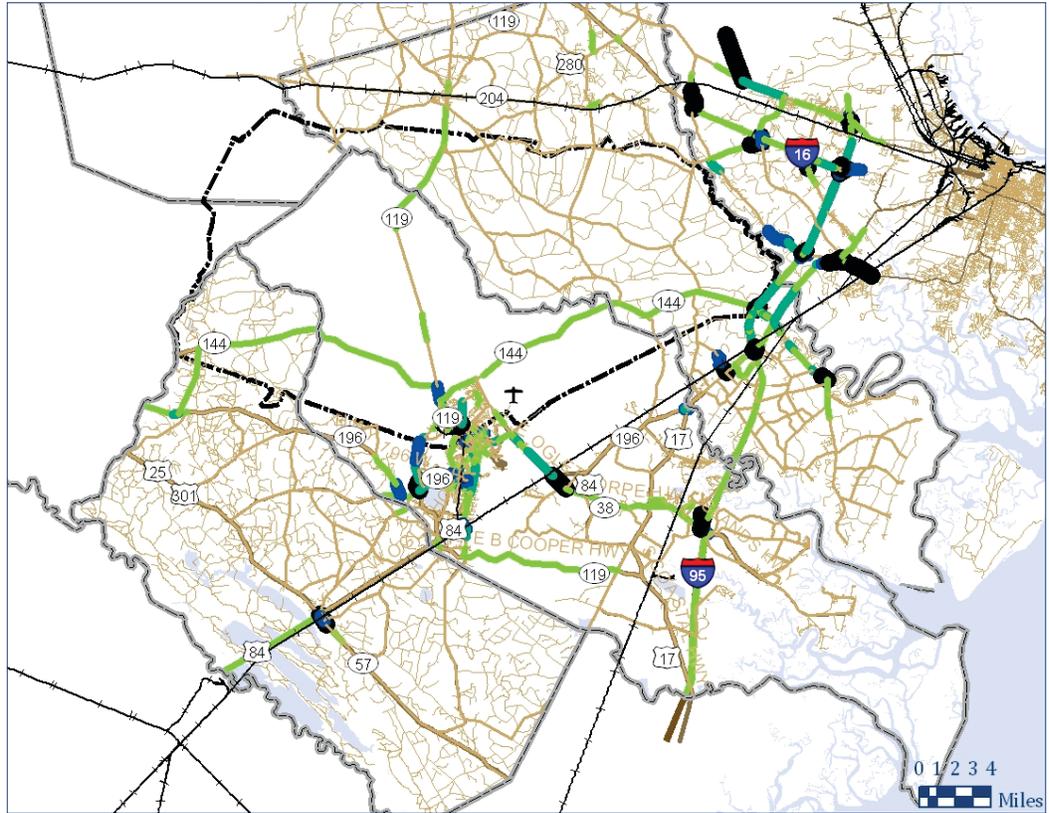
The State Control Scenario assumes that population projections developed by the state Office of Planning and Budget will apply to the three counties in the study area. These projections are used by the Coastal Water Planning Region in their efforts. The state control growth assumes that Fort Stewart military and civilian employment will follow projections received from the Office of Resource Management and reviewed by the Garrison Commander.

In order to project the future performance of the transportation system, the study team modeled an existing and committed transportation network with future population and employment for three future time points. The existing and committed transportation network includes three improvements to the existing transportation network that are far enough along in the planning process that it is reasonable to assume the projects will be completed in the near future. These three projects are the widening of SR 196 (under construction at this time), widening of Frank Cochran Drive from EG miles Parkway to Wilson Avenue, and widening of Airport Road from US 84 to EG Miles Parkway. Both the Frank Cochran Drive improvement and the Airport Road improvement will increase mobility for traffic approaching Fort Stewart. The figures below show the projected congestion on the road network for the three analysis years, 2015, 2020, and 2030.

Figure 9.1 and Figure 9.2 show that congestion will increase in the area as population and employment increase into the future. The travel demand model projects that roadways

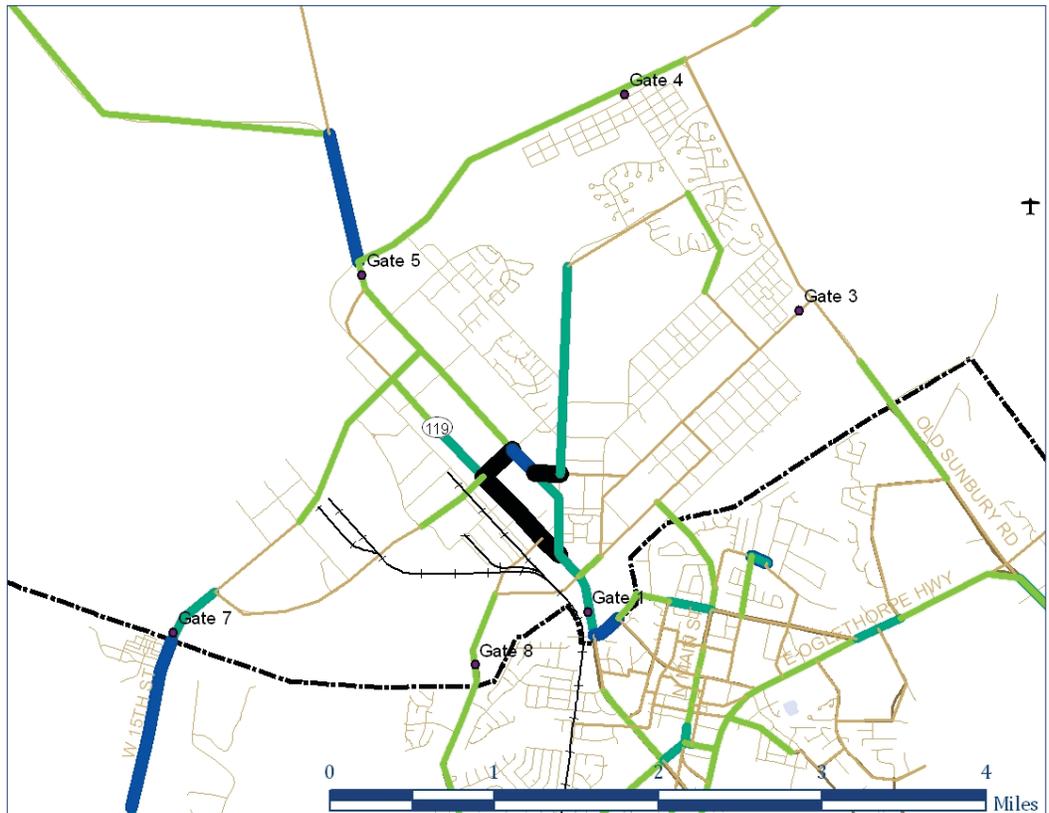


- 2015 Traffic**
- Free flow
  - May experience delay
  - Near capacity
  - At capacity
  - Congested
  - Railroad
  - Liberty County Airport
  - Fort Stewart
  - Ocean, lakes, rivers, streams
  - County Boundary



**Figure 9.1** Traffic in 2015

- 2015 Traffic**
- Free flow
  - May experience delay
  - Near capacity
  - At capacity
  - Congested
  - Railroad
  - Liberty County Airport
  - Fort Stewart
  - Ocean, lakes, rivers, streams
  - County Boundary



**Figure 9.2** Traffic Level of Service at ACPs

at Gates 1, 5 and 7 will operate at capacity in 2015. Based on feedback from the Master Planning Division, 15th Street on post will be widened by 2015 and although the construction timeline of the Fort Stewart bypass is not known, this new roadway will certainly impact the projected congestion levels. If the commercial gate is moved from Gate 7 to a new gate north of Gate 5, this would also greatly impact traffic patterns in the area.

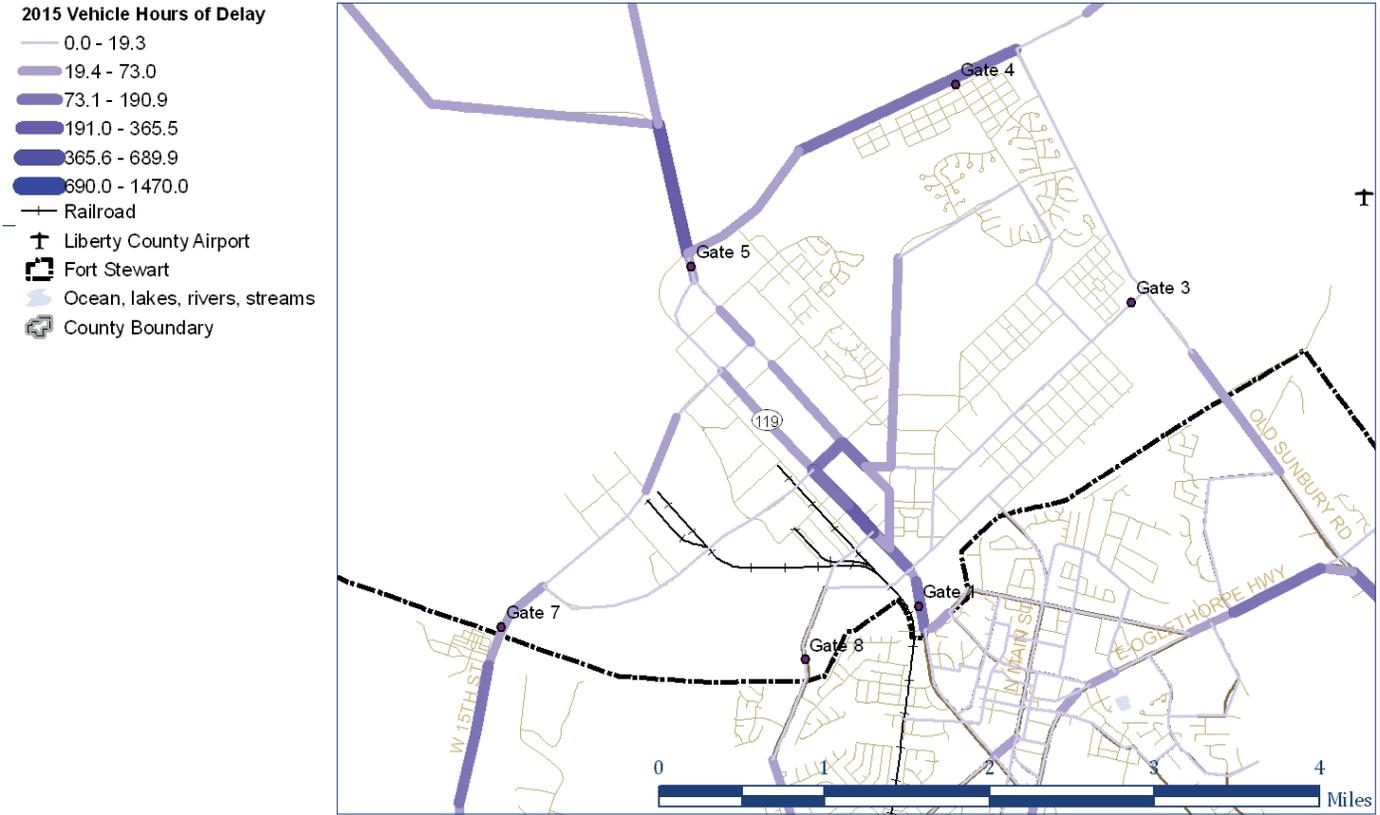
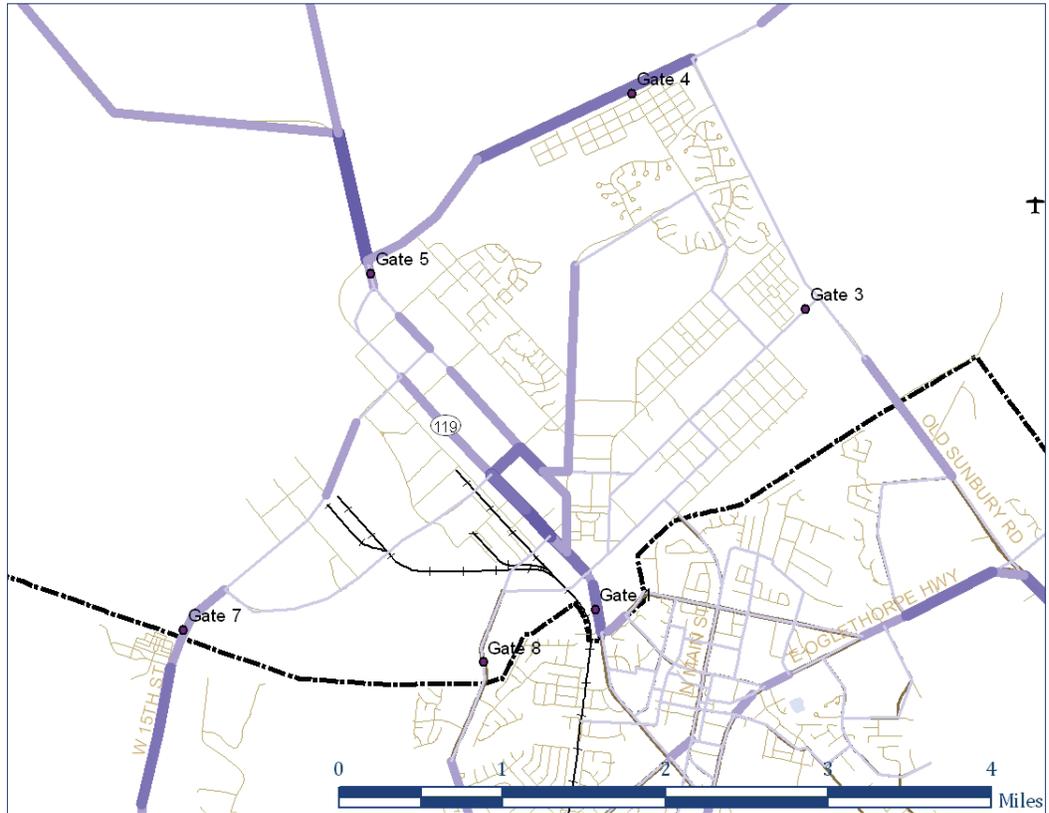


Figure 9.3 2015 Delay

Figure 9.3 shows that vehicle hours of delay will increase in the near term at SR 144 and SR 119 approaching Gate 5. This is critical because the crash history on SR 144 is already relatively high. Additionally, traffic approaching Gates 1 and 7 as well as Old Sunbury Road approaching Gate 3 will experience increasing levels of delay.

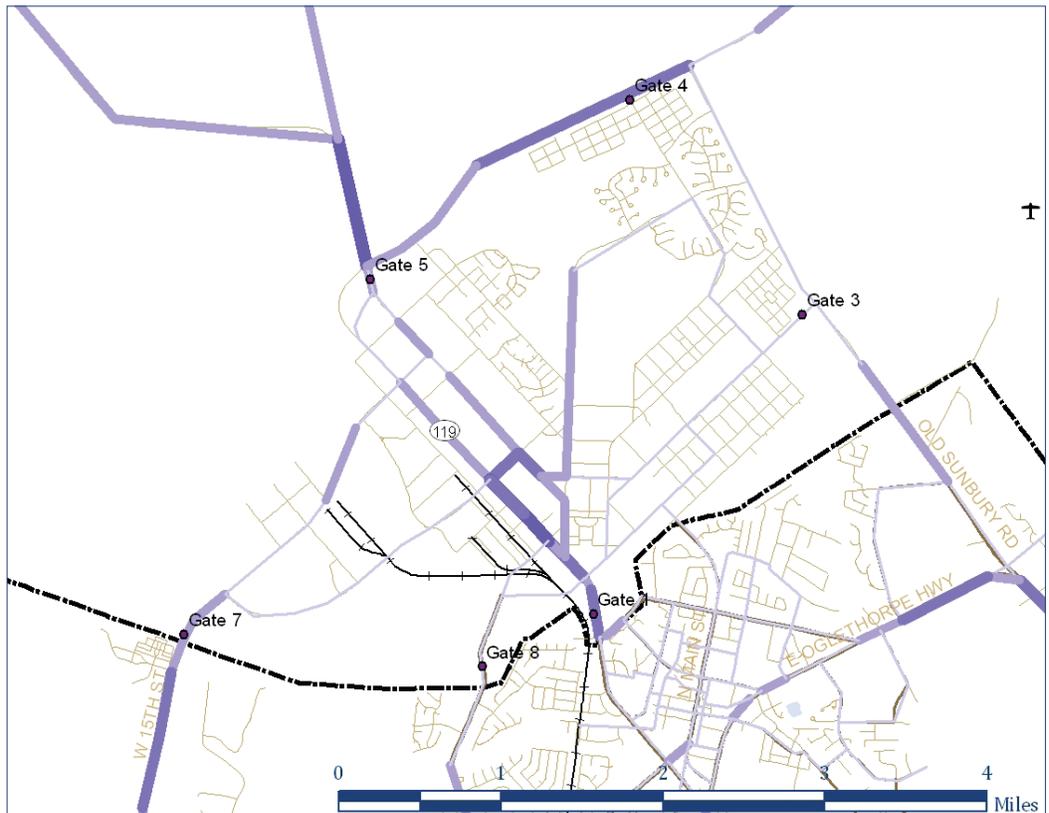
Figure 9.4 and Figure 9.5 show the roadway level of service projected for 2020. 15th Street approaching Gate 7 will be a critical levels of congestion by 2020, in particular as the Independence community develops just outside of the installation. There is also a proposed middle school on the installation which would cause increasing traffic on 15th Street.

- 2015 Vehicle Hours of Delay**
- 0.0 - 19.3
  - 19.4 - 73.0
  - 73.1 - 190.9
  - 191.0 - 365.5
  - 365.6 - 689.9
  - 690.0 - 1470.0
  - Railroad
  - ✈ Liberty County Airport
  - 🏰 Fort Stewart
  - 🌊 Ocean, lakes, rivers, streams
  - 🗺 County Boundary



**Figure 9.4** Traffic in 2020

- 2015 Vehicle Hours of Delay**
- 0.0 - 19.3
  - 19.4 - 73.0
  - 73.1 - 190.9
  - 191.0 - 365.5
  - 365.6 - 689.9
  - 690.0 - 1470.0
  - Railroad
  - ✈ Liberty County Airport
  - 🏰 Fort Stewart
  - 🌊 Ocean, lakes, rivers, streams
  - 🗺 County Boundary



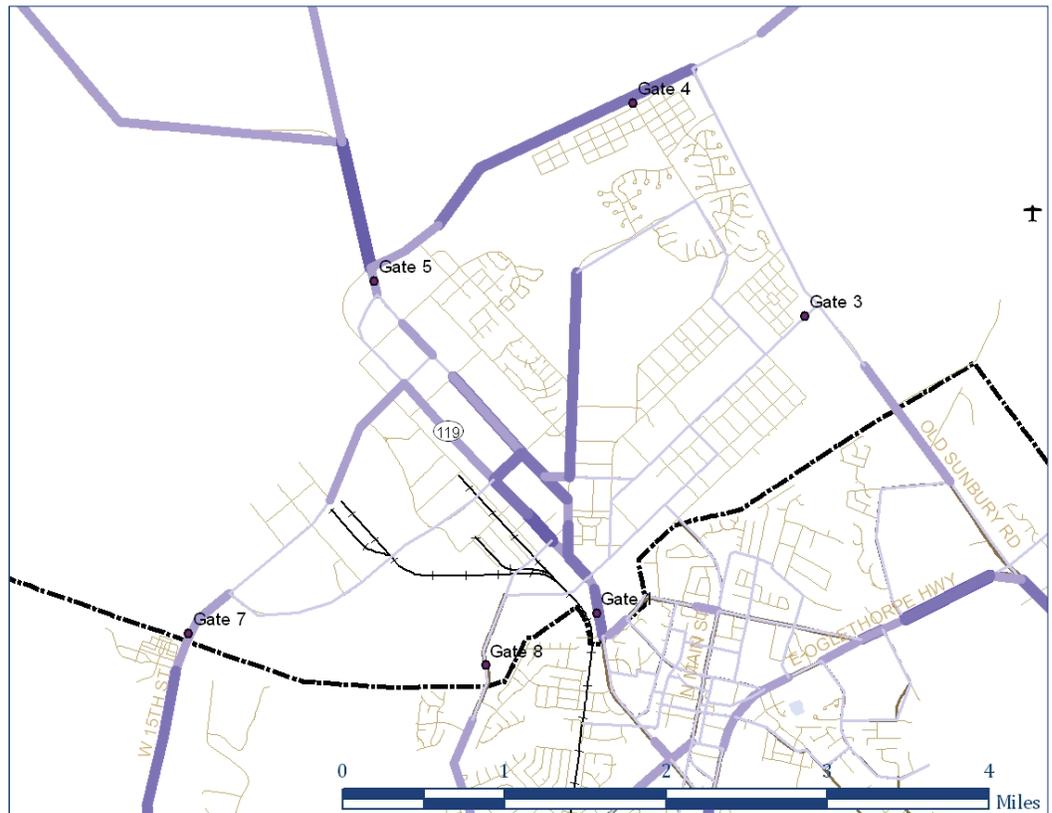
**Figure 9.5** Traffic Level of Service at ACPs



Figure 9.6 shows the vehicle hours of delay projected for 2020. While delay increases in the study area, the congested road segments generally remain the same.

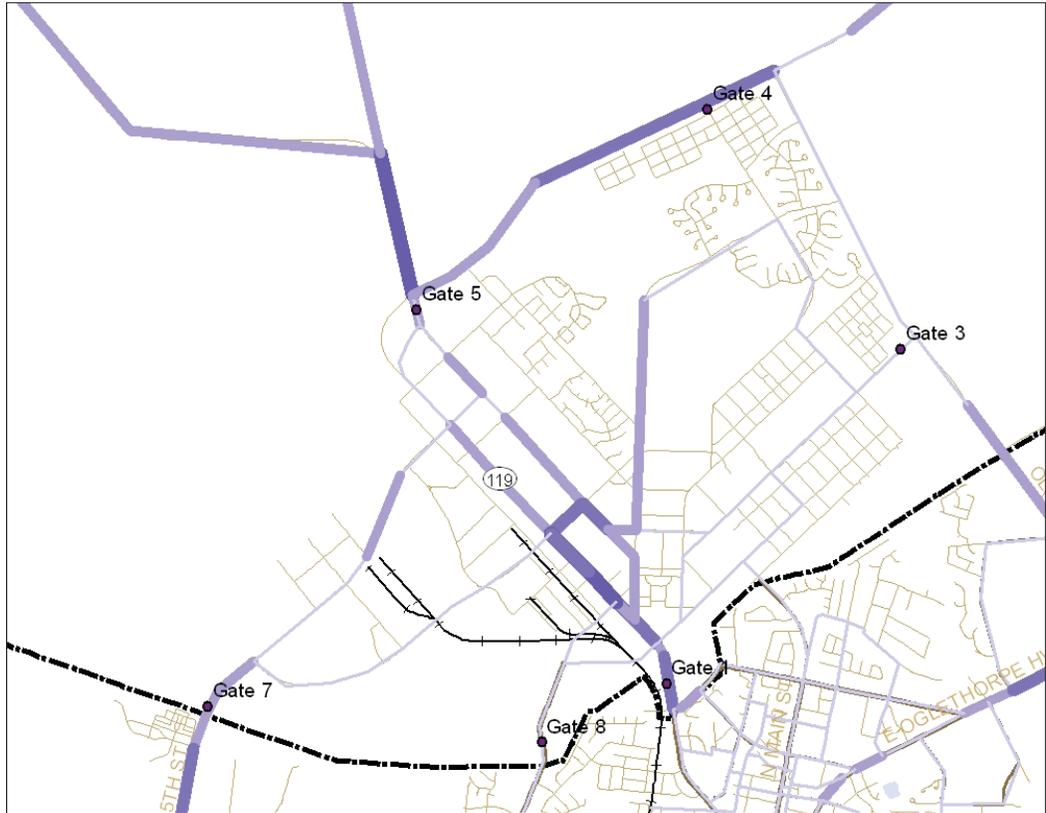
**2020 Vehicle Hours of Delay**

- 0.0 - 19.3
- 19.4 - 73.0
- 73.1 - 190.9
- 191.0 - 365.5
- 365.6 - 689.9
- 690.0 - 1471.0
- Railroad
- ✈ Liberty County Airport
- 🏰 Fort Stewart
- 🌊 Ocean, lakes, rivers, streams
- 🗺 County Boundary



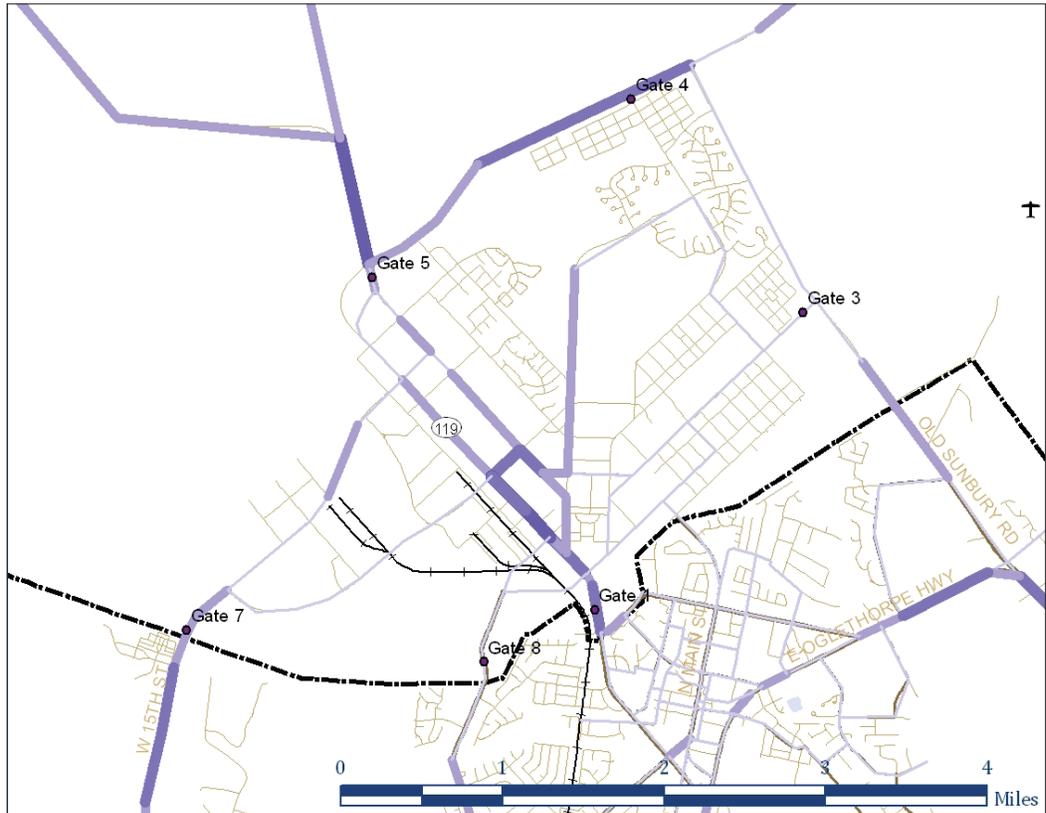
**Figure 9.6** 2020 Delay

- 0.0 - 19.3
- 19.4 - 73.0
- 73.1 - 190.9
- 191.0 - 365.5
- 365.6 - 689.9
- 690.0 - 1470.0
- ✈ Liberty County Airport
- 🏰 Fort Stewart
- 🌊 Ocean, lakes, rivers, streams
- 🗺 County Boundary

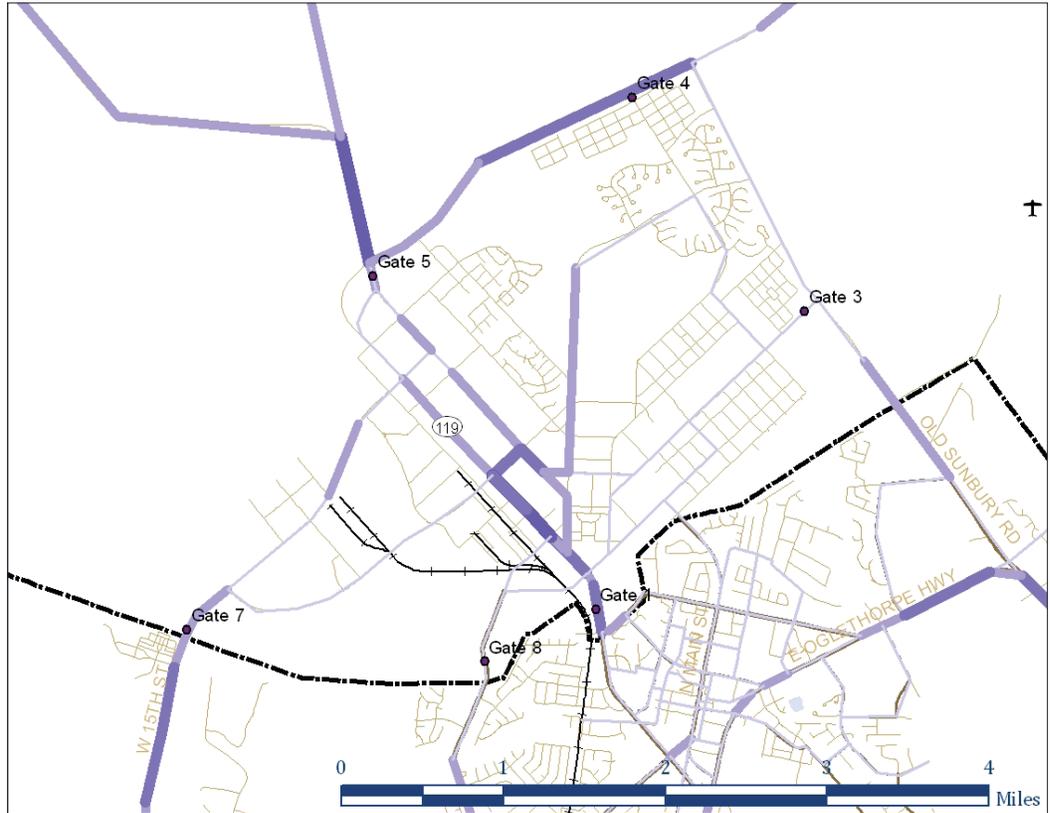
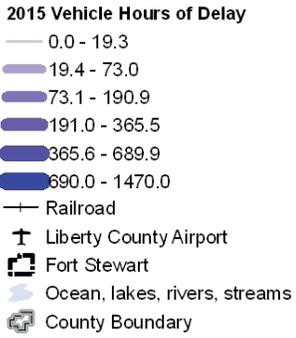


**Figure 9.8** Traffic Level of Service at ACPs

- 0.0 - 19.3
- 19.4 - 73.0
- 73.1 - 190.9
- 191.0 - 365.5
- 365.6 - 689.9
- 690.0 - 1470.0
- ✈ Liberty County Airport
- 🏰 Fort Stewart
- 🌊 Ocean, lakes, rivers, streams
- 🗺 County Boundary



**Figure 9.7** Traffic in 2030



**Figure 9.9** 2030 Delay

Figures 9.7, 9.8 and 9.9 show the projected roadway level of service in 2030. Congestion levels are expected to increase approaching all gates, with 15th Street and SR 119, at critical levels. Because General Screven Way will be at capacity at this time, long range capacity improvements in the Gate 1 area may be necessary. However, demand management strategies as well as transit should be promoted before capacity improvements are considered.



## Issues

The key issues within the study area are listed below:

### Regional

- Lack of transportation alternatives
- Lack of local road connectivity
- Key arterials and designated truck routes are routed through the installation
- Coordination of transportation investments with desired development patterns and the need to preserve resources

### Bryan County

- Congestion at I-95 and SR 144 interchange
- Increasing traffic on Harris Trail Road, I-95, and Belfast River Road

### Liberty County

- Queuing at Gate 1 during elevated security levels impacts adjacent signalized intersection

- Increasing traffic levels due to developments both on and off post (IBCT and Independence community)
- Truck traffic on US 84, Main Street, 15th Street, and SR 119/Airport Rd/EB Cooper Hwy
- Startup of Liberty Transit

### Long County

- Through traffic and local traffic concentrated on US 84 and SR 57
- Unpaved roads

### Tattnall County

- Need to continue to improve highways and other transportation facilities
- Increase the amount of roads that are paved and/or resurfaced annually
- Need to expand and maintain network of sidewalks in municipal areas
- Desire to develop and widen the two major transportation corridors of U.S. 301 and U.S. 280
- Implement the grant to upgrade facilities/services at the local airport
- Desire to improve bicycle and pedestrian facilities

## Recommendations

### Introduction

The following recommendations are based on the results of the Three County Transportation Assessment conducted by RS&H, as well as findings from a review of Tattnall County plans and interviews with county stakeholders.

### Short-Term Recommendations

#### Regional/HAMPO, Hinesville, and Fort Stewart:

- Conduct an origin-destination survey for Fort Stewart employees including information about time of travel and alternatives to making the trip
- Conduct an origin-destination survey of commercial vehicle traffic entering Fort Stewart
- Conduct a survey of Liberty Transit riders and Fort Stewart residents and employees regarding quality of service of the transit system (after one year of service)
- Continue Liberty Transit startup
- Pursue the Army Mass Transportation Benefit Program to provide transit passes to Federal employees

#### Regional/HAMPO, Liberty County and cities

- Study issues along eastern boundary including impact of new IBCT, potential designation of new commercial vehicle gate, proposed Flemington Loop, US 84 curve area, and Old Sunbury Road; Coordination with GDOT will be essential.
- Design and implement traffic operations strategies to address US 84 curve; pursue safety grant for improvements
- Coordinate 15th Street widening concept and Central Connector concept with Fort Stewart commercial vehicle gate designation, proposed defense roadway improvements, and Liberty County



Board of Education plans for a new Middle School

- Add signage for non-permitted traffic entering Gate 1
- Promote Liberty Transit and Army Mass Transportation Benefit Program
- Pursue demand management strategies with Fort Stewart to reduce the peak hour traffic

### **HAMPO/GDOT/Liberty/Bryan County**

- Study SR 144 going east into Bryan County from Fort Stewart to determine need and purpose for either road widening or passing lanes
- Assess operational improvements at SR 144 and I-95 interchange; coordinate impacts of commercial gate designation with Fort Stewart due to potential increases in truck traffic at this interchange in the future
- Assess maintenance issues at US 17 and I-95 interchange; resurface ramps as appropriate for commercial vehicle traffic
- Ensure road widening project concepts include access management strategies

### **Tattnall County**

- Conduct a county-wide transportation infrastructure assessment to inventory the existing network of roadways, multi-modal facilities, aviation facilities, and pedestrian amenities in support of future transportation planning

- Increase the amount of roads that are paved and/or resurfaced annually with an emphasis on incorporated areas and more quickly growing areas adjacent to the municipal boundaries of Glennville and Reidsville
- Implement the grant to upgrade facilities/services at the local airport

## Long-Term

### HAMPO/GDOT

- Widen Airport Road , 15th Street, Frank Cochran Drive, and Military Road 47 to four lanes
- Construct Central Connector from General Screven Way to 15th Street and possibly onto SR 196 if demand justifies it
- Construct alternate route for commercial vehicles if commercial gate location is changed

### Hinesville/Liberty County

- Continue to provide transit service to Fort Stewart; coordinate Army Mass Transportation Benefit Program with Fort Stewart point of contact to provide free service to Federal employees

### Cities, Liberty, Long, and Bryan Counties

- Increase local road network connectivity to relieve arterials, provide more efficient travel, provide local facilities for shorter auto trips as well as walking and biking, and promote healthy development patterns
- Coordinate information sharing with Fort Stewart and troops

### Tattnall County

- Continue to advocate and plan for the widening of U.S. 301 and U.S. 280 as a means of alleviating vehicular congestion on I-16 and supporting increased economic development and tourism in the county; special care should be taken either through traffic calming/design features or loop roads to ensure that increased highway capacity and resulting traffic does not disrupt the traditional character of the downtowns of Glennville and Reidsville



# Sec. 10 Implementation

## Section Summary

The ability to prepare for growth associated with Fort Stewart/Hunter Army Airfield necessarily entails both individual community actions, as well as regional and public-private partnerships. This Implementation Plan organizes the recommendations of the previous ten resource area sections into a series of specific action steps and identifies associated timeframe, implementing partners, and possible funding sources.

The tables that follow are intended to guide community and service providers actions in the years ahead and to support investment and policy decisions that continue to promote quality of life for military members and the regions' residents.

