Final
Environmental Assessment for the Residential Communities Initiative at Fort Benning, Georgia

prepared for

Commander, Fort Benning

by

US Army Corps of Engineers Mobile District

with Technical Assistance from

Tetra Tech, Inc.
Fairfax, Virginia 22030
June 2005

Army Residential Communities Initiative
Draft Finding of No Significant Impact
Fort Benning, Georgia

Pursuant to the Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500–1508) for implementing the procedural provisions of the National Environmental Policy Act (42 U.S.C. § 4321 et seq.) and Army Regulation 200-2 (32 CFR Part 651, *Environmental Analysis of Army Actions*), Fort Benning, Georgia, conducted an Environmental Assessment (EA) of the potential environmental and socioeconomic effects associated with implementing a Community Development and Management Plan (CDMP) under the Army's Residential Communities Initiative (RCI).

Purpose and Need

The purpose of the proposed action is to improve military family housing and ancillary supporting facilities at Fort Benning. The proposed action is needed to provide affordable, quality housing and ancillary supporting facilities to Soldiers and their families through a combination of replacement of and improvement to existing family housing units to ensure that they meet current Army standards.

Proposed Action

Consistent with authorities contained in the 1996 Military Housing Privatization Initiative, Fort Benning proposes to transfer responsibility for providing housing and ancillary supporting facilities to Fort Benning Family Communities LLC. In accordance with the CDMP, Fort Benning proposes to convey the 3,945 existing family housing units (3,905 Main Post units and 40 Porter Village units) and ancillary supporting facilities to Fort Benning Family Communities LLC and to provide Fort Benning Family Communities LLC with a 50-year lease of the underlying land. Fort Benning also proposes to lease an additional 536 acres to Fort Benning Family Communities LLC for the siting of new housing.

Originally, Fort Benning Family Communities LLC proposed to increase the on-post housing inventory at Fort Benning by 161 units (124 Main Post units and 37 Porter Village units) to provide an end state inventory of 4,200 units. Fort Benning Family Communities LLC would renovate 533 units, demolish 3,506 units, and construct 3,667 new units on Fort Benning. However, as a result of planning refinements, Fort Benning Family Communities LLC has proposed to renovate 754 units (482 non-historic and 272 historic), demolish 2,930 units, and construct 3,185 units for an end state inventory of 4,200 housing units (which includes 261 "no-work" units, 221 historic and 40 non-historic).

Fort Benning Family Communities LLC would revise the mix of family housing to better meet current requirements of Soldiers and their families; renovate and improve historic units; provide landscaping improvements; and build four village centers, two community centers, one recreation center, and six outdoor pools. Implementation would also require that Fort Benning Family Communities LLC operate and maintain all family housing for a period of 50 years, as well as construct, operate, and maintain ancillary supporting facilities.

Alternatives Considered

The alternatives to the proposed action that were considered in the EA included a partial privatization alternative, a private sector reliance alternative, and leasing alternatives. Those alternatives were considered unreasonable or unfeasible and therefore were not further evaluated. As prescribed by CEQ regulations, the EA evaluated the no action alternative, which would consist of the Army's continuing to provide for the family housing needs of its personnel through use of traditional military construction and maintenance funding obtained through the congressional authorization and appropriations process.

Factors Considered in Determining That No Environmental Impact Statement Is Required

The EA, which is attached and incorporated by reference into this Finding of No Significant Impact, examined the

potential effects of the proposed action and the no action alternative on 12 resource areas and areas of environmental and socioeconomic concern: land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic substances.

Implementation of the proposed action at Fort Benning would result in a combination of minor to localized moderate short-term and long-term adverse and beneficial effects. There would be short-term minor adverse effects on land use, aesthetics and visual resources, air quality, noise, soils, fauna, sensitive species, protection of children, roadways and traffic, and potable water supply, primarily associated with construction and renovation activities. Long-term beneficial effects would be realized in the areas of land use, aesthetics and visual resources, noise, socioeconomics, housing, quality of life, transportation, schools, recreation, and utilities.

In addition, there could be long-term minor adverse cumulative effects on air quality, ecological resources (wildlife and its habitat), water resources, and transportation. Minor adverse cumulative effects on air quality would result from minor, but increased, short-term and long-term loading of pollutants to the air shed. Minor effects on biological resources would result from the transformation and removal of vegetation and habitat for the construction of housing, roads, and other planned facilities. Minor adverse effects on water resources would result from increased pollutant loadings and flows to streams as additional construction projects replace permeable ground surfaces (native vegetation, wildlife habitat, and landscaped areas) with impervious surfaces such as parking lots, roads, roofs, and sidewalks. Finally, minor adverse effects on transportation would result from the continuing development of highways, which ultimately leads to further human uses of resources.

Best management practices (BMPs) and mitigation measures to be implemented at Fort Benning pertain to landscaping materials and design, air quality, noise controls, energy conservation, preservation of vegetation, protection of migratory bird species, soils protection, protection of children, traffic control, and control of hazardous and toxic substances during construction and demolition. BMPs and mitigation measures included in the CDMP are enforceable as essential elements of the contract defining the parties' obligations for carrying out Fort Benning's RCI project.

Conclusion

Based on the EA, it has been determined that implementation of the proposed action will have no significant direct, indirect, or cumulative adverse impacts on the quality of the natural or human environment. Because no significant environmental impacts will result from implementation of the proposed action, an Environmental Impact Statement is not required and will not be prepared.

Public Comment

The EA and draft Finding of No Significant Impact are available for review and comment for 30 days, beginning June 8, 2005. Copies of the EA and draft Finding of No Significant Impact can be obtained by contacting Mr. Ron Smith, RCI Program Manager, at the following address: DPW, Office of Director, Bldg 280, Transportation Street, Fort Benning, GA 31905, or by e-mail at smithj@benning.army.mil. Copies have also been provided to the following local libraries: W.C. Bradley Memorial Library (Columbus, Georgia), South Lumpkin Library (Lumpkin, Georgia), and Fort Benning Main Post Library (Fort Benning, Georgia). Alternatively, the EA and Draft Finding of No Significant Impact can be viewed on Fort Benning's Web site at www.benning.army.mil/EMD/Legal&PublicNotices.htm.

Comments on the EA and draft Finding of No Significant Impact should be submitted to the Fort Benning RCI Office at the physical address or e-mail address given above by no later than July 8, 2005.

Date:_____

_____

Ricardo Riera
Colonel, U.S. Army
Installation Commander

ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Environmental Assessment (EA) addresses the proposed action to implement the Residential Communities Initiative (RCI) at Fort Benning, Georgia. As required by Army Regulation 200-2 and the National Environmental Policy Act, the potential environmental and socioeconomic impacts are analyzed.

An ***EXECUTIVE SUMMARY*** briefly describes the proposed action, environmental and socioeconomic consequences, and mitigation measures.

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SECTION 3.0: ***ALTERNATIVES*** examines alternatives to implementing the proposed action.

SECTION 4.0: ***AFFECTED ENVIRONMENT AND CONSEQUENCES*** describes the existing environmental and socioeconomic setting at Fort Benning and identifies potential effects of implementing the proposed action.

SECTION 5.0: ***FINDINGS AND CONCLUSIONS*** summarizes the environmental and socioeconomic effects of implementing the proposed action.

SECTION 6.0: ***REFERENCES*** provides bibliographical information for cited sources.

SECTION 7.0: ***LIST OF PREPARERS*** identifies the persons who prepared the document.

SECTION 8.0: ***PERSONS AND AGENCIES CONSULTED*** provides a list of persons and agencies consulted during preparation of this EA.

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APPENDICES

- ***A*** Community Development and Management Plan (CDMP) Development Brief
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ENVIRONMENTAL ASSESSMENT
IMPLEMENTATION OF THE ARMY RESIDENTIAL COMMUNITIES INITIATIVE
AT FORT BENNING, GEORGIA

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June 2005

ENVIRONMENTAL ASSESSMENT

LEAD AGENCY: Fort Benning, Georgia

TITLE OF PROPOSED ACTION: Implementation of the Army Residential Communities Initiative at Fort Benning, Georgia

AFFECTED JURISDICTION: Chattahoochee, Lumpkin, Marion, and Muscogee counties, Georgia, and Russell County, Alabama

PREPARED BY: Peter F. Taylor, Jr., Colonel, U.S. Army Corps of Engineers, Mobile District, Commanding

APPROVED BY: Ricardo Riera, Colonel, Garrison Commander, Fort Benning, Georgia

ABSTRACT: This Environmental Assessment (EA) considers the proposed implementation of the Army's Residential Communities Initiative at Fort Benning (Main Post and Porter Village), Georgia. The EA identifies, evaluates, and documents the effects of obtaining private sector funding for construction, maintenance, management, renovation, replacement, rehabilitation, and development of family housing and ancillary supporting facilities. A no action alternative is also evaluated. Implementation of the proposed action is not expected to result in significant environmental impacts. Therefore, preparation of an Environmental Impact Statement is not required and a Finding of No Significant Impact (FNSI) will be published in accordance with 32 CFR Part 651, *Environmental Effects of Army Actions*, and the National Environmental Policy Act.

REVIEW COMMENT DEADLINE: The EA and FNSI are available for review and comment for 30 days, beginning June 8, 2005, through July 8, 2005. Copies of the EA and Draft FNSI can be obtained by contacting Ron Smith, RCI Program Manager, at the following address: DPW, Ofc of Director, Bldg 280, Transportation Street, Fort Benning, GA 31905, or by e-mail at smithj@benning.army.mil. Copies have also been provided to the following local libraries: W.C. Bradley Memorial Library (Columbus, Georgia), South Lumpkin Library (Lumpkin, Georgia), and Fort Benning Main Post Library (Fort Benning, Georgia). Alternatively, the EA and Draft FNSI can be viewed on Fort Benning's Web site at www.benning.army.mil/EMD/ Legal&PublicNotices.htm. Comments on the EA and Draft FNSI should be submitted to the Fort Benning RCI Office at the physical address or e-mail address given above by no later than July 8, 2005.

Errata Sheet

Final Environmental Assessment
for the
Residential Communities Initiative at Fort Benning, Georgia

The analysis of environmental and socioeconomic impacts in the Fort Benning RCI EA was based on the original development plans, which included 4,039 original housing units and the renovation of 533 units, demolition of 3,506 units, and construction of 3,667 units for an end state inventory of 4,200 units. Just before the release of the Final EA, Fort Benning Family Communities LLC refined its development plans.

The primary impetus for the change in planning is that 94 housing units in the Boutin Heights and Davis Hills housing areas are within a Noise Zone III contour caused by training on nearby ranges. Long-term housing is incompatible with the levels of noise that occur in Zone III per Army Regulation 200-1, *Environmental Protection and Enhancement*, dated 21 February 1997 and Department of the Army Pamphlet 200-1, *Environmental Protection and Enhancement*, dated 17 January 2002. Reference Section 4.4, Noise, of the *Final Environmental Assessment for Residential Communities Initiative at Fort Benning, Georgia* dated May 2005 for more information regarding potential noise impacts. The noise incompatibility resulted in the removal of the 94 housing units located in a noise Zone III contour from the RCI footprint. As a result, there are now 3,945 existing housing units, of which 754 will be renovated (482 non-historic and 272 historic) and 2,930 will be demolished; 3,185 new units will be constructed for an end state inventory of 4,200 housing units (which includes 261 "no-work" units, 221 historic and 40 non-historic).

The changes proposed by the Fort Benning Family Communities LLC are minor, do not change the end state housing inventory, and are not "substantial." The changes do not result in significant new circumstances or information relevant to environmental concerns for the proposed action or its impacts. The original analysis in the EA was based on a large number of existing units, and therefore the analytical results are conservative when compared to the revised development plans. No significant impacts are expected as a result of the changes because the original analysis did not indicate that significant impacts were expected to occur. Accordingly, there is no need to revise the analysis in the EA.

EXECUTIVE SUMMARY

INTRODUCTION

The Army operates and maintains approximately 90,000 family housing units at its installations throughout the United States. More than 75 percent of the units do not meet current Army housing standards. Despite this, at most installations demand for adequate housing on-post exceeds supply. The lack of adequate on-post housing forces many Soldiers and their families to live in housing in need of repair or renovation or to live off-post, where the cost and quality of housing vary considerably. Often, the costs to Soldiers and their families to live off-post are 15 to 20 percent greater than the costs to live on-post. The Army estimates that as much as $6 billion would be needed to bring its housing up to current standards and to address the deficit of housing.

In recognition of these problems, Congress enacted Section 2801 of the 1996 Defense Authorization Act (Public Law 104-106, codified at Title 10 of the *United States Code* [U.S.C.] Sections 2871–85). Also known as the Military Housing Privatization Initiative (MHPI), this provision of law creates alternative authorities for improvement and construction of military family housing. The legislative intent of Congress in enacting these additional authorities is to enable the military to obtain private sector funding to satisfy family housing requirements. By leveraging scarce public funding, the Army can obtain private sector funds for construction, maintenance, management, renovation, replacement, rehabilitation, and development of Army family housing and ancillary supporting facilities.[1] The Army's implementation of the MHPI authorities is known as the Army Residential Communities Initiative (RCI).

BACKGROUND

Fort Benning was established in 1918 near Columbus, Georgia, as the home of the Infantry School of Arms. Encompassing 181,275 acres of river valley terraces and rolling terrain, the post is now the home of the 11th Infantry Regiment and the 29th Infantry Regiment, units whose major training brigades provide instruction for numerous infantry courses for the U.S. Army. The post is also home to the 3rd Brigade and the 3rd Infantry Division and is the Army's 75th Ranger Regiment headquarters. Camp Merrill, a sub-installation in Dahlonega, Georgia, 180 miles northeast of Fort Benning, is a training site for the 5th Ranger Training Battalion. Housing for troops stationed at Camp Merrill is available at Porter Village in Dahlonega. Fort Benning has 3,999 family housing units on-post and 40 family housing units at Porter Village.

The age and condition of Fort Benning's family housing units vary. The Installation has 493 family housing units that are listed on the National Register of Historic Places or have been determined eligible for listing. The date range of these historic structures is from the 19th century through 1954, although most of the historic buildings on the Main Post were constructed between 1918 and 1935. Another 1,906 family housing units, categorized as Capehart and Wherry-era housing, were constructed between 1949 and 1962. Except for the 40 units at Porter Village, Fort Benning has had no family housing units built since 1976. The sizes, configurations, safety, and condition of many housing units are substantially below the Army's standards of acceptability. The older units lack amenities such as family rooms, laundry/utility space, adequate exterior storage, and auxiliary eating areas such as eat-in kitchens or breakfast nooks. Funding shortfalls over the years have limited renovations, resulting in increased maintenance requirements. Without adequate funding to address the renovation backlog, housing units could become

[1] According to 10 U.S.C. 2871, the term *ancillary supporting facilities* means "facilities related to military housing units, including child care centers, day care centers, tot lots, community centers, housing offices, dining facilities, unit offices, and other similar facilities for the support of military housing."

unsuitable for occupancy.

PROPOSED ACTION AND ALTERNATIVES

Consistent with the MHPI authorities, Fort Benning proposes to transfer responsibility for providing housing and ancillary supporting facilities to Fort Benning Family Communities LLC, a limited liability company (LLC) composed of the Army and Clark Pinnacle Realty. Fort Benning would convey all on-post military housing units and selected ancillary supporting facilities and grant a 50-year ground lease for the land on which the housing and facilities are located to Fort Benning Family Communities LLC. Fort Benning would also lease additional areas for Fort Benning Family Communities LLC's use to construct new housing and to operate ancillary supporting facilities.

The purpose of the proposed action is to improve Army family housing and ancillary supporting facilities at Fort Benning. The proposed action is needed to provide affordable, quality housing and ancillary supporting facilities to Soldiers and their families through a combination of replacement of and improvement to existing family housing units to ensure that they meet current Army standards. Fort Benning expects Fort Benning Family Communities LLC to achieve the following goals:

- Ensure that eligible Soldiers and their families have access to quality, attractive, and affordable housing by upgrading inadequate existing family housing and by building new housing to address housing conditions at Fort Benning.
- Improve the appearance and functions of the residential community, while meeting environmental stewardship responsibilities.
- Provide ancillary supporting facilities that enhance Fort Benning's residential community.
- Maintain positive relations with the communities that surround Fort Benning.
- Provide for the effective management and operation of existing, renovated, and new housing units and ancillary supporting facilities on a long-term basis.

Development of the Community Development and Management Plan (CDMP) was an iterative process during which the plan was fine-tuned to meet Fort Benning's needs for attaining affordable, quality housing and other facilities, as well as minimizing or avoiding any potential environmental impacts. In accordance with the CDMP, Fort Benning proposes the following:

- To convey the 4,039 existing family housing units (3,999 Main Post and 40 Porter Village units) and ancillary supporting facilities to Fort Benning Family Communities LLC and to provide Fort Benning Family Communities LLC with a 50-year lease of the underlying land.
- To lease an additional 586 acres to Fort Benning Family Communities LLC for the siting of new housing.

Fort Benning Family Communities LLC would renovate 464 units (192 non-historic units and 272 historic units), demolish 3,220 units, and construct 3,438 new units (Fort Benning Family Communities LLC, CDMP Brief, 2005; Smith, personal communication, 2004). In addition to the housing units, Fort Benning Family Communities LLC would build four village centers, one neighborhood center, one welcome center, two pool cabanas and six outdoor pools (including one pool and cabana at Porter Village), and 51 tot lots. At the end of the initial development period, Fort Benning's total on-post family housing inventory would number 4,200 units (4,123 Main Post units and 77 Porter Village units).

The initial development plan would be implemented, at a maximum, over a 10-year period beginning in 2005. New housing units would be constructed prior to demolition or rehabilitation of existing housing units to provide a pool of housing to prevent a housing shortage during construction and rehabilitation. Some families might have to move off-post or to another house on-post as a result of construction activities.

Alternatives to the proposed action that were considered include partial privatization, in which only a portion of family housing would fall under the RCI. Army housing in good condition could remain subject to Army management. This alternative, however, would delay actions to provide adequate housing for some Soldiers and their dependents, would not be cost-efficient, and thus would not fully meet the Army's purpose of and need for the proposed action. Under an alternative in which Fort Benning would rely wholly on the private sector for family housing needs, Fort Benning would terminate family housing programs, dispose of existing family housing units, and convert the land supporting housing areas to other uses. Reliance solely on the private sector would create conditions leading to poor morale, and abandonment of existing on-post family housing would not be fiscally responsible. Regarding the alternative of leasing property, two key statutory authorities come into play: "Section 801 Housing" (long-term leasing of housing) and "Section 802 Housing" (rental guarantees for housing). Although use of either or both of these authorities would be possible, their use would not be reasonable when compared with the flexibility and economic advantages of the new authorities offered by the RCI to the Army and to Soldiers' families. Accordingly, these alternatives were considered unreasonable under the circumstances and were not further evaluated. As prescribed by Council on Environmental Quality regulations, the environmental assessment (EA) evaluates the no action alternative, which would consist of the Army's continuing to provide for the family housing needs of its personnel by means of traditional military construction and maintenance funded through the congressional authorization and appropriations process.

The EA analyzes the proposed action (the Army's preferred alternative) and a no action alternative. The focus is on evaluating environmental effects that could occur in the first 10 years of implementation of the CDMP (through 2015). Prediction of potential environmental effects for the years beyond 2015 would be increasingly speculative, and therefore it is not attempted.

ENVIRONMENTAL CONSEQUENCES

The EA evaluates potential effects on land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic substances. For each resource and installation, the predicted effects from both the proposed action, identified as the Army's preferred alternative, and the no action alternative are briefly described below.

Consequences of the Preferred Alternative

Land Use

Main Post. Long-term minor adverse and beneficial effects on land use would be expected as a result of the proposed action. Portions of open space buffer and recreational areas would be converted to residential housing, reducing those land use inventories and resulting in encroachment on other land use types. The proposed construction would also increase the amount of impervious surface.

The addition of amenities such as improved landscaping and improved and regular maintenance programs would be expected to result in long-term beneficial effects on the housing areas. Proper consideration and planning in the design of facilities, along with proper site planning for the new

housing units and adherence to master planning guidelines, would mitigate potential adverse effects from noise, aesthetics, and air quality concerns. Most of these projects would not be expected to have an adverse effect on land use once construction is complete. Vegetative buffers between the major roads or railroad and new housing areas would mitigate potential adverse effects from noise and aesthetics concerns.

Porter Village. Long-term minor adverse effects on land use would be expected at Porter Village. Fort Benning Family Communities LLC plans to clear 35 acres of forest to construct a new village center, a swimming pool, and 37 homes on the property south of the existing soccer field. This could remove a forest buffer between Porter Village and the adjoining Sky County subdivision to the west.

Aesthetic and Visual Resources

Main Post. Short- and long-term minor adverse and long-term moderate beneficial effects would be expected. Short-term adverse effects would result from construction activities, which are inherently aesthetically displeasing. Long-term minor adverse effects would result from new construction in the undeveloped areas, which would replace wooded vistas with landscaped housing areas, permanently altering the natural viewsheds in these areas.

Long-term beneficial effects would be expected from proper implementation of the CDMP, which is designed to achieve an aesthetically harmonious community through the use of cohesive and regionally appropriate architectural design characteristics, landscape planning that focuses on using native plant species and screening visually intrusive structures, and activities with vegetation and inclusion of green space.

Porter Village. Long-term minor adverse and long-term moderate beneficial effects would be expected from the removal of up to 35 acres of forest to construct the village center on the property south of the existing soccer field, potentially removing an aesthetic forest buffer between Porter Village and the adjoining Sky County subdivision to the west. Long-term moderate beneficial effects would be expected from proper implementation of the CDMP, including the construction of a new village center and pool, as well as minor renovations to the 40 homes at Porter Village. The regular and preventive maintenance programs outlined in the CDMP would maintain the revitalized housing areas at the highest operation levels. As a result of the RCI program, the aesthetic appeal of the existing housing areas would be expected to improve.

Air Quality

Main Post. Short-term minor adverse effects would be expected as a result of increased vehicle emissions and negligible impacts from fugitive dust associated with an increase in construction activities. The construction-related emissions would be short-term and intermittent. Although short-term minor effects on air quality would be expected, the proposed action would not violate any National Ambient Air Quality Standards (NAAQS) or other Clean Air Act (CAA) standard, rule, or regulation. Dust would be controlled through best management practices (BMPs) such as wetting the ground with water during periods of ground disturbance.

Porter Village. No effects on air quality would be expected to occur at Porter Village. The emission of criteria pollutants at Porter Village would not violate the NAAQS or any other CAA standard.

Noise

Main Post. Long- and short-term minor adverse effects would be expected. Long-term minor adverse effects on residents living in housing within the Zone II noise contour would be expected. However, all new housing built within Noise Zone II would be constructed with noise-attenuating materials, and existing housing in Zone II would be demolished or modified with sound-

attenuation designs to mitigate noise effects. Required mitigation included in the CDMP states that housing in Zone II will be attenuated so that outside-to-inside noise levels are reduced by 25 and 30 a-weighted decibels (dBA). Short-term minor adverse effects would include additional sources of noise during construction activities due to the operation of equipment and construction activities in general.

Porter Village. Short-term minor adverse effects would include additional sources of noise during construction activities due to the operation of equipment and construction activities in general.

Geology and Soils

Geology and Topography. No effects on geology would be expected at the Main Post or Porter Village.

Soils

Main Post. Short-term minor adverse effects would be expected from demolition and construction activities that might cause removal of vegetation, soil exposure, and increased susceptibility to wind and water erosion, possibly resulting in increased runoff and erosion during site preparation. Potential adverse effects would be minimized by implementing BMPs to control runoff, erosion, and sedimentation during construction and by taking pollution prevention measures when using or managing hazardous materials.

Porter Village. Short-term minor adverse effects would be expected from construction activities that could cause removal of vegetation, soil exposure, and increased susceptibility to wind and water erosion, possibly resulting in increased runoff and erosion during site preparation. Potential adverse effects would be minimized by implementing BMPs to control runoff, erosion, and sedimentation during construction and by taking pollution prevention measures when using or managing hazardous materials.

Prime Farmland. No effects on prime farmland would be expected on the Main Post or Porter Village.

Water Resources

Surface Water

Main Post. Short- and long-term minor adverse effects would be expected at the Main Post. In the short term, construction activities would increase erosion, potentially increasing sedimentation in streams, and could contribute small quantities of dissolved solids and petroleum hydrocarbons to surface waters. Potential adverse effects would be minimized by implementing BMPs to control runoff and sedimentation during construction and by taking pollution prevention measures when using or managing hazardous materials.

After construction there would be the potential for increased runoff to streams from new buildings, roads, and parking areas.

Porter Village. Long-term negligible adverse effects would be expected at Porter Village. Effects similar to those described for the Main Post would be expected. A minor increase in storm water runoff would be expected at Porter Village.

Groundwater

Main Post. Short- and long-term negligible adverse effects on groundwater would be expected. Increased waterborne pollutants (e.g., dissolved solids, sediment, petroleum hydrocarbons) in surface water bodies resulting from construction activities, and from the increase in impervious surfaces following construction, could easily be transported into the groundwater system. Potential adverse effects would be minimized by implementing BMPs to control runoff and sedimentation during construction and by taking pollution prevention measures when using or managing hazardous materials.

Porter Village. Negligible adverse effects would be expected at Porter Village.

Floodplains. No effects on floodplains would be expected at the Main Post or Porter Village.

Biological Resources

Flora and Fauna

Main Post. Short- and long-term minor adverse effects on flora or fauna would be expected. It is estimated that up to 336 acres of forested areas might be disturbed for new housing construction, and therefore there would be some minor adverse effects on wildlife due to tree removal and habitat degradation.

Porter Village. Short- and long-term minor adverse effects on flora and fauna would be expected. Approximately 35 acres of the forested area would be disturbed for new housing construction. As a result, there would be some minor adverse effects on wildlife resulting from tree removal and habitat degradation.

Sensitive Species

Main Post. Short- and long-term minor adverse effects would be expected to affect red-cockaded woodpecker (RCW) foraging habitat. Timber within RCW foraging habitat would need to be removed for the construction of new facilities. In a letter dated February 15, 2005, the U.S. Fish and Wildlife Service (USFWS) indicated that no further action is required under Section 7(a)(2) of the Endangered Species Act (ESA). However, if new information became available or changes in the project involved federally listed species, further consultation would be required.

No adverse effects on migratory birds would be expected to occur.

Porter Village. No effects would be expected to occur. Following agency coordination, USFWS determined that no further action is required under Section 7 of the ESA.

Wetlands

Main Post. No effects on wetlands would be expected because there are no wetlands within the RCI footprint. Short-term indirect minor adverse impacts on streambanks would occur as sedimentation from runoff from nearby construction sites. Impacts on wetlands and streambanks in and near the RCI footprint could be minimized by implementing stream protection BMPs and 25-foot riparian buffer zones.

Porter Village. No effects on wetlands would be expected. Sediment loading from minor housing renovations would be minimized by the significant forested buffer surrounding the wetland, as well as stream protection BMPs that would be implemented before renovation and construction.

Unique Ecological Areas

Main Post. No effects would be expected to occur.

Porter Village. No effects would be expected to occur.

Cultural Resources

Main Post. Long-term minor adverse and beneficial effects on cultural resources would be expected from implementation of the proposed action. Beneficial effects could result from the maintenance of historic structures, as well as the renovation and new construction designed to complement the character, style, materials, distinctive building elements, and overall feeling of existing historic structures and the viewsheds of historic areas.

Potential minor adverse effects could occur as a result of renovation and demolition of some existing housing structures and historic units, as well as construction of new housing units, which might cause soil disturbance that could uncover currently unknown archeological resources. Minor adverse impacts on historic structures might occur in the adjacent Main Post Family Housing Area, depending on the renovation or demolition of existing housing and new construction within RCI footprint Area R.

Long-term minor adverse and beneficial effects on the four historic structures within the footprint of Area R, as well as historic structures within Areas W, X, and V, might occur. Demolition, construction, or renovation in these areas could cause minor adverse or beneficial impacts on the unique or distinctive qualities of those structures, original materials or building elements, or the general character of the buildings.

Porter Village. Long-term minor adverse and beneficial effects on cultural resources would be expected from implementation of the proposed action at Porter Village. Construction could cause soil disturbance that has the potential to uncover currently unknown archeological resources. If unknown deposits or remains were discovered during construction, activities would cease until the Fort Benning cultural resources manager and the appropriate State Historic Preservation Office (SHPO) personnel were contacted and a determination was made regarding the National Register of Historic Places (NRHP) eligibility of the site. If NRHP-eligible, sites would be treated in accordance with procedures to protect the integrity of those cultural resources and to mitigate impacts on them, in consultation with the Georgia SHPO.

Consideration should be given to avoiding the Hand Ditch in the case of any planned construction of housing units, a village center, or a pool in the area of this NRHP-eligible resource. Future construction within the RCI footprint could adversely affect the portion of the Hand Ditch within the footprint. A detailed preservation plan describing how the ditch could be preserved and protected, along with further relevant background research on details of construction of the ditch, has not yet been completed. Therefore, special consideration of the Hand Ditch, as well as efforts to mitigate any adverse effects of future construction within the RCI footprint on this historic aqueduct, should be considered. If it is thought that future mission activities might at some point affect the Hand Ditch, mitigation could involve HABS/HAER investigations and drawings and other in-depth investigations of the site. The appropriate mitigation measures would best be determined and implemented through consultation with the Georgia SHPO.

Socioeconomics

Main Post

EIFS Model Results. Short-term direct and indirect minor beneficial effects would be expected.

The expenditures associated with demolition, construction, and renovation of family housing and associated facilities at Fort Benning would increase sales volume, employment, and income in the ROI.

Housing. Long-term direct moderate beneficial effects on on-post family housing would be expected. The proposed action would improve the overall quality of life for Soldiers and their families by allowing more military families to have quality, attractive, affordable housing that fits their needs.

Quality of Life. Short-term direct minor adverse and long-term direct moderate beneficial effects on quality of life would be expected. In the short term, noise and traffic from construction of RCI housing could be disruptive to the existing residents. In the long term, however, the overall quality of life for Soldiers and their families would be greatly improved because of the improved condition of on-post family housing as well as the overall residential community.

Law Enforcement and Fire Protection. Short-term minor adverse effects on law enforcement services could occur. Because of the location of the new housing, the increased concentration of housing, and the increased on-post population, emergency service response times for communities in the RCI footprint could increase. However, the RCI program would take about 8 years to complete, providing time for the Fort Benning Law Enforcement Command to adjust and expand as the number of housing units increased.

Schools. Long-term minor beneficial effects would be expected. The federal impact aid status would change from Military B to Military A; therefore, the public school district would receive a higher level of funding for students from military families.

Recreation. Long-term minor beneficial effects would be expected to result from the additional community amenities, such as parks and recreation areas, community centers, walking trails, ball fields, and tennis courts.

Environmental Justice. No effects would be expected.

Protection of Children. Short-term minor adverse effects on the protection of children would be expected because construction sites can be enticing to children. Construction activity could be an increased safety risk. In addition, hazardous waste generated from demolition and renovation activities would result in a minor short-term increase in the amount of hazardous waste generated at Fort Benning.

Porter Village

EIFS Model Results. Short-term direct and indirect minor beneficial effects would be expected. The expenditures associated with construction and renovation of family housing at Porter Village would increase sales volume, employment, and income in the ROI.

Housing. Long-term minor beneficial effects would be expected. The proposed action would improve and maintain the condition and aesthetic appeal of the housing through revitalization (e.g., painting).

Quality of Life. Long-term minor beneficial effects on quality of life would be expected as a result of the continued maintenance of and improvements to Porter Village housing.

Law Enforcement and Fire Protection. No effects on law enforcement or fire department services would be expected.

Schools. Long-term beneficial effects would be expected. If the RCI program were implemented, more primary and secondary school-age children would live at Porter Village. These children would continue to attend the public school system, but their federal impact aid status would change from Military B to Military A. Therefore, the public school district would receive a higher level of funding for these students.

Recreation. Long-term minor beneficial effects would be expected. Under the proposed action, a village center and outdoor pool would be built, expanding and enhancing recreational opportunities at Porter Village.

Environmental Justice. No effects would be expected.

Protection of Children. Short-term minor adverse effects on the protection of children would be expected because construction sites can be enticing to children. Construction activity could be an increased safety risk.

Transportation

Short- and long-term minor adverse and long-term beneficial effects on transportation would be expected. Short-term adverse effects would occur during the construction and renovation phase. These effects would include increased traffic congestion and wear and tear on Installation roads from construction vehicles, a temporary increase in maintenance activities, and temporary road closures to accommodate utility construction and installation.

Long-term beneficial effects on traffic would be expected from implementation of a well-executed CDMP and strategic road improvements, configurations, and supporting maintenance.

Porter Village. Short-term minor adverse effects on transportation might occur during the construction phase in the form of short-term traffic delays.

Utilities

Potable Water

Main Post. Short- and long-term negligible adverse and long-term negligible beneficial effects would be expected. Water requirements for construction activities would create a short-term effect on the water supply. A long-term increase in demand for water would result from the on-post population increase from the addition of 124 family housing units. Water-efficient devices, such as low-flow showerheads, faucets, and toilets, would be installed in all new facilities to reduce the demand on the potable water supply. No shortage of potable water would be expected if a net small increase in demand resulted from the proposed action. The water supply system has been privatized, and the private utility company would assume all responsibility for ensuring the adequacy of the system and its maintenance.

Porter Village. Long-term negligible adverse effects would be expected from the addition of 37 family housing units.

Sanitary Wastewater

Main Post. Long-term negligible adverse effects would be expected. The projected increase of 124 housing units would place an additional demand on the wastewater system, and the installation of low-flow water devices in new and renovated housing units would lessen the impact of the increased demand. The net increase in demand would not exceed the system's capacity. The wastewater treatment system at Fort Benning has been privatized, and the private utility company would assume all responsibility for ensuring the adequacy of the system and its

maintenance.

Porter Village. Long-term negligible adverse effects would be expected from the addition of 37 family housing units.

Storm Water

Main Post. Short-term minor adverse and long-term beneficial effects would be expected. The projected increase of 124 housing units would be expected to increase the amount of impervious surface and could strain the existing drainage system. Long-term minor beneficial effects would be expected. Storm water runoff from construction sites would be collected and allowed to settle in retention ponds. The quality of storm water from family housing areas would not be expected to be affected in the long term. Adherence to RCI guidelines and planning principles would be expected to minimize the effects of the increase on streams. Fort Benning Family Communities LLC would assume all responsibility for ensuring the adequacy of the system and its maintenance.

Porter Village. Long-term negligible adverse effects would be expected from the addition of 37 family housing units. Draft development plans for Porter Village include an increase in units at Camp Merrill (in Dahlonega). The storm water runoff from Camp Merrill (with zero current and 37 new units) would increase, but adherence to RCI guidelines and planning principles would be expected to minimize the effects of the increase.

Energy

Main Post. Long-term minor beneficial effects would be expected. The projected increase of 124 housing units would increase the number of family housing units needing to be served by the electricity infrastructure; however, 3,667 of the 4,200 end-state units would be new construction that would have Energy Star-compliant fixtures and appliances. The net increase in electrical demand, if any, would be expected to be minor. Any new electrical lines would be installed below ground by Flint Electric and Georgia Power.

Porter Village. Long-term negligible adverse effects would be expected from the addition of 37 family housing units.

Communications

Main Post. Long-term negligible adverse effects would be expected. New communication lines would be installed by Bell South Company in the undeveloped areas where housing is to be built, creating a negligible additional demand.

Porter Village. Long-term negligible adverse effects would be expected. All new housing units would be supplied with communication lines, and the new lines would create a negligible additional demand.

Solid Waste and Recycling

Main Post. Short- and long-term adverse moderate effects would be expected. Short-term effects would occur from the increased volume of solid waste generated by construction, renovation, and demolition of family housing units. Concrete, asphalt, and wood generated by demolition and renovation activities could be recycled, reducing the volume of solid waste disposed of in the inert or solid landfills. Debris from construction, renovation, and demolition of family housing units would increase relative to the volume of solid waste generated annually by the Installation. *DoD Measures of Merit for Non-Hazardous Solid Waste Diversion Rate* states that the

nonhazardous solid waste diversion rate should be greater than 40 percent by the end of fiscal year (FY) 2005. To help Fort Benning achieve this goal, any solid waste (e.g., concrete, asphalt, and wood) generated from demolition and renovation activities should be recycled, thereby reducing the volume of solid waste disposed of in the inert or solid landfills. Solid waste volume would also increase over the long term with the addition of new housing units. However, Fort Benning would continue to encourage residents to recycle, reducing the volume of waste landfilled.

Porter Village. Short-term moderate and long-term minor adverse effects would be expected. Short-term effects would occur from the increased volume of solid waste generated by construction, renovation, and demolition of family housing units. Concrete, asphalt, and wood generated by demolition and renovation activities could be recycled, reducing the volume of solid waste disposed of in the inert or solid landfills. Debris from construction, renovation, and demolition of family housing units that could not be recycled or reused would increase relative to the volume of solid waste generated annually by the residents of Porter Village. *DoD Measures of Merit for Non-Hazardous Solid Waste Diversion Rate* states that the nonhazardous solid waste diversion rate should be greater than 40 percent by the end of FY05. To help Fort Benning achieve this goal, any solid waste (e.g., concrete, asphalt, and wood) generated from demolition and renovation activities should be recycled, thereby reducing the volume of solid waste disposed of in the inert or solid landfills. The solid waste volume would also increase over the long term with the addition of new housing units. However, Fort Benning would continue to encourage residents to recycle, reducing the volume of waste landfilled by the City of Dahlonega.

Hazardous and Toxic Substances

Main Post. Long-term beneficial effects would be expected. Actual and potential asbestos-containing materials, interior and exterior lead-based paint, and potential PCB-containing light ballasts would be removed from post housing units or encapsulated during renovation or demolition activities. There would be an overall reduction in the amount of hazardous material in residential areas. Upon removal, hazardous materials would be handled in a manner consistent with applicable rules and regulations. Installation SPCC requirements would be followed at all times during construction and the use or storage of hazardous materials.

Porter Village. No effects would be expected.

Cumulative Effects

In addition to the RCI, numerous construction activities on the Installation are planned over the next several years. During this period of activity, there could be long-term minor adverse cumulative effects on air quality, biological resources (wildlife and its habitat), water resources, and transportation.

Air Quality. Minor adverse cumulative effects on air quality would result from minor, but increased, short-term and long-term loading of pollutants to the air shed.

Biological Resources. Minor adverse cumulative effects on biological resources would result from the transformation and removal of vegetation and habitat for the construction of housing, roads, and other planned facilities.

Water Resources. Minor adverse cumulative effects on water resources would result from increased pollutant loadings and flows to streams as additional construction projects replaced permeable ground surfaces (native vegetation, wildlife habitat, and landscaped areas) with impervious surfaces such as parking lots, roads, roofs, and sidewalks.

Transportation. Minor adverse cumulative effects on transportation would result from the continuing development of highways, which would ultimately lead to further human uses of resources.

Considering the past, present, and reasonably foreseeable future actions on Fort Benning, Porter Village, and the region, no significant cumulative impacts would be expected from the preferred alternative.

Consequences of the No Action Alternative

Only those resources that would be affected are discussed below.

Aesthetic and Visual Resources

Main Post. Long-term minor adverse effects would be expected in the housing areas. Under the no action alternative, the Army would continue to be responsible for maintenance and renovation of existing housing and construction of new housing as necessary. The current lack of sufficient funding for housing construction and an extensive backlog of work indicate that the housing units would be expected to deteriorate over time, which would adversely affect visual and aesthetic resources on the Installation.

Porter Village. Long-term minor adverse effects, as stated for Fort Benning, would be expected.

Noise

Main Post. Long-term moderate adverse effects would be expected. Some residents in on-post family housing would continue to be subjected to undesirable noise levels because the houses are already in Noise Zones II and III. The Army lacks funding to modify housing units in a manner that would reduce noise.

Cultural Resources

Main Post. Minor or moderate adverse effects are possible for the status quo because of the minimal funding for family housing and the potential for structures beginning to deteriorate to continue to do so. This deterioration might result in the loss of the structures' historical integrity or even demolition by neglect.

Socioeconomics

Main Post

Housing and Quality of Life. Long-term moderate adverse effects would be expected. Continuation of the present family housing programs would perpetuate deficiencies in quality of life for many Soldiers and their dependents.

Protection of Children. Long-term minor adverse effects on the protection of children would be expected. As homes deteriorate, the risk that children would be exposed to hazardous materials (for example, chipping lead-based paint or cracked asbestos tiles) would increase.

Porter Village

Housing and Quality of Life. Long-term minor adverse effects could occur. Over the years, some housing units could deteriorate to the point that they would become unsuitable for living, thereby decreasing the inventory of family housing at Camp Merrill and forcing Soldiers and their families to find housing outside Porter Village.

Cumulative Effects

The no action alternative would not be expected to result in any cumulative effects.

Table ES-1 summarizes the predicted effects on Fort Benning for each resource area from both the proposed action, identified as the Army's preferred alternative, and the no action alternative.

Table ES-1
Summary of Potential Environmental and Socioeconomic Consequences

Resource	Environmental and Socioeconomic Consequences			
	Proposed Action		No Action Alternative	
	Main Post	Porter Village	Main Post	Porter Village
Land Use	Long-term minor adverse and beneficial effects	Long-term minor adverse effects	No effects	No effects
Aesthetics and Visual Resources	Short- and long-term minor adverse and long-term beneficial effects	Long-term minor adverse and long-term moderate beneficial effects	Long-term minor adverse effects	Long-term minor adverse effects
Air Quality	Short-term minor adverse effects	No effects	No effects	No effects
Noise	Long- and short-term minor adverse effects	Short-term minor adverse effects	Long-term moderate adverse effects	No effects
Geology and Soils				
• Geology and topography	No effects	No effects	No effects	No effects
• Soils	Short-term minor adverse effects	Short-term minor adverse effects	No effects	No effects
• Prime farmland	No effects	No effects	No effects	No effects
Water Resources				
• Surface water	Short- and long-term minor adverse effects	Long-term negligible adverse effects	No effects	No effects
• Groundwater	Short- and long-term negligible adverse effects	Long-term negligible adverse effects	No effects	No effects
• Floodplains	No effects	No effects	No effects	No effects
Biological Resources				
• Flora and fauna	Short- and long-term minor adverse effects	Short- and long-term minor adverse effects	No effects	No effects
• Sensitive species	Short- and long-term minor adverse effects	No effects	No effects	No effects
• Wetlands	No effects	No effects	No effects	No effects
• Unique ecological areas	No effects	No effects	No effects	Not applicable
Cultural Resources	Long-term minor adverse and beneficial effects	Long-term minor adverse and beneficial effects	Minor or moderate adverse effects	No effects

Table ES-1
Summary of Potential Environmental and Socioeconomic Consequences (continued)

Resource	Environmental and Socioeconomic Consequences			
	Proposed Action		No Action Alternative	
	Main Post	Porter Village	Main Post	Porter Village
Socioeconomics				
• Economic development and demographics	Short-term minor beneficial effects	Short-term minor beneficial effects	No effects	No effects
• Housing	Long-term moderate beneficial effects	Long-term minor beneficial effects	Long-term moderate adverse effects	Long-term minor adverse effects
• Quality of life	Short-term minor adverse and long-term moderate beneficial effects	Long-term minor beneficial effects	Long-term moderate adverse effects	Long-term minor adverse effects
• Law enforcement and fire protection	Short-term minor adverse effects	No effects	No effects	No effects
• Schools	Long-term minor beneficial effects	Long-term minor beneficial effects	No effects	No effects
• Recreation	Long-term minor beneficial effects	Long-term minor beneficial effects	No effects	No effects
• Environmental justice	No effects	No effects	No effects	No effects
• Protection of children	Short-term minor adverse effects	Short-term minor adverse effects	Long-term minor adverse effects	No effects
Transportation	Short- and long-term minor adverse and long-term beneficial effects	Short-term minor adverse effects	No effects	No effects
Utilities				
• Potable water supply	Short- and long-term negligible adverse and long-term minor beneficial effects	Long-term negligible adverse effects	No effects	No effects
• Sanitary wastewater system	Long-term negligible adverse effects	Long-term negligible adverse effects	No effects	No effects
• Storm water system	Short-term minor adverse and long-term minor beneficial effects	Long-term negligible adverse effects	No effects	No effects
• Energy sources	Long-term beneficial effects	Long-term negligible adverse effects	No effects	No effects
• Communications	Long-term negligible adverse effects	Long-term negligible adverse effects	No effects	No effects
• Solid waste and recycling	Short- and long-term moderate adverse effects	Short-term moderate and long-term minor adverse effects	No effects	No effects
Hazardous and Toxic Substances	Long-term beneficial effects	No effects	No effects	No effects

BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

BMPs and mitigation measures for the proposed Army RCI project would be incorporated into the CDMP. A combination of BMPs and mitigation measures would be expected to reduce, avoid, or compensate for most adverse effects. Table ES-2 summarizes the proposed BMPs and mitigation measures to be implemented for each of the affected resources for Fort Benning (Main Post and Porter Village).

CONCLUSIONS

Based on the analysis performed in this EA, implementation of the preferred alternative would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. Preparation of an Environmental Impact Statement is not required. Issuance of a Finding of No Significant Impact would be appropriate.

Table ES-2
Summary of Best Management Practices and Mitigation Measures

Land Use
• Adhere to optimal land use plans and guidelines outlined in the *Fort Benning Real Property Master Plan* when siting housing developments. • Include vegetative or other buffers where appropriate to minimize land use incompatibilities.
Aesthetics and Visual Resources
• Design housing units in a regionally appropriate architectural style. • Revegetate housing areas with native vegetation, and maintain trees and native vegetation wherever possible. • Place new utility lines underground to improve aesthetics. • Maintain adequate off-street parking. • Provide sufficient storage in new units.
Air Quality
• Implement BMPs (e.g., wetting the soil during and at the end of the construction day). • Clean soil from roadways during and after work. • Cover trucks transporting soil with tarp.
Noise
• Housing in Zone II will be attenuated so that outside-to-inside noise levels are reduced by 20 and 30 a-weighted decibels (dba). [This is a required mitigation measure.] • Use earthen beams and tree buffers to separate noise-producing land uses from housing areas where appropriate. • Limit construction activities to daylight hours.
Geology and Soils
• Avoid construction on steep slopes. • Obtain necessary permits for storm water and erosion control. • Use appropriate BMPs (such as silt fences, straw bale dikes, diversion ditches, riprap channels, water bars, and water spreaders) to reduce soil erosion and sedimentation. • Adhere to the storm water pollution prevention plan and any other plans or guidance, as appropriate, per the National Pollutant Discharge Elimination System (NPDES) General Permit process.
Water Resources
• Implement BMPs (e.g., silt fencing, hay bales) to control surface erosion and runoff. • Reseed and revegetate areas following construction activities to minimize impacts. • Use stream protection BMPs and avoid construction in riparian buffer zones (minimum 25-ft buffer) unless granted a variance. • Follow protocols outlined in the storm water NPDES permit. • Follow Total Maximum Daily Load (TMDL) recommendations for protecting water quality (e.g., adoption of proper unpaved road maintenance practices, implementation of erosion and sediment control plans for land-disturbing activities, mitigation and prevention of streambank erosion due to increased stream flow velocities caused by urban runoff, application of BMPs appropriate to agricultural or urban land uses). • Encourage low-impact development designs. • Install water-efficient appliances (e.g., low-flow showerheads, faucets, and toilets).

Table ES-2
Summary of Best Management Practices for Fort Benning (continued)

Biological Resources

Vegetation

No mitigation is necessary; however, Fort Benning should consider the following:

- Limit disturbed areas to the current housing footprint and a minimal amount of adjacent construction staging area.
- Plant native trees near homes, in parks, and in open spaces and around storm water management structures.
- Employ erosion control practices and tree protection devices at all proposed sites to protect vegetation and habitat areas.

Wildlife

No mitigation is necessary; however, Fort Benning should consider the following:

- Preserve associated roads, existing parks, and large blocks of existing native vegetation on each site to act as buffers and wildlife corridors.
- Use tree-protection BMPs during construction of new developments to maintain natural habitat areas.

Cultural Resources

- Design all structures constructed in sensitive cultural resource areas (i.e., Historic Districts and Protected Areas) and alteration/renovation of historic structures (i.e., historic housing and support facilities), in consultation with the Georgia SHPO, to have no adverse impact on cultural resources. Incorporate mitigation measures, coordinated through the consultation process, before the construction/alteration/renovation stage.
- Provide special treatment for areas with known cultural resources in accordance with the guidelines of the Secretary of the Interior's *Standard for Rehabilitation of Historic Properties* and the Programmatic Agreement (PA) between Fort Benning and the Georgia State Historic Preservation Office (SHPO).
- If unknown deposits or remains are discovered during construction, stop activities until the Fort Benning cultural resources manager and the Georgia SHPO are contacted and a determination is made regarding the NRHP eligibility of the site. If NRHP-eligible, treat sites in accordance with procedures outlined in the PA.

Socioeconomics and Protection of Children

- Place barriers and "No Trespassing" signs around construction sites where practicable.
- Avoid the use of building products that contain hazardous materials.
- Secure construction vehicles and equipment when not in use.

Traffic and Transportation

- Optimally route and schedule all RCI construction vehicle traffic.
- Locate construction material staging areas in locations that would minimize traffic impacts.
- Expand government-operated shuttle bus routes to include the new housing areas.
- Incorporate traffic-calming measures into the housing areas.
- Include overall design improvements, such as walkways and bicycle paths, to reduce reliance on vehicles and to create more connected, pedestrian-friendly communities.

Utilities

Potable Water

- Install water-efficient devices, such as low-flow showerheads, faucets, and toilets, in all new facilities.

Energy

- Install energy-efficient interior and exterior lighting fixtures and controls in all new facilities to reduce electrical demands.

Hazardous and Toxic Substances

- During construction, prevent, control, and manage spills and leaks of oil and petroleum products in accordance with Fort Benning's *Installation Spill Prevention, Control, and Countermeasures Plan*.
- Dispose of demolition materials in accordance with applicable regulations.
- Recycle construction/demolition debris to the extent practicable.
- No mitigation measure is necessary for management of municipal solid waste. Fort Benning's waste minimization and pollution prevention programs would continue to minimize waste volumes generated at the Installation.

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SECTION 1.0
PURPOSE, NEED, AND SCOPE FOR THE PROPOSED ACTION

1.1 BACKGROUND

The Army operates and maintains approximately 90,000 family housing units at its installations throughout the United States. More than 75 percent of the units do not meet current Army housing standards. Nevertheless, at most installations demand for adequate housing on-post exceeds supply. The lack of adequate on-post housing forces many Soldiers and their families to live in housing in need of repair or renovation or to live off-post, where the cost and quality of housing vary considerably. Often, the costs to Soldiers and their families to live off-post are greater than their entitlement to Basic Housing Allowance (BAH). The Army estimates that as much as $6 billion would be needed to bring its housing up to current standards and to address the deficit of housing.

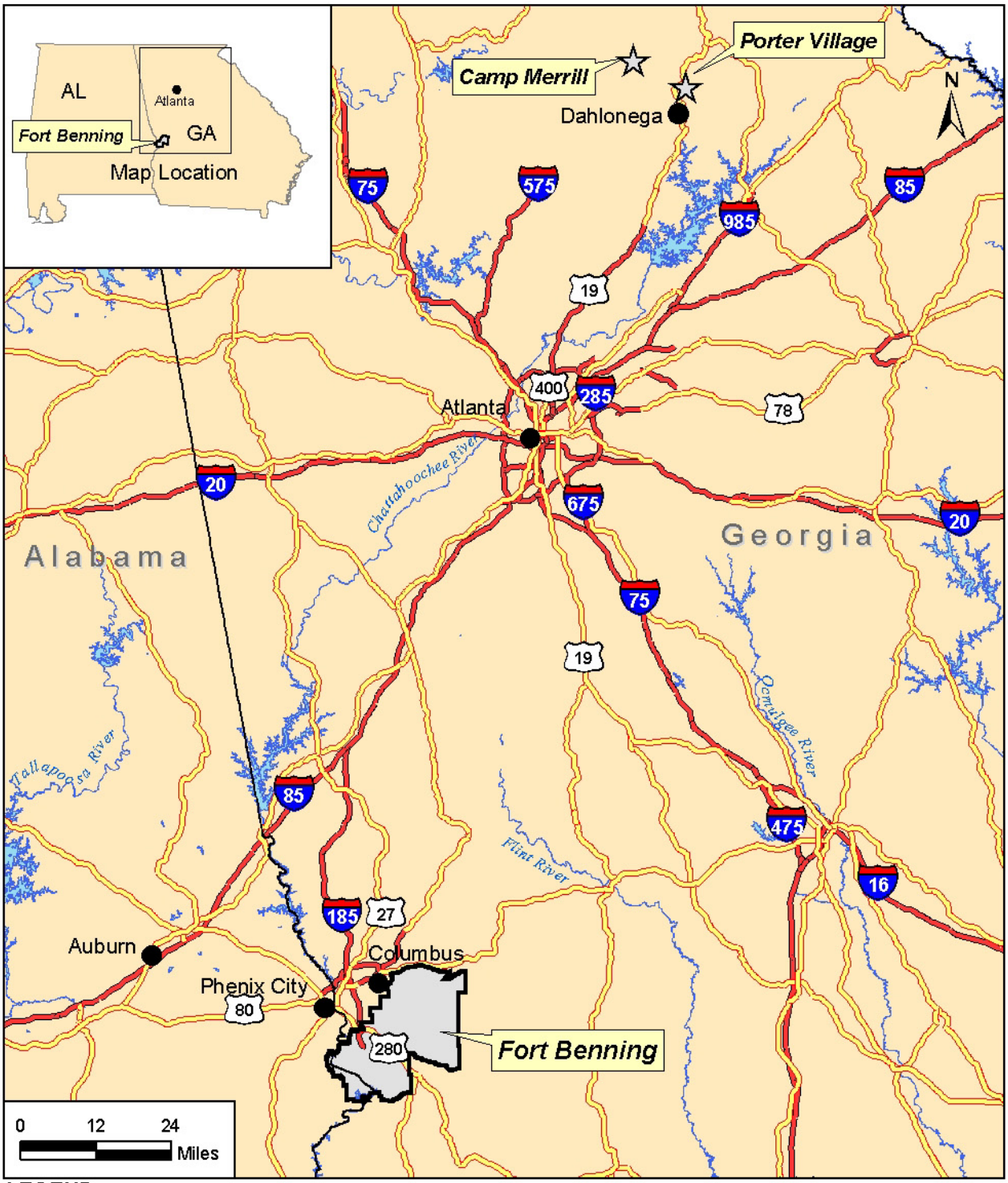
In recognition of these problems, Congress enacted Section 2801 of the 1996 Defense Authorization Act (Public Law 104-106, codified at Title 10 of the United States Code [U.S.C.] Sections 2871–2885). Also known as the Military Housing Privatization Initiative (MHPI), this provision of law creates alternative authorities for improvement and construction of military family housing. The legislative intent of Congress in enacting these additional authorities is to enable the military to obtain private sector funding to satisfy family housing requirements. By leveraging scarce public funding, the Army can obtain private sector funds for construction, maintenance, management, renovation, replacement, rehabilitation, and development of Army family housing and ancillary supporting facilities.[1] The Army's implementation of the MHPI authorities is known as the Army Residential Communities Initiative (RCI).

Fort Benning was established in 1918 near Columbus, Georgia, as the home of the Infantry School of Arms. Encompassing 181,275 acres of river valley terraces and rolling terrain, the post is now the home of the 11th Infantry Regiment and the 29th Infantry Regiment, units whose major training brigades provide instruction for numerous infantry courses for the U.S. Army. The post is also home to the 3rd Brigade and the 3rd Infantry Division and is the Army's 75th Ranger Regiment headquarters. Camp Frank D. Merrill, a satellite installation in Dahlonega, Georgia, 180 miles northeast of Fort Benning, is a training site for the 5th Ranger Training Battalion. Housing for troops stationed at Camp Merrill is available at Porter Village in Dahlonega. Fort Benning has 3,999 family housing units on-post and 40 family housing units at Porter Village. The location of Fort Benning is shown in Figure 1-1.

1.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

Consistent with the MHPI authorities, Fort Benning proposes to transfer responsibility for providing housing and ancillary supporting facilities to Fort Benning Family Communities LLC, a limited liability company (LLC) composed of the Army and Clark Pinnacle Realty. Fort Benning would convey all on-post military housing units and selected ancillary supporting facilities and grant a 50-year ground lease for the land on which the housing and facilities are located to Fort Benning Family Communities LLC.

[1] According to 10 U.S.C. § 2871, the term *ancillary supporting facilities* means "facilities related to military housing units, including child care centers, day care centers, tot lots, community centers, housing offices, dining facilities, unit offices, and other similar facilities for the support of military housing."



Installation Locations

Figure 1-1

Fort Benning would also lease additional areas for Fort Benning Family Communities LLC's use to construct new housing and to operate ancillary supporting facilities.

The purpose of the proposed action is to improve Army family housing and ancillary supporting facilities at Fort Benning. The proposed action is needed to provide affordable, quality housing and ancillary supporting facilities to Soldiers and their families through a combination of replacement of and improvement to existing family housing units to ensure that they meet current Army standards. Fort Benning expects Fort Benning Family Communities LLC to achieve the following goals:

- Ensure that eligible Soldiers and their families have access to quality, attractive, and affordable housing by upgrading inadequate existing family housing and by building new housing to address housing conditions at Fort Benning.
- Improve the appearance and functions of the residential community, while meeting environmental stewardship responsibilities.
- Provide ancillary supporting facilities that enhance Fort Benning's residential community.
- Maintain positive relations with the communities that surround Fort Benning.
- Provide for the effective management and operation of existing, renovated, and new housing units and ancillary supporting facilities on a long-term basis.

The age and condition of Fort Benning's family housing units vary. The post has 493 family housing units that are listed on the National Register of Historic Places or have been determined eligible for listing. Another 1,906 family housing units, categorized as Capehart and Wherry-era housing, were constructed between 1949 and 1962. Except for the 40 units at Porter Village, Fort Benning has had no family housing units built since 1976. The sizes, configurations, safety, and condition of many housing units are substantially below the Army's standards of acceptability. The older units lack amenities such as family rooms, laundry/utility space, adequate exterior storage, and auxiliary eating areas like eat-in kitchens or breakfast nooks. Funding shortfalls over the years have limited renovations, resulting in increased maintenance requirements. Without adequate funding to address the renovation backlog, housing units could become unsuitable for occupancy.

1.3 SCOPE OF ANALYSIS

This environmental assessment (EA) has been developed in accordance with the National Environmental Policy Act (NEPA) and implementing regulations issued by the Council on Environmental Quality (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decisionmakers and the public of the likely environmental consequences of the proposed action and alternatives.

The EA identifies, documents, and evaluates the potential environmental effects of implementing the Army RCI at Fort Benning. Section 2.0 describes the proposed action. Section 3.0 sets forth alternatives to the proposed action, including a no action alternative, and explains why certain alternatives are not evaluated in detail. Section 4.0 describes existing environmental conditions at Fort Benning that could be affected by the proposed action, identifies potential environmental effects that could occur upon implementation of each alternative evaluated, and presents potential

mitigation measures. Section 5.0 presents findings and conclusions regarding the potential environmental effects of the proposed action.

This EA evaluates the environmental and socioeconomic effects that would be expected to occur upon implementation of the proposed action as reflected in the Community Development and Management Plan (CDMP), the agreement ultimately negotiated by and between Fort Benning and Fort Benning Family Communities LLC (Appendix A). Because of financial, environmental, or other reasons, certain choices—such as alternative housing sites, housing densities, housing formats (high-rise vs. low-rise), types of ancillary supporting facilities, and timing of specific Fort Benning actions—were eliminated from further consideration during CDMP negotiations.

An interdisciplinary team of environmental scientists, biologists, ecologists, geologists, planners, economists, engineers, archeologists, historians, lawyers, and military technicians reviewed the proposed action in light of existing conditions and has identified relevant beneficial and adverse effects associated with the action. The EA focuses on effects likely to occur within the project area, which generally consists of the present family housing areas and new parcels to be used for family housing. The document analyzes direct effects (those caused by the proposed action and occurring at the same time and place) and indirect effects (those caused by the proposed action and occurring later in time or farther removed in distance but still reasonably foreseeable). The potential for cumulative effects is also addressed, and mitigation measures are identified where appropriate.

This EA focuses on evaluation of environmental effects that are reasonably foreseeable, approximately within the first 10 years of implementation of the CDMP (through 2015), as described in detail in Section 2.2.1. This is the period during which Fort Benning Family Communities LLC would demolish and renovate existing housing units, construct new family housing, and operate and maintain the housing units and ancillary supporting facilities. Projecting potential environmental effects beyond 2015 would be speculative, and therefore they are not analyzed in this EA.

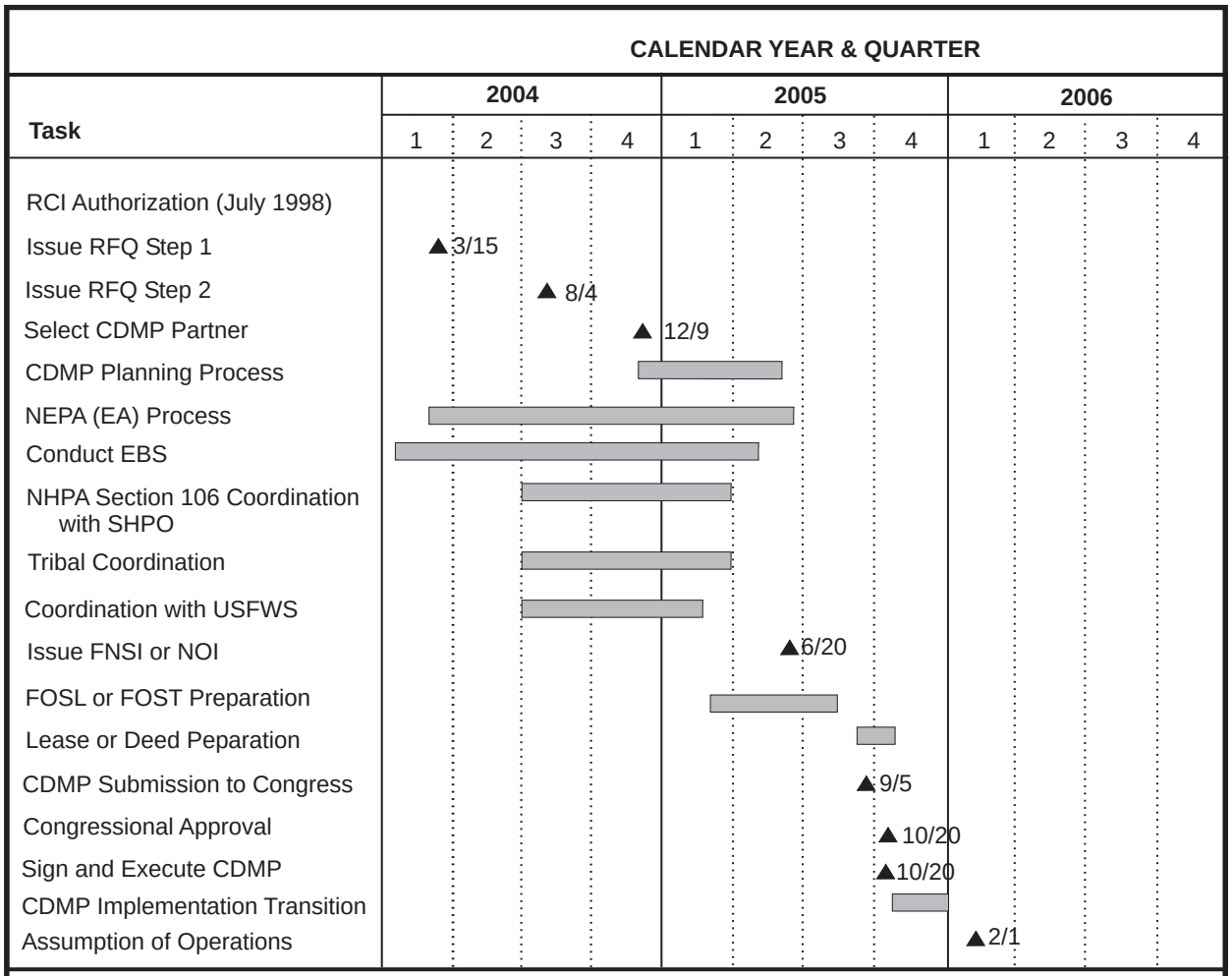
This EA identifies matters related to environmental considerations and supports decisionmaking on proposed RCI actions. Consistent with Army and other federal regulations and policies, the Army must undertake numerous other actions to achieve its objectives. Many of these other actions result in the availability of information for use in this EA. Figure 1-2 identifies the timeline for the EA process in relation to other actions that would accompany the RCI effort.

1.4 PUBLIC INVOLVEMENT

Fort Benning invites public participation in the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decisionmaking. All agencies, organizations, and members of the public having a potential interest in the proposed action, including minority, low-income, and disadvantaged persons, are urged to participate in the decisionmaking process.

The Army's NEPA guidance provides for public participation in the NEPA process. If the EA concludes that the proposed action would not result in significant environmental effects, Fort Benning may issue a draft Finding of No Significant Impact (FNSI). Fort Benning would then observe a 30-day period during which agencies and the public may submit comments on the proposed action, the EA, or the draft FNSI. Upon consideration of any comments received from the public or agencies, Fort Benning may approve the FNSI and implement the proposed action.

If, however, during development of the EA it is determined that significant effects would be likely, the Army would issue a Notice of Intent to prepare an Environmental Impact Statement.



LEGEND

Period of Task

▲ Milestone

CDMP = Community Development and Management Plan

EA = Environmental Assessment

EBS = Environmental Baseline Survey

FNSI = Finding of No Significant Impact

FOSL = Finding of Suitability to Lease

FOST = Finding of Suitability to Transfer

NEPA = National Environmental Policy Act

NHPA = National Historic Preservation Act

NOI = Notice of Intent

RFQ = Request for Qualifications

SHPO = State Historic Preservation Officer

USFWS = U.S. Fish and Wildlife Service

RCI Project Schedule

Fort Benning, Georgia

Figure 1-2

Throughout this process, the public may obtain information on the status and progress of the proposed action and the EA by contacting James R. (Ron) Smith, RCI Program Manager (DPW, Office of Director, Building 280, Transportation Street, Fort Benning, GA 31905, e-mail: smithj@benning.army.mil). The EA and the draft FNSI will be posted on Fort Benning's Web site (http://www-benning.army.mil/EMD/_program_mgt/legal/index.htm).

1.5 AGENCY COORDINATION

Fort Benning intiated formal agency consultation with the U.S. Fish and Wildlife Service (USFWS) on August 8, 2004, informing the agency of the Installation's intent to prepare an EA for the implementation of the RCI program. On February 11, 2005, Fort Benning informed USFWS of the inclusion of Porter Village in the proposed action. In letters dated February 11 and February 25, 2005, USFWS indicated in its response that no further action is required under Section 7(a)(2) of the Endangered Species Act.

In a letter dated July 28, 2004, Fort Benning informed the Georgia State Historic Preservation Officer (SHPO) of its intent to implement the RCI program. In March 2005, Fort Benning and the Georgia SHPO executed a Programmatic Agreement under Section 106 of the National Historic Preservation Act (NHPA).

A list of the persons and agencies consulted is provided in Section 8.0, copies of agency correspondence are in Appendix B, and a signed copy of the Programmatic Agreement can be found in Appendix C.

1.6 FRAMEWORK FOR ANALYSIS

A decision on whether to proceed with the proposed action rests on numerous factors, such as Fort Benning's mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, Fort Benning is guided by several relevant statutes (and implementing regulations) and Executive Orders that establish standards and provide guidance on environmental and natural resource management and planning. These include NEPA and the Clean Air Act, Clean Water Act, Noise Control Act, Endangered Species Act, Farmland Protection Policy Act, National Historic Preservation Act, Archaeological Resources Act, Resource Conservation and Recovery Act, Toxic Substances Control Act, Executive Order 11988 (*Floodplain Management*), Executive Order 11990 (*Protection of Wetlands*), Executive Order 12088 (*Federal Compliance with Pollution Control Standards*), Executive Order 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), and Executive Order 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*). Applicable state laws and regulations must also be followed. Where useful to enhance better understanding, key provisions of these statutes and Executive Orders are described in more detail in the text of the EA. No cooperating agencies having jurisdiction by law or special expertise with respect to significant environmental, social, or economic impacts have been designated for this action.

SECTION 2.0
PROPOSED ACTION

This section presents information on the Army's RCI program and Fort Benning's proposed action under that initiative. Section 2.1 describes the Army's RCI program in general and the legislative authorities in detail, while Section 2.2 describes more specifically how the CDMP would be implemented at Fort Benning. Implementation of the proposed action as described in Section 2.2 is Fort Benning's preferred alternative for privatization of family housing; other alternatives are presented in Section 3.0.

Consistent with authorities contained in the 1996 MHPI, Fort Benning proposes to transfer responsibility for providing housing and ancillary supporting facilities to Fort Benning Family Communities LLC, a partnership consisting of the Army and Clark Pinnacle Realty, a private sector development company. Fort Benning Family Communities LLC has developed a CDMP to implement the MHPI at Fort Benning.

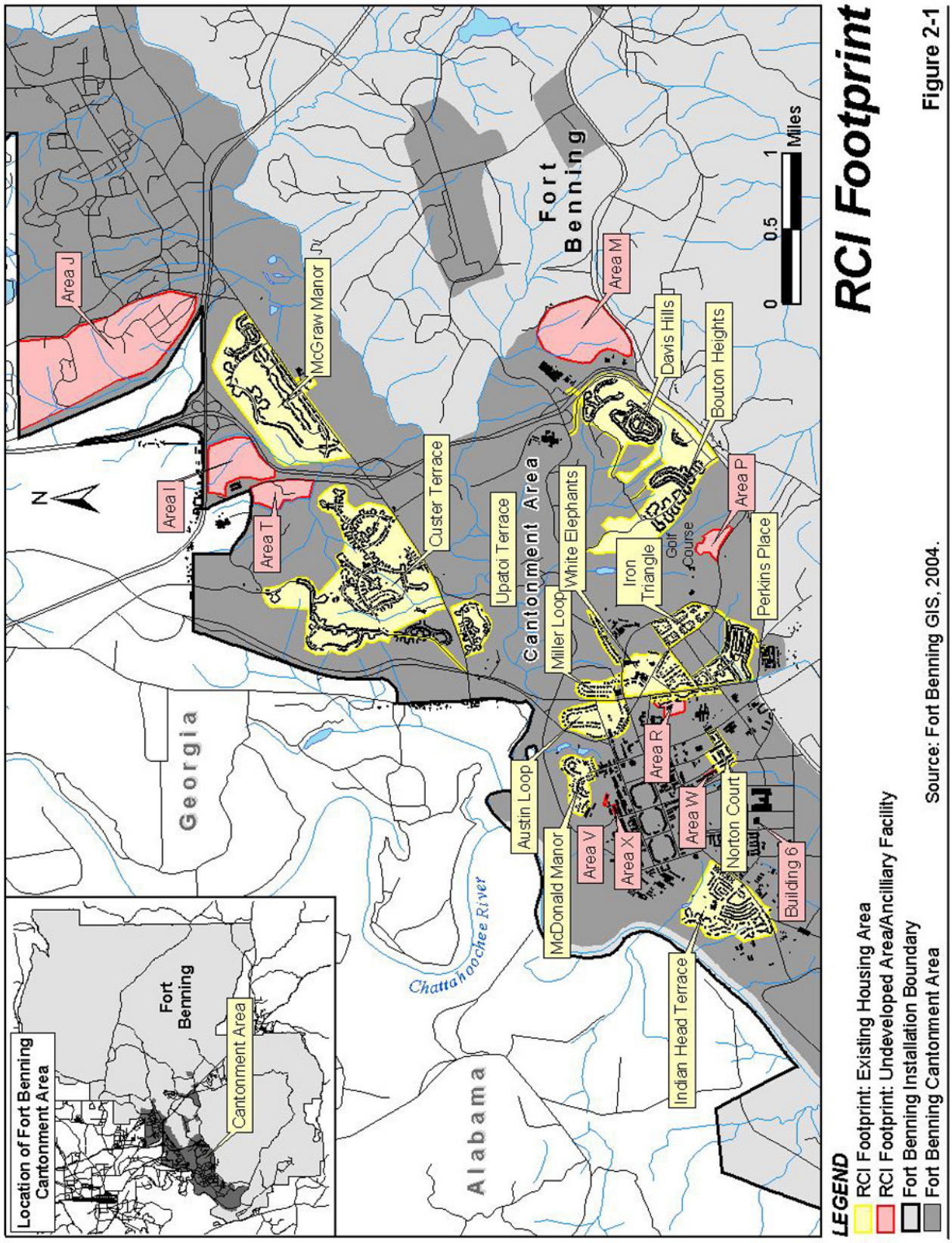
Development of the CDMP was an iterative process during which the plan was fine-tuned to meet Fort Benning's needs for attaining affordable, quality housing and other facilities, as well as minimizing or avoiding any potential environmental impacts. An excerpt from the CDMP (referred to as the CDMP Brief) is provided in Appendix A. In accordance with the CDMP, Fort Benning proposes the following:

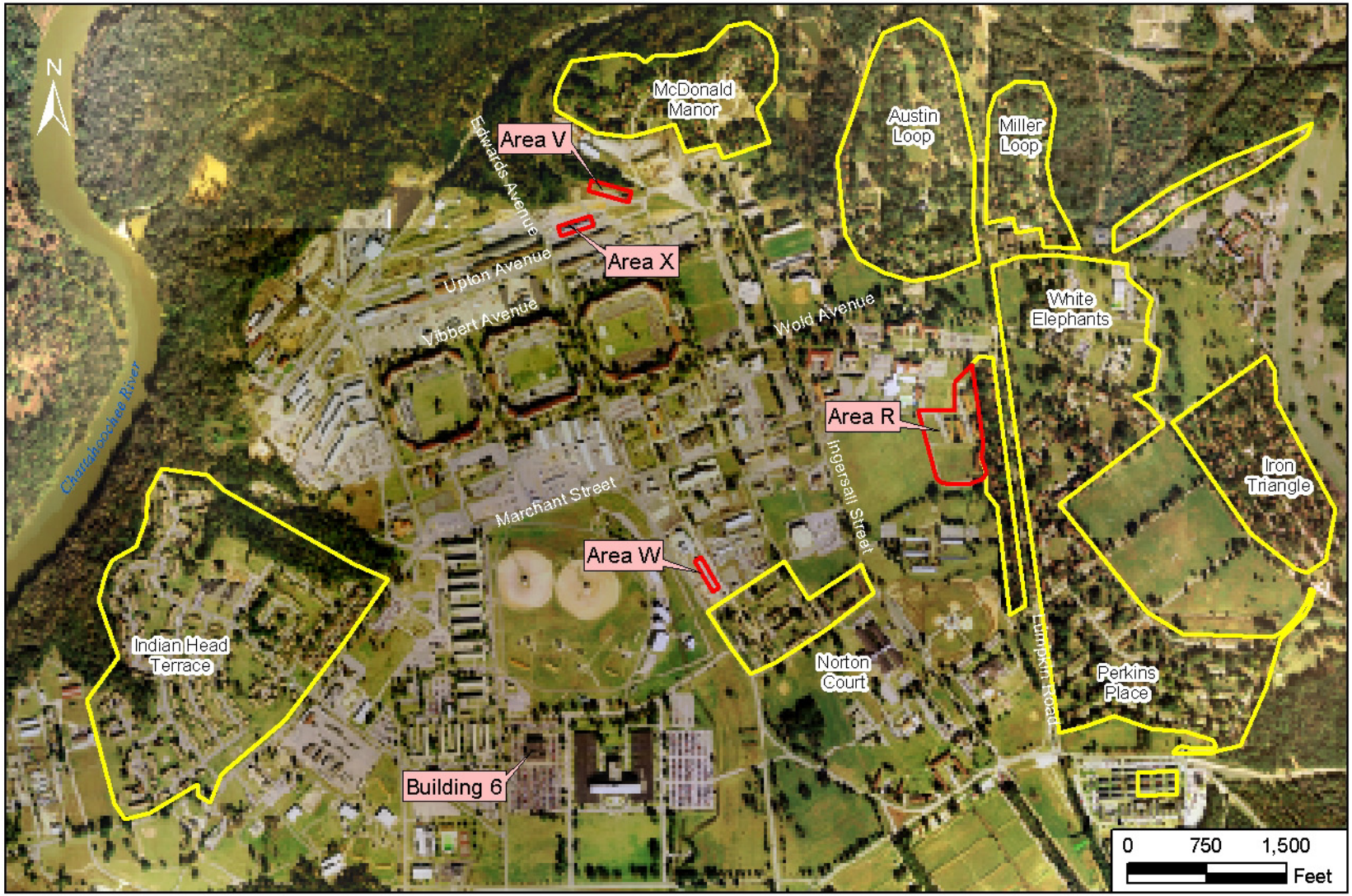
- To convey the 4,039 existing family housing units (3,999 Main Post units and 40 Porter Village units) and ancillary supporting facilities to Fort Benning Family Communities LLC and to provide Fort Benning Family Communities LLC with a 50-year lease of the underlying land. Figures 2-1 through 2-6 show the locations of Fort Benning's existing housing and proposed developable areas in the Main Post's cantonment area (the largely developed area that contains command/administrative offices, industrial facilities, warehousing, support facilities, and housing/billeting areas) and existing housing at Porter Village.

- To lease an additional 586 acres to Fort Benning Family Communities LLC for the siting of new housing.

Fort Benning Family Communities LLC would renovate 464 units (192 non-historic units and 272 historic units), demolish 3,220 units, and construct 3,438 new units (Fort Benning Family Communities LLC, CDMP Brief, 2005; Smith, 2004, personal communication). In addition to the housing units, Fort Benning Family Communities LLC will build four village centers, one neighborhood center, one welcome center, two pool cabanas and six outdoor pools (including one pool and cabana located at Porter Village), and 51 tot lots. At the end of the initial development period, Fort Benning's total on-post family housing inventory would number 4,200 units (4,123 Main Post units and 77 Porter Village units). Table 2-1 indicates the breakdown of units by housing area, and Table 2-2 presents the phasing plan for development.

The initial development plan would be implemented over a period of no more than 10 years, beginning in 2005. New housing units would be constructed before demolishing or rehabilitating existing housing units to provide a pool of housing to prevent a housing shortage during construction and rehabilitation. Some families might have to move off-post or to another house on-post as a result of construction activities.


RCI Footprint
Figure 2-1
Location of Fort Benning Cantonment Area
Fort Benning
Cantonment Area
Georgia
Alabama
Chattahoochee River
Cantonment Area
Fort Benning
N
0
0.5
1
Miles
Area J
Area I
Area T
Area M
Area P
Area V
Area X
Area R
Area W
McGraw Manor
Custer Terrace
Upatoi Terrace
Miller Loop
White Elephants
Iron Triangle
Golf Course
Davis Hills
Bouton Heights
Perkins Place
Austin Loop
McDonald Manor
Norton Court
Building 6
Indian Head Terrace
LEGEND
RCI Footprint: Existing Housing Area
RCI Footprint: Undeveloped Area/Ancilliary Facility
Fort Benning Installation Boundary
Fort Benning Cantonment Area
Source: Fort Benning GIS, 2004.



LEGEND

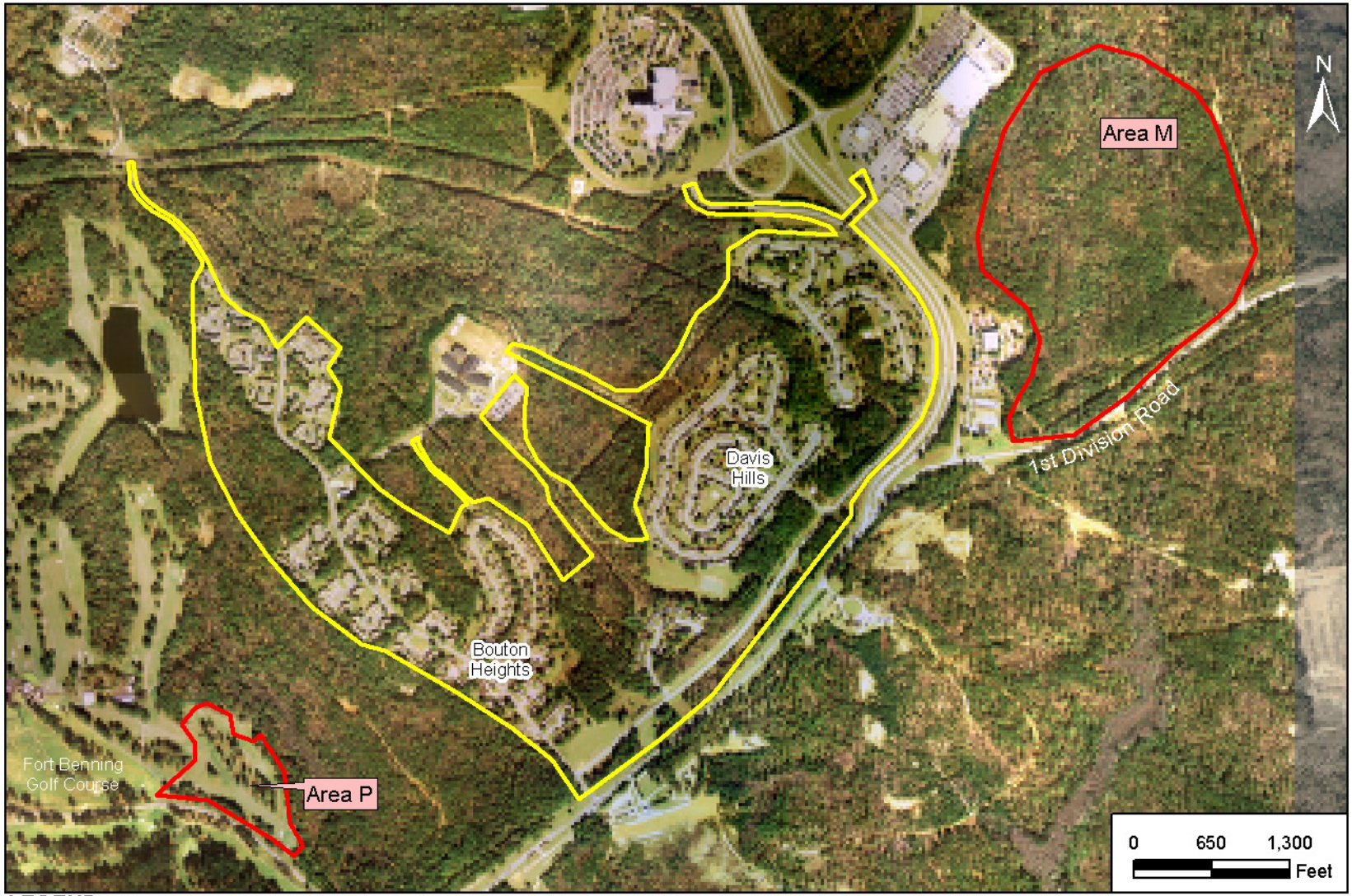
RCI Footprint: Existing Housing Area

RCI Footprint: Undeveloped Area/Ancillary Facility

Source: Fort Benning GIS, 2004.

Aerial Photo of Southwest Cantonment Area

Figure 2-2



LEGEND

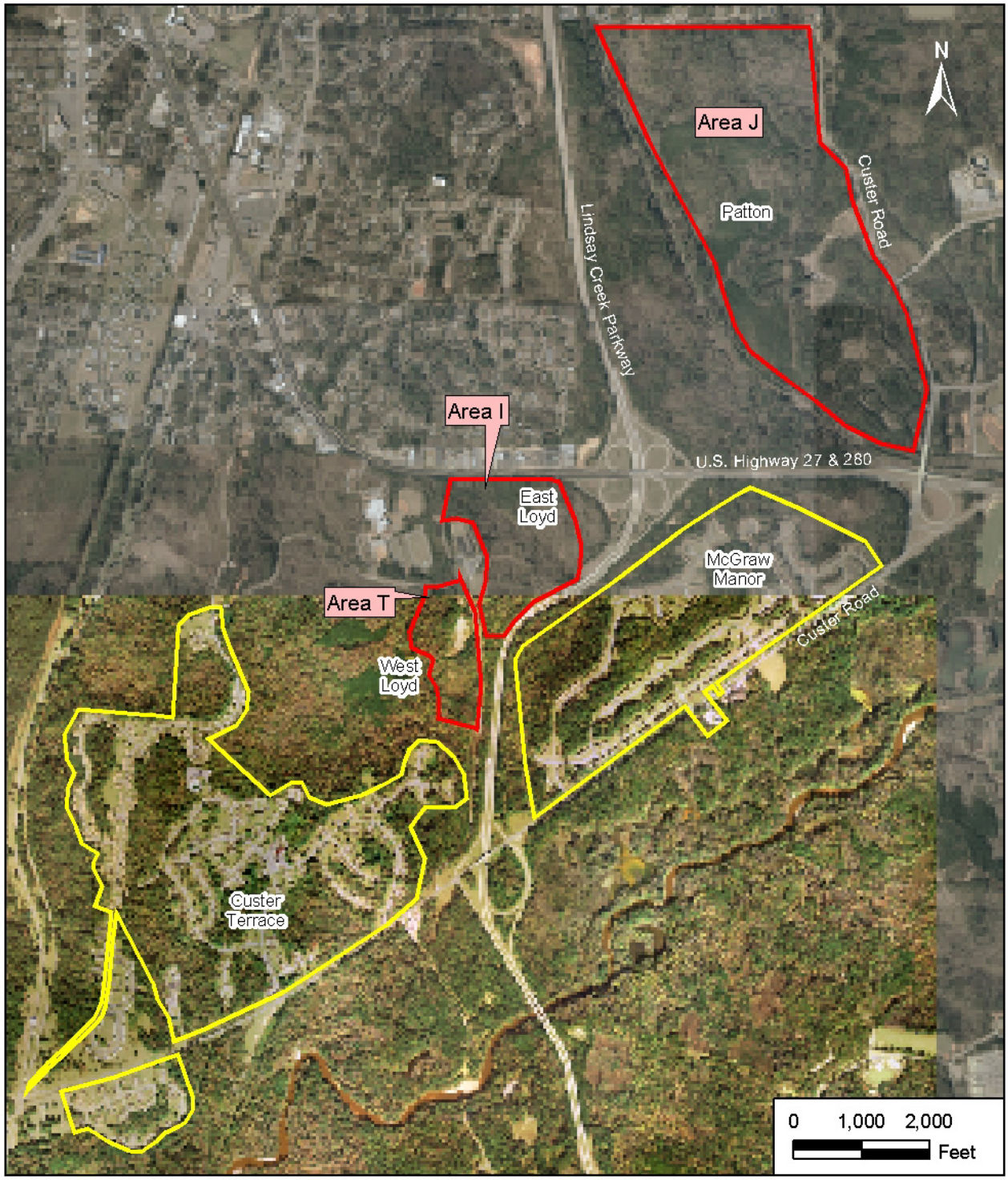
RCI Footprint: Existing Housing Areas

RCI Footprint: Undeveloped Area/Ancillary Facility

Source: Fort Benning GIS, 2004.

Aerial Photo of Central Cantonment Area

Figure 2-3



LEGEND

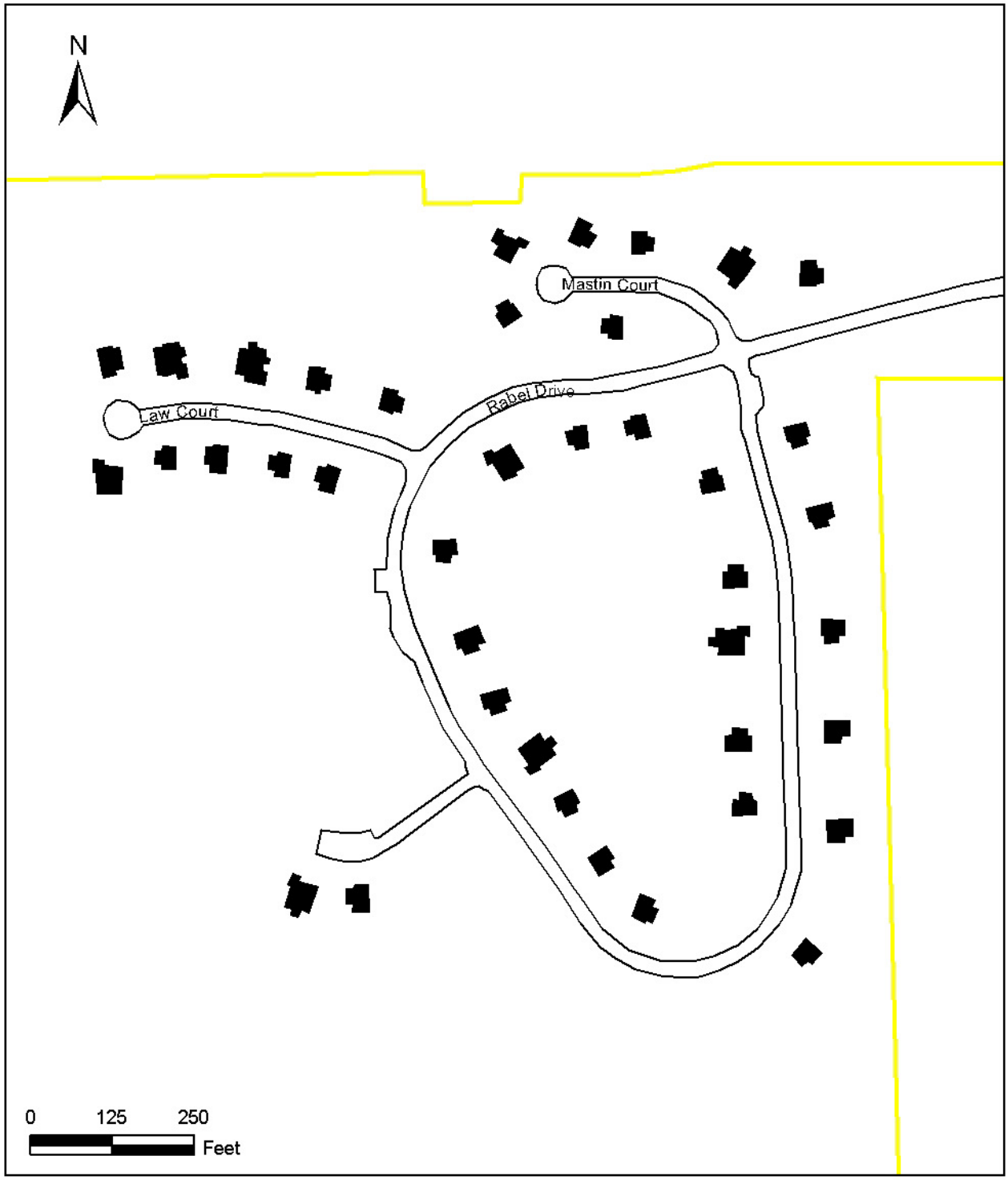
RCI Footprint: Exisisting Housing Areas

RCI Footprint: Undeveloped Area/Ancillary Facility

Source: Fort Benning GIS, 2004.

Aerial Photo of Northeast Cantonment Area

Figure 2-4



LEGEND

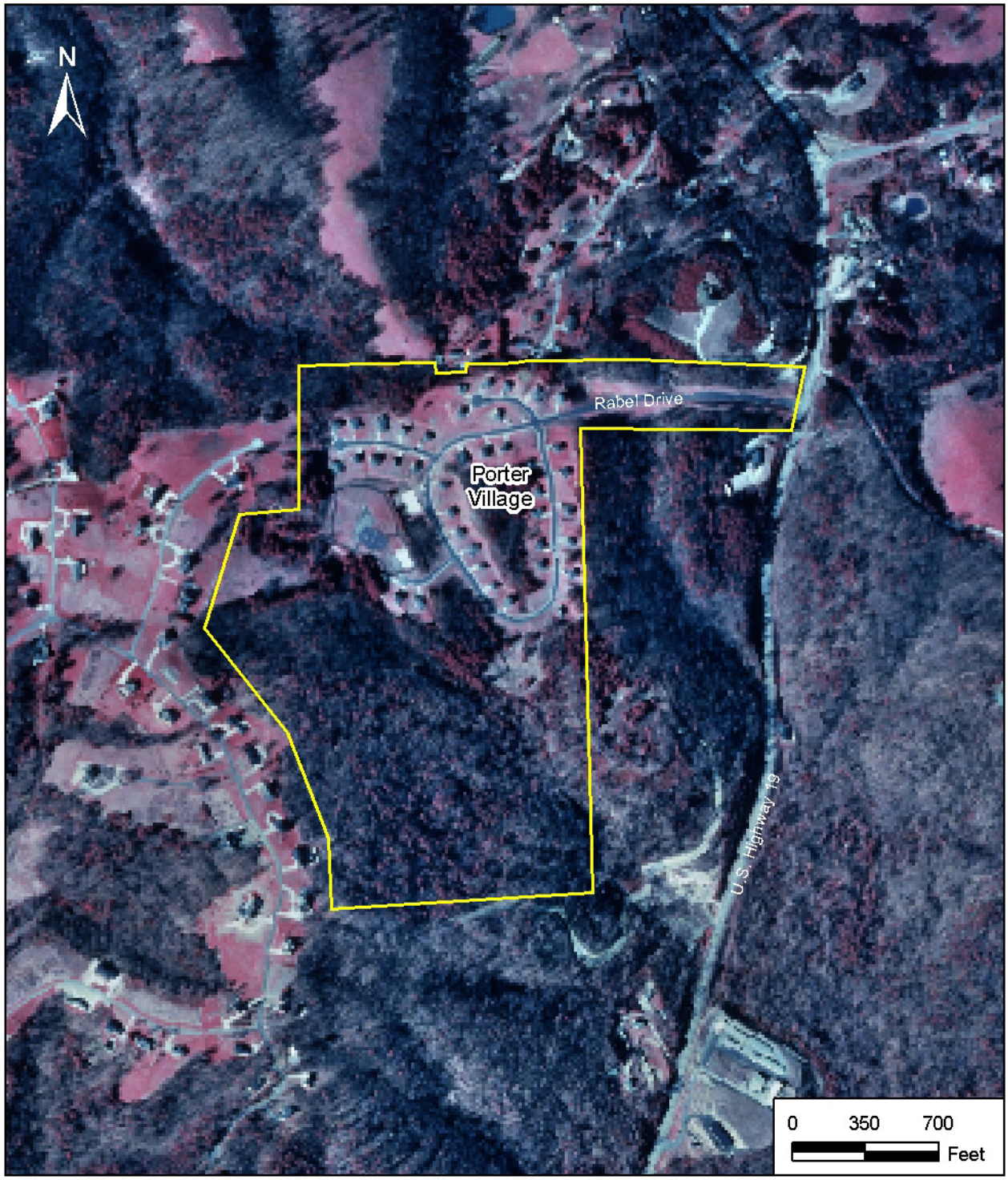
Installation Boundary and RCI Footprint

Buildings

Porter Village RCI Footprint

Source: Fort Benning GIS, 2004.

Figure 2-5



Source: Fort Benning GIS, 2004.

Figure 2-6

Table 2-1

Revised Development Plan by Housing Area

Neighborhood	Existing	Demolish	Renovate	Construct	Endstate	Additional Amenities
Patton Village (Area J)	0	0	0	804	804	Build village center and outdoor pool
McGraw Manor	952	952	0	601	601	Build village center and outdoor pool
Custer Terrace	872	872	0	772	772	Build village center and rehabilitate existing outdoor pool
Upatoi Terrace	150	150	0	138	138	
Indianhead Terrace (non-historic)	436	436	0	312	312	Build neighborhood center and outdoor pool
Bouton Heights / Davis Hill	710	630	80	583	663	Build village center and outdoor pool
Perkins Place	180	180	0	228	228	Build cabana and outdoor pool
Norton Court	112	0	112	0	112	
Historic/East Main Post[1] (historic renovation)	493	0	272	0	493	Renovate historic units
Area M	0	0	0	0	0	To be used as construction staging area and borrow pit. No current plan for development; project flex space
Area I	0	0	0	0	0	No current plan for development; project flex space
Area T	0	0	0	0	0	No current plan for development; project flex space
Porter Village	40	0	0	37	77	Build cabana and outdoor pool
TOTALS	**3,945**	**3,220**	**464**	**3,475**	**4,200**	
Previous Totals (original impact analysis was conducted on these numbers)	4,039	3,506	533	3,667	4,200	

[1] Consists of housing units in (or along) the Iron Triangle, McDonald Manor, Indianhead, Rainbow Road, White Elephants, Austin Loop, Miller Loop, Sigerfoos Road, Lumpkin Road, Eames Avenue, and Baltzell Avenue.

Table 2-2
Phasing Plan for Housing Development

Housing Area	End State	Years 1–10	Years 11–20	Years 21–40	Years 41–50
Patton Place	804	New/replace: 804	Minor renovation: 804	Medium renovation: 804	Demo and replace: 804
McGraw Manor	601	Demo: 952 New/replace: 601	Minor renovation: 601	Medium renovation: 601	Demo and replace: 601
Custer Terrace	772	Demo: 872 New/replace: 772	Minor renovation: 772	Medium renovation: 772	Demo and replace: 772
Upatoi Terrace	138	Demo: 150 New/replace: 138	Minor renovation: 138	Medium renovation: 138	Demo and replace: 138
Perkins Place	228	Demo: 180 New/replace: 228	Minor renovation: 228	Medium renovation: 228	Demo and replace: 228
Indianhead Terrace	312	Demo: 436 New/replace: 312	Minor renovation: 312	Medium renovation: 312	Demo and replace: 312
Davis/Bouton	663	Demo: 630 New/replace: 583 Major renovation: 80	Minor renovation: 583 & 80	Medium renovation: 583 Demo and replace: 80	Demo and replace: 583 Minor renovation: 80
Norton Court	112	Major renovation: 112	Minor renovation: 112	Demo and replace: 112	Minor renovation: 112
Historic Units	493	Medium renovation: 272 No work: 221	Minor renovation: 272 Major renovation: 221	Medium renovation: 272 Minor renovation: 221	Major Renovation: 272 Major renovation: 221
Porter Village	77	No work: 40 New/replace: 37	Medium renovation: 40 Minor renovation: 37	Minor renovation: 40 Medium renovation: 37	Demo and replace: 77
Total # Units	4,200	4,200	4,200	4,200	4,200

2.1 THE ARMY RESIDENTIAL COMMUNITIES INITIATIVE

2.1.1 Army RCI Procedures

The MHPI grants the Department of Defense (DoD) and the Military Services new authorities for obtaining family housing and ancillary supporting facilities. The essence of the authorities is that they comprehensively allow access to private sector financial and management resources for the improvement, construction, operation, and maintenance of family housing. The Army RCI program implements the 1996 MHPI.

The goal of the Army RCI, simply stated, is to provide affordable, quality housing for Soldiers

and their families. Implementation of RCI projects, however, is complex. Projects typically involve large numbers of family housing units, and they represent sizable financial stakes for both the private sector developer and the Army. Moreover, project implementation is complex because of the considerable amount of planning, coordination, and oversight that must occur among diverse functions such as engineering, finance, real estate, housing management, law, and others, including the local community.

An RCI project normally addresses an installation's entire inventory of family housing. It might also address required ancillary supporting facilities such as community centers, neighborhood playgrounds, housing offices, and maintenance facilities. An RCI project typically has seven major steps:

1. Decision to participate in the Army RCI. The initial decision whether an installation will participate in the Army RCI rests with the Installation Commander. The Commander's decision can be influenced by many considerations, such as the general condition and availability of family housing for Soldiers assigned to the Installation, the number of personnel on waiting lists for family housing, the length of time required to obtain family housing, and private sector housing costs near the Installation. A Commander's decision to participate in the initiative does not necessarily mean that an RCI project will ultimately occur; rather, it means that planning for the project may proceed.

2. Preliminary determination of requirements. An RCI project has five very visible components: (1) construction of new housing, (2) demolition of existing housing that is obsolete or beyond economical repair or rehabilitation, (3) renovation of housing, (4) provision of ancillary supporting facilities, and (5) operation and maintenance of the housing inventory. Upon an installation's entry into the Army RCI, information to support decisions about requirements for each component must be gathered and verified. Also, suitable locations for siting new housing or ancillary supporting facilities might have to be identified.

To help reach these preliminary determinations, the Installation Commander initiates several studies and reports. Among these are a Report of Availability (identification of areas that might be leased to a developer/private sector entity, referred to as the "Fort Benning Family Communities LLC"), an Environmental Baseline Survey (examination of potential contamination at the proposed lease site), and DA Form 337 (identification of buildings and improvements that might be conveyed to the Fort Benning Family Communities LLC as part of the CDMP). The Installation Commander may begin analysis of potential environmental effects at this early stage of the project's planning. Other studies that might also be initiated include a Housing Market Analysis and engineering studies pertaining to utility capacity, soil testing, and boundary delineation. For RCI projects that involve housing eligible for listing in the National Register of Historic Places, the Installation Commander should initiate consultation under Section 106 of the NHPA. In all cases, the Installation Commander initiates coordination with local school districts to ensure local officials' ability to plan for and accommodate the educational needs of children.

3. Two-step Request for Qualifications. The Army RCI Project Office, within Headquarters, Department of the Army, oversees a two-step Request for Qualifications (RFQ). Step 1 of the RFQ identifies potential development partners that are highly qualified with respect to experience, financial capability, organization (corporate level), past performance, and small business utilization (general history). Offerors meeting these requirements constitute an exclusive competitive range. In Step 2 of the RFQ process, a development entity is awarded a contract to partner with the Army and create a CDMP. The award is made based on the firm's submittal, which addresses the preliminary concept, financial return, organizational capabilities, and small business plan.

4. Negotiation of the CDMP. Requirements for new construction, demolition, renovation, and ancillary supporting facilities, as well as future operation and maintenance of family housing, are identified and agreed upon through negotiations between an installation and its development entity. It is during this planning and negotiating process that a variety of options or alternatives for family housing (e.g., housing sites and housing densities) and ancillary supporting facilities (e.g., types of facilities and possible locations) are considered and some dismissed for financial or other reasons. During this time, the NEPA analysis is conducted and coordinated with development of the CDMP. Through this coordination, some potential alternatives are dismissed because of environmental concerns, while any remaining environmental issues are considered and appropriate minimization and mitigation measures are identified.

Throughout development of the CDMP, the Army evaluates the development entity's approaches to various environmental stewardship issues. These include matters affecting potential savings with respect to energy conservation, recycling (both during demolition and construction and during later home ownership), natural landscaping and vegetative cover, and similar "smart" building and operational practices. The resulting CDMP contains all the details of the RCI project, including all work to be done, financing arrangements, and schedules.

5. Approval of the CDMP. The Installation Commander submits the negotiated CDMP through command channels to Headquarters, Department of the Army, for concurrence. The CDMP is then submitted to DoD for approval, and the congressional committees responsible for MHPI oversight are notified. The approval process authorizes the Installation's access to the Family Housing Improvement Fund, a revolving fund established for the MHPI, as well as the Installation's use of the MHPI's authorities as set forth in the negotiated CDMP.

6. Ratification of the CDMP. Based on DoD's approval of the use of statutory authorities and the revolving fund, the Installation and the development entity sign the CDMP. Analysis of potential environmental effects and any resulting mitigation in accordance with NEPA are completed prior to approving (signing) the CDMP.

7. Transfer of operation and implementation of the CDMP. The CDMP is implemented in accordance with its terms.

2.1.2 Legislative Authorities

The scope of an RCI project is determined primarily by analysis of the condition of existing housing and consideration of additional housing requirements to address the Installation's deficit of affordable, quality housing. These factors drive the amount of new construction, demolition, and renovation and the number of ancillary supporting facilities needed at an installation. Negotiation of the CDMP includes selection of the appropriate legislative authorities to support fulfillment of the Installation's family housing needs. These provisions give the Army and its development entity exceptional flexibility to create successful business arrangements for the benefit of Soldiers and their families. The authorities (with their U.S.C. citations) are summarized below.

- ***Direct loans.*** The Army may make direct loans to an eligible entity to provide funds to the eligible entity for the acquisition or construction of housing units that are suitable for use as military family housing. (10 U.S.C. § 2873(a)(1))

- ***Loan guarantees.*** The Army may guarantee a loan to an eligible entity if the eligible entity uses the proceeds of the loan to acquire or construct housing units that the Army determines are suitable for use as military family housing. (10 U.S.C. § 2873(b))

- ***Investment in nongovernmental entities.*** The Army may make investments in an eligible entity carrying out projects for the acquisition or construction of housing units suitable for use as military family housing. An investment may take the form of an acquisition of a limited partnership interest, a purchase of stock or other equity instruments, a purchase of bonds or other debt instruments, or any combination of such forms of investment. (10 U.S.C. § 2875(a), (b))

- ***Differential lease payments.*** Pursuant to an agreement to lease military family housing, the Army may pay the lessor an amount in addition to the rental payments made by military occupants to encourage the lessor to make the housing available to military members. (10 U.S.C. § 2877)

- ***Conveyance or lease of existing property and facilities.*** The Army may convey or lease property or facilities, including ancillary supporting facilities, to eligible entities for purposes of using the proceeds of such conveyance or lease to carry out activities under the initiative. (10 U.S.C. § 2878)

- ***Conformity with similar local housing units.*** The Army will ensure that the room patterns and floor areas of military family housing units acquired or constructed under the initiative are generally comparable to the room patterns and floor areas of similar housing units in the locality concerned. Space limitations by pay grade or military family housing units provided in other legislation will not apply to housing acquired under the initiative. (10 U.S.C. § 2880(a), (b))

- ***Ancillary supporting facilities.*** Any project for the acquisition or construction of military family housing under the initiative may include the acquisition or construction of ancillary supporting facilities. (10 U.S.C. § 2881)

- ***Lease payments through pay allotments.*** The Army may require Soldiers who lease housing acquired or constructed under the initiative to make lease payments by allotments from their pay. (10 U.S.C. § 2882(c))

2.2 IMPLEMENTATION OF THE PROPOSED ACTION

The proposed CDMP would include a number of actions to be undertaken by Fort Benning and Fort Benning Family Communities LLC. This section provides an overview of the CDMP, as outlined in the CDMP Brief in Appendix A. Under the CDMP, Fort Benning Family Communities LLC would respect and respond to the existing natural and built environment to minimize impact and to capitalize on the value of existing conditions. In addition, all new work, alterations, and renovations would be designed pursuant to *The Secretary of the Interior's Standards* to minimize the effect on the historic built environment (housing areas, housing, support facilities, open areas, landscapes, and streetscapes). Planning would reflect the following environmental principles:

- Housing areas will be designed to respect the existing natural systems of topography, vegetation, and drainage.

- Developed areas will be designed to minimize groundworks, aboveground utilities, and drainage.

- Existing landscape will be preserved in all possible situations.

- The landscape will be populated largely with native plant materials.
- A water-management system will be designed to handle both the quantity and quality of storm water runoff.
- Community design will reduce dependency on the car.
- An open-space network will be used to link larger spaces, corridors, and fragments with a system of pedestrian/bike trails.
- The sense of community will be heightened by improved and linked open spaces, strategic tree locations, trail systems, activity areas, and street layouts that enhance the quality of outdoor life.
- Existing built and non-built landscapes will be accessed and integrated with the new.

2.2.1 Community Development and Management Plan Provisions

2.2.1.1 Lease of Land

Fort Benning would grant Fort Benning Family Communities LLC a lease of the approximately 1,416 acres (1,321 on the Main Post and 95 at Porter Village) currently used for family housing and family housing support. Fort Benning would also grant a 50-year lease for parcels in other areas on the Main Post, totaling approximately 586 acres, for siting of new family housing and ancillary supporting facilities to be constructed, operated, and maintained by Fort Benning Family Communities LLC. Leasing of these parcels would be subject to several conditions imposed by the Army. The lease would be subject to all existing easements, or those subsequently granted, as well as established access routes for roadways and utilities located, or to be located, on the premises. The lease would include clauses that do the following:

- Prohibit Fort Benning Family Communities LLC from storing, treating or disposing of hazardous wastes (above those quantities generated in routine operations and immediately disposed of off-post) or taking any actions that would cause irreparable injury to the land. Fort Benning Family Communities LLC would be required to comply with all applicable federal, state, interstate, and local laws, regulations, conditions, or instructions affecting its activities. The Army would also include clauses in the leases permitting the Army's periodic inspection of the property to ensure its safe condition and its proper use in accordance with the terms of the lease.
- Prohibit the discharge of waste or effluent from the premises in such a manner that the discharge would contaminate streams or other bodies of water or otherwise become a public nuisance.
- Prohibit removing or disturbing, or causing or permitting to be removed or disturbed, any historical, archeological, architectural, or other cultural artifacts, relics, remains, or objects of antiquity, unless previously authorized. If such items were discovered, Fort Benning Family Communities LLC would be required to notify the Installation Commander or his or her designated representative immediately and protect the site and the material from further disturbance until the Installation Commander or the designated representative gives clearance to proceed.

- Require maintenance of all soil and water conservation structures and the taking of appropriate measures to prevent or control soil erosion on the premises. These measures would be addressed in permits (e.g., Clean Water Act Section 404 and National Pollutant Discharge Elimination System [NPDES]) and in a Storm Water Pollution Prevention Plan (SWPPP).

- Prohibit cutting timber; conducting mining operations; removing sand, gravel, or like substances from the ground; burying waste of any kind; or in any manner substantially changing the contour or condition of the premises except as authorized through permits or by the Installation Commander or the designated representative.

2.2.1.2 Existing Family Housing Areas

Fort Benning's family housing is located throughout the Main Post's cantonment area and at Porter Village. Table 2-3 provides information concerning Fort Benning's family housing inventory. Table 2-4 shows the Installation's housing stock by year of construction.

Table 2-3
Fort Benning Family Housing Inventory

Grade Category	1-BR	2-BR	3-BR	4-BR	5-BR	Total
General/Flag Officer	0	0	0	1	1	2
Senior Grade Officer	0	0	73	9	0	82
Field Grade Officer	0	0	76	23	0	99
Company Grade Officer	0	1	209	161	0	371
Senior Noncommissioned Officer	0	0	145	317	9	471
Junior Noncommissioned Officer	0	519	1,935	560	0	3,014
TOTAL	**0**	**520**	**2,438**	**1,071**	**10**	**4,039**

Note: Inventory data include the 40 family housing units at Porter Village.

Table 2-4
Fort Benning Family Housing Construction Dates

Year Built	2-BR	3-BR	4-BR	5-BR	Total
1918[1]	0	0	0	1	1
1923[1]	0	99	0	0	99
1924[1]	0	1	0	0	1
1930[1]	10	10	0	0	20
1931[1]	72	18	1	0	91
1932[1]	1	0	0	0	1
1934[1]	0	153	32	0	185
1935[1]	0	96	0	0	96

Table 2-4
Fort Benning Family Housing Construction Dates (continued)

Year Built	2-BR	3-BR	4-BR	5-BR	Total
1950	0	80	0	0	80
1952	101	143	0	0	244
1957	196	602	0	0	798
1958	0	784	0	0	784
1963	0	3	292	0	295
1968	0	30	45	0	75
1969	0	162	243	0	405
1970	0	12	4	0	16
1971	0	146	52	0	198
1972	0	82	56	0	138
1973	0	2	2	0	4
1975	124	0	331	9	464
1979	0	0	4	0	4
1996	16	15	9	0	40
Total	520	2,438	1,071	10	4,039

Note: Inventory data include the 40 family housing units at Porter Village in 1996.
[1] Historic structure.

2.2.1.3 Development Strategy

In developing the CDMP, Fort Benning and Fort Benning Family Communities LLC considered several options for implementing the proposed action. Implementation of the CDMP would require that Fort Benning Family Communities LLC operate and maintain all family housing for a period of 50 years (with an optional 25-year extension), as well as construct, operate, and maintain the ancillary supporting facilities. The development plan has a variety of options for family housing units, including the following:

- *Technical revitalization*: Replace or repair various housing components to upgrade units to standard (e.g., replace dishwasher, replace roof, replace light fixtures, repair driveway and sidewalk).

- *Functional replanning*: Add, modify, or improve the floor plan or structure to enhance livability (e.g., convert two 2-bedroom units into one 4-bedroom unit).

- *Redesignation*: Modify the number of bedrooms in a housing unit without construction (e.g., redesignate a 3-bedroom home as a 2-bedroom home with a family room).

- *Demolition/removal*: Completely remove a housing unit without replacing it.

- *Demolition/replacement*: Completely remove a housing unit and replace it with an alternative housing unit.

- *Replacement/undeveloped land*: Build a replacement housing unit on an unoccupied site. Appropriate NPDES permit requirements would be implemented during design and construction phase.

- *New construction*: New construction on greenfield sites[2]. Appropriate NPDES permit requirements would be implemented during design and construction phase.

2.2.1.4 Conveyance

All existing on-post family housing units would be conveyed to Fort Benning Family Communities LLC. The Army would convey this property with encumbrances, notices, and requirements obligating Fort Benning Family Communities LLC to perform certain actions. As appropriate to each structure or group of structures, the deed would identify the presence of asbestos-containing materials (ACM), lead-based paint (LBP), and radon. The Army would also identify any easements and rights-of-way that might affect use of the conveyed property. These encumbrances would be in the form of covenants in the deed and would be binding on the transferee, as well as any subsequent successors or assigns. Negotiated terms of transfer or conveyance might result in requirements for Fort Benning Family Communities LLC to maintain the status quo of historic buildings or archeological sites or might impose a requirement for consultation with the SHPO prior to any actions affecting such resources.

2.2.1.5 Barrier-free Design

New family housing and ancillary supporting facilities must adhere to the *Uniform Federal Accessibility Standards* and the *Americans with Disabilities Act Accessibility Guidelines* promulgated by the Access Board (formerly known as the Architectural and Transportation Barriers Compliance Board) pursuant to the Architectural Barriers Act of 1968, Rehabilitation Act of 1973, and Americans with Disabilities Act of 1990. These standards require that at least 5 percent of new family housing be designed and built to be accessible, or easily modifiable for access, by persons with physical disabilities.

2.2.1.6 Construction Standards

Construction standards to be applied to family housing reflect consideration of both RCI minimum construction standards and local community building codes. Construction of housing units would be based on sustainable design and development concepts. Army policy is that RCI projects, planned or under design, must achieve the Gold rating of the Sustainable Project Rating Tool (SPiRiT) process.[3] The SPiRiT process, based on sustainable design and development concepts, assesses the degree to which the design of a building successfully incorporates consideration of factors such as sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Use of the SPiRiT process improves the environmental and economic performance of facilities through the use of established and advanced industry principles, practices, materials, and standards. All construction activities will be evaluated for proper implementation of NPDES requirements and the preparation of an Erosion, Sedimentation and Pollution Control Plan (ESPCP). The ESPCP will meet SPiRiT requirements for erosion and sedimentation control.

[2] The term *greenfield site* refers to undeveloped, unsullied property.

[3] The Sustainable Project Rating Tool is derived from the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Green Building Rating System and is based on the LEED *Green Building Reference Guide*.

2.2.1.7 Operation and Maintenance

For 50 years Fort Benning Family Communities LLC would operate and maintain all existing and new family housing units and ancillary supporting facilities, including associated parking lots, sidewalks, existing and new tot lots, playgrounds, parks, walking trails, and other amenities, in accordance with the quality standards established in the CDMP. At Fort Benning's option, the Installation may extend the period of operation and maintenance and the leases of land supporting family housing for an additional 25 years.

2.2.1.8 Rental Rates and Payments

The rental rate to be paid by any Soldier would not exceed his or her BAH. Fort Benning would continue to categorize family housing by grade group (e.g., junior noncommissioned officer [NCO], senior NCO, company grade officer).

2.2.1.9 Occupancy Guarantee

Fort Benning would not guarantee for Fort Benning Family Communities LLC the level of occupancy of the housing units. Under special circumstances such as large-scale, long-term deployments, Fort Benning Family Communities LLC could rent vacant family housing units to tenants other than service members with dependents in accordance with the CDMP Family Housing Management Plan, at rental rates that are no less than what a Soldier of the appropriate grade would be charged for the dwelling unit. In such a case the Installation Commander must approve Fort Benning Family Communities LLC's basic lease agreement.

2.2.1.10 Regulatory Controls

It is the intent of the development plan to adopt the International Residential Code *One- and Two-Family Dwellings*, 2003 edition, by the International Code Council, Inc., with standardized requirements for building, plumbing, mechanical, and electrical by incorporation of a compilation of data from the following national model codes: Uniform Building Code, Standard Building Code, Building Officials and Code Administrators (BOCA) National Building Code, Standard Plumbing Code, International Building Code, BOCA National Plumbing Code, Uniform Mechanical Code, Standard Mechanical Code, Standard Gas Code, BOCA National Mechanical Code, Code for the Installation of Heat-Producing Appliances, National Electrical Code, applicable Georgia state codes and regulations, and applicable federal codes and regulations.

2.2.1.11 Utilities

Natural gas, water, sewer, telephone, cable, and electricity at Fort Benning and Porter Village are privatized. Ownership and operation of the utility infrastructure would continue to be the responsibility of the private utility provider. The development plan assumes maximum reuse of roads and utility infrastructure. Water, sewer, electricity, and gas commodity would be purchased from Fort Benning at the Installation's bulk rate.

2.2.1.12 Police and Fire Protection

Project revenues would be used to reimburse Fort Benning for police and fire protection services.

2.2.1.13 Jurisdiction

The legislative jurisdiction at Fort Benning's housing areas is exclusive. The term "exclusive legislative jurisdiction" is applied when the federal government possesses, by whatever method

acquired, all the authority of the state and the state concerned has not reserved to itself the right to exercise any of the authority concurrently with the United States except the right to serve civil or criminal process in the area relative to activities that occurred outside the area.[4] Implementation of the RCI program would not change existing legislative jurisdiction.

2.2.1.14 Implementation Commencement

Assuming execution of the CDMP by Fort Benning and Fort Benning Family Communities LLC before the end of May 2005, implementation of the CDMP would begin in November 2005. Any required permit application and preparation of a ESPCP for each site will be available for review at the installation level before any construction activity is initiated.

2.2.2 Siting of New Housing

The following siting criteria have been considered in establishing the footprint for the RCI family housing.

2.2.2.1 Proximity to Existing Housing

New family housing and ancillary supporting facilities would be located near existing family housing. From a land use pattern perspective, this approach allows for maintaining consistency in adjacent land uses in large general areas. It also allows residents to live close to existing supporting facilities such as community clubs, the post exchange, the commissary, and auto service stations. Such proximity helps to create a sense of "small town" neighborhoods where principal shopping destinations are nearby. Locating new neighborhoods close to existing ones helps to reduce development costs by enabling use of existing utility corridors and other infrastructure. Finally, keeping family housing in or near a generally developed portion of the Installation avoids opening newer, more distant areas. Risks of potential effects on ecological systems (e.g., wildlife disturbance, habitat fragmentation) are thus decreased.

2.2.2.2 Sufficient Size

Lack of adequate acreage for proposed housing could adversely affect an otherwise pleasing atmosphere by creating too high a building density. Allocation of an adequate amount of property would result in a density that strikes an appropriate balance between the residents' desire for space and an appropriate use of land resources. Density for new and redeveloped family housing areas/neighborhoods would meet RCI guidance standards.

2.2.2.3 Physical Features

Any site for family housing must not be located on steep terrain; in areas heavily incised by watercourses; or within any stream buffers, wetland buffers, or floodplains.

2.2.2.4 Compatible Land Uses

Siting of family housing parcels must not result in the creation of incompatible land uses (e.g., siting on contaminated properties or adjacent to off-post industrial property).

[4] Definitions and characteristics of jurisdiction are provided in Army Regulation (AR) 405-20, *Federal Legislative Jurisdiction*.

2.2.2.5 Minimal Loss of Natural, Ecological, and Cultural Resources

Siting of family housing must avoid loss of natural, ecological, and cultural resources such as wetlands, federally listed species or their habitats, archeological sites, structures eligible for the National Register of Historic Places, and structures contributing to historic districts. Implemention of the proposed action would be conducted in accordance with the provisions described in the March 2005 Programmatic Agreement between Fort Benning and the Georgia SHPO.

2.2.2.6 Military Security

Family housing parcels must be located so as not to enable or encourage residents to interfere with military security requirements or to pose a risk of breach of military security. Housing areas should not be located near sites supporting activities to which access is controlled for security reasons.

2.2.2.7 Operational Safety

Family housing parcels should be located away from operational areas to avoid potential safety risks to residents. In addition, family housing should not be located so that residents would be required to travel past or through training areas while transiting to off-base locations.

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SECTION 3.0
ALTERNATIVES

Fort Benning has identified four alternatives under its proposed action, as well as a no action alternative. These alternatives are described below.

3.1 PREFERRED ALTERNATIVE

Implementation of the proposed action, as described in Section 2.2, is Fort Benning's preferred alternative. Use of various MHPI authorities, proposed for and identified in the CDMP put forth by Fort Benning Family Communities LLC and negotiated by Fort Benning, would achieve the purpose of and need for the proposed action as described in Section 1.2. Accordingly, this alternative is evaluated in detail in Section 4.0 of this document.

3.2 PARTIAL-PRIVATIZATION ALTERNATIVE

Under the partial-privatization alternative, Fort Benning would subject only a portion of the Installation's family housing to the RCI. Family housing in good condition (not needing demolition or renovation) would remain subject to Army management for maintenance and operational control.

Privatization of only a portion of Fort Benning's family housing inventory would have three substantial drawbacks. First, the condition of the family housing retained by the Army would change over time, eventually requiring renovation or replacement. Failure to include the entire inventory of housing in the RCI would only delay action to provide adequate housing for Soldiers and their dependents. Second, two management regimes (the Army's and the development entity's) would not be as cost-efficient as one. From a development entity's perspective, maximum potential cash flow is important to support development and operation of ancillary supporting facilities desired by an installation, activities that traditionally do not provide independent sources of revenue for their sustainment. Finally, partial privatization would not fully meet the Army's purpose of and need for the proposed action. Together, these factors render partial privatization at Fort Benning not feasible, and therefore such an alternative is not evaluated in detail in this EA.

3.3 PRIVATE-SECTOR-RELIANCE ALTERNATIVE

Under this alternative, Fort Benning would rely solely on the private sector to meet the housing needs of personnel assigned to the Installation. The Installation would terminate family housing programs, dispose of existing family housing units, and convert the land now supporting housing areas to other uses.

The alternative is premised, in part, on the view that competitive marketplace forces would lead to the creation of sufficient affordable, quality family housing. Moreover, there are several intangible benefits to Soldiers and their families living on-post. These include camaraderie and esprit de corps among the military personnel, a sense of "family" among dependents (especially during Soldiers' deployments), proximity to the workplace (thereby avoiding lengthy commutes), and Soldiers' comfort level in knowing that their dependents are residing in a safe community while they are deployed or serving on temporary duty at a distant location.

As a practical matter, termination of Fort Benning family housing would prove difficult. If on-post housing were to be terminated over a period of years, in the absence of maintenance funding, the existing housing would become unsuitable because of age or disrepair. Residents could then

find themselves living in blighted and partially abandoned neighborhoods. If on-post housing were to be terminated at once, it is unlikely the private sector could provide enough affordable, quality housing, as well as schools, shopping, roads, and other support amenities, on short notice.

Renovation of many of the family housing units at Fort Benning is economically sound. Termination of family housing programs would involve abandonment of immense investments in those facilities. The various consequences of reliance on the private sector and the management difficulties of effecting termination of family housing on-post would prove challenging. In light of the aggregate value of family housing units amenable to renovation, termination of a family housing construction and maintenance program would gravely contravene the fiscal responsibilities Congress expects the Army to fulfill. For these reasons, this alternative is not reasonable and is not further evaluated in this EA.

3.4 LEASING ALTERNATIVE

Statutory authorities exist for Fort Benning to ensure the availability of adequate, affordable housing through use of long-term leases of housing for military family use. Key aspects of the two laws providing these authorities are summarized below.

- *Long-term leasing of military family housing to be constructed*. Family housing obtained through use of this authority, which appears at 10 U.S.C. § 2835, is often referred to as "Section 801 housing." Under this authority, the Army may, through competitive contract procedures, have a developer build or renovate (to residential use) family housing units near an installation. Housing units under this authority must meet DoD specifications. The Army may then lease the units for use as family housing for a period of not more than 20 years. Upon termination of the lease period, the Army has the right of first refusal to acquire all rights, title, and interest in the housing facilities constructed and leased under the contract.

- *Military housing rental guarantee program.* Family housing obtained through use of this authority, which appears at 10 U.S.C. § 2836, is often referred to as "Section 802 housing." Under this authority, the Army may award a competitive contract to a private developer or a state or local housing authority to construct or rehabilitate housing on or near an installation having a shortage of housing for personnel with or without accompanying dependents. Under the contract, the Army guarantees the occupancy levels of the housing units at rental rates comparable to those for similar units in the same general market. Housing units under this authority must comply with DoD specifications or, at the discretion of the Service secretary, local building codes. A rental guarantee agreement may not exceed 25 years in duration; it may be renewed only for housing on government-owned land. The agreement may provide that utilities, trash collection, snow removal, and pest control services will be furnished by the Army at no cost to the occupant to the same extent that such services are provided to occupants of base housing.

Army-wide, there has been only limited experience with either of the foregoing authorities. An important drawback affecting the Section 801 and Section 802 housing programs is related to what is known as budget "scoring," the method of accounting for federal government obligations required by the Budget Enforcement Act of 1990. Scoring ensures that all government obligations are accounted for when long-term liability is incurred (during the first year of a project). Scoring guidelines issued by the Office of Management and Budget require that a project be fully funded with sufficient budget authority in its first year to cover the government's long-term commitment. In other words, all potential costs associated with long-term leasing or rental guarantee programs must be recognized in the first year, and they must be considered as

part of the Army's total obligational authority (the total monies appropriated by Congress for use by the Army in a given year). For some privatization projects, such as military leased housing, the Army's obligations for scoring purposes amount to the net present value of the total rent under the lease. These amounts can be nearly as great as the sums required under traditional military construction financing for Army-initiated construction of similar facilities.

The Section 801 housing program and Section 802 rental guarantee program only partially address the purpose of and need for the proposed action. Because of the scoring guidelines, the Army would obtain either very little or no leverage benefit.

Enactment of new authorities in the MHPI suggests Congress's recognition that the drawbacks of Section 801 and Section 802 outweigh the potential benefits to the Army. Although use of either or both of the authorities at Fort Benning would be possible, their use would not be reasonable when compared with the greater flexibility and economic advantages of the new authorities offered by the RCI to the Army and to the Soldiers' families. Accordingly, the off-post leasing alternative is not further evaluated in this EA.

3.5 NO ACTION ALTERNATIVE

Inclusion of the no action alternative is prescribed by Council on Environmental Quality regulations. The no action alternative serves as a baseline against which the impacts of the proposed action and alternatives can be evaluated.

Under the no action alternative, Fort Benning would not implement the proposed action but would continue to provide for the family housing needs of its personnel by using traditional military maintenance and construction procedures. Fort Benning would continue to obtain funding for family housing through the congressional authorization and appropriations process. Based on historical trends, it is assumed that the amount of congressional funding for family housing would not change and that the housing maintenance backlog would continue to increase. Any major changes to existing housing or construction of new housing would require that appropriate NEPA analyses be completed before implementing such actions.

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SECTION 4.0
AFFECTED ENVIRONMENT AND CONSEQUENCES

4.1 LAND USE

4.1.1 Affected Environment

4.1.1.1 Regional Setting

Main Post. Fort Benning encompasses 181,275 acres and is situated in west-central Georgia on the Alabama border, about 100 miles southwest of Atlanta. The installation is adjacent to and south of the city of Columbus, Georgia, along the Chattahoochee River in Muscogee and Chattahoochee counties, as well as small portions of Muscogee County and Marion County, Georgia, and Russell County, Alabama. About 12,000 acres of the installation are on the Alabama side of the Chattahoochee River in Russell County. Aside from the urban and residential setting to the north in Columbus, the area surrounding Fort Benning is largely rural, consisting of agricultural and forested land.

Located on the boundary of the Atlantic Coastal Plain and Piedmont Physiographic Province, Fort Benning has a humid temperate climate with well-defined seasons. The summers are long, hot, and humid, and the winters are mild. Temperatures average 37 degrees Fahrenheit (°F) for the wintertime low and over 90 °F for the summertime high. The average annual rainfall for the area is 51 inches (Fort Benning, 2001b).

Porter Village. Porter Village is the housing area for Camp Merrill, a satellite installation of Fort Benning. Porter Village is approximately 2 miles north of the town of Dahlonega in Lumpkin County, Georgia, approximately 180 miles northeast of Fort Benning and 80 miles north of Atlanta. The mountains and higher elevation of this location result in milder summers and cooler winters than those at Fort Benning. The annual mean temperatures are a high of 78 °F and a low of 48 °F. (Fort Benning, 2001b).

4.1.1.2 Installation Land Use

Main Post. Fort Benning's primary mission activities are the following:

- Training entry-level Soldiers.
- Serving as the primary infantry training facility in the United States.
- Hosting the Army's Noncommissioned Officer Academy.
- Hosting the Western Hemisphere Institute for Security Cooperation, which provides education and training to military and law enforcement personnel and civilians to promote democratic values.
- Providing a power projection platform for rapid deployment.

In addition to the resident training units, a number of tenants, including the 11th and 29th Infantry Regiments, Basic Combat Training Brigade (BCTB), 3rd Brigade 3rd Infantry Division (ID), and 3rd Battalion 75th Ranger Regiment, conduct much of their training on the Installation (Fort Benning, 2004a). Fort Benning is home to more than 20,000 Soldiers (Fort Benning, 2001b). Training facilities cover 95 percent of the installation and include numerous ranges (six of which accommodate mechanized vehicle

training), training areas, ordnance impact areas, landing strips, drop zones, and bivouac sites. A digitized multipurpose range complex for additional mechanized vehicle training is being constructed (Fort Benning, 2004d).

The developed cantonment areas on Fort Benning occupy about 9,000 acres, or 5 percent of the installation. The largest of these, the Main Post, is on the west side of the installation, adjacent to and south of the city of Columbus and just west of the Chattahoochee River. Land use categories on the Main Post are generally, from west to east, Airfield (Lawson Army Airfield), Industrial, Maintenance, Administrative, Housing, Community Facilities, Open Space, Training and Ranges, and Medical (Laubman-Reed and Assoc., n.d.). The other smaller cantonment areas are Sand Hill and Kelly Hill, northeast of the Main Post, and Harmony Church, near the center of the installation (Fort Benning, 2003a). Table 4-1 lists the approximate acreage of each land use category in the cantonment areas, and Figure 4-1 shows the land uses on the Main Post, where the majority of the RCI footprint is located.

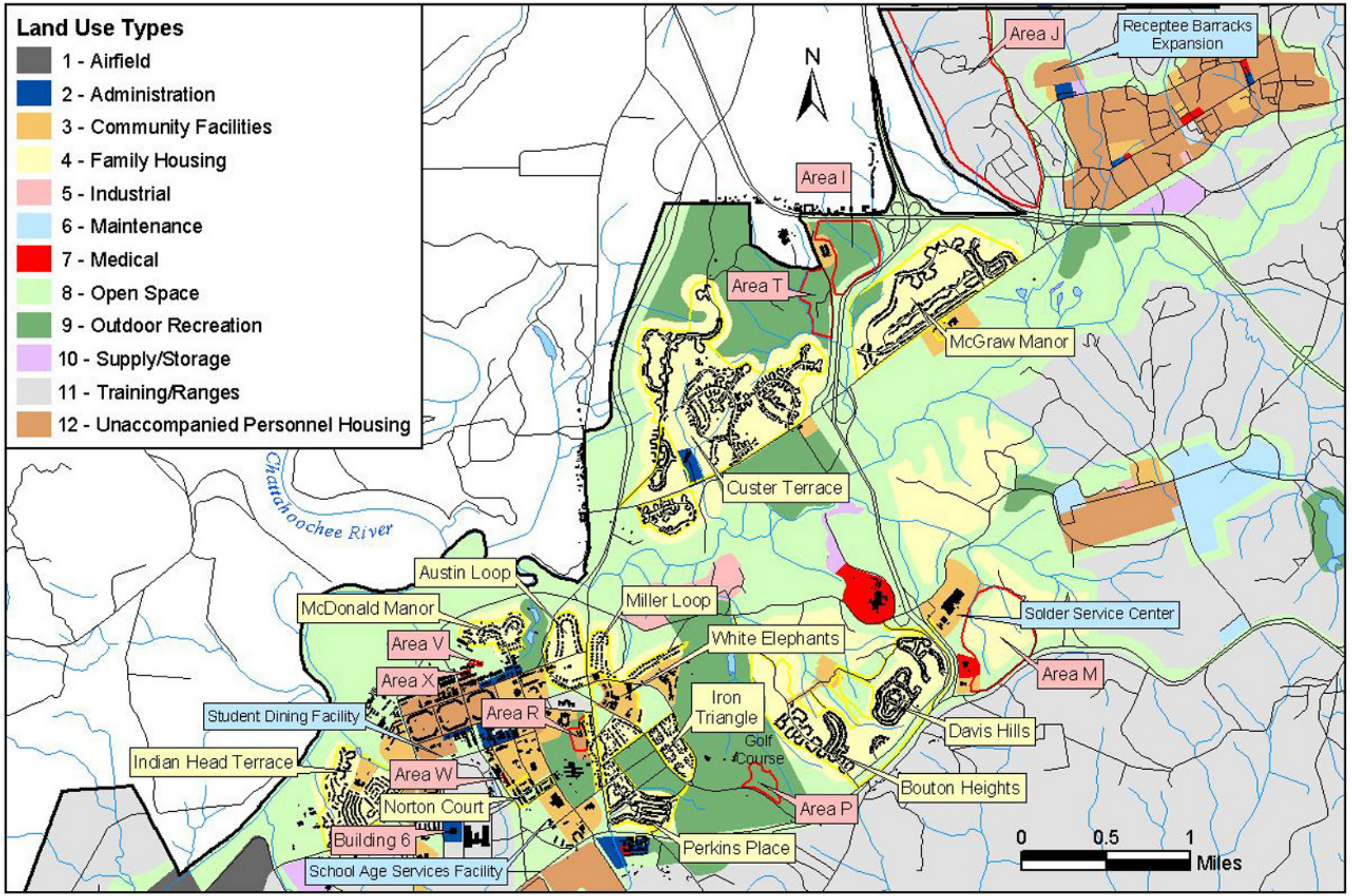
Table 4-1

Fort Benning Land Uses – Main Post

Land Use Type	Acreage	Percentage of Total
Airfield	1,372	10.9
Administration	90	0.7
Community Facilities	470	3.8
Family Housing	1,466	11.7
Industrial	139	1.1
Maintenance	379	3.0
Medical	71	0.6
Open Space	5,163	41.2
Outdoor Recreation	1,868	14.9
Supply/Storage	507	4.0
Unaccompanied Personnel Housing	1,006	8.0
TOTAL	**12,531**	**100.0**

Sources: Modified from Harland Bartholomew and Assoc., 1994; Fort Benning, 2004b.

Porter Village. Camp Merrill is home to the 5th Ranger Training Battalion and the Mountain Phase of the U.S. Army Ranger School. Facilities on Camp Merrill include a firing range, a heliport (Mosby Army Heliport), an airfield, classroom facilities, barracks, a gymnasium, a medical clinic, and a housing area and associated community support facilities (Camp Merrill, 2002; USMRA, 2004). Camp Merrill is surrounded by Chattahoochee National Forest, which troops stationed at the camp are permitted to use to conduct military training activities in mountainous terrain. The Porter Village housing area, which serves Camp Merrill, is approximately 9 miles southeast of Camp Merrill and about 2 miles north of Dahlonega.



LEGEND

- Proposed Construction Project
- RCI Footprint: Existing Housing Area
- RCI Footprint: Undeveloped Area/Ancillary Facility
- Fort Benning Installation Boundary

Source: Fort Benning GIS, 2004.

Land Use

Figure 4-1

4.1.1.2.1 Housing

Main Post. Fort Benning has 13 family housing areas for officers and enlisted personnel, consisting of 3,999 housing units on 1,466 acres (Fort Benning, 2004b; Jones Lang Lasalle, 2004). The 1,466 acres constitute the existing housing areas portion of the 2,052-acre RCI footprint. The remaining 586 acres are for undeveloped land potentially to be used for housing and related administrative functions. The housing areas are described below, from southwest to northeast, and are shown in Figure 4-1.

- *Indianhead Terrace* is southwest of the unaccompanied personnel housing on the Main Post. It has 454 three- and four-bedroom units on 124 acres (ac) for a residential density (RD) of 3.7 units/ac, considered medium-low-intensity development (2 to 6 units/ac). Indian Head Terrace has 18 historic houses and 5 historic detached garages that are included in the Main Post Historic District. This area contains Capehart and Wherry Era housing (Ledford, 2005, personal communication).

- *Norton Court* has 112 three-bedroom units on 19 acres for an RD of 5.9 units/ac, considered medium-low-intensity development.

- *McDonald Manor* is in the Main Post Historic District and has 83 two-bedroom historic housing units on 38 acres for an RD of 2.2 units/ac (medium-low-intensity development). McDonald Manor also contains numerous historic detached garages.

- *East Main Post* consists of the *Austin Loop*, *Miller Loop*, *White Elephants*, and *Iron Triangle* housing areas in the Main Post Historic District. This area contains 392 three- and four-bedroom historic housing units and numerous historic detached garages on 156 acres for an RD of 2.5 units/ac (medium-low-intensity development). Quarters I and the garage (Buildings 1 and 1098) are being listed on the National Register of Historic Places.

- *Perkins Place*, at the intersection of Lumpkin Road and Dixie Road, has 180 three- and four-bedroom units on 102 acres for an RD of 1.8 units/ac (low-intensity development).

- *Bouton Heights* and *Davis Hills* are also along Dixie Road east of Perkins Place and the Fort Benning golf course. They have 804 two-, three-, and four-bedrooom units on 315 acres for an RD of 2.6 units/ac (medium-low-intensity development).

- *Upatoi Terrace* is along the south side of Custer Road, across from and south of the Custer Terrace housing area. Upatoi Terrace has 150 two- and three-bedroom units on 39 acres for an RD of 3.8 units/ac (medium-low-intensity development).

- *Custer Terrace* has 872 two- and three-bedroom units on 409 acres for an RD of 2.1 units/ac (medium-low-intensity development). This area contains Capehart and Wherry Era housing.

- *McGraw Manor* is along Custer Road east of Custer Terrace. It has 952 three- and four-bedroom units on 264 acres for an RD of 3.6 units/ac (medium-low-intensity development).

Available Developable Areas. In addition to the existing housing areas, the RCI footprint includes 586 acres of available developable areas scattered throughout the Main Post (Figure 4-1). Areas R, V, W, X, and two unnamed parcels in the southwestern portion of the Main Post are small parcels totaling 18 acres; they are already cleared or developed. Areas I (proposed East Loyd housing area), J (proposed Patton housing area), M (proposed First Division Road housing area), P, and T (proposed West Loyd

housing area) are in the eastern and northeastern part of the Main Post and are larger parcels. These parcels total 568 acres, and they are largely forested and relatively undeveloped.

Community Support Facilities. Fort Benning operates six elementary schools and one middle school in the housing areas for children of military personnel living on-post. In addition, there are three child development centers, a youth services center, a teen center, a family sports complex, and other facilities. The Martin Army Community Hospital is on Marne Road near the Lindsay Creek Bypass, across from the Davis Hills housing area. The commissary/post exchange mall complex is farther east on Marne Road at Santa Fe Road. Four shopettes are scattered around the cantonment areas (Fort Benning, 2004a; Harland Bartholomew and Assoc., 1994).

Land Use Compatibility: Fort Benning. Family housing areas at Fort Benning are surrounded by generally compatible land uses including open space, community, and administrative facilities. However, the Fort Benning Real Property Master Plan (Harland Bartholomew and Assoc., 1994) identified several incompatibilities due to traffic and noise near the housing areas, including the following:

- Maintenance facilities at the corner of Indianhead Road and Lavoie Street are incompatible with the adjacent Indianhead Terrace housing area because of noise from maintenance activities and vehicles.
- Adjacent warehouses are incompatible with the McDonald Manor housing area because of noise from warehouse activities and vehicles.
- Historic housing units along Lumpkin Road in the East Main Post housing areas are exposed to excessive noise from traffic.
- Maintenance facilities along Edwards Street are incompatible with the Norton Court housing area because of noise from maintenance activities and vehicles. This facility will be transferred as part of the proposed action.
- Maintenance and storage facilities along Michael Street are incompatible with the Perkins Place housing area because of noise from maintenance activities and vehicles.

Land Use Compatibility: Porter Village. The 95-acre Porter Village housing area that serves Camp Merrill contains 40 units. The developed northern half of Porter Village has about 48 acres for an RD of 0.8 units/ac (low-intensity development). The southern half of the 95-acre parcel is undeveloped and forested. Porter Village is surrounded by generally compatible, low-density residential to rural and undeveloped land uses. The Sky Country housing subdivision is to the west, and Owens Road runs north-south to the east (USACE, 1993).

4.1.1.2.2 Outgrants

Main Post. Fort Benning has 90 outgrants in the form of permits, easements, leases, and agreements for utilities, roads, railroads, schools, banks, and commercial interests. Most of the 38 utility outgrants are for electric, water, sewer, or gas lines maintained by utility companies. Seven outgrants are for schools in the housing areas (Harland Bartholomew and Assoc., 1994). The RCI footprint contains the nine outgrants described below.

- *Flint Electrical Membership Corporation.* This easement was granted for the construction and maintenance of the electrical distribution system serving Fort Benning. Electrical equipment and

utility lines are present throughout the RCI footprint. This outgrant, DACA-21-2-99-6437, expires in May 2009.

- *BellSouth Communication Lines.* Two easements were granted for Class B telephone lines on Fort Benning. These outgrants, DACA-21-3-00-3457 and DACA-21-3-00-3458, occur throughout the RCI footprint and expire in July 2008 and January 2005, respectively.

- *United Cities Gas Company.* This easement was granted for the construction and maintenance of the natural gas system serving Fort Benning, and equipment and utility lines are present throughout the RCI footprint. This outgrant, DACA-21-2-02-6736, expires in January 2052.

- *Battle Park Homes, Inc.* This easement is for operating a housing project that consists of 44.1 acres along Arrowhead Road, north of Custer Road, east of Fort Benning Boulevard, and west of and adjacent to the Custer Terrace housing area. This outgrant, DACA21-1-49-0043, expires in July 2024.

- *Fort Benning Schools.* Three outgrants for schools are in the RCI footprint: Wilson Elementary School (DACA21-4-64-5064, 14.5 acres) adjacent to the Indianhead Terrace housing area; White Elementary School (DACA21-4-60-3760, 11.2 acres) adjacent to the White Elephants housing area; and Wilbur High School (DACA21-4-55-3591, 30.2 acres), adjacent to the Custer Terrace housing area.

- *Columbus Bank and Trust Company.* This easement is for operating an automatic teller machine (ATM) in Building 10800 in the Custer Terrace housing area. This outgrant, DACA21-1-03-3234, expires in August 2008 (USACE, Savannah District, 2004).

Porter Village. The roads, sidewalks, and main utility lines (water, sanitary sewer, and storm water systems) of Porter Village were granted to the City of Dahlonega under Department of the Army outgrant DACA21-2-00-3412 in September 2000 (USACE, Savannah District, 2004).

4.1.1.2.3 Current and Future Development

Numerous construction projects are under way or planned for community facilities to support the housing areas or other projects in the immediate vicinity of the RCI footprint at Fort Benning. The projects listed here are in a general order of priority, beginning with the highest priority and sorted by planned year of construction. Figure 4-1 highlights some of the proposed projects that are slated for construction near the RCI footprint or would provide community services to Fort Benning residents (Fort Benning, 2004c). Short-range projects include the following:

- ***Installation of Anti-Terrorism/Force Protection Measures (ongoing).*** Enhanced-security perimeter barriers are being constructed around the cantonment areas on the installation. The barriers include fences, guardrails, and natural barriers such as ridges and streams. Permanent access control points (ACPs) are also being constructed at the installation's entry points, and roads will be modified to accommodate the ACPs (Fort Benning, 2003b, 2004d).

- ***Privatization of Utilities (fiscal year [FY] 04).*** The water and wastewater systems at Fort Benning have recently been privatized. The contract includes day-to-day operation of the systems (Fort Benning, 2004d).

- ***Barracks and Tactical Equipment Shop Projects (FY05–07).*** Work would consist of the construction of additional barracks and tactical equipment shops across from existing 106

ranges (beyond Easley and McAndrews ranges) along Dixie Road. These projects are currently in the design phase only. The approximate size of the overall project area is 15 to 20 acres.

- ***Digital Multi-Purpose Training Range (DMPTR, aka Hastings Range Upgrade) (FY06; project in planning phase only).*** Work would consist of upgrading the existing Hastings Range to a DMPTR and would involve removal/replacement and upgrading of existing targetry, expansion of the existing tank trails, construction of associated support facilities, demolition of currently existing temporary buildings on-site, and associated utility placement. The approximate size of the overall project area is 100 to 150 acres.

- ***Receptee Barracks Expansion (FY07).*** This project would provide additional adequate billeting space, activity space, a larger dining facility, and reception station processing facilities for persons entering the Army and being processed by the 30th AG Battalion. The proposed site is about 1,500 feet east of RCI Area J.

- ***Soldier Service Center (FY08).*** This project will involve demolishing 14 buildings (total of 35,354 square feet [ft^2]) and constructing a new consolidated service center where all Adjutant General functions can be executed, including in/out processing, welcome/information, finance, medical/dental screening, and housing administration. The proposed site is adjacent to the existing Army and Air Force Exchange Service (AAFES) commissary/post exchange, north of RCI Area M.

- ***School Age Services Facility***. A new facility is to be built south of the Norton Court housing area to consolidate existing facilities into one School Age Services Center capable of handling 310 students.

- ***Consolidated Student Dining Facility, Main Post***. A dining facility (45,000 ft^2) with capacity for 1,800 personnel would be constructed to serve all Infantry School-enlisted students living in the eight barracks in the 2700 block. The facility would be north of RCI Area W.

Long-range construction projects include the following:

- ***Child Development Center, McGraw Manor.*** A standard-design child development center for 99 children would be built in the McGraw Manor family housing area.

- ***Community Activity Centers, Indianhead Terrace and Marne Road.*** Projects will include construction of a new youth outreach/community center to replace the existing Indianhead facility in the Indianhead Terrace housing area and a new youth outreach/community center near the intersection of Marne Road and Lindsay Creek Bypass.

- ***Fire Stations, Main Post and Marne Road.*** Three existing fire stations will be replaced with one new facility to accommodate two fire companies along Dixie Road south of the Perkins Place housing area. An additional fire station would be constructed on Marne Road east of the Lindsay Creek Parkway.

- ***Hospital Replacement.*** This project would replace the existing Martin Army Community Hospital at the intersection of Marne Road and Lindsay Creek Parkway with a new, 238-bed hospital offering inpatient and outpatient care, preventive medicine services, family practice services, and obstetric/gynecologic care.

- ***Consolidated Health Clinic, Main Post.*** This new clinic would provide select primary health care services and ancillary services to 10,580 enrollees at Fort Benning and would consolidate the services now provided by Troop Medical Clinics 1 and 2, Aviation Medical Clinic, and Physical Examination Clinic. The project site is southeast of the Indianhead housing area.

- ***Chapel, Custer Road.*** A new 200-seat chapel for service members residing in the Custer Terrace housing area would be constructed along Lindsay Creek Parkway south of Custer Road.

- ***Unit Chapel.*** A new chapel would replace an inadequate facility serving the vicinity of the Indianhead Terrace housing area.

- ***Main Library Replacement.*** This project would involve construction of a larger and more modern library to serve all active and retired military personnel, their dependents, and civilians employed on the post. The new library would be at the northwest corner of Ingersoll Street and Wold Avenue, south of the McDonald Manor housing area.

- ***Post Exchange.*** The existing AAFES facility would be replaced by a new facility on the north side of Marne Road. The existing AAFES facilty would be reused for another function. The existing AAFES facility and proposed new site are immediately north of the Davis Hills housing area and RCI Area M.

- ***Bowling Center.*** A 48-lane bowling center with pro shop and dining area would be built. It would be on the east side of Lindsay Creek Parkway across from the Davis Hills housing area.

- ***Combined Officer's Club and Golf Course Facility.*** This facility would replace the existing facility. A new 26,000-ft^2 combined officers club/golf course clubhouse, including dining and banquet areas, would be constructed. This project would also upgrade the existing golf course and relocate the practice/driving range.

- ***National Infantry Museum.*** A new museum would be constructed at the corner of Lumpkin Road and Fort Benning Boulevard. along the installation boundary. The existing museum just south of the Miller Loop housing area would be used for other purposes.

- ***Widening and Improvements to Custer Road.*** About 3 miles of Custer Road, a major artery between the Main Post and Sand Hill cantonment area, would be upgraded and widened to four lanes. This section of Custer Road runs by the Upatoi Terrace, Custer Terrace, and McGraw Manor housing areas.

- ***Marne Road Realignment.*** This road improvement project would remove hazardous curves and improve visibility on Marne Road between Lindsay Creek Parkway and the Kelly Hill cantonment area. This section of Marne Road runs east-west and is north of RCI Area M.

- ***Widening of Lindsay Creek Parkway to First Division Road.*** This project would involve expanding Lindsay Creek Parkway (the I-185 extension into Fort Benning) to eight lanes from U.S. 27/280 to Custer Road and to six lanes from Custer Road to First Division Road (Fort Benning, 2003b, 2004c). The second section of Lindsay Creek Parkway runs between the Davis Hills housing area and RCI Area M near First Division Road.

- ***Widening and Realignment of Edwards Street.*** Edwards Street would be realigned and expanded to four lanes from Marchant Street to Dixie Road. The Norton Court housing area is along this section of Edwards Road.

- ***Widening of First Division and Dixie Roads.*** These roads would be expanded to four lanes between Lindsay Creek Parkway and Edwards Street. The roads run east-west just south of the Davis Hills, Bouton Heights, and Perkins Place housing areas.

Non-Appropriated Fund (NAF) projects in the vicinity of the RCI footprint include the following:

- ***Guest House Renovation Annex.*** Renovation of Gavin Hall, south of the McDonald Manor housing area, would provide temporary housing in adequate quarters for Permanent Change of Station families.

- ***Recreational Equipment Checkout Facility.*** Seven existing buildings (12,300 ft^2 total) northeast of the Indianhead Terrace housing area would be converted to a recreational equipment storage and checkout facility.

- ***Family Recreation Complex.*** A new complex north of the Norton Court housing area would offer ice skating, roller blading, an arcade, game rooms, an auditorium, child care, aerobics, and a snack bar.

Numerous other construction projects, such as barracks replacement and renewal, are slated for the cantonment areas but are generally not in the immediate vicinity of the RCI footprint (Fort Benning, 2004c, 2004d).

4.1.1.3 Surrounding Land Use

Off-post areas in the vicinity of the RCI footprint are in Muscogee and Chattahoochee counties in Georgia and in Russell County in Alabama. The city of Columbus is in Muscogee County adjacent to the Fort Benning Main Post (to the north) and is primarily residential and commercial urban. The population of Muscogee County remained largely unchanged between 2000 and 2003. Chattahoochee and Russell counties are predominantly agricultural with scattered low-density residential and commercial areas. Although the population of Russell County fell by about 1 percent, Chattahoochee County's population grew about 30 percent between 2000 and 2003 to 19,300; this percentage increase was the second highest in the United States (U.S. Census Bureau POI, 2004). Much of the associated residential and commercial development associated with this growth is occurring in the city of Cusseta, southeast of Fort Benning.

Major off-post development in Columbus and in Muscogee County in the vicinity of the RCI footprint includes repair and safety improvements to I-185 and U.S. 280 north of the RCI footprint; expansion of the Oxbow Meadows Environmental Learning Center and construction of an adjacent marina off Lumpkin Road just west of the installation boundary; and breaching of two small dams on the Chattahoochee River near downtown Columbus, which would restore the historical and natural flow of the river downstream to the area where the Fort Benning installation boundary crosses the river. Two road-widening and improvement projects are also planned for St. Mary's Road (FY05) and Buena Vista Road (FY07) in Columbus. St. Mary's and Buena Vista Roads intersect I-185 and are about 1.5 and 2.5 miles north of the installation boundary, respectively (Fort Benning, 2004d). The suburban areas of Columbus and Marion County have been expanding with increased residential and commercial developments along the northern boundary of Fort Benning.

Porter Village is surrounded by low-density residential, rural, and undeveloped land uses. The Sky County housing subdivision is to the west, and Owens Road runs north-south to the east.

Georgia zoning procedures law (*Official Code of Georgia Annotated* [OCGA] §36-66-6; January 30, 1997) provides for the notification of the Installation Commander of proposed development/zoning near a military installation.

4.1.2 Consequences

4.1.2.1 Proposed Action

The threshold level of significance for land use is altering the existing use category of the land in such a manner as to cause incompatibility with adjacent land uses.

Long-term minor adverse and beneficial effects on land use would be expected as a result of the proposed action. Portions of open space buffer and recreational areas would be converted to residential housing, reducing those land use inventories and resulting in encroachment on other land use types. However, development of the undeveloped portions of the RCI footprint to housing areas would generally be compatible with surrounding land uses. The proposed construction would also increase the amount of impervious surface. All pertinent erosion control and storm water management standards would be implemented as specified in the CDMP. Implementation of the proposed action is consistent with the installation's current land use planning.

The proposed action would increase available housing on Fort Benning by about 161 units and 586 acres, bringing total family housing to about 4,200 units on 2,052 acres. Demolition efforts, if deemed viable, would free up land to allow planners to make best use of existing and desired compatible land uses and provide for more efficient use of land. The expansion of residential housing would include new units with "smart growth" design centered around expanded and improved community resources and work areas. Fort Benning Family Communities LLC plans to construct 7 pools, 2 community centers, 1 recreation center, 4 village centers, and 146 new playfields and tot lots throughout the RCI footprint. All features of the CDMP would be designed with enhancements specified in the CDMP, such as improved landscaping and improved and regular maintenance programs. The addition of such amenities would be expected to result in a long-term beneficial effect on the housing areas. The RCI project is expected to meet the requirements for the sustainable design (SPiRiT) Gold rating, the highest rating for successfully incorporating sustainable design and development concepts. The SPiRiT rating process is described in further detail in Section 2.2.1.6.

No existing housing areas would be converted to other uses, and no major incompatible land uses would be expected from implementation of the proposed action. However, Area J is adjacent to a rail line, and Areas I and T are adjacent to the Lindsay Creek Bypass. In addition, numerous construction projects are expected to occur near the housing areas, as identified in Section 4.1.1.2.3. Proper consideration and planning in the design of these facilities, along with proper site planning for the new housing units and adherence to master planning guidelines, would mitigate potential adverse effects from additional noise and from changes in aesthetics and air quality. Most of these projects would not be expected to have an adverse effect on land use or on the RCI project once construction is complete. Sufficient vegetative buffers should be left if already present or planted between the major roads or railroad and new housing areas to provide noise and aesthetic buffers. These projects are discussed further in Section 4.13, Cumulative Effects Summary. The proposed action would not be expected to affect off-post land use surrounding Fort Benning.

Long-term minor adverse effects on land use would be expected at Porter Village. Fort Benning Family Communities LLC plans to clear 35 acres of forest to construct a new village center, swimming pool, and 37 new homes on the property south of the existing soccer field. This construction could remove a forest buffer between Porter Village and the adjoining Sky County subdivision to the west.

4.1.2.2 No Action Alternative

No effects on land use would be expected. No changes to land use designations would occur under the no action alternative. On-post residential areas would be maintained as at present, with no changes or improvements anticipated other than those undertaken in the course of normal maintenance activities.

4.2 AESTHETICS AND VISUAL RESOURCES

4.2.1 Affected Environment

Aesthetics and visual resources consist of natural and man-made features present on the installation landscape. They include cultural and historic resources, architectural and development patterns, areas of particular beauty or significance, water surfaces, and vegetation. Together, these features form the overall impression that a viewer receives of an area and its landscape.

Main Post. The Main Post Historic District has a single, unified image. Its buildings, which are of Spanish Colonial Revival design, are constructed primarily with stucco and terra-cotta tile roofing. The building, street, grounds, landscapes, and trees in the historic family housing areas are typical of the style of city planning known as the "City Beautiful Movement" (Fort Benning, 2004d).

The current housing areas vary in character and reflect the time periods in which they were built, ranging from 1918 through 1976. This variation is due to the variety of construction materials used within each housing area, including brick, vinyl siding, stucco, terra-cotta shingles, and asphalt shingles, and the architectural differences of the units. The units range in size from two to five bedrooms and include one- and two-story duplexes, single-family homes, multi-unit buildings of varying densities, and detached historic garages.

The amount of open space, landscaping, and mowed common area and the presence of mature trees also vary greatly among the housing areas. Some housing areas are heavily shaded with mature, tree-lined streets and yards, whereas others are more open with limited landscaping and tree cover and are separated primarily by large mowed areas. Overhead utility lines are visible in some housings areas but not in others. Driveways and parking lots are generally adequate throughout all housing areas, and therefore street parking is relatively sparse. Although most parking lots are open, a few include covered carport areas.

The remainder of Fort Benning, excluding the housing areas and cantonment, is primarily wooded (Fort Benning, 2004d).

The visual impression of all existing housing areas is one of functional efficiency, order, and focused activity. Because grounds maintenance is provided at a relatively high level, there is an appearance of cleanliness and general order throughout all the housing areas.

The undeveloped portions of the RCI footprint are currently wooded and would require clearing, grading, or both for construction.

Porter Village. The Porter Village housing area, constructed in 1996, consists of two-story single-family homes constructed of brick and siding. Although surrounded by thickly wooded areas, the housing area itself is relatively open and the units are separated by manicured grassy areas. There is limited landscaping. Underground power lines, adequate driveway parking, and garages allow for a well-maintained, clean, and orderly appearance.

4.2.2 Consequences

4.2.2.1 Proposed Action

Visual and audible (noise) aspects are considered in this evaluation of impacts on aesthetics. The region of influence (ROI) consists of the very local areas immediately adjacent to each alternative site where construction of new facilities is observed and noise from construction can be heard. The threshold of significance would be visually incompatible facilities or excessive construction or activity noise levels that disturb sleep between the hours of 10 p.m. and 6 a.m.

Main Post. Short- and long-term minor adverse and long-term moderate beneficial effects would be expected. Short-term adverse effects would result from construction activities, which are inherently aesthetically displeasing. During the construction and renovation phases of the RCI program, vistas from various vantage points on the installation would be disrupted by construction equipment, construction material staging areas, and bare land as buildings undergo construction or demolition. These effects, however, would be short-term and localized to the areas under construction. Construction activities would be limited to daylight hours; therefore, night-time construction activities and associated lighting would not be expected to occur.

Long-term minor adverse effects would result from new construction in the undeveloped areas, which would replace wooded vistas with landscaped housing areas, permanently altering the natural viewsheds in these areas. Potential adverse effects on the natural vistas would be greatly reduced by implementing a well-designed CDMP—one that takes the natural surroundings into account and integrates them into a low-impact development community design with intense use of native vegetation for landscaping.

Long-term beneficial effects would be expected from proper implementation of the CDMP, which is designed to achieve an aesthetically harmonious community through the use of cohesive and regionally appropriate architectural design characteristics, landscape planning that focuses on using native plant species and screening visually intrusive structures, and activities with vegetation and inclusion of green space. Fort Benning Family Communities LLC plans to construct new pools, community centers, a recreation center, village centers, and playfields and tot lots throughout the RCI footprint. With linked open spaces, strategic tree locations, trail systems, activity areas, and street layouts that enhance the quality of outdoor life, the sense of community would be heightened and improved. Furthermore, the regular and preventive maintenance programs outlined in the CDMP would maintain the revitalized housing areas at the highest operation levels. As a result of the RCI program, the aesthetic appeal of the existing housing areas would be expected to improve.

Porter Village. Long-term minor adverse and long-term moderate beneficial effects would be expected from proper implementation of the CDMP. Fort Benning Family Communities LLC plans to construct a new village center and pool, and make minor renovations to the 40 homes at Porter Village. Up to 35 acres of forest would be cleared to construct the village center on the property south of the existing soccer field, potentially removing an aesthetic forest buffer between Porter Village and the adjoining Sky County subdivision to the west. Long-term moderate beneficial effects would be expected from proper implementation of the CDMP, including the construction of a new village center and pool as well as minor renovations to the 40 homes at Porter Village. The regular and preventive maintenance programs outlined in the CDMP would maintain the revitalized housing areas at the highest operation levels. As a result of the RCI program, the aesthetic appeal of the existing housing areas would be expected to improve.

4.2.2.2 No Action Alternative

Main Post. Long-term minor adverse effects would be expected in the housing areas. Under the no action alternative, the Army would continue to be responsible for maintenance and renovation of existing housing and construction of new housing as necessary. The current lack of sufficient funding for housing construction and an extensive backlog of work indicate that the housing units would be expected to deteriorate over time, which would adversely affect visual and aesthetic resources on the installation.

Porter Village. Long-term minor adverse effects, as stated for Fort Benning, would be expected.

4.3 AIR QUALITY

4.3.1 Affected Environment

Air quality is regulated at the national level through regulations promulgated under the Clean Air Act (CAA) of 1970 and its subsequent amendments. The act directed the United States Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for air pollutants that endanger public health. EPA subsequently adopted air quality standards for six criteria pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead particles. The CAA requires state or local governments to monitor ambient levels of these pollutants and to develop air quality management plans to ensure compliance with the standards. To evaluate compliance with the NAAQS, EPA has divided the country into attainment/nonattainment areas commonly delineated by Metropolitan Statistical Areas (MSAs) and further separated by county. Each MSA has multiple air monitoring stations to sample ambient air concentrations of the criteria pollutants. Areas that do not meet the EPA NAAQS are classified as nonattainment and must develop an implementation plan to bring the area into attainment. Any federal action within a nonattainment area must comply with the state's implementation plan before the action may commence.

Main Post. Fort Benning is in Muscogee and Chattahoochee counties. The Georgia Environmental Protection Division (GA EPD) enforces air quality in this region with rules promulgated by EPA. The GA EPD, the agency with the overall authority for air quality, has adopted an implementation plan to achieve compliance with the NAAQS for the criteria pollutants. Air quality in Muscogee and Chattahoochee counties and in the surrounding parishes of Fort Benning meets the NAAQS as established by EPA, including the latest standard changes for ozone and PM2.5. Therefore, the area is considered an attainment area according to 40 CFR 81.319 (USEPA, 2002). Fort Benning is working with the Georgia Department of Natural Resources (GA DNR) to establish a Smoke Management Program (SMP). Fort Benning's air emissions for stationary sources for the year 2003 are shown in Table 4-2.

Table 4-2
2003 Air Emissions from Fort Benning (tons/year)

Pollutant	2003
VOC	406.00
NO_x	199.00
CO	10,721.00
PM	1,331.00
PM10	989.00
SO_x	0.61
Pb	0.28

Note: VOCs = volatile organic compounds; NO_x = nitrous oxides; CO = carbon monoxide; PM10 = particulate matter less than 10 microns in diameter; SO_x = sulfur oxides.
Source: Fort Benning Air Quality Manager

Porter Village. Porter Village is in Lumpkin County in north-central Georgia in the Blue Ridge Province, approximately 80 miles north of Atlanta, Georgia. Lumpkin County is in attainment for all six NAAQS. Approximately 160 military personnel are stationed at Camp Merrill. At present, the Porter Village housing development has 40 housing units.

4.3.2 Consequences

4.3.2.1 Proposed Action

The threshold level of significance for air quality is the violation of applicable federal or state laws and regulations, such as the CAA, and the potential for Notices of Violation (NOV) for failure to receive applicable state permits (such as those required for construction projects) prior to initiating a proposed action or failure to follow permit requirements.

Main Post. Short-term minor adverse effects would be expected for the proposed action at Fort Benning. Additional sources of air pollutants would be introduced during the initial construction phase of the proposed action. These sources would include construction equipment, such as a rock crusher and batch plant, and soil disturbance, which would be expected to produce some amounts of vehicle emissions and fugitive dust. Additional vehicular pollutants would be introduced as well with the increase in construction-related jobs in the area. However, the construction-related emissions would be short-term and intermittent. Construction permits and operating permits would be required for a rock crusher and batch plant and would be the responsibility of the contractor. Fort Benning is a major source of pollution and operates under a Title V permit for stationary sources.

Section 176(c) of the CAA requires federal agencies to ensure that their actions are consistent with the CAA and with state and local federally enforceable air quality management plans. EPA's General Conformity Rule requires that a conformity determination be prepared for federal actions occurring in nonattainment or maintenance areas. Because Fort Benning is in an attainment area for all criteria pollutants, preparation of a conformity determination is not necessary.

The development initiative would occur over a 10-year period. During this period, 533 housing units would be renovated, 3,506 housing units would be demolished, and 3,667 new units would be built. The annual criteria pollutant emissions resulting from the proposed action are listed in Table 4-3. The emissions would actually be less than those shown in Table 4-3 because the construction phase would not require daily heavy equipment use over the entire 10 years. Although short-term minor effects on air quality would be expected, the proposed action would not violate any NAAQS or other CAA standard, rule, or regulation. The project is in an area classified as "in attainment," and the General Conformity Rule does not apply. A Record of Nonapplicability (RONA) is not required for this proposed action.

Table 4-3

Fort Benning Criteria Pollutant Emissions for Proposed Action (tons/yr)

Pollutant	Reconfiguration	Construction/Demolition
NO_x	2.631	18.75
VOC	1.0813	3.21
CO	4.58504	15.25
PM10	2.77435	1.37
SO_x	0.392	1.02

Source: Tetra Tech *Air Emissions Calculations and Tracking System (AECATS*), 2004.

The proposed action would result in negligible impacts on air quality from fugitive dust. Projected emissions from the rock crusher and batch plant were shown to be negligible. During the months of demolition and earth disturbance, fugitive dust would be generated by heavy equipment activities. However, the dust would be controlled through best management practices (BMPs) (e.g., wetting the ground with water during periods of ground disturbance).

Porter Village. Porter Village serves as the housing area for Soldiers training at Camp Merrill. Porter Village and Camp Merrill are in Lumpkin County in north-central Georgia in the Blue Ridge Province approximately 70 miles north of Atlanta, Georgia. Lumpkin County is in attainment for all six NAAQS. Activities conducted at Camp Merrill consist primarily of Ground Ranger diverse training. Approximately 160 military personnel are stationed at Camp Merrill. At present, the Porter Village housing development has 40 units.

The proposed action would include construction of 37 new family housing units, resulting in a total of 77 family housing units. The air emissions associated with the construction of 37 new units are shown in Table 4-4.

Table 4-4

Porter Village Criteria Pollutant Emissions for Proposed Action (tons/yr)

Pollutant	Construction/Demolition
NO_x	7.89
VOC	2.51
CO	7.32
PM10	0.66
SO_x	0.58

Source: Tetra Tech *Air Emissions Calculations and Tracking System (AECATS*), 2004.

The emission of criteria pollutants at Porter Village would not violate the NAAQS or any other CAA standard.

4.3.2.2 No Action Alternative

No effects on air quality would be expected under the no action alternative. Any future demolition, refurbishment, or building of new housing units would require compliance with NEPA and other applicable federal and state requirements.

4.4 NOISE

4.4.1 Affected Environment

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. Sound quality criteria promulgated by EPA, the U.S. Department of Housing and Urban Development (HUD), and DoD have specified noise levels to protect public health and welfare with an adequate margin of safety. These levels are considered acceptable guidelines for assessing noise conditions in an environmental setting. Noise levels below 65 decibels (dB) are considered normally acceptable in suitable living environments.

Responses to noise vary, depending on the type and characteristics of the noise, the expected level of noise, the distance between the noise source and the receptor, the receptor's sensitivity, and the time of day. One significant response to noise is annoyance. The receptor's expectation of a sound level associated with an activity has a direct bearing on the level of annoyance. The annoyance can be experienced individually or as a group. The five factors identified by EPA, HUD, and DoD as indicators for estimating negative community reaction to noise are type of noise, amount of repetition, type of neighborhood, time of day, and amount of previous exposure. For the Army, high sound levels are both part of the job of operating weapon systems and a necessary training condition because Soldiers must learn to function in an environment similar to what they will encounter on the battlefield.

In the training areas of military reservations, the noises generated by weapons and equipment are exempted from noise compliance requirements under the Noise Control Act of 1972. To address the issue of compatibility of noise from training with on-post land uses such as family housing or other noise-sensitive off-post land uses, the Army has developed four noise descriptor zones (Noise Zones I, II, and III and a Land Use Planning Zone). The Land Use Planning Zone (LUPZ) provides the installation with a better means to predict possible noise complaints and meet the public demand for a better description of the noise that will occur during a period of increased operations. Each zone corresponds to a population annoyance level that is dependent on day-night noise level (L_{dn}) measured in A-weighted decibels (dBA) for sounds perceived by the human ear, C-weighted decibels (dBC) for low-frequency sounds from impulse or blast noises that can be felt, and linear (unweighted) decibels (dBP) that take into account the entire spectrum of noise. The noise zone descriptors are shown in Table 4-5. Currently, there are family housing units in Zones II and III. Zone II is normally incompatible with noise-sensitive land uses, and Zone III is incompatible with noise-sensitive land uses.

Table 4-5
U.S. Army Noise Guidelines for Noise Zones I, II, and III

Noise Zone	Noise-Sensitive Land Use	Population Annoyed	Transportation ADNL (dBA)	Impulsive CDNL (dBC)	Small Arms ADNL
LUPZ	Compatible	9%–15%	60–65 dBA	57–62 dBC	60–65 dBA
I	Normally compatible	<15%	<65	<62	<87
II	Normally incompatible	15%–39%	65–75	62–70	87–104
III	Incompatible	>39%	>75	>70	>104

Note: ADNL = A-weighted decibels; CDNL = C-weighted decibels.
Source: Draft IONMP, 2004.

Fort Benning has drafted an Installation Operational Noise Management Plan (Draft IONMP) with the objective of reducing the potential of incompatible land uses around the facility severely affecting mission operations. To provide a planning tool that accounts for some days having higher-than-average operations and possible noise annoyance, the LUPZ contour is used. The LUPZ is intended to provide the local community with additional information to make better-informed land use decisions.

Main Post. Military and nonmilitary activity on and around Fort Benning produces both intermittent pulse sounds, such as tank and artillery fire, and continuous sounds, such as vehicles moving along state highways and roadways or aircraft flying across the sky. Loud sounds are produced in Fort Benning's training areas and ranges by the activities of Soldiers training with vehicles and equipment. The nearest urban areas adjacent to Fort Benning are Columbus, Georgia, to the installation's west and north, and Phenix City, Alabama, to the west of Columbus and across the Chattahoochee River. Rural areas also lie

to the east, southwest, and south of Fort Benning and consist of farms, timberland, and isolated residences. Fort Benning generates noises from rotary and fixed-wing tactical aircraft; small arms firing; mortar, tank gun, and artillery firing and impacts; heavy tracked vehicles and specialized combat vehicles; and various pyrotechnic devices. Fort Benning has installed noise monitors along the northern and western boundaries of the installation. These monitors record and track noise during operation and can be used to investigate noise complaints received from the on-post and surrounding communities.

Lawson Army Airfield (LAAF) is on the southwestern portion of the Fort Benning cantonment area. Fixed-wing and rotary-wing aircraft land and take off from LAAF. Although air traffic has significantly diminished over the years (Figure 4-2), Noise Zone II from LAAF activities extends beyond the boundaries of the installation approximately 500 meters into Russell County. The LUPZ extends beyond Noise Zone II approximately 4,000 meters into Alabama and Chattahoochee counties. However, this land is primarily agricultural with scattered residential land use. Pilots are instructed to avoid overflights of housing areas (Sigmon, 2004, personal communication). There are 11 drop zones on Fort Benning. Because of the nature of drop zone activity, the slow-moving aircraft generate a noise contour of 50 ADNL. Occasionally, a direct C-5 or C-17 flight over a populated area might produce a 20- or 30-second noise level of 90 dBA. This single-event noise level would be a rare event because, as noted, pilots are instructed to avoid residential overflights.

Small arms ranges are located on Fort Benning southeast of Dixie Road and around the Malone Range Area. Noise from these ranges in contained within the boundaries of the installation. The LUPZ generated from this activity does not affect residential areas.

Large-caliber weapons are used on the installation for training purposes. The LUPZ from the large-caliber firing range extends beyond the installation boundaries to the west, east, and a small portion of the north. Zones II and III extend beyond the installation boundary to the east into Marion County, with a small portion of Zone II extending into Muscogee County.

Currently, most of the existing housing areas on base fall within the Zone I noise contour or outside it. However, the areas of Davis Hill and Boutin Heights lie within Zone II and Zone III, with most of the housing lying within Zone II. Approximately 630 existing housing units lie within the Zone II noise contour, which is normally incompatible with residential use, and 94 existing houses lie within the Zone III noise contour, which is incompatible with residential use.

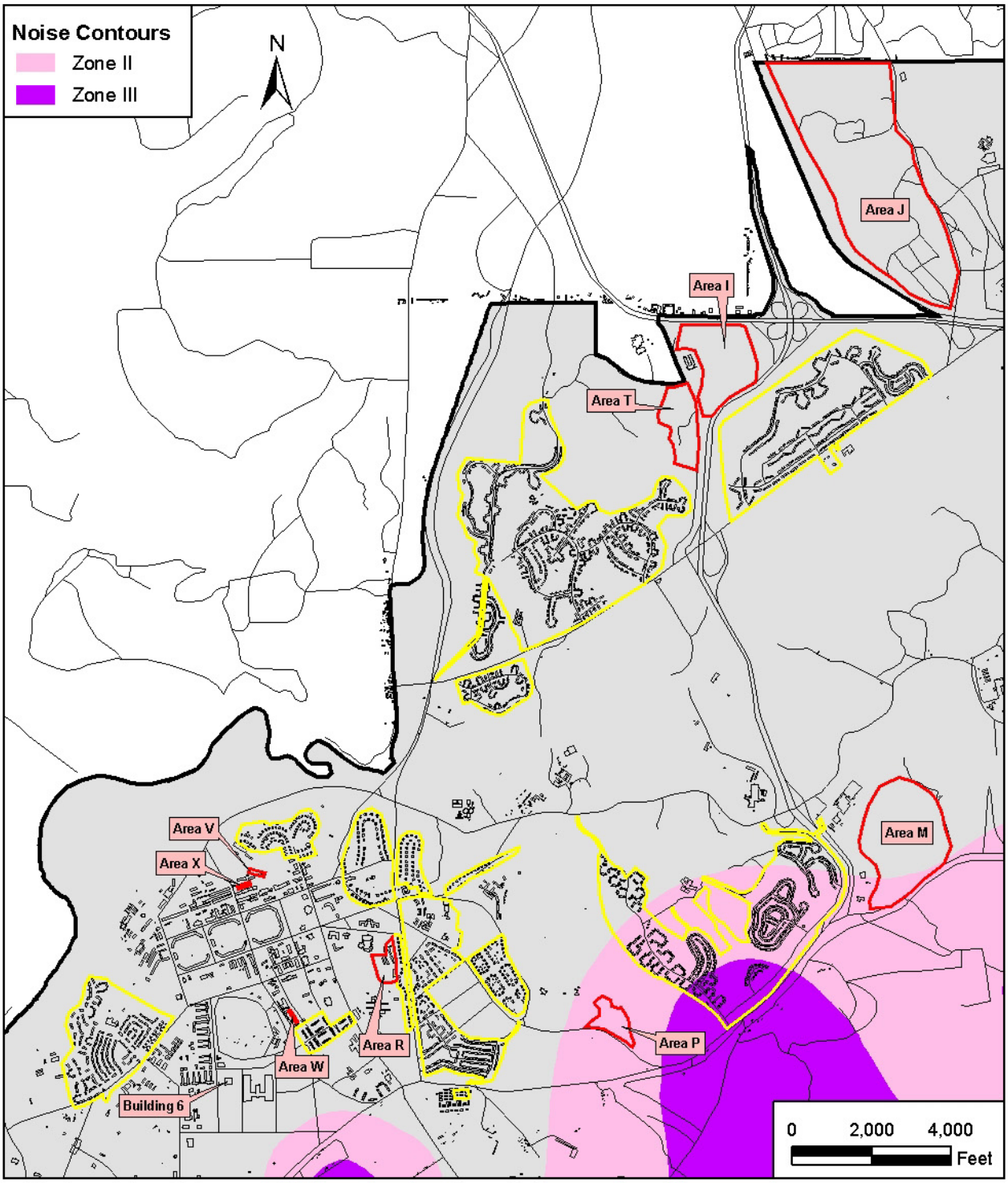
Porter Village. Porter Village is a small housing development area. As a result of the proposed action, there would be construction noise during the daylight hours, ranging from 65 dBA to 70 dBA, on an intermittent basis. Proposed construction of new housing in the Porter Village area would occur entirely within areas compatible with the U.S. Army guidelines for noise-sensitive land use zones.

4.4.2 Consequences

4.4.2.1 Proposed Action

The threshold for significance for noise impacts is an expansion of noise Zone II or III that would affect sensitive receptors.

All new housing would be constructed in Zones I and II. There would be no new housing construction in Zone III, and land in Zone III would not be leased to Fort Benning Family Communities LLC. Long-term minor adverse and short-term minor adverse effects would be expected. Long-term minor



LEGEND

- RCI Footprint: Existing Housing Area
- RCI Footprint: Undeveloped Area/Ancillary Facility
- Installation Boundary
- Buildings
- Roads

Noise Contours

Source: Fort Benning GIS, 2005.

Figure 4-2

adverse effects on residents living in housing within the Zone II noise contour on Main Post would be expected. However, all new housing built within Noise Zone II would be constructed with noise-attenuating materials and existing housing in Zone II would be demolished or modified with sound-attenuation designs to mitigate noise effects. Required mitigation included in the CDMP states that housing in Zone II would be attenuated so that outside-to-inside noise levels are reduced by 25 and 30 dBA. No long-term adverse effect are anticipated for Porter Village. Short-term minor adverse effects would be expected at both Main Post and Porter Village due to additional sources of noise during construction and renovation. These minor annoyances would be confined to daytime hours during the normal workweek. Nearby residents 200 to 300 feet from the construction site could be exposed to daily periodic noise levels reaching 70 dBA during the daytime construction activities, depending on the phase of the construction.

There are no noise standards that if exceeded result in violation of a federal act or law, as there are with maximum contaminant levels (MCLs) in water quality. Because the noise effect on residents is intermittent and not a daily event, the effect is considered minor adverse. The impacts from noise on residents would be reduced by using noise-attenuating construction materials such as double-pane windows.

4.4.2.2 No Action Alternative

Long-term moderate adverse effects would be expected. Some residents in on-post family housing would continue to be subjected to undesirable noise levels because the houses are already in Noise Zones II and III. The Army lacks funding to modify housing units in a manner that would reduce noise.

4.5 GEOLOGY AND SOILS

4.5.1 Affected Environment

4.5.1.1 Geologic and Topographic Conditions

Main Post. Fort Benning is in the East Gulf Coastal Plain physiographic province, in Chattahoochee and Muscogee counties, Georgia. This area is characterized by flat to rolling terrain often broken up by numerous small creeks and streams, with geologic formations dating to the Cretaceous period. Fort Benning is just south of the Fall Line, the area where the lower Coastal Plain province overlaps with the higher Piedmont physiographic province (Fort Benning, 2001b).

The topography across the installation is variable, with generally flat areas along the Chattahoochee River and steeper upland slopes farther inland. Elevations on Fort Benning range from about 170 to 750 feet above mean sea level (msl) (Fort Benning, 2004b) and from 230 to 740 feet above msl within the RCI footprint (Fort Benning, 2004b). Slopes are moderate throughout much of the RCI footprint, ranging from 1 to 12 percent in most areas; however, slopes range as high as 25 percent in some areas (Fort Benning, 2004b).

Porter Village. Porter Village is in Lumpkin County, Georgia, in the Blue Ridge physiographic province near its intersection with the Piedmont physiographic province. The area is characterized by steep slopes and rock outcroppings. Geologic formations near Porter Village are highly jointed and fractured metamorphic rock predominantly from Precambrian basement matter (Fort Benning, 2001b).

The elevation on the RCI footprint at Porter Village ranges from 1,420 to 1,580 feet above msl. The slopes are moderate to severe throughout much of the footprint, ranging from 0 to 20 percent, and are steepest in the northern and eastern areas.

4.5.1.2 Soils

Main Post. There are 39 unique soil series in the Fort Benning RCI footprint. The four predominant soil types are described below (Table 4-6). These four soils describe 1,099 acres, or 53 percent, of the RCI footprint. In general, the soils in Fort Benning are formed from marine sediments of the Coastal Plain. They are deep, well drained, and moderately permeable, with no occurrences of ponding or flooding (USDA NRCS, 2002).

Table 4-6

Fort Benning Soil Types

Soil	Acres	% of RCI Footprint	Percent Slope
Urban land	374.7	18.3	0 to 10
Esto and Troup loamy sands	298.6	14.6	12 to 25
Orangeburg-Urban land complex	282.6	13.8	2 to 8
Urban land-Orangeburg complex	143.6	7.0	0 to 10

Sources: Fort Benning, 2004b; USDA NRCS, 1924, 1997.

The soils in the Fort Benning RCI footprint are susceptible to wind and water erosion. About 1,003 acres, or 49 percent of the RCI footprint, are potentially highly erodible from water or susceptible to wind erosion (USDA NRCS, 2002). There are 12 acres, or 2 percent of the Fort Benning RCI footprint, of hydric Bibb sandy loam along streams bordering Areas I and T.

There are virtually no borrow areas for soil on Fort Benning (Veenstra, 2004, personal communication).

Porter Village. Seven soils are found at Porter Village (Table 4-7). The three predominant soils in this area are Tallapoosa loam, Hayesville sandy clay loam, and Tusquitee loam, which cover about 89 percent of the Porter Village RCI footprint. In general, these soils are well drained with moderate permeability, and there is no occurrence of ponding or flooding (USDA NRCS, 1972). The Tallapoosa loam is a shallow soil formed in residuum weathered from mica schist. The Hayesville sandy loam is a very deep soil formed from weathered igneous and high-grade metamorphic rock (granite, gneiss, schist). The Tusquitee loam is a very deep soil formed from weathered igneous and metamorphic crystalline rocks (USDA NRCS, 2002).

Table 4-7

Porter Village Soil Types

Soil	Acres	% of Area*	Percent Slope
Tallapoosa loam	56	59.2	25 to 70
Hayesville sandy clay loam	21	22.1	10 to 25
Tusquitee loam	11	11.6	10 to 25

Source: USDA NRCS, 1972.

Years ago the Hayesville sandy clay loam covering 21 acres, or 22 percent, of the Porter Village housing area was identified as severely eroded (USDA NRCS, 1972). Since that time the housing area has been

constructed, possibly altering the state of the soils in the area. Other soils in the Porter Village RCI footprint might be susceptible to erosion because of their steep slopes.

4.5.1.3 Prime Farmland

Main Post. Prime farmland soils are protected under the Farmland Protection Policy Act (FPPA) of 1981. About 103 acres of prime farmland soils cover 5 percent of the RCI footprint. These areas are in the northeastern section of the footprint, in areas T, I, and J. The prime farmland soils are Esto sandy loam (2 to 5 percent slope) and Orangeburg loamy sand (2 to 5 and 5 to 8 percent slope) (USDA NRCS, 2002).

The RCI footprint has not been used for any agricultural purposes since Fort Benning was established in 1922. A Farmland Conversion Impact Rating (Form AD-1006) of the project area is not warranted, and therefore no further action is required under the FPPA.

Porter Village. There are no prime farmland soils on Porter Village (USDA NRCS, 2003).

4.5.1.4 Petroleum and Minerals

There are no known petroleum or mineral resources within the Fort Benning or Porter Village RCI footprints.

4.5.1.5 Seismicity

There are no known Quaternary faults or fault zones in the RCI footprint or the region surrounding Fort Benning or Porter Village (USGS, 2002). Between 1973 and 2004, 86 seismic events were recorded within 125 miles of Fort Benning. Most of these events can be categorized as light earthquakes, ranging from 3.2 to 5.4 in magnitude (USGS, 2004).

4.5.2 Consequences

4.5.2.1 Proposed Action

The threshold level of significance for soils is any ground disturbance or other activities that would violate applicable federal or state laws and regulations, such as the Georgia Erosion and Sedimentation Control Act (ESCA), and the potential for NOVs for failure to receive applicable state permits, such as an NPDES construction permit under the ESCA, prior to initiating a proposed action.

Geology and Topography. No effects on geology would be expected at either Main Post or Porter Village. If steep slopes were affected during construction, soil erosion could result, as described below.

Soils. Short-term minor adverse effects would be expected at Main Post and Porter Village from implementation of the proposed action. Demolition and construction activities could cause removal of vegetation, soil exposure, and increased susceptibility to wind and water erosion, possibly resulting in increased runoff and erosion during site preparation. However, these effects would be minimized by the use of appropriate BMPs for controlling runoff, erosion, and sedimentation during construction and timber removal. In accordance with federal and state regulations, Fort Benning Family Communities LLC would obtain necessary permits for storm water and erosion control, including an NPDES permit and permits from the GA DNR, which would include providing an erosion, sedimentation, and pollution control plan (ESPCP).

Fort Benning Family Communities LLC would also install sedimentation and erosion control devices and would implement practices sufficient to retain sediment generated by land-disturbing activity within the boundaries of the construction site. A site-specific ESPCP describing the BMPs to be used to minimize impacts from increased runoff and soil erosion during site construction would be implemented. BMPs to control surface erosion and runoff would be followed to minimize adverse effects on surface water and groundwater quality. Fort Benning Family Communities LLC would address storm water management in the design of each neighborhood and would address both storm water quantity and quality requirements. Fort Benning Family Communities LLC would implement BMPs and sediment control plans as more detailed plans and survey data become available. Example BMPs include using silt fencing, straw bale dikes, diversion ditches, riprap channels, water bars, terracing, seeding and mulching, sediment traps and basins, cover vegetation, and natural or man-made fibrous mats or other stabilizing materials to control soil erosion.

Prime Farmland. No effects on prime farmland would be expected on Main Post or Porter Village.

4.5.2.2 No Action Alternative

No effects on geology, topography, soils, or prime farmland would be expected.

4.6 WATER RESOURCES

4.6.1 Affected Environment

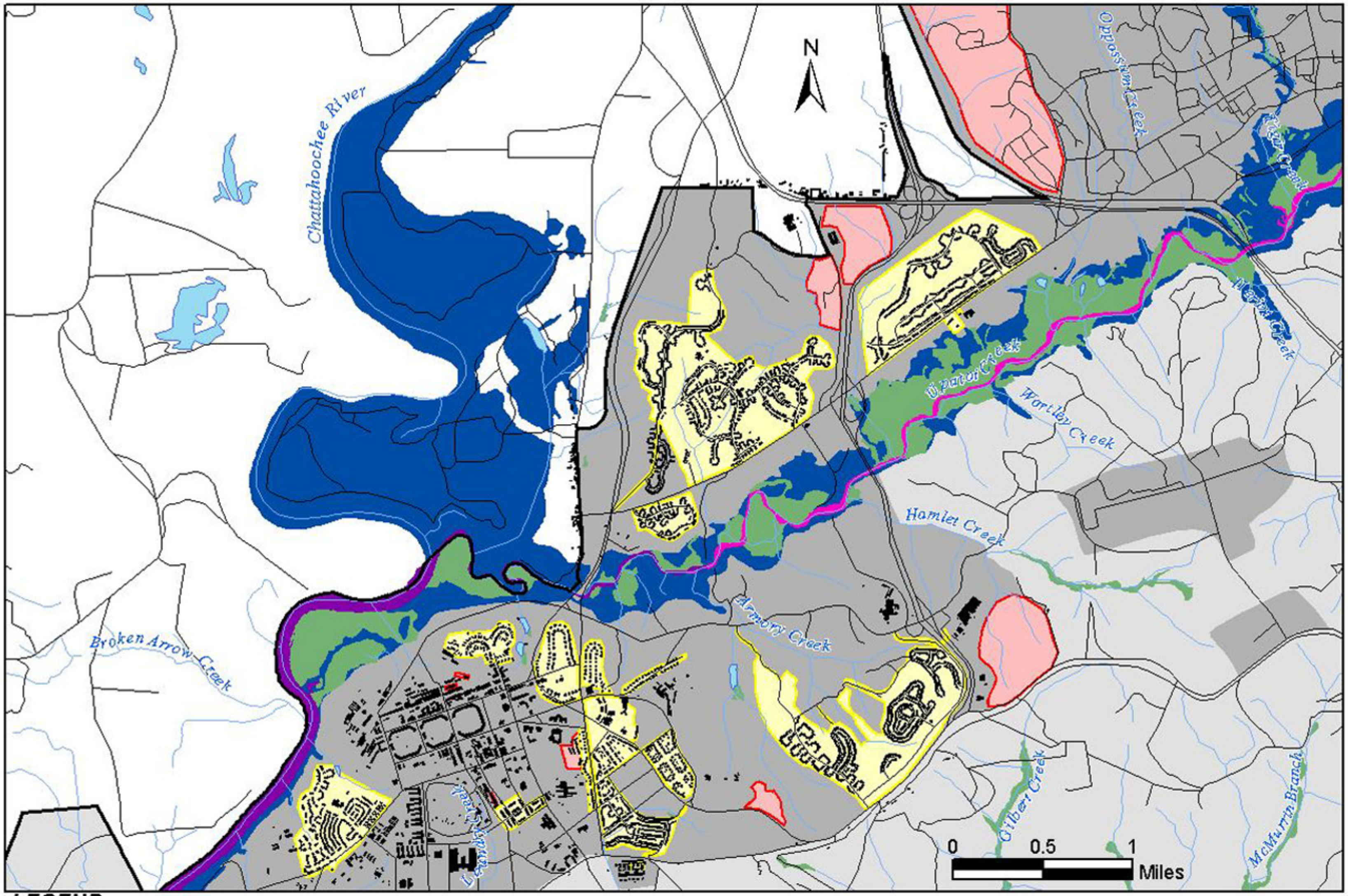
4.6.1.1 Surface Water

Main Post. Most streams in Fort Benning's Main Post drain into the Chattahoochee River through Upatoi Creek. Upatoi Creek traverses the cantonment area and bisects the RCI project footprint. Both Upatoi Creek and the Chattahoochee River originate in the Piedmont and generally flow in a southerly direction (Fort Benning, 2001b).

There are several streams and unnamed tributaries in or near the RCI footprint (Figure 4-3). Armory Creek extends into the Davis Hills housing area, and two branches of Hamlet Creek flow across Area M. Unnamed tributaries to Upatoi Creek are in Custer Terrace and proposed housing areas I and J. Unnamed tributaries to the Chattahoochee River flow in the Indianhead Terrace and Perkins Place housing areas. Table 4-8 lists the stream length for each existing and proposed housing area.

Table 4-8
Streams in RCI Footprint

RCI Footprint Area	Stream Miles
Area I	0.42
Area J	0.94
Area M	0.81
Custer Terrace	1.69
Bouton Heights/Davis Hills	0.43
Indianhead Terrace	0.31
Perkins Place	0.25
McGraw Manor	0.50
TOTAL	**5.35**



LEGEND

Wetland Type

- Lacustrine
- Palustrine
- Riverine
- RCI Footprint: Existing Housing Area
- RCI Footprint: Undeveloped Area/Ancillary Facility
- 100-Year Flood Zone
- Cantonment Area

Source: Fort Benning GIS, 2004.

Surface Water Features and Wetlands

Figure 4-3

Surface Water Quality. The Chattahoochee River, Tiger Creek, Pine Knot Creek, Little Pine Knot Creek, Little Juniper Creek, and Little Hitchitee Creek were listed on the 2004 Clean Water Act Section 303(d) list of impaired water bodies for the state of Georgia. The Chattahoochee River and Tiger Creek are in the vicinity of the RCI footprint at the Main Post. Parameters of concern listed for the Chattahoochee River segment immediately upstream of Upatoi Creek (North Highland dam to Upatoi Creek) are fecal coliform bacteria and PCBs resulting from urban runoff and urban effects. Fecal coliform bacteria from urban runoff and urban effects were the parameter of concern listed for the Chattahoochee River segment immediately downstream of Upatoi Creek (Upatoi Creek to the railroad at Omaha). Impacts on biota from nonpoint sources or unknown sources were the parameter of concern for Tiger Creek from its headwaters to Upatoi Creek (USEPA, 2004a).

The primary water quality concerns at Fort Benning are sedimentation from highly erodible soils, fecal coliform bacteria, and storm water runoff from impervious areas. Additional sources of water quality impacts could include solid waste management units (e.g., pesticide mixing areas), underground storage tanks, and aboveground storage tanks.

A TMDL is the amount of a particular pollutant that a water body can receive and still meet its beneficial use designation and state water quality standards for that pollutant. Data collected during development of TMDLs in the Chattahoochee River Basin suggest that stream impairment by sediment might be a result of past land use practices such as farming. The TMDL states that if sediment loads are maintained at an allowable level (i.e., no more than the 2002 annual average sediment load), streams will repair themselves over time (GA DNR, June 2002b, cited in Fort Benning, 2004d). No set "allowable" level has been established for the stream segments on Fort Benning; instead, the installation is using management practices, as defined in the GA DNR guidance for TMDLs, which include the following (GA DNR, 2002a, 2002b, as cited in Fort Benning, 2004d):

- Compliance with the requirements of the NPDES permit program.
- Implementation of Georgia Forestry Commission (GFC) BMPs for forestry.
- Adoption of Natural Resources Conservation Service (NRCS) conservation practices.
- Adherence to the Mined Land Use Plan prepared as part of the Surface Mining Permit Application.
- Adoption of proper unpaved road maintenance practices.
- Implementation of ESPCPs for land-disturbing activities.
- Mitigation and prevention of streambank erosion due to increased stream flow velocities caused by urban runoff.

Possible sources of fecal coliform bacteria in the Chattahoochee River from Fort Benning include two permitted point sources (wastewater treatment plants) and storm water. Combined point and nonpoint source fecal coliform releases originating from sources upstream from the installation also contribute fecal coliform bacteria to the Fort Benning section of the Chattahoochee River. The GA DNR established a wasteload allocation (WLA) to determine the "maximum allowable" levels of fecal coliform bacteria that may be discharged into the Chattahoochee River. As long as Fort Benning maintains its discharges below the WLA, it is not required to reduce its discharge into the Chattahoochee River and is in compliance with the TMDL program (GA DNR, 2002a, cited in Fort Benning, 2004d). Management practices recommended by the GA DNR, and followed by Fort Benning, to reduce or maintain point and nonpoint

source fecal coliform loads include compliance with NPDES permit limits and requirements and application of BMPs appropriate to agricultural or urban land uses (Fort Benning, 2004d). There are no TMDL segments within the RCI footprint.

Storm Water Management. A storm water drainage system on Fort Benning drains all storm water from the Main Post districts into tributaries of the Chattahoochee River, including Upatoi Creek. The storm water drainage system on the cantonment area at Fort Benning consists of culverts, ditches, swales, natural seepage, and overland flow (Fort Benning, 2004d). Fort Benning's storm water management system is discussed in greater detail in Section 4.11, Utilities. Currently, the installation has an ESPCP that addresses storm water management for industrial activities. A Storm Water Management Plan (SWMP) will be developed during Phase II of the municipal separate storm sewer (MS4) regulations, and it will address issues related to housing areas and the installation in general. Separate specific general permits and plans for each specific construction site regulate management of storm water during construction (Seda, 2004, personal communication).

Porter Village. Two unnamed tributaries to Ward Creek traverse the Porter Village RCI footprint. Ward Creek flows into Yahoola Creek and ultimately into the Chestatee River south of Dahlonega. Local hydrology at Porter Village consists of perennial seeps and approximately 3,100 feet of narrow streams (3-foot average width) (USACE, 1993).

4.6.1.2 Hydrogeology/Groundwater

Main Post. Fort Benning is in the Coastal Plain hydrogeologic province of Georgia and Alabama, whose principal groundwater source is the Cretaceous aquifer system (Fort Benning, 2001b). Specifically, Fort Benning is located over Cretaceous aquifers A-3 through A-6. Aquifer A-3 correlates with the Cusseta Sand Formation. Yields from this aquifer range from 1 to 10 gallons per minute (gpm) in the area around the Installation. This aquifer is not considered an individual source aquifer. Aquifer A-4 is in the upper sedimentary sequence of the Blufftown Formation, and it has increasing amounts of dissolved solids, sodium, and bicarbonate concentrates down dip. Aquifer A-5 is part of the basal sedimentary sequence of the Blufftown Formation. Some sedimentary lenses of Aquifer A-5 contain gypsum crystals, resulting in a high sulfate content. Both Aquifers A-4 and A-5 have low yields and are usually combined with other aquifers to produce adequate supplies. Aquifer A-6 is part of the upper Tuscaloosa and the overlying Lower Eutaw formations. This aquifer typically has the capacity to yield approximately 50 gpm near the Fall Line, but yields increase to approximately 700 gpm near the southern installation boundary. Water from aquifer A-6 is usually of uniformly good quality (Fort Benning, 2004d). The recharge area for these aquifers is in the Sand Hills area, which includes Fort Benning (Fort Benning, 2001b).

Fort Benning obtains some of its drinking water from seven active wells on the installation proper (Fort Benning, 2004d). Four of the wells are in the cantonment area, one of which (well 06S002) is along the northeast border of the Indianhead Terrace housing area. The depth of well 06S002 is 560 feet, and it is used to supply water to Young's Pool (EDR, 2004).

Porter Village. Porter Village is in the Blue Ridge hydrogeologic province of Georgia. According to the 1993 *Environmental Assessment for Proposed Family Housing at Camp Merrill*, there is one deep well on the premises (USACE, 1993). Although the exact origin of the well is unknown, it is likely that the well was the water supply to a private chicken house operation located on the property years before Porter Village was built (Wilkins, 2005, personal communication). The well is no longer in use.

4.6.1.3 Floodplains

Main Post. Both 100- and 500-year floodplains occur on the Main Post of Fort Benning. The floodplains follow the Chattahoochee River and Upatoi Creek, which traverses the cantonment area. The RCI footprint does not overlap the 100- or 500-year floodplains (FEMA, 1988, 1993).

Porter Village. The Porter Village footprint does not overlap the 100- or 500-year floodplains. The closest 100-year floodplain is approximately 2,000 feet south of the existing housing on the east side of Wimpy Road (FEMA, 1991).

4.6.2 Consequences

4.6.2.1 Proposed Action

The threshold level of significance for water quality is the violation of applicable federal or state laws and regulations, such as the Clean Water Act and the Georgia Water Quality Control Act, and the potential for NOVs for failure to receive applicable federal and state permits, such as an NPDES permit (required for all projects 1 acre or more in size), prior to initiating a proposed action. This also includes not following management practices for "impaired streams," as defined under Georgia's Clean Water Act Section 303(d) List for TMDLs.

Surface Water. Short - and long-term minor adverse effects would be expected at the Main Post. In the short term, construction activities would increase erosion, potentially increasing sedimentation in streams, and could contribute small quantities of dissolved solids and petroleum hydrocarbons to surface waters. The proposed action would require an NPDES permit, and the Phase II NPDES Storm Water Program requires an NPDES permit for storm water discharges from construction activities greater than 1 acre. Fort Benning Family Communities LLC would use retention basins to control storm water runoff and sedimentation to streams and would obtain all necessary permits before beginning any construction activities.

In the long term, there would be an increase in storm water runoff from the increase in impervious area associated with the new building foundations, roads, and parking areas. Adhering to the following environmental principles from the RCI planning guidelines would reduce the overall impact on the storm water sewer system and receiving waters:

- Housing areas will be designed to respect the existing natural systems of topography, vegetation, and drainage.
- Developed areas will be designed to minimize groundworks, aboveground utilities, and drainage.
- A water-management system will be designed to handle both the quantity and quality of storm water runoff.

The quantity of additional storm water runoff would vary greatly from housing area to housing area. Storm water runoff would be expected to decrease at Indianhead Terrace, Norton Court, Custer Terrace, McGraw Manor, and Davis Hill; to increase at Perkins Place, Upatoi Terrace, and Patton Place; and to remain the same at Indianhead Terrace (historic), McDonald Manor, Bouton Heights, and East Main Post. The greatest increases would occur at Patton Place, which contains 0.94 mile of streams, and Perkins Place, which contains 0.25 mile of streams. Long-term negligible adverse effects would be expected at Porter Village. Effects similar to those described above would be expected. A minor increase in storm water runoff would be expected at Porter Village.

Groundwater. Short- and long-term negligible adverse effects would be expected for groundwater resources at the Main Post. Pollutants released during construction activities could enter groundwater, and the increase in impervious surfaces could reduce groundwater recharge locally. Implementation of the mitigation measures recommended in this EA, requirements in permits, and the RCI planning guidelines would be expected to reduce the severity of long-term impacts on groundwater.

Negligible adverse effects would be expected at Porter Village.

Floodplains. No effects on floodplains would be expected at the Main Post or Porter Village.

4.6.2.2 No Action Alternative

No effects on surface water, groundwater, or floodplains would be expected.

4.7 BIOLOGICAL RESOURCES

4.7.1 Affected Environment

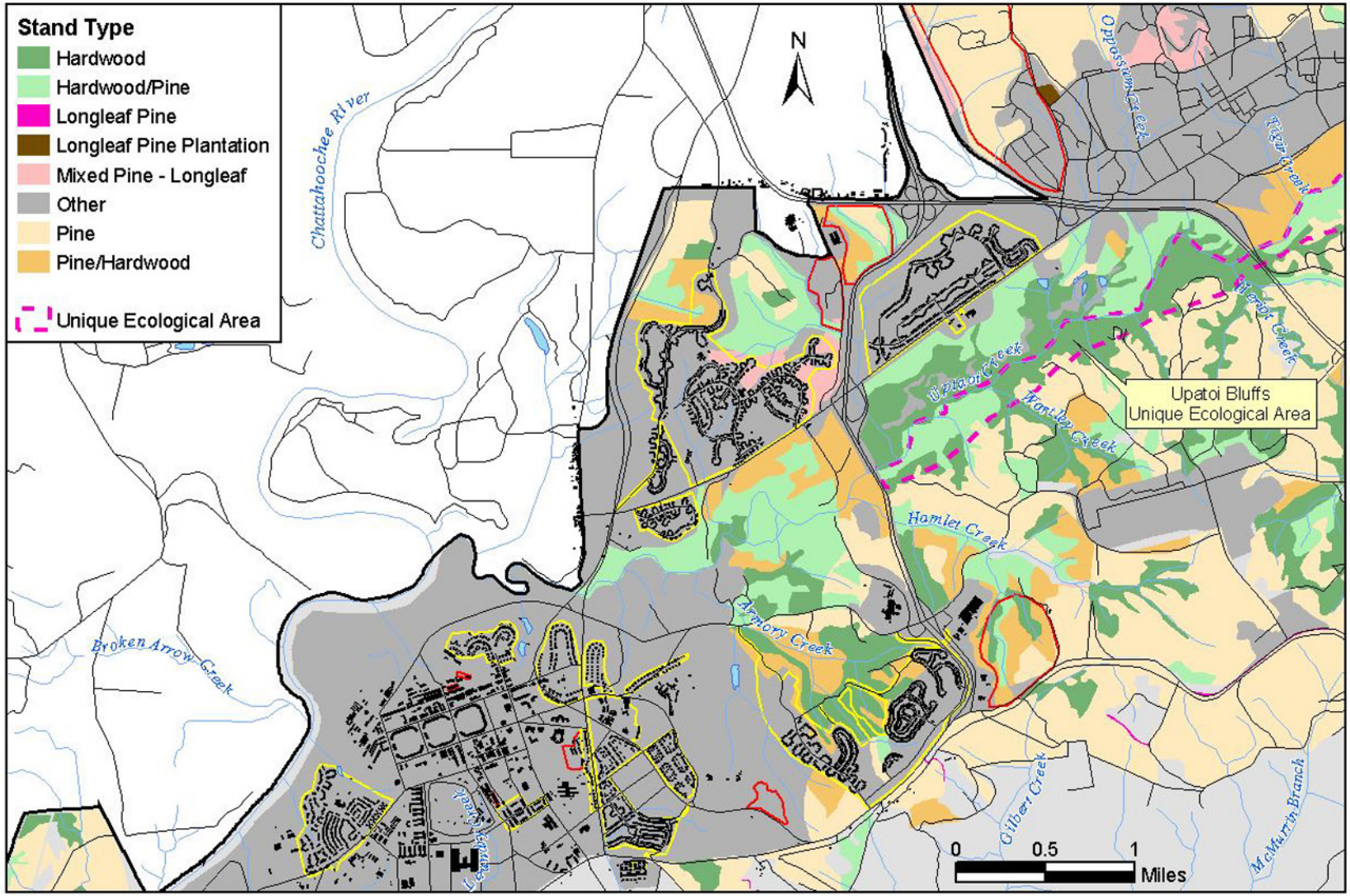
4.7.1.1 Flora

Main Post. Fort Benning is included within the Longleaf Pine Ecosystem and was historically dominated by longleaf pine (*Pinus palustris*) with a mixture of other pine species within the stands. Oaks and other less fire-tolerant species dominated the drains and areas, which were not subject to natural wildfires. As a result of changes in agricultural and forestry practices and in land ownership over the past 150 years, the original vegetative cover has been modified to a predominantly coniferous/deciduous mixture. Vegetated acreage on Fort Benning consists of approximately 16,000 acres of lawn and grassed areas, approximately 4,000 acres of open land and old fields (shrubs and herbaceous plants), and approximately 163,000 acres of woodland (including the ordnance impact areas and excluding the approximately 1,000 acres of water bodies). Loblolly pine (*Pinus taeda*) and longleaf pine (*Pinus palustris*) are the principal conifers on the reservation and constitute approximately 54,000 acres of the woodlands. The remaining 109,000 acres of woodland consist of approximately 55,000 acres of mixed pine and hardwoods and 54,000 acres of hardwood forest (Fort Benning, 2004d).

There are more than 1,275 species of plants on Fort Benning. These include trees such as the longleaf pine and white oak (*Quercus alba*), shrubs such as waxmyrtle (*Myrica cerifera*), vines such as muscadine grape (*Vitis rotundifolia*) and poison ivy (*Rhus radicans*), and herbaceous groundcover such as grasses and legumes.

The area proposed for future development of troop housing is primarily pine forests and other areas, which have no forested cover (Figure 4-4). Most of the RCI footprint consists of manicured lawns, grassed areas, and ornamental plants (Table 4-9).

Porter Village. The housing area of Porter Village consists almost entirely of manicured lawns, grassed areas, and ornamental plantings. The southern portion of Porter Village is undeveloped and forested. Although no forest inventories have been done in this area, it can be characterized as consisting primarily of hardwoods and some areas of mixed pine-hardwood habitat.



LEGEND

- RCI Footprint: Existing Housing Area
- RCI Footprint: Undeveloped Area/Ancillary Facility
- Cantonment Area

Source: Fort Benning GIS, 2004.

Forest Stand Types

Figure 4-4

Table 4-9
Forest Stand Acreage in RCI Footprint

Type	Existing Housing Area	Proposed Housing Area	Total	Percent of Total
Hardwood	21.4	23.3	44.7	2.2
Hardwood/Pine	9.3	39.4	48.7	2.4
Longleaf Pine	0.1	0.1	0.2	0.0
Mixed Pine-Longleaf	33.6	66.9	100.5	4.9
Pine	7.9	268.1	276.0	13.4
Pine/Hardwood	43.9	73.9	117.8	5.7
Other	1,349.8	114.7	1,464.5	71.4
TOTAL	**1,466.0**	**586.4**	**2,052.4**	**100.0**

Note: "Other" is developed, open space, or sparsely forested.
Source: Fort Benning, 2004b.

4.7.1.2 Fauna

Main Post. Approximately 345 species of wildlife inhabit Fort Benning (Fort Benning, 2004d). These include 152 species of birds, 47 species of mammals, 47 species of reptiles, 24 species of amphibians, 67 species of fish, and 8 species of mussels (shellfish) (Fort Benning, 2003b).

The built-up or cantonment area does not, by nature, provide good habitat for wildlife. Development and human activity have forced native animal populations to less disturbed and less active areas of the installation, such as the training areas. Wildlife species common within the RCI footprint include white-tailed deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensus*), eastern cottontail rabbit (*Sylvilagus floridanus)*, raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), groundhog (*Marmota monax*), and mourning dove (*Zenaidura macroura*). White-tailed deer, turkey, rabbits, raccoons, flying squirrels, and gray squirrels are common in the mesic hardwood forests (Fort Benning, 2003a). The federally listed red-cockaded woodpecker (*Picoides borealis*), or RCW, inhabits the loamhill longleaf pine stands that are vital to the recovery of the installation's population. The Bachman's sparrow (*Aimophila aestivalis*), a species of conservation concern, also inhabits these forests. The longleaf pine stands in these dry, sandy areas support RCWs, gopher tortoises, and dusky gopher frogs (*Rana capito sevosa*).

There are 16 species of bats known to exist in Georgia; of these, 8 species of bats are known to exist on Fort Benning. These are the red bat (*Lasiurus borealis*), Mexican free-tailed bat (*Tadarida brasiliensis*), big brown bat (*Eptesicus fuscus*), Seminole bat (*Lasiurus seminolus*), southeastern myotis (*Myotis austroriparius*), eastern pipistrelle (*Pipistrellus subflavus*), little brown myotis (*Myotis lucifugus*), and evening bat (*Nycteceius humeralis*). The southeastern myotis is designated special concern in Georgia and state protected in Alabama; the Seminole bat is special concern in Alabama; and the Mexican free-tailed bat is special protection in Alabama. The main focus of bat management on Fort Benning is resolving nuisance bat complaints and erecting bat boxes when needed. Most complaints originate from the two-story duplexes in the Bouton Heights housing area and the quartels on Main Post, particularly Buildings 17 and 75. The Mexican free-tailed bat is the most common bat in these buildings. From 1993 to 1998, more than 150 bat complaints were handled. There have been large-scale exclusion and sealing efforts in Bouton Heights to resolve the bat problems, but these have been only partly successful because bats can pass through holes as small as a dime and storms often loosen soffits, vents, and fascia boards and thus provide new access points. A bat Standard Operating Procedure (SOP) was developed in 1996

by Natural Resources to assist the Work Order Branch when conducting bat exclusion efforts. The SOP identifies two periods (spring and late summer) when bat exclusion can be conducted while minimizing the possibility of sealing hibernating bats or immature bats in the house. The SOP also describes netting techniques for excluding bats and sealing holes.

Species lists for mussels, fish, amphibians, reptiles, birds, and mammals are provided in Fort Benning's Integrated Natural Resources Management Plan (INRMP) (Fort Benning, 2003b).

Porter Village. The southern, forested portion of Porter Village supports a variety of wildlife, including birds, white-tailed deer, opossum, raccoon, rabbits, and various reptiles and amphibians. The stream on the site supports some small species of fish.

4.7.1.3 Sensitive Species

Main Post. Ninety-six Georgia (state), Alabama (state), and federal threatened, endangered, candidate, and special concern animal and plant species have been observed on Fort Benning (Fort Benning, 2003b). Fort Benning considers species to be of conservation concern if they are listed by the U.S. Fish and Wildlife Service (USFWS) or by a state as threatened or endangered, or otherwise identified as a candidate species, species of special concern, rare species, unusual species, or watchlist species.

Five federally listed species occur on Fort Benning: the RCW (E), wood stork (E), bald eagle (T), American alligator (T [S/A], in which S/A = due to similar appearance), and relict trillium (E) (Table 4-10). These species are managed in accordance with the Endangered Species Management Plans (ESMPs) that Fort Benning has prepared and included as appendices to the INRMP. The RCW, described below, is the only federally listed species known to occur within the RCI footprint.

Red-Cockaded Woodpecker. The RCW was placed on the federal list of endangered species in 1970. The reasons for its protected status included species rarity, documented declines in local populations, and reductions in available nesting habitat. Although populations have become more fragmented and isolated, the RCW is rather widely distributed. The species is still found in all southern and southeastern coastal states from eastern Texas into southern Virginia, and small interior populations are found in southeastern Oklahoma and southern Arkansas; until recently, it was found in southeastern Kentucky. The largest populations are in the coastal plain forests of the Carolinas, Florida, Georgia, Alabama, Mississippi, Louisiana, and eastern Texas, and in the Sandhills forests of the Carolinas (USFWS Biological Opinion, 1999, as cited in Fort Benning, 2004d).

RCWs have a social structure that involves a breeding pair and helpers that assist with cavity excavation and maintenance, egg incubation, feeding of the young, and defense of the group's territory. Nesting generally occurs from April through June, with some renesting attempts observed as late as August. Groups of RCWs nest in an aggregation of cavity trees, called a cluster, that is surrounded by contiguous foraging habitat. Discrete cluster sites are typically located where mature pine trees are more than 60 years old. Foraging habitat, however, is more variable, and timber takes on increasing value as the stands age past 30 years. Both nesting and foraging habitat can be characterized as open stands of pine with a scarce to moderate midstory. As the midstory becomes dense or reaches the height of cavities, cluster abandonment and decreased foraging value result.

Fort Benning has one of the largest RCW populations in the southeastern United States. The RCWs are well dispersed over the entire installation, although there are no active clusters on the Alabama portion of the installation. On September 27, 2002, the USFWS approved Fort Benning's ESMP for the RCW and issued a Biological Opinion (BO) that included specific management activities. This allowed

Table 4-10
Federally and State-Listed Species on Fort Benning

Common Name *Scientific Name*	Listing Status			Fort Benning Habitat
	Federal [1]	State [2]	SRank [3]	
Birds				
Red-cockaded woodpecker *Picoides borealis*	E	E	S2	Open pine woods; pine savannas
Wood stork *Mycteria americana*	PS:E	E	S2	Cypress/gum ponds; marshes; river swamps; bays
Bald eagle *Haliaeetus leucocephalus*	(PS:T)	E	S2	Edges of lakes and large rivers; seacoasts
Amphibians and Reptiles				
American alligator *Alligator mississippiensis*	T(S/A)		S4	Fresh and brackish marshes, ponds, lakes, rivers, swamps
Gopher tortoise *Gopherus polyphemus*	(PS:T)	T	S2	Sandhills; dry hammocks; longleaf pine-turkey oak woods; old fields
Plants				
Relict trillium *Trillium relliquum*	E	E		
Indian olive *Nestronia umbellula*		T		
Pickering's morning glory *Stylisma pickeringii pickeringii*	C	T		

[1] Federal status.
E: Endangered. Species that is in danger of extinction throughout all or a significant portion of its range.
T: Threatened. Species that is likely to become endangered within the foreseeable future.
C: Candidate. Species that is ready for proposed listing.
PS: Indicates "partial status"—status in only a portion of the species' range. Typically indicated in a "full" species record where an infraspecific taxon or population has Endangered Species Act status but the entire species does not.
S/A: Listed as endangered or threatened because of similarity of appearance.
[2] State Status.
E: Endangered. Species listed in the Wildlife code under 3CSR 10-4.11 are protected by State Endangered Species Law 252.240.
[3] Srank.
S1 = Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state (typically five or fewer occurrences or very few remaining individuals).
S2 = Imperiled in the state because of rarity or because of some factor(s) making it vulnerable to extirpation from the state (6 to 20 occurrences or few remaining individuals or acres).
S3 = Rare and uncommon in the state (21 to 100 occurrences).
S4 = Widespread, abundant, and apparently secure in the state, with many occurrences, but the species is of long-term concern (usually more than 100 occurrences).
Source: Fort Benning, 2003b.

the implementation of the *1996 Management Guidelines for the RCW on Army Installations*. Fort Benning is also one of 13 primary core locations selected by the USFWS to manage for an RCW recovery population (451 clusters for Fort Benning). Currently, Fort Benning has a total of 311 manageable RCW clusters (251 active and 60 inactive, as of 2003). There is an additional estimate of 43 active clusters and 1 inactive cluster in ordnance impact areas A20 and K15.

There are no active or inactive clusters within the RCI footprint, although much of the area contains foraging habitat (Table 4-11 and Figure 4-5). RCW foraging habitat is within areas proposed for future development (First Division Road, Patton, East Loyd), as well as within or adjacent to existing housing areas, including Custer Terrace, McGraw Manor, Bouton Heights, Davis Hills, Miller Loop, and Perkins Place. The development of Areas J and M represents 334.8 acres of habitat that would be eliminated from future RCW expansion.

Table 4-11

RCW Foraging Habitat in Proposed Housing Areas

Proposed Housing Area	Total Acreage	RCW Foraging Habitat (acres)	Percentage of Proposed Area Used for RCW Foraging
I	66.2	17.1	26
J	335.0	241.7	72
M	116.9	93.1	80
P	15.4	0.1	1
T	34.6	19.7	57
Total	**568.1**	**371.7**	**65**

Gopher Tortoise. State-listed species are not protected under the Endangered Species Act (ESA); however, whenever feasible, installations cooperate with state authorities in efforts to conserve these species. State-protected species known to occur on Fort Benning include the gopher tortoise (*Gopherus polyphemus*), Indian olive (*Nestronia umbellula*), and Pickering's morning glory (*Stylisma pickeringii pickeringii*) (Table 4-10). Only the gopher tortoise is known to occur near the RCI footprint (within approximately 0.5 mile), specifically in Bouton Heights and Area P.

The gopher tortoise, a state-threatened species, occurs in the sandy soil habitats found only in the northern two-thirds and southeastern tip of the installation (Fort Benning, 2004d). Dry land turtles, gopher tortoises have high, domed shells with shell lengths of up to 15 inches. They have stubby, elephant-like hind feet and flattened front feet with large toenails for digging. They favor dry, sandy ridges with open stands of longleaf pine, turkey oak, and other scrub oaks. They also frequent open areas around road shoulders, food plots, and rights-of-way, which have well-drained, sandy soil. The tortoises dig long, sloping burrows up to 30 feet long and extending up to 9 feet below the surface. These dens are used as shelter by the tortoises, as well as by a variety of other sandhill residents, including the eastern diamondback rattlesnake and the gopher frog. The tortoises feed on grasses and other plant material near the ground. Feeding trails are often visible leading from the den's sandy apron to foraging areas. Eggs are laid in or near the den apron in May, June, and July and hatch in about 80 to 100 days. Young tortoises are about the size of silver dollars and are very vulnerable to predation by crows, raccoons, opossums, foxes, skunks, and other animals. More than 8,200 tortoise burrows have been documented to date on Fort Benning.

The tortoise is a critical component of the longleaf pine–scrub oak community. Species management on Fort Benning consists of burrow and habitat protection. In areas with high vehicular traffic, "Sensitive Area" signs are posted around known active and inactive tortoise burrows, totaling 150 acres, and the burrows are also marked. These sites are primarily in mechanized training areas. Digging activities and vehicles are required to stay 50 feet away from the burrows to protect the integrity of the burrow area (Thornton, 2003, personal communication).

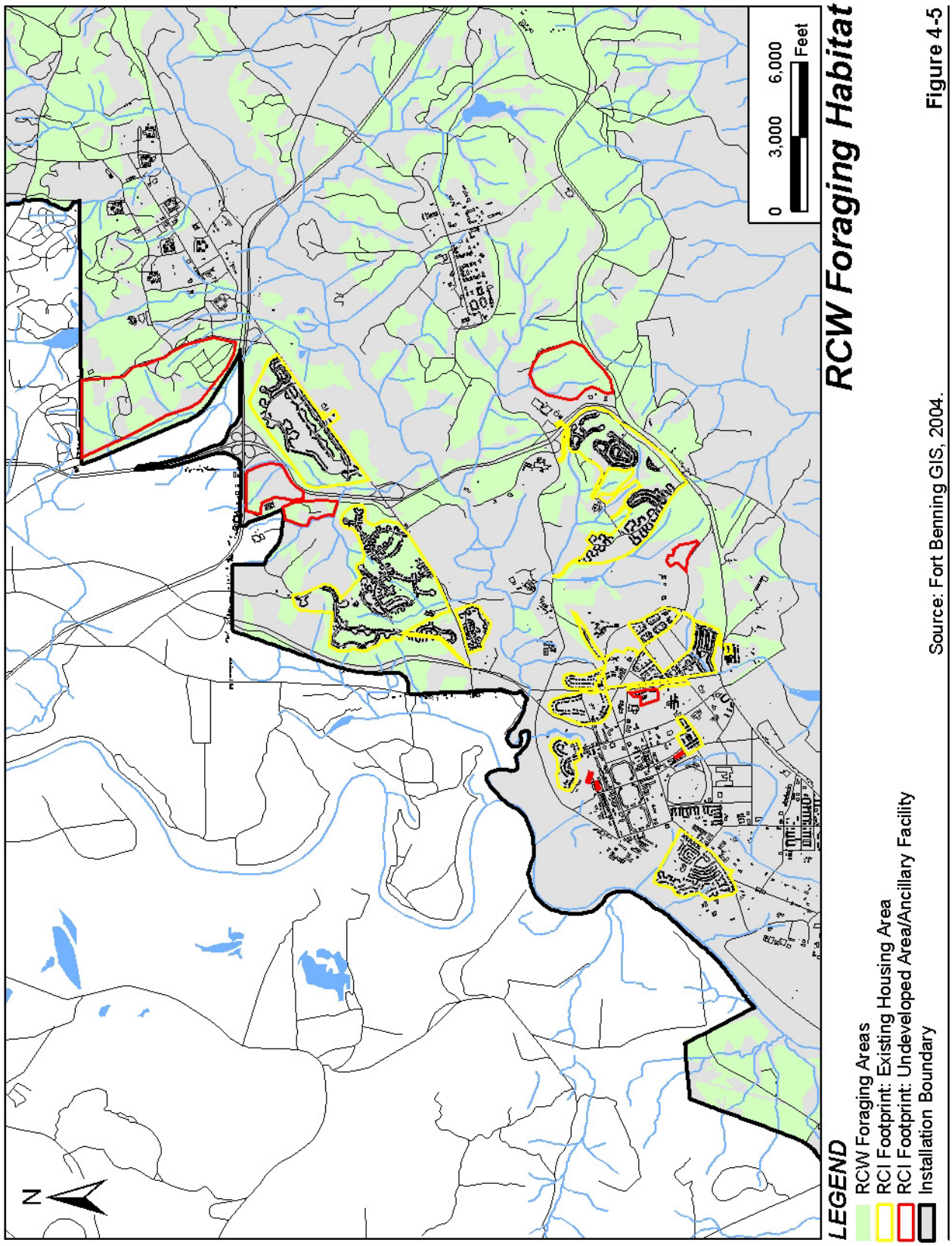

RCW Foraging Habitat
0
3,000
6,000
Feet
N
LEGEND
RCW Foraging Areas
RCI Footprint: Existing Housing Area
RCI Footprint: Undeveloped Area/Ancillary Facility
Installation Boundary
Source: Fort Benning GIS, 2004.

Figure 4-5

Migratory Birds. Except for some resident game birds such as wild turkey and bobwhite quail, most of the birds on Fort Benning are protected under the Migratory Bird Treaty Act (MBTA). This act implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. All military installations must comply with the provisions of the MBTA. The MBTA does not allow intentional or unintentional "take" of migratory birds. "Take" means to pursue, hunt, shoot, kill, trap, capture, or collect.

Approximately 150 species of birds protected under the MBTA are present on the installation seasonally or year-round (Fort Benning, 2004d). Fort Benning is currently cooperating with federal, state, and private organizations in gathering information on many migratory bird species in this region. Three common migratory birds on the installation are discussed in more detail below, as examples.

The Bachman's sparrow (*Aimophila aestivalis*) is a small (6-inch) bird with a brown back (with gray and black streaks), a white unstreaked underbelly, and a pale bill. It lives in the open pinewoods indicative of the northern portion of the Installation (Fort Benning, 2004d). During the USFWS terrestrial survey, 275 male Bachman's sparrows were identified by calls in training areas throughout the installation. Habitat quality for this species is good and abundant on Fort Benning due mainly to the widespread use of prescribed fire, which promotes the open pine forests in which this species thrives. It is not known whether populations exist within the RCI footprint.

The migrant loggerhead shrike (*Lanius ludovicianus*) is a small to medium-size (8- to 10-inch) bird with a dark gray back, a whitish underbelly, a black facemask, and a black bill. It lives in open country with scattered trees, typical of the northern portion of the installation (Fort Benning, 2004d). There is an abundance of suitable habitat for this species throughout many parts of the installation. It is not known whether populations exist within the RCI footprint.

The Southeastern American kestrel (*Falco sparverius*) is a medium-size (9- to 12- inch) bird with a reddish back and wings, a multicolored head with dark markings, and a buff-colored underbelly. It lives in the open countryside, which is typical of the northern portion of the installation (Fort Benning, 2004d). This species is also known to occur and breed on the installation. It has been observed in a variety of habitats such as open fields, clear-cut areas, loblolly/longleaf stands, open sandhills, and brushy fields. It is not known whether populations exist within the RCI footprint.

Porter Village. Three species known to occur in Lumpkin County are federally and state-listed species: the bald eagle (*Haliaeetus leucocephalus)*, Cherokee darter (*Etheostoma scotti*), and Etowah darter (*Etheostoma etowaha*). Additional state-listed species include bluestripe shiner (*Cyprinella callitaenia*), highscale darter (*Notropis hypsilepis*), holiday darter (*Etheostoma brevirostrum*), and Manhart sedge (*Carex manhartii*). No threatened and endangered species were observed during a survey conducted in 1992. No migratory bird surveys have been conducted at Porter Village.

4.7.1.4 Wetlands and Streams

In 1982 the USFWS conducted an inventory of Fort Benning's 16,926 acres of wetlands (Fort Benning, 2004d). The characterization of these wetlands was based on USFWS National Wetland Inventory (NWI) data, obtained by using aerial photogrammatic techniques to determine approximate wetland boundaries on large-scale topographic maps.

The inventory indicated that the wetlands on the installation consist of lacustrine, riverine, and palustrine systems and include impounded water, flowing water, river floodplains, stream floodplains, small stream swamps, wooded seepage bogs, herbaceous and shrub seepage bogs, and gum/oak ponds.

Numerous streams that drain to or are tributaries of Upatoi Creek and the Chattahoochee River and that are not officially categorized as wetlands lie within or near the existing and proposed housing areas. Streambanks are protected areas, and generally a 25-foot buffer along either side of a stream is protected from development impact on Fort Benning (Fort Benning, 2004d).

Main Post. Although there are approximately 711.5 acres of wetlands within the cantonment area (Table 4-12), none of these wetlands are within, or border, the RCI footprint (Figure 4-3). Streams lie within the existing housing areas of Indianhead Terrace, Custer Terrace, David Hills, and Perkins Place and in proposed areas I, J, M, and T. A total of 5.35 miles of stream lie within the RCI footprint (Table 4-8).

Table 4-12
Wetland Acreage in the Fort Benning Cantonment Area

Wetland Type	Acres
Lacustrine Limnetic Unconsolidated Bottom	24.8
Lacustrine Littoral Unconsolidated Bottom	0.5
Palustrine Aquatic Bed	5.4
Palustrine Emergent	17.9
Palustrine Forested	439.1
Palustrine Scrub-Shrub	79.5
Palustrine Unconsolidated Bottom	68.2
Palustrine Unconsolidated Shore	0.5
Riverine Lower Perennial Unconsolidated Bottom	75.6
TOTAL	**711.5**
Streams	5.35 miles

Source: NWI data.

Porter Village. A wetland delineation conducted in 1992 indicated that a wetland covering 0.11 acre is located in the southern, forested, and undeveloped portion of the RCI footprint at Porter Village (USACE, 1993). This wetland has been characterized as a small basin, approximately 75 feet in diameter, which traps water from a spring or seep, is distinguished by a dark mottled or un-mottled soil with free water near the surface, and is populated with smartweed (*Polygonum hydropiperoides*) and beggar-ticks (*Bidens frondosa*).

4.7.1.5 Unique Ecological Areas

In accordance with DoD Instruction 4715.3, Fort Benning, in conjunction with its conservation partners, identified several areas that have unique or rare ecological characteristics or represent the best example on Fort Benning of a particular habitat or plant community type. These areas were chosen on the basis of the characteristics of their soil type, topography, slope, aspect, elevation, hydrology, flora, fauna, and other biotic and abiotic features. Many areas apparently contain remnant native plant communities that have experienced minimal disturbance relative to other similar communities. As a result, at least a few areas, or portions of them, may require little or no active management to maintain their condition. Such areas can serve as reference sites for the biodiversity and ecological processes associated with natural communities. In addition, each area seems to have experienced only minimal impacts in the past and is now experiencing only relatively minimal impacts, if any, from military training activities. To preserve the ecological integrity of these areas, Fort Benning uses their designation as Unique Ecological Areas

(UEAs) to ensure that land use planning and training activities account for their presence and preservation efforts (Fort Benning, 2003b).

Main Post. The Upatoi Bluffs are the only UEA near the RCI footprint (Figure 4-4). The Upatoi Bluffs are characteristic of the Mesic Hardwood Forests Ecological Group and occur within the west-central portion of the installation along the eastern side of Upatoi Creek (Fort Benning, 2003b). This area borders the northern portion of the southeastern border of the Main Post and is nearest Area M (First Division Road) of the RCI footprint. The area is rarely used for military training and is limited to foot traffic.

The steep topographic area consists of the bluff forests on the eastern and southern sides of Upatoi Creek. Species of conservation concern that occur in this area include croomia (*Croomia pauciflora*), American ginseng (*Panax quinquefolium*), Carolina silverbell (*Halesia carolina*), Flyr's nemesis, white four-o'clock (*Mirabilis albida*), and needle palm.

Porter Village. There are no UEAs within the boundaries of Porter Village (USACE, 1993).

4.7.2 Consequences

4.7.2.1 Proposed Action

Flora and Fauna

The threshold level of significance for vegetation is loss of vegetation at a level that would substantially reduce the occurrence of a plant species or degrade the habitat of a dependent animal species at a population level on the installation. The vegetation discussed includes both understory or ground cover, such as grasses, and overstory cover, such as mature pines and hardwoods.

Main Post. Short-term and long-term minor adverse effects on flora or fauna would be expected. The native vegetation within the RCI footprint has been greatly altered and, except for some forested areas, is largely landscaped. It is estimated that up to 336 acres of forested areas could be disturbed for new housing construction, but the overall amount would be determined primarily by the topographic limitations of the project area. As a result, there would be some minor adverse effects on wildlife resulting from tree removal and habitat degradation.

Porter Village. Short-term and long-term minor adverse effects on flora and fauna would be expected. Approximately 35 acres of the forested area would be disturbed for new housing construction, but the absolute amount would be determined primarily by the topographic limitations of the project area. As a result, some minor adverse effects on wildlife would result from tree removal and habitat degradation.

Sensitive Species

The threshold level of significance for federally listed species occurs if an alternative disrupts normal behavioral patterns or disturbs habitat at a level that substantially impedes the installation's ability to either avoid jeopardy or conserve and recover the species.

The threshold level of significance for state-listed species is an impact that would jeopardize the future existence of a state-listed species on Fort Benning or lead to the federal listing of that species.

The threshold for significance for migratory birds is a substantial adverse effect on a species' population.

Main Post. Short- and long-term minor adverse effects would be expected to affect rare, threatened, and endangered species. Although there are no active or inactive RCW clusters within the RCI footprint, it is likely that timber within RCW foraging habitat would be removed for the construction of new facilities. In addition, the construction of housing in undeveloped areas such as Area J would make habitat management efforts, such as prescribed burning, difficult to implement. Fort Benning has coordinated with USFWS regarding the RCI proposed action (reference Appendix B). In a letter dated February 15, 2005, USFWS indicated that no further action is required under ESA Section 7(a)(2). However, if new information became available or changes in the project involved federally listed species, further consultation would be required. Fort Benning is currently engaged in coordination with USFWS regarding the potential for future development in Area M.

No effects on gopher tortoises would be expected from the proposed action. The nearest gopher tortoise sites are approximately 0.5 mile from the RCI footprint and across 1st Divison Road. The construction activities nearest the gopher tortoise sites would occur within Bouton Heights and Area P and would not cross over 1st Division Road.

It is likely that migratory bird species occasionally frequent the open and forested areas within the RCI footprint. However, these species do not remain permanently in any one location; therefore, no adverse effects on the species would be expected.

Porter Village. No effects would be expected because no federally listed threatened or endangered species are known to inhabit the area within the RCI footprint. Following agency coordination, USFWS determined that no further action is required under Section 7 of the ESA (Appendix B).

Wetlands and Streams

The threshold of significance for wetlands and streambanks is the potential to violate federal, state, or installation laws and regulations, such as the Clean Water Act (CWA), and the potential for NOVs for failure to receive applicable state permits, such as a Section 404 permit or Stream Variance, prior to initiating a proposed action.

Main Post. No effects on wetlands would be expected because there are no wetlands within the RCI footprint. Short-term indirect minor adverse impacts on streambanks would occur as sedimentation from runoff from nearby construction sites. Impacts on wetlands and streambanks in and near the RCI footprint could be minimized by implementing stream protection BMPs and 25-foot riparian buffer zones.

Porter Village. No effects on wetlands would be expected. The wetland within the RCI footprint is at the southern end of the property and is separated from the proposed construction site by a significant forested buffer. Sediment loading from housing renovations and construction would be minimized by the forested buffer surrounding the wetland, as well as stream protection BMPs that would be implemented prior to renovation.

Unique Ecological Areas

The threshold level of significance for a UEA is the removal or destruction of vegetation or other actions (such as sedimentation) sufficient to make the UEA no longer functional as an ecosystem unit.

Main Post. No effects would be expected to occur on the Upatoi Bluffs. Although this UEA is adjacent to the cantonment area, it is not in close proximity to the RCI footprint.

Porter Village. There are no UEAs at Porter Village.

4.7.2.2 No Action Alternative

No effects on biological resources on the Main Post of Fort Benning or Porter Village would be expected under the no action alternative. Any future renovation or new construction of housing would be subject to Fort Benning's BMPs for minimizing impacts on biological resources.

4.8 CULTURAL RESOURCES

4.8.1 Affected Environment

The threshold level of significance for cultural resources is the violation of applicable federal laws and regulations, such as the National Historic Preservation Act (NHPA), the Archaeological Resources Protection Act, and others.

4.8.1.1 Prehistoric and Historic Background

The *Final Environmental Impact Statement, Digital Multi-Purpose Range Complex, Fort Benning, Georgia* (Fort Benning, 2004d) contains a description of the prehistoric and historic background of the area in which the installation is located and is thus incorporated by reference.

4.8.1.2 Status of Cultural Resource Inventories and Section 106 Consultations

Main Post. The total area of the installation at Fort Benning is 181,275 acres or more than 287 square miles. Approximately 171,589 acres of this area have undergone systematic archeological survey, and the inventory of cultural resources for the whole installation is 93 percent complete to date. Approximately 12,411 acres in range unexploded ordnance (UXO) or dud areas have not been included in pedestrian cultural resource studies because of issues of human health and safety, such as the potential presence of UXO (Kerr, 2004, personal communication). More than 100 pedestrian cultural resource inventories have been performed within the installation boundaries at Fort Benning since 1987.

A total of 3,837 archeological sites have been documented at Fort Benning, of which 2,609 (approximately 68 percent) have been determined to be ineligible for inclusion in the National Register of Historic Places (NRHP). A total of 82 of the known archeological sites have been determined to be eligible. One site has been listed on the NRHP. The remaining 1,145 known archeological sites need further evaluation and are of unknown eligibility at this time, though they are considered potentially eligible (Kerr, 2004, personal communication). Four cultural/archeological sites within the RCI footprint are eligible or might be eligible for the NRHP. These sites occur in the Upatoi Terrace area, the McDonald Manor area, the White Elephant area, and the Austin Loop area (Hamilton, 2005, personal communication).

No NRHP-listed, eligible, or potentially eligible archeological sites are within Main Post portion of the RCI footprint at Fort Benning (Fort Benning, 2004b). Archeological site locations are not identified because of security issues.

Numerous cemetery studies have been conducted on the installation, beginning in 1963. There are 73 known historic cemeteries on the installation, 14 American Indian burial locations, and 1 pet cemetery (Kerr, 2004, personal communication). There is one known historic cemetery within the RCI footprint, southeast of the Davis Hills housing area (Fort Benning, 2004b).

Analysis of architectural resources and structures at Fort Benning is complete for structures built through 1957. An Interior Historic Building Survey was completed in 1999 on 32 individual buildings (Kerr, 2004, personal communication). The most inclusive historic property survey of the Installation was

undertaken in 1997 (Jaeger Company and Southern Research Historic Preservation Consultants, Inc., 1997).

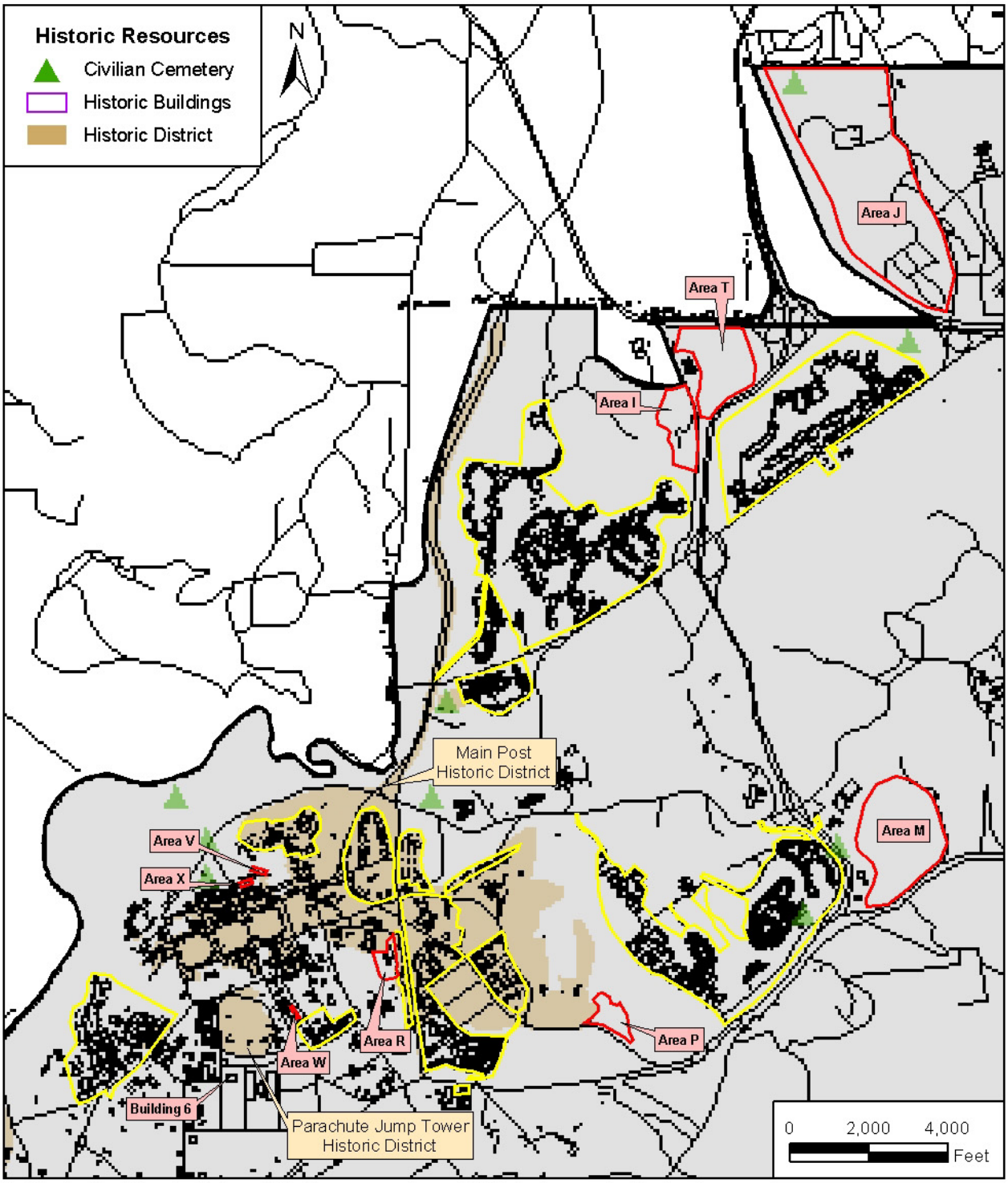
Five NRHP-eligible historic districts have been identified on the installation: the Main Post, Lawson Army Airfield, Parachute Jump Tower, Army Ground Forces Board, and Ammunition Storage Area. The RCI footprint areas at Fort Benning border only one of these eligible historic districts directly, the Main Post district (Fort Benning, 2004b).

There are 1,562 historic architectural properties at Fort Benning. A total of 626 of these are NRHP-eligible, including 21 individually eligible and 605 eligible as contributing elements of the Main Post Historic District. The date range of these historic structures is from the 19th century through 1954. A total of 193 of the architectural properties on the Installation are not eligible for listing on the NRHP, and there are 742 unevaluated architectural properties. One historic structure is listed on the NRHP. Some buildings and structures on the installation predate the establishment of Fort Benning in 1918, although the construction dates of these structures are still being investigated (Kerr, 2004, personal communication).

Most of the historic buildings on the Main Post portion of Fort Benning were constructed between 1918 and 1935. Among these structures are the Officers Quarters, built between 1931 and 1934 on the East Main Post; several one-story, single-family quarters constructed in 1931 on Indianhead Terrace; and many one-story single-family quarters constructed in 1931 on the West Main Post. A plantation house on the West Main Post built in 1918 and serving as the Commanding General's Quarters is also included in this number.

There appear to be historic architectural properties within the RCI footprint areas designated as Areas R, W, X, and V, as shown in Figure 4-6. Four historic structures appear to be within the RCI footprint of Area R, along the eastern edge of that footprint area. Area R is within the view shed of the Main Post Historic District. Areas V and X are in the Main Post Historic district, and each area has one structure (Buildings 1836 and 224, respectively) that is eligible for listing on the NRHP. Area W has one structure (Building 228) and is in the view shed of the Parachute Jump Tower Historic District and Buildings 223 and 1633, all of which are eligible for listing on the NRHP. In addition, RCI footprint areas P, R, V, and X directly border the NRHP-eligible Main Post Historic District. No other existing structures are currently identified as NRHP-listed, eligible, or potentially eligible within the other areas of the RCI footprint at Fort Benning (Fort Benning, 2004b).

Fort Benning has post-World War II Capehart and Wherry-era housing units, which were constructed between 1949 and 1962. These units are in the Main Post and Custer Terrace housing areas. Fort Benning was one of the installations investigated and filmed in a videotape documentary, *Housing an Army: The Wherry and Capehart Era Solution to the Postwar Family Housing Shortage (1949–1962)*, completed by the Department of the Army. In May 2002 the ACHP and the National Park Service approved a Program Comment that completes the Army's compliance with the NHPA with respect to management of its inventory of Capehart and Wherry-era family housing, associated structures, and landscape features. The Program Comment assumes that all Capehart and Wherry-era



Source: Fort Benning GIS, 2004.

Figure 4-6

housing is eligible for the NRHP, yet the Comment allows the Army to proceed with actions involving maintenance and repair, rehabilitation, layaway and mothballing, renovation, demolition, replacement, and transfer, sale, or lease out of federal control of all Capehart and Wherry-era housing units without further Section 106 consultation. Also, the Program Comment stipulates in part that "The Army will advise developers involved in the Army's privatization initiatives that Capehart and Wherry Era properties may be eligible for historic preservation tax credits."

Twelve federally recognized American Indian Tribes are affiliated with the lands of the present installation as a whole. Fort Benning will consult, as appropriate, with the Tribes or other consulting parties regarding the proposed RCI actions (Kerr, 2004, personal communication). The Tribes are as follows:

The Alabama-Coushatta Tribe of Texas
The Alabama-Quassarte Tribe of Oklahoma
The Chickasaw Nation of Oklahoma
The Coushatta Tribe of Louisiana
The United Keetoowah Band of Cherokee Indians of Oklahoma
The Kialegee Tribal Town of Oklahoma
The Miccosukee Tribe of Indians
The Muscogee (Creek) Nation of Oklahoma
The Poarch Band of Creek Indians of Alabama
The Seminole Nation of Oklahoma
The Seminole Tribe of Florida
The Thlopthlocco Tribal Town of Oklahoma

Porter Village. In February 1994 a report was submitted regarding cultural resource surveys on two housing tracts on Camp Merrill, Lumpkin County, Georgia (Gulf Engineers & Consultants, Inc. and Southeastern Archeological Services, Inc., 1994). One of the areas surveyed, termed the Dahlonega Tract, corresponds precisely to the RCI footprint at Porter Village. Five archeological sites were recorded as part of this survey, and they fall within the RCI footprint at Porter Village; the sites were designated 9LU45, 9LU46, 9LU47, 9LU48, and 9LU52. Four of these archeological sites were found to be ineligible for listing on the NRHP; one, termed the Hand Ditch, was determined to be NRHP-eligible. According to the report, of the four that were ineligible, three were sparse prehistoric lithic scatters and one was a bulldozed (and thus highly disturbed) historic house site with a prehistoric lithic scatter component. The locations of these archeological sites are not identified because of security issues.

The Hand Ditch, site 9LU52, was recommended in the report as being NRHP-eligible at the state level of significance and potentially eligible at the national level. It was suggested that it is eligible primarily under criterion a, as associated with events with a significant contribution to the broad pattern of Georgia history, and also eligible under criterion c, as embodying distinctive characteristics of a specific period and type of construction. The Hand Ditch is a 19th century aqueduct or flume constructed to provide water and water pressure to gold mines near Dahlonega for the purposes of hydraulic mining. Within the footprint area the ditch is uniformly approximately 5 feet deep and 10 feet wide, and the portion of the ditch within and near the boundary of the footprint is approximately 1.3 miles long. The Hand Ditch was named after the Hand Mine that it served in part, and it was conceived and designed in the late 1850s by the Yahoola River and Cane Creek Hydraulic Hose Mining Company (Gulf Engineers & Consultants, Inc. and Southeastern Archeological Services, Inc., 1994). The construction of the ditch took place from 1859 to 1861, after which time construction was halted because of the Civil War, according to the survey report. The Hand Ditch weaves and winds through the center and eastern portion of the lower two-thirds of the RCI footprint at Porter Village, covering at least a mile of distance. It is the only known NRHP-eligible site within the RCI footprint at Porter Village.

There are 40 existing housing units at Porter Village. None of these are considered historic structures, and none are eligible, potentially eligible, or listed on the NHRP. There are no historic architectural properties within the RCI footprint at Porter Village.

Fort Benning and the Georgia SHPO have signed a Programmatic Agreement regarding the proposed RCI action on both portions of the Installation. The Programmatic Agreement was signed in March 2005, and a copy is provided in Appendix C.

4.8.1.3 American Indian Resources

Main Post. An initial assessment of remains from excavations and inadvertent discoveries stored at Fort Benning identified the remains of 15 American Indian individuals along with associated grave goods. No American Indian Traditional Cultural Properties (TCPs) have been identified to date at Fort Benning. Fort Benning has established a burial area (outside the RCI footprint) as an optional location for any burials that have to be moved after proper consultation with the Tribes (Veenstra, 2004, personal communication).

Porter Village. No American Indian TCPs have been identified within the RCI footprint at Porter Village, nor any American Indian archeological sites other than those mentioned in the text above.

4.8.2 Consequences

4.8.2.1 Proposed Action

Main Post. Long-term minor adverse and beneficial effects on cultural resources would be expected from implementation of the proposed action. Renovation of historic structures is planned for a portion of the Indianhead Terrace housing area (18 historic structures), for 83 historic structures within the McDonald Manor housing area, and for 392 historic structures within the East Main Post housing area. Beneficial effects could result from the maintenance and renovation of these historic structures by Fort Benning Family Communities LLC in accordance with *The Secretary of the Interior's Standards*. Renovations and new construction could have adverse effects on historic properties if they are not designed to complement the character, style, materials, distinctive building elements, and overall feeling of existing historic structures and the viewsheds of historic areas. The southeastern corner of the Indianhead Terrace housing area contains the 18 historic structures that would be renovated, while the other structures within this housing area would be demolished and replaced with 257 new housing units, a village center, and an outdoor pool. Therefore, the viewshed of the historic buildings in the Indianhead Terrace housing area could be a relevant topic of consideration when determining the style and materials to be used in the new construction.

In terms of potential minor adverse effects on cultural resources, renovation and demolition of some existing housing structures, as well as construction of new housing units, are planned. All existing housing units within the Perkins Place, Upatoi Terrace, Custer Terrace, McGraw Manor, Bouton Heights, and Davis Hill housing areas would be demolished and replaced with newly constructed housing units. New construction could cause soil disturbance with the potential to uncover currently unknown archeological resources. Construction of 641 new housing units, a community center, and an outdoor pool is planned for Patton Place; this area currently has no housing units, so there is the possibility of discovery of previously undisturbed archeological remains. Furthermore, as part of the planned RCI activities, a total of six outdoor swimming pools would be installed within the RCI footprint on the Main Post portion of the Installation. The installation of these pools would likely result in a large amount of soil disturbance and removal. If unknown deposits or remains were discovered during the construction activities overall or during soil excavation for pool installation, activities would cease until the Fort

Benning cultural resources manager and the appropriate SHPO and Tribal personnel were contacted and a determination was made regarding the NRHP eligibility of the site. If NRHP-eligible, sites would be treated in accordance with procedures to protect the integrity of those cultural resources and to mitigate impacts on them, in consultation with the Georgia SHPO. Also, one known historic civilian cemetery is located within the RCI footprint near the Davis Hills housing area, and it should be avoided and protected from ground-disturbing activities associated with planned new construction in that area. In addition, Fort Benning and Fort Benning Family Communities LLC would review and consider the *Capehart and Wherry Neighborhood Design Guidelines* when planning renovations that affect Capehart and Wherry era housing, associated structures, and landscape features on Fort Benning.

Depending on possible renovation and demolition of existing housing and new construction within RCI footprint areas R, W, X, and V, there is a potential for minor adverse impacts on historic structures in the adjacent Main Post Family Housing Area. Because there appear to be four historic structures within the footprint of Area R, long-term minor adverse and beneficial effects on these historic structures could occur from implementation of the proposed action. Footprint Areas W, X, and V are also in the Main Post Historic District and are either in the districts or within the view shed of other historic structures. Therefore, such actions in these footprint areas could also have similar impacts on these resources. Any future construction or renovations in all of these RCI footprint areas (R, V, W, and X) should include an awareness of the need to maintain and preserve the architectural character and qualities of any historic structures within the areas and to consider the character of the adjacent historic district. If applicable, future renovations and new construction should be designed to complement the character, style, materials, and overall feeling of the contributing elements of the adjacent eligible historic district in these areas as well, so as not to adversely affect the viewshed of the adjacent historic area.

Porter Village. Long-term minor adverse and beneficial effects on cultural resources would be expected from implementation of the proposed action at Porter Village. A total of 40 housing units at Porter Village would be renovated or refurbished, but none of these are NRHP-eligible structures. Construction of a village center, outdoor pool, and 37 new homes are also planned in this area. Such construction could cause soil disturbance with the potential to uncover currently unknown archeological resources. If unknown deposits or remains were discovered during construction, activities would cease until the Fort Benning cultural resources manager and the appropriate SHPO and Tribal personnel were contacted and a determination was made regarding the NRHP eligibility of the site. If NRHP-eligible, sites would be treated in accordance with procedures to protect the integrity of those cultural resources and to mitigate impacts on them, in consultation with the Georgia SHPO.

Consideration should be given to the avoidance of the Hand Ditch in the case of any planned construction of housing units, a village center, or a pool in the area of this NRHP-eligible resource. Future construction within the RCI footprint could adversely affect the portion of the Hand Ditch within the footprint. A detailed preservation plan describing how the ditch could be preserved and protected, along with further relevant background research on details of construction of the ditch, has not yet been completed. Therefore, special consideration of the Hand Ditch, as well as efforts to mitigate any adverse effects of future construction within the RCI footprint on this historic aqueduct, should be considered. If it is thought that future mission activities might at some point affect the ditch, mitigation could involve HABS/HAER investigations and drawings and other in-depth investigations of the site. The appropriate mitigation measures would best be determined and implemented through consultation with the Georgia SHPO.

4.8.2.2 No Action Alternative

Main Post. Minor or moderate adverse effects are possible for the status quo because of the minimal funding available for family housing and the associated potential for structures that are beginning to deteriorate to continue to do so. This could result in a loss of their historical integrity or even demolition by neglect.

4.9 SOCIOECONOMICS

4.9.1 Affected Environment

This section describes the economy and the sociological environment of the region surrounding Fort Benning. The socioeconomic indicators used for this study include regional economic activity, population, housing, and schools. These indicators characterize the ROI. In addition, recreational and community facilities and public and social services are discussed.

An ROI is a geographic area selected as the basis on which social and economic impacts of project alternatives are analyzed. The criteria used to determine the ROI are the geographic location of Fort Benning; the residency distribution of Fort Benning military and civilian personnel; commuting distances and times; and the location of businesses providing goods and services to Fort Benning, its personnel, and their dependents. On the basis of these criteria, the ROI for the social and economic environment is defined as the Columbus, GA-AL Metropolitan Statistical Area (MSA). The MSA includes Chattahoochee, Harris, Marion, and Muscogee counties in Georgia and Russell County in Alabama (U.S. Census Bureau, 2004).

The baseline year for socioeconomic data is 2001. This base year is the most recent year for which the majority of socioeconomic indicators (e.g., population, employment, and housing data) are reasonably available. Where 2001 data are not available, the most recent data available are presented.

4.9.1.1 Main Post

Employment and Unemployment. Fort Benning makes a substantial contribution to the ROI economy, employing more than 31,000 active duty Soldiers and about 6,700 civilian personnel. Fort Benning's annual economic impact on the ROI in FY03 was $1.9 billion. The installation is the sixth largest in the United States and has the third largest troop density (Fort Benning, 2003c).

Government and government enterprises, manufacturing, retail trade, and the health care and social assistance sector were the primary sources of employment in the ROI. Together, these industry sectors accounted for more than half of total regional employment. The largest source of jobs in the ROI was the government and government services sector, which includes federal civilian and military, state, and local governments. The government sector accounted for 26 percent of total employment, of which 13 percent was employed by the military (US DOC, BEA, 2003a).

The ROI civilian labor force as of February 2004 was 131,116, with an unemployment rate of 4.5 percent. For comparison, Georgia's unemployment rate was 3.8 percent and the national unemployment rate was 6.0 percent (Georgia DOL, 2004).

Income. The per capita personal income (PCPI) of the ROI was $25,909 (US DOC, BEA, 2003b). For comparison, the PCPI of Georgia was $28,523 and the PCPI for the United States was $30,413 (US DOC, BEA, 2003b).

Demographics. Table 4-13 shows the ROI population in 1990 and 2000, with comparative data for Georgia and the United States. According to the U.S. Census, the ROI population increased 13 percent between 1990 and 2000, half the percentage increase for Georgia (26 percent) but the same as the percentage increase for the United States.

Table 4-13
Fort Benning ROI Population

Location	1990[1]	2000[2]	Percent Change, 1990–2000
Columbus, GA-AL MSA	243,072	274,624	13
Georgia	6,478,216	8,186,453	26
United States	248,709,873	281,421,906	13

[1] Source: U.S. Census Bureau, 1990.
[2] Source: U.S. Census Bureau, 2000.

On- and Off-Post Housing. Fort Benning has 3,999 family housing units on-post. The existing family housing areas and housing inventory are described in Section 2.0. On-post housing is typically fully occupied, though some units may be temporarily unavailable to allow maintenance to be completed between tenants. The waiting time for on-post family housing ranges from 0 to 7 months, depending on the number of bedrooms required (Fort Benning, 2003c).

Battle Park Homes, west of and adjacent to the Custer Terrace housing area, is a single-story apartment complex consisting of 200 two-and three-bedroom units (DMDC, 2003). These rental apartments are on leased government land and owned by a private company, Battle Park Homes, Inc. (see also Section 4.1.1.2.2, Outgrants). Although within the proposed RCI footprint, the Battle Park apartments are already privatized and therefore would not be included in the 3,999 Main Post family housing units that would be transferred to the RCI Fort Benning Family Communities LLC.

Uniformed personnel living off-post are given a basic allowance for housing (BAH). BAH is listed on a Soldier's Leave and Earnings Statement as an entitlement and is nontaxable income for paying rent or a mortgage. Table 4-14 lists BAH by rank for 2002. Current DoD policy does not mandate that BAH meet all housing costs for uniformed personnel and their families. Each Soldier is expected to pay an "out-of-pocket" (OOP) expense to meet additional housing costs, such as the cost of utilities.

Table 4-14
BAH, OOP, and MAHC for Fort Benning

Pay Grade	BAH	OOP	MAHC
E1 through E9	$683–$960	$99–$147	$782–$1,107
W1 through O5	$877–$1,109	$136–$163	$1,013–$1,272
O6+	$1,192	$184	$1,376

Source: Niehaus, 2003.

OOP varies by pay grade and ranges from $99 per month for enlisted personnel up to $184 per month for officers (Table 4-14). The sum of BAH and OOP equals the maximum acceptable housing cost (MAHC). If a Soldier finds it necessary to pay more than MAHC to obtain adequate housing (quality, size, location), that Soldier is, by definition, housed in an unacceptable unit. For Fort Benning, MAHC

ranges from $782 to $1,376 per month, depending on grade (Table 4-14). Based on current DoD guidance, it is assumed that OOP will be reduced to zero by 2007, and BAH rates will increase to reflect projected rent plus utility costs within the market area (Niehaus, 2003).

Table 4-15 lists information on rental rates for market housing in the ROI. Comparing the BAH in Table 4-14 with the cost of housing in Table 4-15 shows that military personnel could have housing costs greater than their MAHC, depending on the Soldier's rank and number of bedrooms required.

Table 4-15

Fort Benning Market Housing Rental Information

Type of Housing	Median Monthly Rent (including utilities and insurance)
Two bedrooms	$606
Three bedrooms	$863
Four+ bedrooms	$1,125

Source: Niehaus, 2003.

The Community Homefinding Relocation and Referral Services office of the Fort Benning Housing Division assists in finding accommodations for those Soldiers who must find off-post housing because on-post family housing is full or choose to live off-post. The ROI off-post housing stock was 111,341 units in 2000, up from 92,378 units in 1990, reflecting an average annual growth rate of 1.5 percent per year. The overall vacancy rate in 2002 was estimated at 11.1 percent, up from 8.0 percent in 1990. For the rental-housing component of the market, vacancy rates were estimated at 13.2 percent, up from 9.6 percent in 1990. Forecasts are for a slight contraction in the housing market, with overall vacancy rates falling to 9.6 percent and rental vacancy rates dropping to 11.5 percent over the next 5 years (Niehaus, 2003).

Based on these projected off-post housing market conditions, the on-post housing conditions, and estimated military and civilian population growth, a *Family Housing Market Analysis* (FHMA)[1] conducted for Fort Benning determined that in 5 years the requirement for government-provided (on-post) family housing would total 4,123 units. This number would meet the Army's projected minimum on-post housing requirement, plus provide a sufficient number of on-post housing units to compensate for the community-housing shortfall (i.e., projected shortage of off-post housing units that meet the Army's criteria of affordability, quality, location, and number of bedrooms).

Law Enforcement and Fire Protection Services. The Fort Benning Law Enforcement Command provides law enforcement services to the entire Fort Benning community, including the family housing areas. Services include policing operations, patrols, general investigations, a game warden, traffic accident investigations, school resource officers, community-oriented policing, K-9, and training. The Law Enforcement Command works closely with local law enforcement agencies when their services are required.

[1] The Army uses an FHMA to evaluate the availability of housing for accompanied military personnel stationed at an installation. The study projects housing needs for 5 years from the date of the study. In the case of Fort Benning, the study was conducted in 2002, and housing needs were projected for the year 2007. Housing that is deemed acceptable must meet the Army's standards of affordability, location, quality, and number of bedrooms (Niehaus, 2003).

The Fort Benning Fire Department operates from three fire stations and consists of three engine companies at each site, one ladder truck, two rescue units, one HAZMAT unit, two command vehicles, and administrative offices. The Fort Benning Fire Department has mutual aid agreements with local communities for fire protection and HAZMAT response.

Schools. The U.S. Department of Education provides federal impact aid to school districts that have federal lands within their jurisdiction. This federal impact aid is authorized under Public Law 103-382 as payment in lieu of taxes that would have been paid if the land were not held by the federal government. School districts receive federal impact aid for each student whose parent or parents live or work on federal property. The amount of federal impact aid a school district receives is dependent on the number of "federal" students the district supports in relation to the total district student population. Schools receive more federal impact aid for those students whose parents both live and work on federal property. Military A students are dependents of military employees residing on federal property. Military B students are dependents of military employees not residing on federal property. School districts receive the highest level of federal impact aid for Military A students and a lower level of federal impact aid for Military B students. Total impact aid varies year by year according to congressional appropriations for the program, but in general it has ranged from $450 to $2,200 per pupil.

The Fort Benning School System is one of 14 Domestic Dependent Elementary and Secondary Schools districts funded by the DoD. Fort Benning has six elementary schools and one middle school on-post. The schools are operating under capacity and therefore have room for additional students. Total student enrollment is about 2,719. The student-teacher ratio for kindergarten through 3rd grade is 18:1 and for 4th through 8th grades is 23:1. There are plans to enlarge the Faith School gymnasium and to add a central kitchen facility (Tesch, 2004, personal communication).

Children living on-post who are of high school age attend Spencer High School, part of the Muscogee County School District. Spencer High School serves grades 9 through 12, has a student enrollment of about 900, and has a student-teacher ratio of 16:1 (NCES, CCD, 2004). Muscogee County School District receives the Military A level of federal impact aid for the Fort Benning students because the children live on the installation but attend an off-post school.

Children living off-post attend elementary, middle, or high schools in Muscogee County School District, Phenix City School District, Harris County School District, Russell County School District, Chattahoochee County School District, or Marion County School District. Because the children attending these schools live off-post, these schools receive the Military B level of federal impact aid per student.

Recreation. Fort Benning offers a number of recreational facilities, including two 18-hole golf courses; tennis courts; two bowling alleys; riding stables; six fitness centers with basketball courts, racquetball courts, a swimming pool, free weights, and a sauna; ball fields; outdoor swimming pools; a picnic area; hunting; fishing; bird watching; a riverwalk; an automotive center; and an RV trailer camp.

Environmental Justice. On February 11, 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. The Executive Order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. Environmental justice analyses are performed to identify the disproportionate placement of high and adverse environmental or health impacts from proposed federal actions on minority or low-income populations, and to identify alternatives that could mitigate these impacts. Minority populations included in the Census are identified as Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and other Pacific Islander; other race; of two or more races; and Hispanic. Poverty status, used in this EA to define low-income status, is reported as the number of persons with income below poverty level. The

2000 Census defines the poverty level as $8,794 of annual income, or less, for an individual and $17,603 of annual income, or less, for a family of four.

As of the 2000 Census, 53 percent of the ROI population was white and 47 percent was of a minority race or ethnicity. For comparison, about 35 percent of the state of Georgia's population is composed of minority populations, whereas the United States has a minority population of about 25 percent (U.S. Census Bureau, 2000). About 15 percent of the ROI population had an income below poverty level. The ROI's poverty rate was higher than Georgia's rate of 13 percent and the national rate of 12 percent (U.S. Census Bureau, 2000).

Protection of Children. Executive Order 13045, *Protection of Children from Environmental Health and Safety Risks*, requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children.

Historically, children have been present at Fort Benning as residents and visitors (e.g., family housing, schools, users of recreational facilities). On such occasions, the Army has taken precautions for their safety by a number of means, including using fencing, limiting access to certain areas, establishing curfews, and providing adult supervision.

As stated in Section 4.12 (Hazardous and Toxic Substances), previous investigations identified hazardous substances (asbestos-containing materials, lead-based paint, and possibly pesticides) present in or around housing units on Fort Benning. These materials, widely used in the building products industry and for housing maintenance for many years, are being removed or encapsulated as units are renovated. In addition, asbestos and lead-based paint are being managed in place per plans.

4.9.1.2 Porter Village

This section describes the economy and the sociological environment of the region surrounding Porter Village. The ROI for the social and economic environment for Porter Village is defined as Lumpkin County, Georgia.

Employment and Unemployment. Government and government enterprises, manufacturing, retail trade, and the construction sectors were the primary sources of employment in the ROI. Together these industry sectors accounted for more than half of total regional employment. The largest source of jobs in the ROI was the government and government services sector, which includes federal civilian and military, state, and local governments. The government sector accounted for 20 percent of total employment, of which 16 percent was state and local government jobs (US DOC, BEA 2003a).

The ROI civilian labor force as of February 2004 was 11,909, with an unemployment rate of 2.4 percent. For comparison, Georgia's unemployment rate was 3.8 percent and the national unemployment rate was 6.0 percent (Georgia DOL, 2004).

Income. The PCPI of the ROI was $22,495 (US DOC, BEA, 2003b). For comparison, the PCPI of Georgia was $28,523, and the PCPI for the United States was $30,413 (US DOC, BEA, 2003b).

Demographics. Table 4-16 shows the ROI population in 1990 and 2000, with comparative data for Georgia and the United States. According to the U.S. Census, the ROI population increased 44 percent between 1990 and 2000, much higher than the percent population increase for Georgia (26 percent) and the United States (13 percent).

Table 4-16
Porter Village ROI Population

Location	1990[1]	2000[2]	Percent Change, 1990–2000
Lumpkin County	14,573	21,016	44
Georgia	6,478,216	8,186,453	26
United States	248,709,873	281,421,906	13

[1] Source: U.S. Census Bureau, 1990.
[2] Source: U.S. Census Bureau, 2000.

On- and Off-Post Housing. Porter Village has 40 family housing units. The existing family housing areas and housing inventory are described in Section 2.0. Porter Village is typically fully occupied, although some units may be temporarily unavailable to allow maintenance to be completed between tenants. The waiting time for family housing in Porter Village is about 12 months.

Uniformed personnel living off-post are given a BAH. Table 4-17 lists BAH by rank for 2003. OOP varies by pay grade and ranges from $68 per month for enlisted personnel up to $120 per month for officers (Table 4-17). The sum of BAH and OOP equals the MAHC. For Porter Village, MAHC ranges from $843 to $1,357 per month, depending on grade (Table 4-17). Based on current DoD guidance, it is assumed that OOP will be reduced to zero by 2008, and BAH rates will increase to reflect projected rent plus utility costs within the market area (Niehaus, 2003).

Table 4-18 lists information on rental rates for market housing in the ROI. Comparing the BAH in Table 4-17 with the cost of housing in Table 4-18 shows that military personnel could have housing costs greater than their MAHC, depending on the Soldier's rank and number of bedrooms required.

Table 4-17
BAH, OOP, and MAHC for Porter Village

Pay Grade	BAH	OOP	MAHC
E1 through E9	$775–$1,043	$68–$101	$843–$1,144
W1 through O5	$1,000–$1,149	$97–$111	$1,097–$1,260
O6+	$1,237	$120	$1,357

Source: Niehaus, 2003.

Table 4-18
Porter Village Market Housing Rental Information

Type of Housing	Median Monthly Rent (including utilities and insurance)
Two bedrooms	$761
Three bedrooms	$1,031
Four+ bedrooms	$1,198

Source: Niehaus, 2003.

The ROI housing stock was about 5,400 units in 2000, up from 3,700 units in 1990, reflecting an average annual growth rate of 3.0 percent per year. The overall vacancy rate in 2003 was estimated at 9.4 percent, down from 13.0 percent in 1990. For the rental-housing component of the market, vacancy rates were estimated at 8.3 percent, down from 13.1 percent in 1990. Forecasts are for an overall vacancy rate of 8.9 percent, and rental vacancy rates are expected to drop to 7.9 percent over the next 5 years (Niehaus, 2003).

Based on these projected off-post housing market conditions, the on-post housing conditions, and estimated military and civilian population growth, a *Family Housing Market Analysis*[2] conducted for Porter Village determined that in 5 years, the requirement for government-provided family housing for the Installation would total 77 units. This requirement would meet the Army's projected minimum government-provided housing requirement, plus provide a sufficient number of units to compensate for the community-housing shortfall (i.e., projected shortage of off-post housing units that meet the Army's criteria of affordability, quality, location, and number of bedrooms).

Law Enforcement and Fire Protection Services. Police protection for Porter Village is provided by the City of Dahlonega through a Memorandum of Agreement (MOA) between the City of Dahlonega and Camp Merrill. The Army pays the City of Dahlonega for the services.

The City of Dahlonega provides fire protection for Porter Village through an MOA between the city and Fort Benning. The Army pays the City of Dahlonega for the fire protection services.

Schools. Children living in Porter Village primarily attend one of the four schools in the Lumpkin County Public School District. The two elementary schools, one middle school, and one high school are all in Dahlonega. Lumpkin County School District has a total student enrollment of about 3,400 and a student-teacher ratio of 18:1 (NCES, CCD, 2004). The school district receives the Military A level of federal impact aid for each child from Porter Village attending its schools.

Recreation. Located in the Blue Ridge Mountains at the beginning of the Appalachian Trail, Lumpkin County offers many opportunities for outdoor activities, including hiking, camping, fishing, whitewater rafting, canoeing, and boating on Lake Sidney Lanier. Lumpkin County has two waterfalls, the DeSoto Falls and the Amicalola Falls. Dahlonega (the home of the first gold rush in the United States) has a historic district with cultural attractions, shopping, and museums.

Environmental Justice. As of the 2000 Census, 94 percent of the ROI population was white and 6 percent was of a minority race or ethnicity. For comparison, about 35 percent of the state of Georgia's population is composed of minority populations and the United States has a minority population of about 25 percent (U.S. Census Bureau, 2000). About 13 percent of the ROI population had an income below the poverty level. The ROI's poverty rate was the same as Georgia's rate and just above the national rate of 12 percent (U.S. Census Bureau, 2000).

Protection of Children. The homes in Porter Village were constructed in 1996. By that time, asbestos and lead-based paint were no longer used in the residential building industry. No hazardous substances (e.g., asbestos-containing materials, lead-based paint, pesticides) have been identified in or around housing units at Porter Village. The housing units are not near an industrial area or a high-traffic area that would be unsafe for children.

[2] The Army uses an FHMA to evaluate the availability of housing for accompanied military personnel stationed at an installation. The study projects housing needs for 5 years from the date of the study. In the case of Camp Merrill, the study was conducted in 2003, and housing needs were projected for the year 2008. Housing that is deemed acceptable must meet the Army's standards of affordability, location, quality, and number of bedrooms (Niehaus, 2003).

4.9.2 Consequences

4.9.2.1 Proposed Action

The threshold level of significance for socioeconomics consists of a combination of several factors, including unusual population growth or reduction, unusual increase or decrease in housing demand, substantial increase or decrease in demand on public services, and the potential to substantially increase or decrease employment opportunities.

Main Post

EIFS Model Methodology. The economic effects of implementing the proposed action are estimated using the Economic Impact Forecast System (EIFS) model, a computer-based economic tool that calculates multipliers to estimate the direct and indirect effects resulting from a given action. Changes in spending and employment represent the direct effects of the action. Based on the input data and calculated multipliers, the model estimates ROI changes in sales volume, income, employment, and population, accounting for the direct and indirect effects of the action.

For purposes of this analysis, a change is considered significant if it falls outside the historical range of ROI economic variation. To determine the historical range of economic variation, the EIFS model calculates a rational threshold value (RTV) profile for the ROI. This analytical process uses historical data for the ROI and calculates fluctuations in sales volume, income, employment, and population patterns. The historical extremes for the ROI become the thresholds of significance (i.e., the RTVs) for social and economic change. If the estimated effect of an action falls above the positive RTV or below the negative RTV, the effect is considered significant. Appendix C discusses this methodology in more detail and presents the model input and output tables developed for this analysis.

EIFS Model Results. Short-term direct and indirect minor beneficial effects would be expected. The expenditures associated with demolition, construction, and renovation of family housing and associated facilities at Fort Benning would increase sales volume, employment, and income in the ROI, as determined by the EIFS model (Table 4-19 and Appendix C). The action would create about 837 jobs. However, the economic benefits would be short-term, lasting only for the duration of construction. These changes in sales volume, employment, and income would fall within historical fluctuations (i.e., within the RTV range) and be considered minor.

Housing. Long-term moderate beneficial effects on on-post family housing would be expected. The availability of affordable, quality housing in family-oriented communities is a key issue for Army families. Quality of life for Soldiers and their families would be greatly improved through implementation of the RCI program at Fort Benning. The proposed action would increase the family housing inventory by about 160 units, allowing more military families to live on-post. The proposed action would improve the condition and aesthetic appeal of existing family housing through revitalization. New and revitalized housing units would have modern amenities to better suit the lifestyle of today's families, such as family rooms, eat-in kitchens, laundry/utility space, and more storage space. The rent for the new and revitalized family housing units would not exceed a Soldier's BAH. The proposed action would allow more military families to have quality, attractive, affordable housing that fits their needs.

Quality of Life. Short-term minor adverse and long-term direct moderate beneficial effects on quality of life would be expected. In the short term, noise and traffic from construction of RCI housing could be disruptive to the existing residents. In the long term, however, quality of life for Soldiers and their families would be greatly improved through implementation of the RCI program at Fort Benning

Table 4-19
EIFS Model Output for the Proposed RCI Action at Fort Benning

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	$74,835,350		
Induced Sales Volume	$115,246,400		
Total Sales Volume	$190,081,800	1.81	-8.27% to 10.86%
Direct Income	$12,858,540		
Induced Income	$20,380,770		
Total Income	$33,239,310	0.56	-6.15% to 10.16%
Direct Employment	322		
Induced Employment	515		
Total Employment	837	0.52	-9.54% to 5.10%
Local Population	0	0	-2.17% to 3.06%

because of the improved condition of on-post family housing, as well as the residential community. The proposed action would improve the condition and aesthetic appeal of existing housing through revitalization, as well as heighten the sense of community through improved and linked open spaces, trail systems to connect neighborhoods, and additional recreational amenities. The following paragraphs identify the anticipated effects for each of the key components of quality of life.

Law Enforcement and Fire Protection. Short-term minor adverse effects on law enforcement services could occur. Because of the location of new housing, the increased concentration of housing, and the increased on-post population, emergency service response for communities in the RCI footprint could increase. However, the RCI program would take about 8 years to complete, providing time for the Fort Benning Law Enforcement Command to adjust and expand as the number of housing units increases. The Fort Benning Fire Department has determined that it has sufficient personnel and equipment to serve the new housing areas and would be able to maintain emergency response times (Simmons, 2004, personal communication).

Implementation of the RCI program would not change the legislative jurisdiction at Fort Benning. The Fort Benning Fire Department and the Fort Benning Law Enforcement Command would continue to provide fire response and law enforcement service on the installation.

Schools. Long-term minor beneficial effects would be expected. If the RCI program were implemented, about 35 additional high school-age children would be living on-post (Clark Pinnacle, 2004). These children would continue to attend the public school system, but their federal impact aid status would change from Military B to Military A. Therefore, the public school district would receive a higher level of funding for these students.

Implementation of the RCI program would also increase the number of elementary and middle school-age children living on-post. The number of elementary school students would be expected to increase by about 155, and the number of middle school students would increase by about 50 (Clark Pinnacle, 2004).

However, no adverse effects on school resources would be expected. The on-post schools would be able to accommodate the additional students without the need for temporary classrooms or construction of additional schools or classroom space (Jones, 2004, personal communication).

Recreation. Long-term minor beneficial effects would be expected to result from implementation of the proposed action. The RCI program would also include additional community amenities, such as a new recreation center, two community centers, four village centers, 146 new playfields and tot lots, and seven new swimming pools (Clark Pinnacle, 2004). Along with the existing facilities that already serve Fort Benning residents, these additional facilities would improve recreational opportunities throughout the housing areas.

Environmental Justice. No effects would be expected. Implementation of the proposed action would not result in disproportionate adverse environmental or health effects on low-income or minority populations.

Protection of Children. Short-term minor adverse effects on the protection of children would be expected. In the short term, because construction sites can be enticing to children, construction activity could be an increased safety risk. During construction, safety measures stated in 29 CFR Part 1926, *Safety and Health Regulations for Construction*, and Army Regulation 385-10, *Army Safety Program*, would be followed to protect the health and safety of residents on Fort Benning, as well as construction workers. It is recommended that barriers and "No Trespassing" signs be placed around construction sites to deter children from playing in these areas and that construction vehicles and equipment be secured when not in use.

Hazardous waste generated from demolition and renovation activities would result in a minor short-term increase in the hazardous waste generated at Fort Benning. Because waste management would be conducted in accordance with Fort Benning plans and procedures, as well as applicable federal, state, and Army regulations, no environmental or health effects would be expected.

Porter Village

EIFS Model Results. Short-term direct and indirect minor beneficial effects would be expected. The expenditures associated with construction and renovation of family housing at Porter Village would increase sales volume, employment, and income in the ROI, as determined by the EIFS model (Table 4-20 and Appendix C). The action would create about 16 jobs. However, the economic benefits would be short-term, lasting only for the duration of construction. These changes in sales volume, employment, and income would fall within historical fluctuations (i.e., within the RTV range) and be considered minor.

Housing. Long-term minor beneficial effects would be expected. Implementation of the RCI program at Porter Village would ensure that eligible Soldiers and their families would have access to quality, attractive, and affordable housing. The proposed action would increase the family housing inventory by about 37 units, allowing more military families to live at Porter Village, and would improve and maintain the condition and aesthetic appeal of the existing housing through revitalization (e.g., painting). The rent for the housing would not exceed a Soldier's BAH.

Quality of Life. Long-term minor beneficial effects on quality of life would be expected. Quality of life for Soldiers and their families would be sustained through implementation of the RCI Program at Porter Village because of continued maintenance and improvements to housing. The following paragraphs identify the anticipated effects for each of the key components of quality of life.

Table 4-20

EIFS Model Output for the Proposed RCI Action at Porter Village

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	$1,375,000		
Induced Sales Volume	$1,292,500		
Total Sales Volume	$2,667,500	1.01	-11.62% to 10.72%
Direct Income	$261,411		
Induced Income	$245,726		
Total Income	$507,137	0.14	-13.04% to 8.57%
Direct Employment	8		
Induced Employment	8		
Total Employment	16	0.21	-5.61% to 5.65%
Local Population	0	0	-2.72% to 3.00%

Law Enforcement and Fire Protection. No effects on law enforcement or fire department services would be expected. Implementation of the RCI program would not change the legislative jurisdiction at Porter Village. The City of Dahlonega would continue to provide fire response and law enforcement service to the residents. In addition, no increase in demand for the City of Dahlonega law enforcement or fire protection services would be expected. Soldiers living in the 37 new housing units at Porter Village would be expected to move from other residences in the City of Dahlonega. Therefore, the proposed action would not increase the population of the ROI or generate additional demand for emergency services.

Schools. Long-term minor beneficial effects would be expected. If the RCI program were implemented, more primary and secondary school-age children would live at Porter Village. These children would continue to attend the public school system, but their federal impact aid status would change from Military B to Military A. Therefore, the public school district would receive a higher level of funding for these students.

Recreation. Long-term minor beneficial effects would be expected. Under the proposed action, a village center and outdoor pool will be built, expanding and enhancing recreational opportunities at Porter Village.

Environmental Justice. No effects would be expected. Implementation of RCI would not result in disproportionate adverse environmental or health effects on low-income or minority populations.

Protection of Children. Short-term minor adverse effects on the protection of children would be expected. In the short term, because construction sites can be enticing to children, construction activity could be an increased safety risk. During construction, safety measures stated in 29 CFR Part 1926, *Safety and Health Regulations for Construction*, and Army Regulation 385-10, *Army Safety Program*, would be followed to protect the health and safety of residents at Porter Village, as well as construction

workers. It is recommended that barriers and "No Trespassing" signs be placed around construction sites to deter children from playing in these areas and that construction vehicles and equipment be secured when not in use.

Because no hazardous waste is known to occur at Porter Village, no effects on the protection of children are expected to occur.

4.9.2.2 No Action Alternative

Main Post

Economic Development and Demographics. No effects would be expected. There would be no change in sales volume or employment in the ROI and no change in population.

Housing and Quality of Life. Long-term moderate adverse effects would be expected. Continuation of the present family housing programs would perpetuate deficiencies in quality of life for many Soldiers and their dependents. The availability of affordable, quality family housing is a key function of quality of life and is often given high priority by Soldiers and their families. The Army would continue to do regular maintenance on existing housing, as well as some renovation and demolition, but these activities could be conducted on a constrained budget. Over the years, some housing units would deteriorate to the point that they would become unsuitable for living. This would decrease the inventory of family housing on Fort Benning, forcing Soldiers and their families to find housing off-post. Depending on the Soldiers' rank and number of dependents, they might have to pay more than their BAH to afford off-post housing that fits their families' needs.

No effects on law enforcement, fire protection services, schools, or recreation facilities would be expected to result from implementation of the no action alternative.

Environmental Justice. No effects would be expected. Implementation of the no action alternative would not result in disproportionate adverse environmental or health effects on low-income or minority populations.

Protection of Children. Long-term minor adverse effects on the protection of children would be expected. Under current conditions, the hazardous materials identified in on-post housing units are not health hazards because they have been contained or removed. But as homes deteriorate, the risk of children's being exposed to hazardous materials (for example, chipping lead-based paint or cracked asbestos tiles) would increase. Section 4.12 (Hazardous and Toxic Substances) provides further information on the types of hazardous materials identified in Fort Benning housing units.

Porter Village

Economic Development and Demographics. No effects would be expected. There would be no change in sales volume or employment in the ROI and no change in population.

Housing and Quality of Life. Long-term minor adverse effects could occur. Continuation of the present family housing programs would perpetuate deficiencies in quality of life for Soldiers and their dependents. The availability of affordable, quality family housing is a key function of quality of life and is often given high priority by Soldiers and their families. The Army would continue to do regular maintenance on existing housing, as well as some renovation and demolition, but these activities would be conducted on a constrained budget. Over the years, some housing units could deteriorate to the point that they would become unsuitable for living. This would decrease the inventory of family housing for

Camp Merrill, forcing Soldiers and their families to find housing outside Porter Village. Depending on the Soldiers' rank and number of dependents, they might have to pay more than their BAH to afford off-post housing that fits their families' needs.

No effects on law enforcement, fire protection services, schools, or recreation would be expected to result from implementation of the no action alternative.

Environmental Justice. No effects would be expected. Implementation of the no action alternative would not result in disproportionate adverse environmental or health effects on low-income or minority populations.

Protection of Children. No effects would be expected. Implementation of the no action alternative would not result in environmental health and safety risks that would disproportionately affect children.

4.10 TRANSPORTATION

4.10.1 Affected Environment

Transportation in and around Fort Benning and Porter Village is achieved primarily via road networks and pedestrian walkways. The following discussion describes these and other transportation resources, their relative use, and their importance to the surrounding community.

The threshold level of significance for transportation is impairment to emergency response efforts or impediment of traffic supporting the training and security mission.

4.10.1.1 Roadways and Traffic

Main Post

Access from Off-Post Highways and Roads. Fort Benning is primarily accessed from the north via Interstate 185, U.S. Highway 280 (Victory Drive), Benning Boulevard, and South Lumpkin Road. Highway 280 divides the installation and extends in a diagonal northwest and southeast direction. I-185 enters the installation from the north and terminates east of the cantonment area at First Division Road.

The main gate to Fort Benning is at the intersection of Benning Boulevard and South Lumpkin Road, approximately 2 miles within the installation boundary. In compliance with a Department of the Army directive, temporary ACPs that restrict unauthorized access to Fort Benning were installed. There are currently seven ACPs, at the following locations: Benning Boulevard, Lindsay Creek Parkway (I-185), South Lumpkin Road, Custer Road, Sand Hill, First Division Road, and Eddy Bridge. Fort Benning is working to replace these temporary ACPs with permanent structures (Fort Benning, 2004d).

Other methods to restrict unauthorized access to the installation (such as drum/wedge, traffic arm barricades, and bollards) have also been installed on other paved roads, dirt roads, and trails that formerly provided access across or into the installation. Fort Benning will also install a physical security perimeter barrier (fencing, guard rail, or use of existing natural terrain barriers) within the next year to further restrict access by unauthorized vehicles into three of the installation's main cantonment areas and the Sand Hill training area (Fort Benning, 2004d).

During personnel- or equipment-moving operations, various installation access routes are used; however, a significant proportion of convoy traffic uses a western approach from Alabama to Lawson Army Airfield via Highway 165 (Bunt, 2004, personal communication).

On-Post Roads. The interior road network consists of hundreds of miles of improved and unimproved roads and trails. Access to the cantonment area is primarily provided from the north by Benning Boulevard, a four-lane divided arterial, and Lumpkin Road, a two-lane highway, and from the east by First Division Road, a two-lane, two-way roadway (Harland Bartholomew & Assoc., 1994).

Access to and throughout the existing and proposed housing areas is possible via primary, secondary, and tertiary roads. Lumpkin and other local area roads provide access to Austin Loop, Miller Loop, White Elephants, Perkins Place, and proposed housing Area R. Tenth Division Road and smaller local area roads provide access to Indianhead Terrace and proposed housing Area Y. First Division Road and smaller local area roads provide access to proposed housing Area M, Davis Hills, Bouton Heights, proposed housing Area P, Iron Triangle, White Elephants, and Austin Loop. Norton Court and proposed housing Area W are served by multiple streets, including Ingersoll Street, Carpenter Street, Burr Street, Kilgore Street, and Edwards Street.

Northern housing areas, including Custer Terrace and McGraw Manor, are primarily serviced by Custer Road. Proposed housing Area J is also serviced by the northern portion of Custer Road, just north of Highway 27-280. Santa Fe Road provides access to the eastern boundary of Area T and the western boundary of Area I.

Porter Village

Porter Village, which is just off Morrison Moore Parkway and is accessible only by vehicle, has a single circular street (Rabel Drive) and three cul-de-sacs (Mastin Court, Law Court, and Lucas Court). Camp Wahsega Road, accessed via U.S. Highway 19 and Grove Street, provides a generally direct route from Porter Village to Camp Merrill, which is approximately 10 miles to the east.

4.10.1.2 Public and Other Transportation

Main Post

Air. Commercial airline service is provided to the Fort Benning area by one commercial airline (ASA/Delta Connections) operating out of the Columbus Metropolitan Airport (Gray, 2004, personal communication). Direct access to the airport, which is approximately 12 miles north of Fort Benning, is possible from Fort Benning via I-185.

Air services at Fort Benning are conducted by Lawson Army Airfield. The airfield supports missions of the installation and area reserve components using both Army and Air Force aircraft. Almost all aircraft can be accommodated at LAAF, up to and including the C-5A transport. Mission requirements include operation of both airplanes and helicopters (Fort Benning, 2004d).

There are no airports in or proximate to the northern portion of the installation; however, helicopter landing zones for training or emergency transport are located at various points throughout the installation (Fort Benning, 2004d).

Buses. The only form of commercial mass transit in the Fort Benning/Columbus/Phenix City area is bus service (Fort Benning, 2004d). Two commercial bus lines provide transportation to and around the Columbus Fort Benning area: Greyhound Bus Lines and METRA, the Columbus Metropolitan Transit Transportation System (Greater Columbus Chamber of Commerce, 2003).

METRA provides bus shuttle service between Fort Benning and Columbus via Route 4.The line provides transportation between the METRA Transfer Center in Columbus and the Main Post Bus Station near the intersection of Gillespie Street and Vibbert Avenue (Greater Columbus Chamber of Commerce, 2003).

Three government-operated shuttle bus routes are provided within the installation, serving the Main Post, Sand Hill, Kelley Hill, and Harmony Church. No commercial mass transit routes approach or are proximate to the northern portion of the installation. Military mass transit vehicles routinely transport Soldiers for training in this area.

Rail. Multiple railroad lines extend from Columbus across, or in the vicinity of, Fort Benning. One line (portions of which are operated by Central of Georgia Railroad and Southern Railway) extends in a generally northeast direction from the Columbus area and then extends east, along the northern boundary of Fort Benning.

Additional lines (operated by Norfolk Southern Railroad and Georgia Southwestern) extend southeast from Columbus and bisect Fort Benning in a southeasterly direction. Each of these railroad lines provides only freight service to the Fort Benning/Columbus/ Phenix City area (Fort Benning, 2004d). Portions of both of these lines extend directly along the western boundary of proposed housing Area J.

The Norfolk Southern line includes a rail loading facility near the intersection of 2nd Armored Division Road and W.R. 16th Infantry Regiment Street in the Sand Hill area. A second facility, Ochillee Junction, is north of the intersection of First Division Road and Wood Road, near Ochillee Creek.

These sites are not used for any type of recreational or mass transit purposes, but only to transport military equipment and supplies between Fort Benning and other installations (Fort Benning, 2004d). All locomotives, rolling stock, and trackage are owned and maintained by the commercial carriers, with the exception of track 33, which is owned by Fort Benning and connects the lines of the two commercial railroads in the Sand Hill area. The trackage that previously served the cantonment area was abandoned and has been partially removed (Harland Bartholomew & Assoc., 1994).

Waterways. Waterways are not regularly used to transport personnel or materials to Fort Benning. However, the Chattahoochee River, which flows south past Columbus, follows the southwest border of Fort Benning and then extends to its terminus at Lake Seminole, is navigable for barge and small craft traffic in the Fort Benning area. Access to the Gulf of Mexico is then possible from Lake Seminole via the Apalachicola River, which empties to the Gulf at Apalachicola, Florida (Fort Benning, 2004d).

Porter Village

Air. A single small airport is located nearby in Dahlonega, Georgia. This airport, the Lumpkin County – WIMPYS, has a runway approximately 3,000 feet long. The Mosby AHP, a heliport in Dahlonega, consists of only a 40-foot landing pad (Global Air, 2004).

Buses, Rail, and Waterways. Access to Porter Village is limited to vehicles; therefore, discussion of these transportation resources has been excluded.

4.10.2 Consequences

4.10.2.1 Proposed Action

The threshold level of significance for transportation is the probable substantial impact on existing traffic flow, traffic volumes, or existing traffic levels of service.

Main Post. Short- and long-term minor adverse and long-term beneficial effects on transportation would be expected. During the construction and renovation phase, traffic congestion could occur, particularly during rush hours, as construction vehicles enter and exit Fort Benning to transport construction/demolition materials and debris to and from the project sites. Construction and renovation

activities would be coordinated in advance to avoid unacceptable impacts on emergency response, impediments to training areas, or security concerns.

Wear and tear on installation roads would be expected to increase because of their use by construction vehicles, and these roads could temporarily require increased maintenance to prevent road failure. Such effects and additional traffic would be minimized by directing all RCI construction vehicles to the most strategic access point(s) to reduce construction vehicle movement during peak rush hours, and also by placing construction staging areas in locations that would minimize construction vehicle traffic, especially near housing and administrative areas.

In addition, road closures to accommodate utility construction and installation would be anticipated. These closures could create additional short-term traffic delays.

Long-term beneficial effects on traffic would be expected through implementation of a well-executed CDMP and strategic road improvements, configurations, and supporting maintenance. Changes to existing housing developments should be designed to incorporate traffic-calming measures in the vicinity of housing and create a more bicycle-and pedestrian-friendly environment.

Porter Village. Short-term minor adverse effects on transportation might occur during the construction phase, resulting in short-term traffic delays.

4.10.2.2 No Action Alternative

No effects on transportation resources would be expected.

4.11 UTILITIES

4.11.1 Affected Environment

Utilities available at Fort Benning include potable water, wastewater, storm water, energy, and communication systems, as well as solid waste disposal. Fort Benning's electric, natural gas, potable water, and wastewater systems have been privatized. All the utilities at Porter Village are privatized. For privatized systems, the installation retains ownership of the underlying lands; however, the ownership, operation, and maintenance of the systems and associated facilities are the responsibility of a private, non-federal entity. The following subsections discuss the location, availability, capabilities, and limitations of the utility infrastructure. Appendix E details the increased utility demands due to housing privatization for Fort Benning and Porter Village.

The threshold level of significance for utilities is the potential to overload a given utility system on the installation, such as the water, communication, or electrical system.

4.11.1.1 Potable Water Supply

Main Post. Upatoi Creek, the major source of potable water for Fort Benning, has an average flow of 451 cubic feet per second. In addition, the installation operates seven public water supply wells (Wilkins, 2001, cited in Fort Benning, 2004d). Water from Upatoi Creek is treated at the installation's water treatment plant and is distributed throughout Fort Benning by a network of 8- to 20-inch pipes. Water treatment consists of flocculation/sedimentation and filtration, pH adjustment, disinfection with chlorine, the addition of metallic phosphate to inhibit corrosion, and the addition of fluoride. Well water is treated by chlorination. A backflow-prevention device is installed between the point of chlorine injection and the well to protect the groundwater from contamination. The water treatment plant has a surface water permit to withdraw up to a monthly average of 10 million gallons per day (MGD) and 12 MGD in any 24-

hour period (provided the monthly average is not exceeded) from Upatoi Creek. This permit limits the amount of creek water that can be taken for domestic use, fire fighting, and vehicle washing. In accordance with Georgia laws and permit requirements, the water supply is monitored for a variety of characteristics and constituents at the treatment plant and throughout the distribution system. Water supply is stored in eight large, elevated tanks and two large reservoirs on the installation with a total capacity of 5.79 million gallons.

Privatization of the water supply is complete, and Columbus Water Works (CWW) now owns and operates the system. Ultimately, CWW plans to deliver potable water to Fort Benning by connecting the Fort Benning system to its off-post production and distribution system. This should raise the threshold at which the system could conceivably be overloaded by the proposed action.

Porter Village. The City of Dahlonega supplies potable water to the Porter Village housing area through an MOA between the city and Fort Benning.

4.11.1.2 Wastewater

Main Post. Wastewater collected and treated at Fort Benning is discharged into the Chattahoochee River. The wastewater collection system consists of approximately 126 miles of 6- to 24-inch vitrified clay, cast iron, and concrete lines. To maintain gravity flow to the wastewater plant, 24 lift stations are used to move sewage flows across the rolling terrain of the Installation. In FY03 the average daily flow from Fort Benning was 82,319 kgal of wastewater.

There are two wastewater treatment plants on the Installation with a combined capacity of 16 MGD. Each plant has an extensive and separated collection system to transport domestic waste from the housing areas. Approximately 95,000 gallons per month of anaerobically digested sewage sludge is land-applied at 10 permitted locations on the installation.

Privatization of the water supply is complete, and CWW now owns and operates the system. Ultimately, CWW plans to connect Fort Benning's wastewater system to the private utility's off-post collection and treatment system.

Porter Village. The City of Dahlonega receives and treats wastewater from Porter Village through an MOA between the city and Fort Benning.

4.11.1.3 Storm Water

Main Post. The existing storm drainage system at Fort Benning consists of culverts, ditches, swales, and natural seepage and overland. All storm water from the Main Post drains into tributaries of the Chattahoochee River. Most of the storm water from the RCI project areas would discharge directly to Upatoi Creek, a tributary of the Chattahoochee River.

Porter Village. Local hydrology at Porter Village consists of the Etowah River and its tributaries, which include Cane, Frogtown, Hurricane, Jones, Montgomery, and Tobacco Pouch Branch creeks (Fort Benning, 2001a). Storm water from Porter Village drains to these streams and the river.

4.11.1.4 Energy Sources

Main Post

Electricity. Fort Benning's electrical system was privatized by Flint Electric and Georgia Power. Flint Electric owns and operates the majority of the electrical system, while Georgia Power owns and operates a small portion. The electrical system consists of transformers, poles, wiring, and associated equipment for a 43.8-kilovolt aerial transmission system and 12.47-kilovolt aerial and 7.2-kilovolt underground primary distribution systems. The systems also include seven electrical substations, one switching station, streetlights, hardware, and a secondary meter device.

Georgia Power supplies electrical power though two 115-kilovolt feeders into its substation on Marne Road. The voltage is transformed, metered, and fed to the adjacent Flint EMC-owned substation. The transmission lines leave this substation to supply power to the cantonments, family housing, and other developed areas of the installation. In FY03 the average consumption of electricity by family housing was 486,733 kilowatt-hours.

Natural Gas. The natural gas system was privatized by Atmos Energy. Mission and loads determine the volume of natural gas supplied to Fort Benning. Natural gas supplies the majority of nonmobile fuel requirements at the installation, while fuel oil is used as a backup fuel at Martin Army Community Hospital. In FY01 the average consumption of natural gas by family housing was 267,814 cubic feet.

Porter Village

Electricity. Porter Village purchases electricity from Amicalola EMC, which owns and maintains the system and provides service to the family housing. In FY03 the total consumption of electricity by the family housing was 492,600 kilowatt-hours.

Propane Gas. Porter Village purchases propane gas from the City of Dahlonega, which owns and maintains the system and provides service to the family housing. There are eight 500-gallon, twenty-five 1,000-gallon, and seven 2,000-gallon propane tanks on the installation. In FY03 the total consumption of propane gas by the family housing was 24,232 cubic feet.

4.11.1.5 Communications

Main Post. Fort Benning housing areas are serviced by a commercial telephone system operated by Bell South Company and a cable system provided by Time Warner Cable Company.

Porter Village. Porter Village is serviced by a commercial telephone system operated by Bell South Company and a cable system provided by Time Warner Cable Company.

4.11.1.6 Solid Waste and Recycling

Main Post. Fort Benning no longer has an active municipal solid waste landfill. Solid waste generated at Fort Benning is picked up by SiNor Inc. and disposed of at Taylor County landfill in Mauk, Georgia. There are three inert landfills on the installation; however, only one is in operation. The landfills are designed to accept only inert materials such as fallen limbs and trees, concrete (free of lead-based paint), and cured asphalt. Fort Benning also operates curbside recycling in the family housing areas and a used oil recycling program. SiNor, Inc. provides curbside recycling service, and Dasher Enterprise provides used oil removal service (Williams, 2004, personal communication). In addition, construction contractors are required to

recycle materials through the on-post system, as feasible, to reduce the amount of solid waste leaving the installation.

Porter Village. At Porter Village, the City of Dahlonega provides municipal solid waste and recycling services.

4.11.2 Consequences

4.11.2.1 Proposed Action

Potable Water

Main Post. Short-term and long-term negligible adverse and long-term negligible beneficial effects would be expected. Water requirements for construction activities would create a short-term effect on the water supply. A long-term increase in demand for water would result from the on-post population increase from the addition of 124 family housing units. Water-efficient devices, such as low-flow showerheads, faucets, and toilets, would be installed in all new facilities to reduce the demand on the potable water supply. No shortage of potable water would be expected if a net small increase in demand resulted from the proposed action. The water supply system has been privatized, and the private utility company will assume all responsibility for ensuring the adequacy of the system and its maintenance.

Porter Village. A long-term negligible adverse effect would be expected from the addition of 37 family housing units.

Sanitary Wastewater

Main Post. Long-term negligible adverse effects would be expected. The projected increase of 124 housing units would place an additional demand on the wastewater system, and the installation of low-flow water devices in new and renovated housing units would lessen the impact of the increased demand. The net increase in demand would not exceed the system's capacity. The wastewater treatment system at Fort Benning has been privatized, and the private utility company will assume all responsibility for ensuring the adequacy of the system and its maintenance.

Porter Village. A long-term negligible adverse effect would be expected from the addition of 37 family housing units.

Storm Water

Main Post. Short-term minor adverse and long-term beneficial effects would be expected. The projected increase of 124 housing units would be expected to increase the amount of impervious surface and could potentially strain the existing drainage system. Long-term minor beneficial effects would be expected. Storm water runoff from construction sites would be collected and allowed to settle in retention ponds. The quality of storm water from the family housing areas would not be expected to be affected in the long term. Fort Benning Family Communities LLC would ensure that all housing areas were supplied with adequate storm water drainage and retention facilities, including retention ponds, grassed swales, and drainage to storm water utility lines. Most of the storm water from the RCI project areas would discharge directly to Upatoi Creek, a tributary of the Chattahoochee River. The change in the quantity of storm water from the family housing areas would vary from area to area. Draft development plans for the housing areas include unit demolition and reconstruction to achieve an end number of housing units smaller than the current number at six family housing areas (Indianhead Terrace, Norton Court, Custer Terrace, McGraw Manor, Bouton Heights, and Davis Hill); no change in the configuration or number of

housing units at three family housing areas (Indianhead Terrace [historic], McDonald Manor, and East Main Post); and an increase in units and a new housing configuration at three family housing areas (Perkins Place, Upatoi Terrace, and Patton Place [Area J]). In accordance with RCI guidelines and planning principles, Fort Benning Family Communities LLC would ensure that developed areas are designed to minimize groundworks, aboveground utilities, and drainage. Furthermore, reconfigured areas would be expected to be planned to capitalize on natural drainage features, and those areas with a net increase in housing units would not be expected to generate significantly more storm water runoff than they now do. The storm water runoff from Patton Place (Area J) with zero current and 641 new units, would be substantially increased. Adherence to RCI guidelines and planning principles would be expected to minimize the effects of the increase on streams. Fort Benning Family Communities LLC would assume all responsibility for ensuring the adequacy of the system and its maintenance.

Porter Village. A long-term negligible adverse effect would be expected from the addition of 37 family housing units. Draft development plans for Porter Village include an increase in the number of units. The storm water runoff from Porter Village (with zero current and 37 new units) would increase; however, adherence to RCI guidelines and planning principles would be expected to minimize the effects of the increase.

Energy

Main Post. Long-term minor beneficial effects would be expected. The projected increase of 124 housing units would increase the number of family housing units needing to be served by the electricity infrastructure; however, 3,667 of the 4,200 end-state units would be new construction that would have Energy Star-compliant fixtures and appliances. The net increase in electrical demand, if any, would be expected to be minor. Any new electrical lines would be installed below ground by Flint Electric and Georgia Power.

Porter Village. A long-term negligible adverse effect would be expected from the addition of 37 family housing units.

Communications

Main Post. Long-term negligible adverse effects would be expected. New communication lines would be installed by Bell South Company in the undeveloped areas where housing is to be built, creating a negligible additional demand.

Porter Village. Long-term negligible adverse effects would be expected. All new housing units would be supplied with communication lines, and the new lines would create a negligible additional demand.

Solid Waste and Recycling

Main Post. Short- and long-term moderate adverse effects would be expected. Short-term effects would occur from the increased volume of solid waste generated by construction, renovation, and demolition of family housing units. Concrete, asphalt, and wood generated by demolition and renovation activities could be recycled, reducing the volume of solid waste disposed of in the inert or solid waste landfills. Table 4-21 provides estimates of construction and demolition debris generated as a result of the RCI activities. Debris from construction, renovation, and demolition of family housing units that could not be recycled or reused would increase relative to the volume of solid waste typically generated annually by the installation. *DoD Measures of Merit for Non-Hazardous Solid Waste Diversion Rate* states that the nonhazardous solid waste diversion rate should be greater than 40 percent by the end of FY05. To help Fort Benning achieve this goal, any solid waste (e.g., concrete, asphalt, and wood)

generated from demolition and renovation activities should be recycled, thereby reducing the volume of solid waste disposed of in the inert or solid waste landfills. Solid waste volume would also increase over the long term with the addition of new housing units. However, Fort Benning would continue to encourage residents to recycle, reducing the volume of waste landfilled.

Porter Village. Short-term moderate and long-term minor adverse effects would be expected. Short-term effects would occur from the increased volume of solid waste generated by construction, renovation, and demolition of family housing units. Concrete, asphalt, and wood generated by demolition and renovation activities could be recycled, reducing the volume of solid waste disposed of in the inert or solid waste landfills. Debris estimates for Porter Village, where 40 units would be renovated and 37 units would be constructed, are included in Table 4-21. Debris from construction, renovation, and demolition of family housing units that could not be recycled or reused would increase relative to the volume of solid waste typically generated annually by the residents of Porter Village. *DoD Measures of Merit for Non-Hazardous Solid Waste Diversion Rate* states that the nonhazardous solid waste diversion rate should be greater than 40 percent by the end of FY05. To help Fort Benning achieve this goal, any solid waste (e.g., concrete, asphalt, and wood) generated from demolition and renovation activities should be recycled, thereby reducing the volume of solid waste disposed of in the inert or solid landfills. Solid waste volume would also increase over the long term with the addition of new housing units. However, Fort Benning would continue to encourage residents to recycle, reducing the volume of waste landfilled by the City of Dahlonega.

Table 4-21
Estimates of Construction and Demolition Debris Generated as a Result of Implementing the RCI Program at Fort Benning

Construction Type	Number of Units	Gross (ft^2)	C&D[1] Factor (lb/ft^2)	Waste in Tons
Demolition	3,394	5,400,000	115	310,500
Renovation	533	875,000	19.8	8,662
New Construction	3,667	6,500,000	4.38	14,235
TOTAL		**12,775,000**		**333,397**

[1]Construction and demolition.

4.11.2.2 No Action Alternative

Main Post. No effects on utility systems would be expected. Utility systems would continue to be repaired and maintained on an as-needed basis by the private utility companies. Under the no action alternative, no additional family housing units would be constructed at Fort Benning. The quantity of solid waste generated and recycled at the Main Post would be similar to current quantities.

Porter Village. No effects on utility systems would be expected. Utility systems would continue to be repaired and maintained on an as-needed basis by the private utility companies. Under the no action alternative, no additional family housing units would be constructed at Porter Village. The quantity of solid waste generated and recycled at Porter Village would be similar to current quantities.

4.12 HAZARDOUS AND TOXIC SUBSTANCES

4.12.1 Affected Environment

Specific environmental statutes and regulations govern hazardous material and hazardous waste management activities at Fort Benning. For the purpose of this analysis, the terms *hazardous waste*, *hazardous materials*, and *toxic substances* include those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Resource Conservation and Recovery Act (RCRA); or the Toxic Substances Control Act (TSCA). In general, they include substances that, because of their quantity, concentration, or physical, chemical, or toxic characteristics, might present substantial danger to public health or welfare or the environment when released into the environment.

To identify areas where possible storage, release, or disposal of hazardous substances or petroleum products or their derivatives has occurred, the Army, through contractor support, prepared an Environmental Baseline Survey (EBS) of those areas at Fort Benning considered for RCI project development (Tetra Tech, 2004). The EBS also identified any existing non-CERCLA-related environmental or safety issues (e.g., ACM and LBP) that would limit or preclude use of the property for RCI actions. A summary of the findings contained in the EBS has been included in the following sections.

4.12.1.1 Uses of Hazardous Materials

Previous investigations have identified hazardous substances present in the housing units on Fort Benning (Fort Benning, 2004d). Although these materials are now known to be hazardous, they were widely used in the building products industry and for housing maintenance for many years. Their presence in the housing units does not constitute a health hazard under normal circumstances, and these materials are being removed or encapsulated as units are renovated. These hazardous materials include ACM, LBP, pesticides, and possibly polychlorinated biphenyls (PCBs). ACM includes, but is not limited to, tile floor covering and plumbing insulation. LBP has been identified on interior and exterior surfaces, including windows, doors, and walls, from previous LBP surveys. The EBS identified use of the pesticide Chlordane on the installation prior to 1988 (Tetra Tech, 2004). The presence of ACM, LBP, PCBs, and pesticides in the family housing areas is discussed in greater detail in Section 4.12.1.5, Special Hazards.

Numerous maintenance activities require the use and storage of regulated and nonregulated hazardous materials. Examples of these activities include vehicle operation and maintenance, hospital services, and grounds maintenance. The family housing operation and maintenance contractors use a wide variety of chemicals, typically in small quantities, including hazardous materials in and around family housing and support facilities. Examples of these chemicals are paint, pesticides, herbicides, and cleaning solvents. Housing vehicles and small engine units, (e.g., lawnmowers, blowers) are also used and maintained by housing operations staff. Specially trained staff apply pesticides to common areas and individual housing units as requested. Residents are allowed to use commercial off-the-shelf pesticide products as necessary.

4.12.1.2 Storage and Handling Areas

Fort Benning. There are no active underground storage tanks (USTs) or aboveground storage tanks (ASTs) within the RCI footprint. There are 106 USTs at Fort Benning and 46 USTs and 34 ASTs in the Main Post cantonment area, but they are outside the RCI footprint. Storage tanks at Fort Benning are used to store diesel fuel, used oil, jet fuel (JP-8), heating oil, and MOGAS and range in size from 600 to 35,000 gallons. There were 85 reported releases from USTs at Fort Benning between November 1991 and March 2003 (GADNR, 2004). These tanks have been removed, and the associated soils were

excavated and tested until test results were non-detect. Corrective actions were performed on sites where the amount of soil excavated reached the reportable limit set by Georgia. Three active UST sites are undergoing corrective action. It is expected that the GA EPD will determine that no further action is warranted on these sites this fiscal year. None of these sites are in the Fort Benning RCI footprint. Based on the available evidence, the reported tank releases have not had an impact on the RCI footprint properties. There have been no reported spills or releases that would affect the RCI footprint (Menefee, 2004, personal communication).

Hazardous materials such as paint, solvents, cleaners, asphalt, and fuels and motor oils for construction vehicles would be stored and used during new construction, renovation, demolition, and operation and maintenance activities. Hazardous materials would be managed and stored in accordance with applicable federal, state, and Army regulations.

Porter Village. There are no USTs or ASTs at the Porter Village family housing area. Other than hazardous materials used by the maintenance contractors for routine maintenance activities and household hazardous waste generated by residents, there are no hazardous materials stored at Porter Village.

4.12.1.3 Hazardous Waste Disposal

Fort Benning. A number of hazardous wastes, as defined by RCRA, are generated from the normal operations of Army programs at Fort Benning. Storage and disposal of hazardous waste on Fort Benning are detailed in the Hazardous Waste Management Plan. The Garrison Commander serves as Chairman of the Environmental Quality Control Committee, and the committee's responsibilities include recommending hazardous waste minimization strategies and material management changes.

To facilitate the disposal of hazardous waste/material, all hazardous waste generated by government-owned and operated facilities on the installation is collected by the generating entity in satellite accumulation points (SAPs) or central accumulation points (CAPs) prior to transporting to the Central Hazardous Material Control Center (CHMCC) or the Defense Reutilization Marketing Office (DRMO). A SAP is a hazardous waste collection area where a generator may accumulate up to 55 gallons of hazardous waste or 1 quart of acutely hazardous waste. CAPs are areas where hazardous waste may be stored temporarily for up to 90 days before it is transported to the CHMCC or DRMO storage facility. The CHMCC is in Building 377 at Fort Benning, and hazardous waste/material stored at the CHMCC is transported to the DRMO for removal from the site by the DRMO contract. The DRMO hazardous waste storage building is on 10th Mountain Division Road and is the only GA EPD-permitted storage facility at Fort Benning. An estimated 42,328 pounds of hazardous waste was generated and disposed of by Fort Benning in 2001 (Weston, 2002).

Porter Village. There are no hazardous waste collection areas or disposal sites at Porter Village.

4.12.1.4 Site Contamination and Cleanup

Fort Benning has had an active Restoration Program, the Operations and Maintenance (OMA) and Solid Waste Management Units (SWMUs) Program, since 1982, when an installation assessment determined that many of Fort Benning's OMA-SWMU sites posed minimal to no threat to human health and safety or the environment. Fort Benning's OMA-SWMUs are governed primarily under U.S. Environmental Protection Agency (USEPA) RCRA guidelines. None of Fort Benning's OMA-SWMUs are on the federal National Priorities List of hazardous waste sites under CERCLA; however, the installation's RCRA Part B Permit requires that Fort Benning investigate all potential SWMUs. The Army updated this permit in 1996 and a specific list of SWMUs, based on the RCRA Facility Assessment, was prepared by GA DNR, the agency that regulates Fort Benning. Fort Benning initially identified 87 OMA-SWMU sites, including

landfills, paint facilities, pesticide storage areas, industrial areas, a fire training area, washracks, sludge application sites, and many petroleum-oil-lubricant (POL)-contaminated areas with minor contamination. The contaminants of concern identified at these sites include POL, trichloroethylene, leachate, metals, volatile organic compounds, and pesticides. Media affected include soil, groundwater, and surface water on Fort Benning. Contaminants are not believed to have migrated off the installation. Of the 87 identified OMA-SWMU sites, 42 have been determined to need no further action and 45 are currently managed as active and are subject to further investigation (Fort Benning, 2004e).

Several of the active OMA-SWMU sites are in areas that border family housing units and schools. The SWMU sites are generally within 1,000 feet or more of these family housing units and are primarily washracks less than 100 feet by 100 feet in size. Contamination at these sites is primarily residual buildup of petroleum products prior to the installation of oil-water separators. Building 2020 borders Indianhead Terrace, and the Main Post Gas Station borders Faith Middle School (Morpeth, 2004, personal communication). The washracks in Building 2020 have been closed, and the site has undergone a Phase I RFI. These SWMU sites are not considered to affect the family housing areas (Morpeth, 2004, personal communication), and none are believed to pose any immediate danger to human health or the environment (Fort Benning, 2004e).

In addition to the OMA-SWMU sites at Fort Benning, there are 45 identified Army Environmental Database Restoration sites at the installation. Nineteen of the sites are active, and responses are complete for 26. These sites include landfills (24), spill areas (5), USTs (3), a fire/crash training area (1), a surface disposal area (1), contaminated sediment (2), and contaminated buildings (8). Of the 19 active sites, 14 are remedy in place with Remedial Action-Operation/Long-Term Monitoring, 2 are at the RCRA Facility Investigation phase, and 3 are at the Remedial Action-Construction phase. Cleanup actions will continue at Fort Benning until 2010 and possibly longer, depending on the requirements of the State of Georgia (Fort Benning, 2004e).

4.12.1.5 Special Hazards

Asbestos. USEPA and the Occupational Safety and Health Administration (OSHA) regulate remediation for ACM. Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the CAA, which established the National Emission Standards for Hazardous Air Pollutants (NESHAPs). The NESHAP regulations address the demolition and renovation of buildings with ACM.

Renovation or demolition of buildings with ACM has a potential for releasing asbestos fibers into the air. There are two categories used to describe ACM. Friable ACM is defined as any material containing more than 1 percent asbestos (as determined by polarized light microscopy) that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Non-friable ACM is material than contains more than 1 percent asbestos and does not meet the criteria for friable ACM (USEPA, 2004b).

The current Army practice is to manage or remove ACM in active facilities and to remove ACM in accordance with regulatory requirements prior to facility demolition. Removal of ACM occurs when there is a potential for asbestos fiber release that would affect the environment or human health. The Army regulations concerning the management of asbestos are in Army Regulation (AR) 200-1, Section 10.

Main Post. Routinely, all Fort Benning facilities scheduled for maintenance, remodeling, and demolition are inspected for the presence of ACM. ACM surveys of a representative sampling of housing units conducted between 1986 and 1989 identified ACM in all units constructed before 1975. Other limited, independent asbestos studies have been conducted, mostly as part of Neighborhood Revitalization activities and maintenance/upgrade of housing units. Depending on the condition of the asbestos, it was

removed, repaired, or managed safely in place and periodically monitored and repaired until it was removed.

Fort Benning has developed an Asbestos Management Plan (Rev. 1, September 2002) to identify and control exposure to airborne asbestos fibers, clean up existing contamination, and maintain ACM until it is removed from buildings.

Porter Village. Porter Village family housing was constructed in 1996, after the ban and phase-out rule for asbestos in the United States (40 CFR 763.160). However, the ban does not apply to materials such as floor tiles and roofing materials, and it is possible that these materials might be present.

PCBs. A PCB inventory conducted at Fort Benning in 1998 reported that of the 2,157 transformers surveyed on the installation, 1,166 were assumed to contain PCBs (at 500 or greater parts per million). A PCB Management Plan was also prepared in 1998 to address TSCA and it regulatory requirements (Fort Benning, 2004d). As a result of regulatory changes to the TSCA assumption rule, the assumed PCB pole-mounted, mineral oil-filled transformers have been reclassified as assumed PCB-contaminated transformers. The management practices for these transformers are less stringent.

The operation, maintenance, and repair of the electrical distribution system, and therefore most of the PCB-containing electrical equipment, on Fort Benning are under the control of Flint Electric. Electrical systems at Lawson Army Airfield are managed by Interior Electric. PCB-containing materials are no longer purchased at Fort Benning (Fort Benning, 2004d).

A visual inspection of the interiors of 200 family housing units, conducted during March 2004, found outdated fluorescent light ballasts possibly containing PCBs. No evidence of PCB leaks from the lighting ballasts was found. Even though TSCA does not regulate the disposal of non-leaking ballasts, leaking ballasts are regulated as PCB waste. USEPA encourages voluntary collection and disposal of small PCB capacitors in chemical waste landfills, ballast decap recycling processing, or high-temperature incinerators.

There has been one recorded PCB leak at Fort Benning. The leak occurred in or near the PCB storage yard (Buildings 497 and 1737), approximately 0.5 mile from the RCI footprint properties (Areas V and X). The spill was appropriately cleaned up (Clarke, 2004, personal communication). There have been no PCB leaks in the RCI footprint.

Because the housing units at Porter Village were constructed in 1996, there are no outdated fluorescent light ballasts containing PCBs.

LBP. Current Army policy prescribes controlling LBP by in-place management until removal of the LBP is more cost-effective than in-place management, in-place management is no longer effective, or a major renovation project is conducted. In-place management is used to prevent deterioration over time for those surfaces likely to contain LBP. In accordance with AR 420-70, residents receive specific information on the lead history of their assigned family housing and general information on lead exposure prevention. LBP materials would be encapsulated and/or removed and disposed of in accordance with Army, HUD, USEPA, and OSHA guidelines. In addition, the RCI contractor would follow USEPA guidelines and ensure that the LBP pamphlet is issued to housing occupants, notifying them of the potential risk associated with LBP.

The majority of family housing units at Fort Benning were constructed when LBP was widely used. The likelihood that family housing units built prior to 1978 contain LBP is high. LBP is defined as paint or other surface coatings that contain lead in excess of 1.0 milligram per square centimeter (mg/cm^2) 0.5 percent by weight. Lead is considered a hazard if there are greater than 40 micrograms of lead in dust per

square foot on floors, 250 micrograms of lead in dust per square foot on interior window sills, and 400 parts per million (ppm) of lead in bare soil in children's play areas, or 1,200 ppm average for bare soil in the rest of the yard (TSCA Section 403). Limited LBP surveys of family housing units are conducted during neighborhood revitalization efforts. A limited LBP survey of 77 housing units was conducted in 1996–1997 by the Fort Benning Industrial Hygienist. Soil samples, paint chips, and dust wipes were collected and analyzed. High lead concentrations were found in backyard soils and in dust wipe samples in one unit in the East Main Post housing area (Austin Loop). The measured lead concentration in the backyard soil was 4,600 ppm, well above the USEPA action level. The interior and exterior of the unit was addressed. Damaged surfaces were stabilized and dust and soil hazards were addressed. Other units tested for LBP during the 1996–1997 survey had low dust lead concentrations (10 mg or less) or no LBP.

At Fort Benning, paint containing lead has been sealed (i.e., fixed in place by the application of multiple coats of paint or other sealants) several times with non-LBP. Unless chipped or peeled, or subjected to friction, the LBP does not pose a hazard. Visual surveys conducted during development of the EBS identified paint chips potentially containing LBP on the ground next to one residential unit (Unit C in Building 11382) and in two ancillary support facilities (Building 1836 [Area V] and Building 2621).

The Porter Village family housing units were constructed after the federal government banned the use of LBP for housing in 1978. Therefore, there are no LBP concerns at Porter Village.

Pesticides. Pesticide use at Fort Benning is regulated by AR 200-5 and the Integrated Pest Management Plan. Pest management activities are implemented in the four cantonment areas, training areas, ranges, and drop and landing zones. Pest control activities within the Main Post cantonment area, which includes the RCI footprint, include the prevention and control of termites, mites, ants, ticks, cockroaches, spiders, crickets, earwigs, wasps, hornets, yellow jackets, rodents, and other crawling and flying nuisance pests. Eleven companies provide pest control services on Fort Benning. Overall coordination and oversight of Fort Benning's pest management program is the responsibility of the Installation's Environmental Management Division (EMD).

Building 1190 at the Follow Me Golf Course is the only pesticide storage and mixing facility on Fort Benning. Pest control activities at Fort Benning are conducted on a regularly scheduled or as-needed basis. Occupied and unoccupied housing units are treated for pests as needed.

Historical pesticide usage associated with the RCI footprint appears to be limited to general usage for pest control within and around site structures and for landscaping purposes. Chlordane, a pesticide used in the United States between 1948 and 1988 on crops such as corn and citrus and on home lawns and gardens, was used at Fort Benning until the mid to late 1980s (Menefee, 2004, personal communication). Pesticides currently used at the installation to kill common household pests include Maxforce, Suspend, Intruder HPX, Dragnet SFR, Nibran Granular, Delta Dust, Tengard Perimeter Insecticide, Premise 75, Contrac, and Pyrethrin. The herbicides Roundup Pro, Fusilade II, Lesco Prosecutor, Lesco Three-way, and Image are used for broadleaf weed control on family housing lawns. Glyphosate and Arsenal are used to control vegetation around hydrants, utility poles, sidewalks, and the perimeters of buildings. The sale and distribution of pesticides from self-help stores to residents of Fort Benning are tracked on a monthly basis. The pesticides sold or dispensed by the Veterinary Clinic are those registered by USEPA for general-purpose use.

Although the normal application of pesticides is regulated by the GA DNR and USEPA, pesticides are not considered a waste or hazardous material release. Therefore, normal application of pesticides does not affect the environmental condition of the properties in the RCI footprint. Any materials leaching chlordane at concentrations greater than the action level (0.03 milligram/liter) are defined as hazardous under RCRA and should be managed accordingly.

A local certified pest control company provides pest control services at Porter Village. Pesticide usage reports are sent to Fort Benning monthly.

Radon. Radon gas is a naturally occurring, colorless, and odorless radioactive gas that is produced by the decay of naturally occurring radioactive material (e.g., uranium). Atmospheric radon is diluted to insignificant levels; however, when concentrated in enclosed areas, radon can present a human health risk.

A radon survey of 4,000 buildings was conducted between 1989 and 1991 at Fort Benning. No radon concerns were found (Chauvey, 2004, personal communication). A radon gas survey including 650 Fort Benning priority buildings has also been conducted. This survey resulted in an observed measurement of 0.04 picocuries per liter (pCi/L), which is an acceptable reading, in the Sandhills Physiographic Region of Georgia (Fort Benning, 2004d). Radon information provided by USEPA Region 4, as well as statistics maintained by GA DNR, suggests that there are no regional radon concerns and little potential for radon occurrence above the USEPA action level threshold of 4 pCi/L in the RCI footprint.

No radon studies have been conducted at Porter Village. However, the U.S. Geological Survey (USGS) has identified the geologic radon potential for the Piedmont and Blue Ridge regions as "moderate (average screening radon potential of 2–4 pCi/L)," and therefore Porter Village is assumed to have a moderate geologic radon potential (USGS, 1995).

Radioactive Materials. Available evidence suggests that radioactive materials were never used, stored, or disposed of within the RCI footprint at Fort Benning or Porter Village.

Medicinal/Biohazardous Waste and Silver Recovery. Available evidence suggests that there are no contamination concerns with respect to medical or biohazardous waste or silver recovery from photo-developing and recycling within the RCI footprint at Fort Benning or Porter Village.

Mold. Fungi are present almost everywhere in indoor and outdoor environments. Molds or fungi typically grow on common building components (e.g., walls, ventilation systems, support beams) that are chronically moist or water-damaged. Elevated human exposure to molds and fungi can result in flu-like symptoms, including runny nose, eye irritation, cough, congestion, and aggravation of asthma. Inhalation of fungal spores, fragments, or metabolites (e.g., mycotoxins and volatile organic compounds) from a wide variety of fungi can lead to or exacerbate allergic reactions and cause toxic effects or infections (USEPA, 2001).

During the visual site inspection (VSI) of housing units at Fort Benning, minor mold growth was evident primarily in bathrooms and kitchens in some housing units. Although mold has been identified in some of the housing units on Fort Benning, no adverse health effects from mold exposure have been identified to date. No mold was identified during the VSI at Porter Village.

4.12.2 Consequences

4.12.2.1 Proposed Action

The threshold level of significance for hazardous materials and waste is surpassed if the storage, use, transportation, or disposal of these substances substantially increases the human health risk or environmental exposure; is a violation of applicable federal, state, and local requirements; or results in noncompliance with the Installation's hazardous waste (RCRA Part B) permit.

Main Post. Long-term beneficial effects would be expected. Hazardous waste generated from renovation or demolition activities would be handled in accordance with all applicable regulatory requirements. Renovation and demolition of structures containing ACM would be conducted in accordance with Fort Benning's Asbestos Management Plan and removed only by USEPA-certified and GA DNR-licensed asbestos abatement personnel. Wastes that contain ACM generated during demolition activities would be disposed of in a facility permitted to accept asbestos waste. LBP debris is exempt from hazardous waste regulation, and therefore it may be managed as construction debris with no requirements for hazardous waste characterization. Hazardous waste generated from demolition and renovation activities would result in a minor short-term increase in the hazardous waste generated at Fort Benning. The waste would be managed in accordance with Fort Benning plans and procedures, as well as applicable federal, state, and Army regulations.

Additional potentially hazardous materials that could be found on-site during RCI project-related activities include paints, solvents, cleaners, asphalt, and fuel and motor oil for construction vehicles and demolition equipment. Construction equipment would be maintained regularly, and any sources of leaks would be identified and repaired. Any soil contaminated by fuel or oil spills would be removed and disposed of at an approved disposal site by the construction contractor. Lubricating oil, acid for equipment cleaning, and concrete curing compounds are potentially hazardous wastes that might be associated with construction activities. These materials would be placed in containers within secondary containment structures on-site and disposed of in accordance with the manufacturers' recommendations and applicable regulations. Paint containers would be tightly sealed to prevent leaks and spills. Spills and leaks of hazardous materials during construction would be managed in accordance with Fort Benning's Spill Prevention, Control, and Countermeasures Plan (SPCCP) and Hazardous Waste Management Plan (HWMP).

Household hazardous waste generated by Fort Benning residents would be managed in accordance with the Operation Maintenance and Management Plan. The plan would define hazardous materials and provide procedures for proper disposal in accordance with state, local, and installation regulations.

Porter Village. There would be no renovation or demolition activities at Porter Village. Because there are no LBP, ACM, PCB, or other environmental issues at Porter Village, there would be no effect on hazardous waste generation or management at Porter Village. Spills and leaks of hazardous materials during construction would be managed in accordance with Fort Benning's SPCCP and HWMP. Household hazardous waste generated by Porter Village residents would be managed in accordance with the Operation Maintenance and Management Plan.

4.12.2.2 No Action Alternative

Main Post. Under the no action alternative, there would be no effect on the amount of hazardous materials and hazardous waste generated at Fort Benning. Routine housing maintenance and periodic neighborhood revitalization activities would use small amounts of hazardous materials and generate minor amounts of hazardous waste.

Porter Village. Under the no action alternative, there would be no effect on the amount of hazardous materials used and household hazardous waste and other hazardous waste generated from routine maintenance activities at Porter Village.

4.13 CUMULATIVE EFFECTS SUMMARY

Cumulative effects are defined by the Council on Environmental Quality in 40 CFR 1508.7 as the "impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions."

4.13.1 Region of Influence

For cumulative effects analysis, the ROI includes Fort Benning and the immediately adjacent populated areas. These areas include the cities of Columbus, Georgia and Phenix City, Alabama, as well as Chattahoochee, Harris, Marion, and Muscogee counties in Georgia and Russell County in Alabama.

4.13.2 Past and Present Actions Within the ROI

Established in 1918, Fort Benning currently encompasses 181,275 acres and covers approximately 80 percent of the land in Chattahoochee County, Georgia, as well as small portions of Muscogee County and Marion County, Georgia, and Russell County, Alabama. Since the establishment of the installation, the area has experienced significant growth. The cities of Columbus, Georgia, and Phenix City, Alabama, are the sites of numerous residential developments, commercial and retail facilities, industrial activities, and recreational opportunities (Fort Benning, 2004d). The ongoing projects with the potential to impact the ROIs are discussed below.

Two years ago, Columbus and Fort Benning completed a "land exchange" swapping two parcels of land, known as the North Tract and the South Tract, for which an Environmental Impact Statement and Record of Decision were prepared. Columbus is currently developing the North Tract land conveyed to it, a 2,470-acre parcel adjacent to the Fort Benning northwestern boundary line. Development of the North Tract will be primarily industrial, mixed with recreational land use. In exchange, Fort Benning received the South Tract land, a 2,536-acre parcel at the southernmost end of the Installation, which the Installation uses for training and land management (reforestation and habitat restoration) purposes; future use of the South Tract might also include land-navigation training.

The installation of Anti-Terrorist/Force Protection Measures is a currently occurring project on Fort Benning and consists of the construction of an enhanced physical security perimeter barrier around the Installation's four cantonment areas to include fence, guard rail, or the use of existing natural barriers, such as streams and steep ridges, and to construct permanent ACPs at the Installation's seven entry points. Drainage for perimeter roads and erosion control measures will be required, in addition to protective lighting at the seven ACPs. An EA and FNSI were prepared for this project and are available for review at the EMD. The approximate size of the overall project area is 20 to 25 acres.

Projects in the immediate vicinity of the post include safety improvements to the highway interchange at I-185/US 280 (to the north of Fort Benning). The improvements include reconstructing the interchange at I-185 and US 280. They also include removing and replacing guardrails and possibly installing medians along 10.5 miles of US 280. The approximate size of the overall project area is 5 to 10 acres.

Other current and recently completed projects at Fort Benning include the following:

Army Transformation at Fort Benning (FY04). The 3rd Infantry Division will undergo major reorganization to a future force (U.S. Army Transportation Roadmap, 2003, General Schoomaker). Although implementation planning is ongoing and the details are not yet known, it is expected that the Division's three Brigades would be divided into five smaller units. The timing of this transformation is not currently known. Updates on the Army Transformation's effects on the 3rd Brigade will be provided when available and in future related documents. No plans currently exist that would affect any of the other units at Fort Benning; however, the Installation must prepare for this contingency and comply separately with environmental planning requirements.

Barracks Project (starting in FY04). Work will consist of the construction of a new barracks complex along Dixie Road, Main Post, Fort Benning, Georgia. The new barracks would be across from the existing Easley and McAndrews ranges. The project would also include the demolition of six existing buildings. The approximate size of the overall project area is 30 to 35 acres.

Privatization of the Water and Wastewater Treatment System (FY04). The wastewater treatment system at Fort Benning, which consists of three facilities and a network of underground piping, has recently been privatized. The contract for the system includes the day-to-day upkeep of the system and requires the contractor to abide by all federal, state, and Installation policies and guidelines. An EA and FNSI, as well as a Supplemental EA, were prepared for this action.

Infantry Squad Battle Course (ISBC) (FY04). Work would consist of the conversion of an existing Fort Benning range, Galloway Range, into an ISBC and would include the removal/replacement and upgrading of existing targetry, the construction of associated support facilities, the demolition of currently existing temporary buildings on-site, and associated utility placement. The approximate size of the overall project area is 180 to 190 acres. Fort Benning is preparing an EA for this action.

4.13.3 Reasonably Foreseeable Future Actions Within the ROI

Fort Benning Community

Several construction projects are planned for implementation on Fort Benning during the same time frame as the projects analyzed in the alternatives in this Final EA. Some of the projects have been previously identified in the Installation's Master Plan and have been preliminarily assessed for environmental impacts; however, each project is still pending final approval and subsequent compliance with NEPA, except as indicated below. Projects having potential to contribute to cumulative effects include the following:

Barracks Replacement, Kelley Hill, Phase III (FY05). Work would consist of the demolition of existing buildings (9043, 9046, 9047, 9053, 9054, 9055, 9057, 9058, and 9074), the construction of new facilities, and landscaping around the new facilities in the Kelley Hill area of Fort Benning. The approximate size of the overall project area is 10 to 15 acres.

Modularity Program (FY04 or FY05). Work will consist of the development of a Unit Action Complex on Fort Benning for the placement of modular buildings in support of additional personnel. The complex would include site development, construction, and utility connection and distribution. Whether this complex will be built at Fort Benning or at another installation is not known at this time; therefore, the tentative placement site of the Harmony Church cantonment area is not indicated on the map. However, preliminary analysis and siting are occurring to prepare for if/when Fort Benning is chosen to receive this construction and additional personnel. The approximate size of the overall project area is 30 to 35 acres.

Barracks and Tactical Equipment Shop Projects (FY05-07). Work would consist of the construction of additional barracks and tactical equipment shops across from existing ranges (beyond Easley and McAndrews ranges) along Dixie Road. These projects are in the design phase only. The approximate size of the overall project area is 15 to 20 acres.

Receptee Barracks (FY07). Work would consist of the construction of additional barracks, a dining facility, a Soldiers' community center, and a physical training building with a running track at Sand Hill. The project would also include the demolition of the existing dining facility. The approximate size of the overall project area is 10 to 15 acres.

Infantry Platoon Battle Course (IPBC) (FY06). Work would consist of the construction of a new IPBC in the A12 portion of Fort Benning and would include tree clearing, grading, cut-and-fill, construction of the range and target firing area, and placement of targetry, in addition to the construction/emplacement of support facilities, access roads and trails, and associated utilities. The approximate size of the overall project area is 1,000 acres.

Ammunition Supply Point (ASP) Expansion (FY05). Work would consist of the construction of 2 aboveground general storage facilities, 11 earth-mounded ammunition storage igloos with associated loading platforms, 2 small-quantity ammunition huts, an ammunition surveillance building, and forklift storage/recharge facilities at the existing ASP on Fort Benning. Work would also include the demolition of 19 existing structures in the ASP compound. The approximate size of the overall project area is 10 to 15 acres.

Direct Support/General Support (DS/GS) Consolidated Maintenance Facility (FY07). Work would consist of constructing an approximately 112,000-square-foot equipment maintenance complex for the Department of Public Works (DPW). The facility is to be located in the southwest quadrant of US 280/27 and First Division Road. The approximate size of the overall project area is 10 to 15 acres.

Rehabilitation of North/South Maneuver Corridors (date undetermined; pending funding approval). Work will consist of the rehabilitation of two existing maneuver corridors in the north and three existing maneuver corridors in the south for training utilization by the 3rd Brigade/3rd Infantry of Fort Benning. The areas are contained within the Oscar 1-15 training compartments in the north and the D2-16, L3, E3-4, and J6-7 training compartments in the south (see Figure 6 for relevant training compartments). These are existing maneuver areas that will have erosion control and soil stabilization measures conducted, in addition to selective thinning, to more fully support maneuvers by the mechanized vehicles. The approximate size of the overall project area is 5,000 acres.

Combined Club Facility (date undetermined; pending funding approval). Work would consist of the demolition of the existing Follow Me Golf Course Clubhouse, construction of a new clubhouse to contain the combined functions of the Golf Course Club and Officer's Club, and the redevelopment of the existing Follow Me Golf Course. The approximate size of the overall project area is 5 to 10 acres.

New Post Exchange (AAFES) (date undetermined; pending final decision by AAFES). Work would consist of constructing a new AAFES on the land across the street from the existing AAFES on Custer Road, Main Post, Fort Benning. The old AAFES would be abandoned and reused in another format; it is not scheduled for demolition at this time. Work would also include landscaping and parking lot construction. The approximate size of the overall project area is 10 to 15 acres.

National Infantry Museum (date undetermined; project in planning phase only). Work would consist of constructing a new infantry museum on the land lying between South Lumpkin and Fort Benning roads on the Installation's border with the city of Columbus. The existing museum, located on Baltzell

Avenue, Main Post, Fort Benning, would be reused in another manner, but it would not be demolished. The approximate size of the overall project area is 20 to 30 acres.

Digital Multi-Purpose Training Range (DMPTR, aka Hastings Range Upgrade) (FY06; project in planning phase only). Work would consist of upgrading the existing Hastings Range to a DMPTR; it would include removal/replacement and upgrading of existing targetry, expansion of the existing tank trails, construction of associated support facilities, demolition of currently existing temporary buildings on-site, and associated utility placement. The approximate size of the overall project area is 100 to 150 acres.

A more thorough evaluation of the ASP Expansion, new AAFES Main Mall, NIM, IPBC, Rehabilitation of Maneuver Corridors, and DMPTR will be conducted through separate EAs or other appropriate NEPA analysis for each project; the other listed projects are in the preliminary planning phases only but will undergo NEPA analysis in future documents (Fort Benning, 2004d). Other actions on Fort Benning, such as road and tank trail maintenance, range and building maintenance, building renovations, unit motor pool maintenance, troop training, and routine airfield activities, would continue in the current manner on an annual basis. These projects/actions are assessed for potential environmental impacts case by case through the NEPA process.

Brigade Combat Team (BCT). The Army intends to temporarily station a Brigade Combat Team (BCT) at the the Harmony Church cantonment area at Fort Benning. BCT Soldiers will begin to arrive at Fort Benning by early fall 2005; the BCT is expected to be at full strength with approximately 3,400 Soldiers by mid-October 2005. Therefore, temporary facilities are needed so that Soldiers will have facilities to support them. Temporary construction would include parking areas, maintenance, barracks, administrative, dining, and other support facilities.

The BCT would train using existing ranges and training areas on Fort Benning. It is not currently known whether this Unit of Action and its associated complex will be permanently attached to and built at Fort Benning or will be reassigned at some point in the future. However, preliminary analysis and siting are occurring to prepare for when Fort Benning is chosen to receive this construction and additional personnel. The approximate size of the overall project area is 30 to 35 acres.

Columbus–Phenix City Community

Pending construction and transportation system improvement projects have been proposed for the Columbus-Phenix City area. The projects listed below are those determined to have the potential for moderate adverse impacts on resources within the ROI (Fort Benning, 2004d).

- Oxbow Meadows and Marina, Lumpkin Road, Columbus, Georgia (date undetermined; tentatively scheduled to begin within the next 2 or 3 years). Work would consist of further development of the Oxbow Meadows Environmental Learning Center by creating additional outdoor classrooms, a series of walking trails, a series of hiking trails, and a pavilion and constructing (including dredge and fill) a 350-slip-capacity marina. The approximate size of the overall project area is 10 to 15 acres.

- Phenix City Riverwalk Phase II, Phenix City, Alabama (date undetermined). Work would consist of the construction of a hiking/biking trail between the 13th and 14th Street bridges in Phenix City. The approximate size of the overall project area is 5 to 10 acres.

- Alternative Transportation System, Phase II, North Riverwalk, Columbus, Georgia (date undetermined; scope of work decision pending implementation of Chattahoochee River Restoration Project, below). The work would consist of continuing to construct the

hiking/biking trail (Riverwalk) northward along the Chattahoochee River from 12th Street to 14th Street. The approximate size of the overall project area is 5 to 10 acres.

- Widening/Improvements to Buena Vista Road, Columbus, Georgia (FY07). Work would consist of widening and reconstructing 1.15 miles of an existing two- and four-lane road to a four-through-lane system with turn lanes and medians, as required. The approximate size of the overall project area is 5 to 10 acres.

- Widening/Improvements to St. Mary's Road, Columbus, Georgia (FY05). Work would consist of widening 0.71 mile of a two-lane road to a three- and four-lane system, with intersection improvements as needed. The approximate size of the overall project area is 5 to 10 acres.

- Chattahoochee River Restoration (FY05). Work would consist of breaching the Eagle-Phenix Dam and the City Mills Dam along the Chattahoochee River to restore the historic and natural flow of water along this portion of the river, which extends from just north of the city of Columbus down to its most southern edge. The approximate size of the project area is 2.5 miles (approximately 35 acres).

The proposed action is the development and renovation of family housing; specifically, to renovate 533 units, demolish 3,506 units, and construct 3,667 new units, which will result in a net increase of only 161 units or 4.0 percent. In addition, the vast majority of these units will occur in present housing areas. Thus, the resources being affected are being "reaffected," rather than "newly affected." In other words, the proposed action is a perpetuation of ongoing activities more than an addition of new activities, and therefore contributions to cumulative effects are of a lesser magnitude than those which would be expected from an action occurring in primarily undeveloped areas.

As stated above, the installation plans numerous construction activities over the next several years in addition to the RCI program. In accordance with the Short-Range and Long-Range Components of the Master Plan, Fort Benning would employ all possible safeguards to protect the environment during all construction activities. Because construction projects would be scheduled during the same period as the planned construction, demolition, and renovation of family housing, they could have short- and long-term adverse cumulative effects. The following discussion of those effects is limited to the relevant resources.

During this period of activity, there could be long-term minor adverse cumulative effects on air quality, biological resources (i.e., wildlife and its habitat), water resources, and transportation.

Air Quality. Minor adverse cumulative effects on air quality would result from minor, but increased, short-term and long-term loading of pollutants to the air shed.

Biological Resources. Minor adverse cumulative effects on biological resources would result from the transformation and removal of vegetation and habitat for the construction of housing, roads, and other planned facilities.

Water Resources. Minor adverse cumulative effects on water resources would result from increased pollutant loadings and flows to streams as additional construction projects replaced permeable ground surfaces (native vegetation, wildlife habitat, and landscaped areas) with impervious surfaces such as parking lots, roads, roofs, and sidewalks.

Transportation. Minor adverse cumulative effects on transportation would result from the continuing development of highways, which would ultimately lead to further human uses of resources.

4.14 SUMMARY OF BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES

The implementation of BMPs and mitigation measures could include avoidance of effect; minimization of effect; repair, rehabilitation, or restoration of effect; reduction of effect; compensation for effect; or a combination. BMPS and mitigation measures for the proposed Army RCI project at Fort Benning and Porter Village would be incorporated into the CDMP and RCI documents. Such measures would be expected to reduce, avoid, or compensate for most adverse effects. Table 4-22 summarizes the proposed BMPs and mitigation measures to be implemented for each of the affected resources.

Table 4-22
Summary of Best Management Practices and Mitigation Measures

Land Use
• Adhere to optimal land use plans and guidelines outlined in the *Fort Benning Real Property Master Plan* when siting housing developments.
• Include vegetative or other buffers, where appropriate, to minimize land use incompatibilities.
Aesthetics and Visual Resources
• Design housing units in a regionally appropriate architectural style.
• Revegetate housing areas with native vegetation, and maintain trees and native vegetation wherever possible.
• Place new utility lines underground to improve aesthetics.
• Maintain adequate off-street parking.
• Provide sufficient storage in new units.
Air Quality
• Implement BMPs (e.g., wetting the soil during and at the end of the construction day).
• Clean areas during and after workday of soil from roadways.
• Cover trucks transporting soil with tarp.
Noise
• Housing in Zone II will be attenuated so that outside-to-inside noise levels are reduced by 20 and 30 a-weighted decibels (dBA). [This is a required mitigation measure.]
• Use earthen beams and tree buffers to separate noise-producing land uses from housing areas where appropriate.
• Limit construction activities to daylight hours.
Geology and Soils
• Avoid construction on steep slopes.
• Obtain necessary permits for storm water and erosion control.
• Use appropriate BMPs (such as silt fences, straw bale dikes, diversion ditches, riprap channels, water bars, and water spreaders) to reduce soil erosion and sedimentation.
• Adhere to the ESPCP and any other plans or guidance, as appropriate, per the NPDES General Permit process.

Table 4-22
Summary of Best Management Practices (continued)

Water Resources

- Implement BMPs (e.g., silt fencing, hay bales) to control surface erosion and runoff.
- Reseed and revegetate area following construction activities to minimize impacts.
- Follow protocols outlined in the storm water NPDES permit.
- Follow TMDL recommendations for protecting water quality (e.g., adoption of proper unpaved road maintenance practices, implementation of erosion and sediment control plans for land-disturbing activities, mitigation and prevention of streambank erosion due to increased stream flow velocities caused by urban runoff, application of BMPs appropriate to agricultural or urban land uses).
- Encourage low-impact development designs.
- Install water-efficient appliances (e.g., low-flow showerheads, faucets, and toilets).

Biological Resources

Vegetation

No mitigation is necessary; however, Fort Benning should consider the following:

- Limit disturbed areas to the current housing footprint and a minimal amount of the adjacent construction staging area.
- Plant native trees near homes, in parks, in open spaces, and around storm water management structures.
- Employ erosion control practices and tree protection devices at all proposed sites to protect vegetation and habitat areas.

Wildlife

No mitigation is necessary; however, Fort Benning should consider the following:

- Preserve associated roads, existing parks, and large blocks of existing native vegetation on each site to act as buffers and wildlife corridors.
- Use tree protection BMPs during construction of new developments to maintain natural habitat areas.

Cultural Resources

- Design all structures constructed in sensitive cultural resource areas (i.e., Historic Districts and Protected Areas) and alteration/renovation of historic structures (i.e., historic housing and support facilities), in consultation with the Georgia SHPO, to have no adverse impact on cultural resources. Incorporate mitigation measures, coordinated through the consultation process, before the construction/alteration/renovation stage.
- Provide special treatment for areas with known cultural resources in accordance with the guidelines of the Secretary of the Interior's *Standard for Rehabilitation of Historic Properties* and the Programmatic Agreement (PA) between Fort Benning and the Georgia State Historic Preservation Office (SHPO).
- If unknown deposits or remains are discovered during construction, stop activities until the Fort Benning cultural resources manager and the Georgia SHPO are contacted and a determination is made regarding the NRHP eligibility of the site. If NRHP-eligible, treat sites in accordance with procedures outlined in the PA.

Socioeconomics and Protection of Children

- Place barriers and "No Trespassing" signs around construction sites where practicable.
- Avoid the use of building products that contain hazardous materials.
- Secure construction vehicles and equipment when not in use.

Table 4-22
Summary of Best Management Practices (continued)

Traffic and Transportation

- Optimally route and schedule all RCI construction vehicle traffic.
- Locate construction material staging areas in locations that would minimize traffic impacts.
- Expand government-operated shuttle bus routes to include the new housing areas.
- Incorporate traffic-calming measures into the housing areas.
- Include overall design improvements, such as walkways and bicycle paths, to reduce reliance on vehicles and to create more connected, pedestrian-friendly communities.

Utilities

Potable Water

- Install water-efficient devices, such as low-flow showerheads, faucets, and toilets, in all new facilities.

Energy

- Install energy-efficient interior and exterior lighting fixtures and controls in all new facilities to reduce the demand for electricity.

Hazardous and Toxic Substances

- During construction, prevent, control, and manage spills and leaks of oil and petroleum products in accordance with Fort Benning's SPCCP.
- Dispose of demolition materials in accordance with applicable regulations.
- No mitigation measure is necessary for management of municipal solid waste. Fort Benning's waste minimization and pollution prevention programs would continue to minimize waste volumes generated at the Installation.

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SECTION 5.0
FINDINGS AND CONCLUSIONS

This EA has been prepared to evaluate the potential effects on the natural and human environment from activities associated with implementation of the Army RCI at Fort Benning, Georgia. The EA has examined the Army's preferred alternative—implementation of the CDMP negotiated with Fort Benning Family Communities LLC—and the no action alternative.

The EA has evaluated potential effects on land use, aesthetic and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic substances.

5.1 FINDINGS

The evaluation of the proposed action, identified as the Army's preferred alternative, indicates that the physical and socioeconomic environments at Fort Benning and in the ROI would not be significantly affected if proper mitigation is implemented as identified in Table 4-22. Although the footprint at Fort Benning presents a variety of physical and environmental constraints to developing the RCI property (as shown in Figure 5-1), in preparing the CDMP the Army and Fort Benning Family Communities LLC would work around these constraints to avoid, minimize, or mitigate potential adverse effects whenever possible, resulting in minor to moderate effects on the human and natural environment. The predicted consequences on resource areas are briefly described below. Table 5-1 provides a summary and comparison of potential direct and indirect consequences of the proposed action versus the no action alternative.

5.1.1 Consequences of the Proposed Action

5.1.1.1 Land Use

Main Post. Long-term minor adverse and beneficial effects on land use would be expected as a result of the proposed action. Portions of open space buffer and recreational areas would be converted to residential housing, reducing those land use inventories and resulting in encroachment on other land use types. The proposed construction would also increase the amount of impervious surface.

The addition of amenities such as improved landscaping and improved and regular maintenance programs would be expected to result in long-term beneficial effects on the housing areas. Proper consideration and planning in the design of facilities, along with proper site planning for the new housing units and adherence to master planning guidelines, would mitigate potential adverse effects from noise, aesthetics, and air quality concerns. Most of these projects would not be expected to have an adverse effect on land use once construction is complete. Vegetative buffers between the major roads or railroad and new housing areas would mitigate potential adverse effects from noise and aesthetics concerns.

Porter Village. Long-term minor adverse effects on land use would be expected at Porter Village. Fort Benning Family Communities LLC plans to clear 35 acres of forest to construct a new village center, a swimming pool, and 37 new homes on the property south of the existing soccer field. This could remove a forest buffer between Porter Village and the adjoining Sky County subdivision to the west.

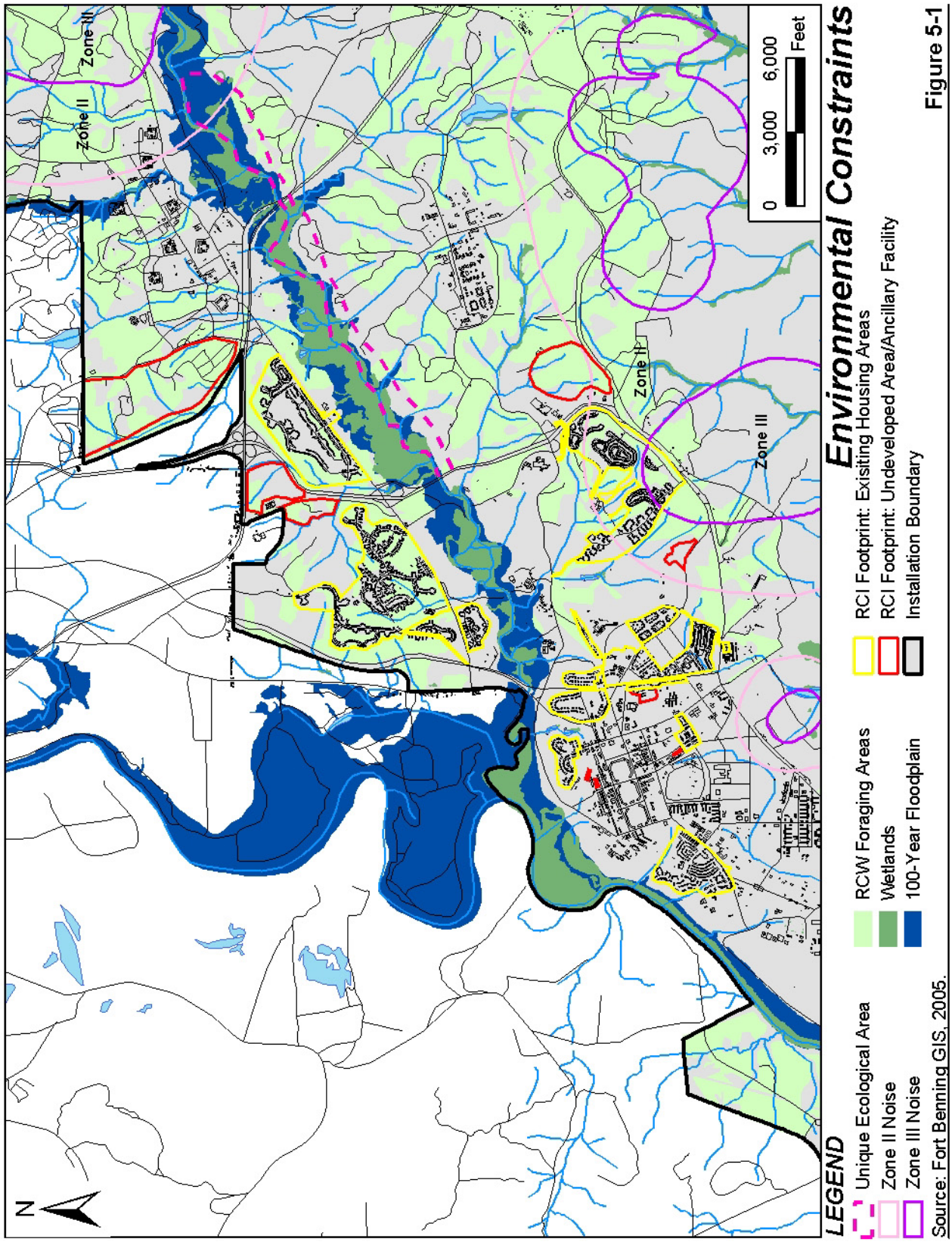
Environmental Constraints
Zone II
Zone III
Zone II
Zone III
0 3,000 6,000 Feet
N
LEGEND
Unique Ecological Area
Zone II Noise
Zone III Noise
RCW Foraging Areas
Wetlands
100-Year Floodplain
RCI Footprint: Exisiting Housing Areas
RCI Footprint: Undeveloped Area/Ancillary Facility
Installation Boundary
Source: Fort Benning GIS, 2005.

Figure 5-1

Table 5-1
Summary of Potential Environmental and Socioeconomic Consequences

Resource	Environmental and Socioeconomic Consequences			
	Proposed Action		No Action Alternative	
	Main Post	Porter Village	Main Post	Porter Village
Land Use	Long-term minor adverse and beneficial effects	Long-term minor adverse effects	No effects	No effects
Aesthetics and Visual Resources	Short- and long-term minor adverse and long-term beneficial effects	Long-term minor adverse and long-term moderate beneficial effects	Long-term minor adverse effects	Long-term minor adverse effects
Air Quality	Short-term minor adverse effects	No effects	No effects	No effects
Noise	Long- and short-term minor adverse effects	Short-term minor adverse effects	Long-term moderate adverse effects	No effects
Geology and Soils				
• Geology and topography	No effects	No effects	No effects	No effects
• Soils	Short-term minor adverse effects	Short-term minor adverse effects	No effects	No effects
• Prime farmland	No effects	No effects	No effects	No effects
Water Resources				
• Surface water	Short- and long-term minor adverse effects	Long-term negligible adverse effects	No effects	No effects
• Groundwater	Short- and long-term negligible adverse effects	Long-term negligible adverse effects	No effects	No effects
• Floodplains	No effects	No effects	No effects	No effects
Biological Resources				
• Flora and fauna	Short- and long-term minor adverse effects	Short- and long-term minor adverse effects	No effects	No effects
• Sensitive species	Short- and long-term minor adverse effects	No effects	No effects	No effects
• Wetlands	No effects	No effects	No effects	No effects
• Unique Ecological areas	No effects	No effects	No effects	Not applicable
Cultural Resources	Long-term minor adverse and beneficial effects	Long-term minor adverse and beneficial effects	Minor or moderate adverse effects	No effects
Socioeconomics				
• Economic development and demographics	Short-term minor beneficial effects	Short-term minor beneficial effects	No effects	No effects

Table 5-1
Summary of Potential Environmental and Socioeconomic Consequences (continued)

Resource	Environmental and Socioeconomic Consequences			
	Proposed Action		No Action Alternative	
	Main Post	Porter Village	Main Post	Porter Village
• Housing	Long-term moderate beneficial effects	Long-term minor beneficial effects	Long-term moderate adverse effects	Long-term minor adverse effects
• Quality of life	Short-term minor adverse and long-term moderate beneficial effects	Long-term minor beneficial effects	Long-term moderate adverse effects	Long-term minor adverse effects
• Law enforcement and fire protection	Short-term minor adverse effects	No effects	No effects	No effects
• Schools	Long-term minor beneficial effects	Long-term minor beneficial effects	No effects	No effects
• Recreation	Long-term minor beneficial effects	Long-term minor beneficial effects	No effects	No effects
• Environmental justice	No effects	No effects	No effects	No effects
• Protection of children	Short-term minor adverse effects	Short-term minor adverse effects	Long-term minor adverse effects	No effects
Transportation	Short- and long-term minor adverse and long-term beneficial effects	Short-term minor adverse effects	No effects	No effects
Utilities				
• Potable water supply	Short- and long-term negligible adverse and long-term minor beneficial effects	Long-term negligible adverse effects	No effects	No effects
• Sanitary wastewater system	Long-term negligible adverse effects	Long-term negligible adverse effects	No effects	No effects
• Storm water system	Short-term minor adverse and long-term minor beneficial effects	Long-term negligible adverse effects	No effects	No effects
• Energy sources	Long-term beneficial effects	Long-term negligible adverse effects	No effects	No effects
• Communications	Long-term negligible adverse effects	Long-term negligible adverse effects	No effects	No effects
• Solid waste and recycling	Short- and long-term moderate adverse effects	Short-term moderate and long-term minor adverse effects	No effects	No effects
Hazardous and Toxic Substances	Long-term beneficial effects	No effects	No effects	No effects

5.1.1.2 Aesthetic and Visual Resources

Main Post. Short- and long-term minor adverse and long-term moderate beneficial effects would be expected. Short-term adverse effects would result from construction activities, which are inherently aesthetically displeasing. Long-term minor adverse effects would result from new construction in the undeveloped areas, which would replace wooded vistas with landscaped housing areas, permanently altering the natural viewsheds in these areas.

Long-term beneficial effects would be expected from proper implementation of the CDMP, which is designed to achieve an aesthetically harmonious community through the use of cohesive and regionally appropriate architectural design characteristics, landscape planning that focuses on using native plant species and screening visually intrusive structures, and activities with vegetation and inclusion of green space.

Porter Village. Long-term minor adverse and long-term moderate beneficial effects would be expected from the removal of up to 35 acres of forest to construct the village center on the property south of the existing soccer field, potentially removing an aesthetic forest buffer between Porter Village and the adjoining Sky County subdivision to the west. Long-term moderate beneficial effects would be expected from proper implementation of the CDMP, including the construction of a new village center and pool, as well as minor renovations to the 40 homes at Porter Village. The regular and preventive maintenance programs outlined in the CDMP would maintain the revitalized housing areas at the highest operation levels. As a result of the RCI program, the aesthetic appeal of the existing housing areas would be expected to improve.

5.1.1.3 Air Quality

Main Post. Short-term minor adverse effects would be expected as a result of increased vehicle emissions and negligible impacts from fugitive dust associated with an increase in construction activities. The construction-related emissions would be short-term and intermittent. Although short-term minor effects on air quality would be expected, the proposed action would not violate any NAAQS or other CAA standard, rule, or regulation. Dust would be controlled through BMPs such as wetting the ground with water during periods of ground disturbance.

Porter Village. No effects on air quality would be expected to occur at Porter Village. The emission of criteria pollutants at Porter Village would not violate the NAAQS or any other CAA standard.

5.1.1.4 Noise

Main Post. Long-term and short-term minor adverse effects would be expected. Long-term minor adverse effects on residents living in housing within the Zone II noise contour would be expected. However, all new housing built within Noise Zone II would be constructed with noise-attenuating materials, and existing housing in Zone II would be demolished or modified with sound-attenuation designs to mitigate noise effects. Required mitigation included in the CDMP states that housing in Zone 2 will be attenuated so that outside-to-inside noise levels are reduced by 25 and 30 dba. Short-term minor adverse effects would include additional sources of noise during construction activities due to the operation of equipment and construction activities in general.

Porter Village. Short-term minor adverse effects would include additional sources of noise during construction activities due to the operation of equipment and construction activities in general.

5.1.1.5 Geology and Soils

Geology and Topography. No effects on geology would be expected at the Main Post or Porter Village.

Soils

Main Post. Short-term minor adverse effects would be expected from demolition and construction activities that might cause removal of vegetation, soil exposure, and increased susceptibility to wind and water erosion, possibly resulting in increased runoff and erosion during site preparation. Potential adverse effects would be minimized by implementing BMPs to control runoff, erosion, and sedimentation during construction and by taking pollution prevention measures when using or managing hazardous materials.

Porter Village. Short-term minor adverse effects would be expected from construction activities that could cause removal of vegetation, soil exposure, and increased susceptibility to wind and water erosion, possibly resulting in increased runoff and erosion during site preparation. Potential adverse effects would be minimized by implementing BMPs to control runoff, erosion, and sedimentation during construction and by taking pollution prevention measures when using or managing hazardous materials.

Prime Farmland. No effects on prime farmland would be expected on the Main Post or Porter Village.

5.1.1.6 Water Resources

Surface Water

Main Post. Short - and long-term minor adverse effects would be expected at the Main Post. In the short term, construction activities would increase erosion, potentially increasing sedimentation in streams, and could contribute small quantities of dissolved solids and petroleum hydrocarbons to surface waters. Potential adverse effects would be minimized by implementing BMPs to control runoff and sedimentation during construction and by taking pollution prevention measures when using or managing hazardous materials.

After construction there would be the potential for increased runoff to streams from new buildings, roads, and parking areas.

Porter Village. Long-term negligible adverse effects would be expected at Porter Village. Effects similar to those described for the Main Post would be expected. A minor increase in storm water runoff would be expected at Porter Village.

Groundwater

Main Post. Short- and long-term negligible adverse effects on groundwater would be expected. Increased waterborne pollutants (e.g., dissolved solids, sediment, petroleum hydrocarbons) in surface water bodies resulting from construction activities, and from the increase in impervious surfaces following construction, could easily be transported into the groundwater system. Potential adverse effects would be minimized by implementing BMPs to control runoff and sedimentation during construction and by taking pollution prevention measures when using or managing hazardous materials.

Porter Village. Negligible adverse effects would be expected at Porter Village.

Floodplains

No effects on floodplains would be expected at the Main Post or Porter Village.

5.1.1.7 Biological Resources

Flora and Fauna

Main Post. Short-term and long-term minor adverse effects on flora or fauna would be expected. It is estimated that up to 336 acres of forested areas might be disturbed for new housing construction, and therefore there would be some minor adverse effects on wildlife due to tree removal and habitat degradation.

Porter Village. Short- and long-term minor adverse effects on flora and fauna would be expected. Approximately 35 acres of the forested area would be disturbed for new housing construction. As a result, there would be some minor adverse effects on wildlife resulting from tree removal and habitat degradation.

Sensitive Species

Main Post. Short- and long-term minor adverse effects would be expected to affect RCW foraging habitat. Timber within RCW foraging habitat would need to be removed for the construction of new facilities. In a letter dated February 15, 2005, USFWS indicates that no further action is required under ESA Section 7(a)(2). However, if new information were to become available or changes in the project were to involve federally listed species, further consultation would be required.

No adverse effects on migratory birds would be expected to occur.

Porter Village. No effects would be expected to occur. Following agency coordination, USFWS determined that no further action is required under Section 7 of the ESA.

Wetlands

Main Post. No effects on wetlands would be expected because there are no wetlands within the RCI footprint. Short-term indirect minor adverse impacts on streambanks would occur as sedimentation from runoff from nearby construction sites. Impacts on wetlands and streambanks in and near the RCI footprint could be minimized by implementing stream protection BMPs and 25-foot riparian buffer zones.

Porter Village. No effects on wetlands would be expected. Sediment loading from minor housing renovations would be minimized by the significant forested buffer surrounding the wetland, as well as stream protection BMPs that would be implemented before renovation and construction.

Unique Ecological Areas

Main Post. No effects would be expected to occur.

Porter Village. No effects would be expected to occur.

5.1.1.8 Cultural Resources

Main Post. Long-term minor adverse and beneficial effects on cultural resources would be expected from implementation of the proposed action. Beneficial effects could result from the maintenance of historic structures, as well as the renovation and new construction designed to complement the

character, style, materials, distinctive building elements, and overall feeling of existing historic structures and the viewsheds of historic areas.

Potential minor adverse effects could occur as a result of renovation and demolition of some existing housing structures and historic units, as well as construction of new housing units, which might cause soil disturbance that could uncover currently unknown archeological resources. Minor adverse impacts on historical structures might occur in the adjacent Main Post Family Housing Area, depending on the renovation or demolition of existing housing and new construction within RCI footprint Area R.

Long-term minor adverse and beneficial effects on the four historic structures within the footprint of Area R, as well as historic structures within Areas W, X, and V, might occur. Demolition, construction, or renovation in these areas could cause minor adverse or beneficial impacts on the unique or distinctive qualities of those structures, original materials or building elements, or the general character of the buildings.

Porter Village. Long-term minor adverse and beneficial effects on cultural resources would be expected from implementation of the proposed action at Porter Village. Construction could cause soil disturbance that has the potential to uncover currently unknown archeological resources. If unknown deposits or remains were discovered during construction, activities would cease until the Fort Benning cultural resources manager and the appropriate SHPO personnel were contacted and a determination was made regarding the NRHP eligibility of the site. If NRHP-eligible, sites would be treated in accordance with procedures to protect the integrity of those cultural resources and to mitigate impacts on them, in consultation with the Georgia SHPO.

Consideration should be given to avoiding the Hand Ditch in the case of any planned construction of housing units, a village center, or a pool in the area of this NRHP-eligible resource. Future construction within the RCI footprint could adversely affect the portion of the Hand Ditch within the footprint. A detailed preservation plan describing how the ditch could be preserved and protected, along with further relevant background research on details of construction of the ditch, has not yet been completed. Therefore, special consideration of the Hand Ditch, as well as efforts to mitigate any adverse effects of future construction within the RCI footprint on this historic aqueduct, should be considered. If it is thought that future mission activities might at some point affect the Hand Ditch, mitigation could involve HABS/HAER investigations and drawings and other in-depth investigations of the site. The appropriate mitigation measures would best be determined and implemented through consultation with the Georgia SHPO.

5.1.1.9 Socioeconomics

Main Post

EIFS Model Results. Short-term direct and indirect minor beneficial effects would be expected. The expenditures associated with demolition, construction, and renovation of family housing and associated facilities at Fort Benning would increase sales volume, employment, and income in the ROI.

Housing. Long-term direct moderate beneficial effects on on-post family housing would be expected. The proposed action would improve the overall quality of life for Soldiers and their families by allowing more military families to have quality, attractive, affordable housing that fits their needs.

Quality of Life. Short-term direct minor adverse and long-term direct moderate beneficial effects on quality of life would be expected. In the short term, noise and traffic from construction of RCI housing could be disruptive to the existing residents. In the long term, however, the overall quality of life for

Soldiers and their families would be greatly improved because of the improved condition of on-post family housing as well as the overall residential community.

Law Enforcement and Fire Protection. Short-term minor adverse effects on law enforcement services could occur. Because of the location of the new housing, the increased concentration of housing, and the increased on-post population, emergency service response times for communities in the RCI footprint could increase. However, the RCI program would take about 8 years to complete, providing time for the Fort Benning Law Enforcement Command to adjust and expand as the number of housing units increased.

Schools. Long-term minor beneficial effects would be expected. The federal impact aid status would change from Military B to Military A; therefore, the public school district would receive a higher level of funding for students from military families.

Recreation. Long-term minor beneficial effects would be expected to result from the additional community amenities, such as parks and recreation areas, community centers, walking trails, ball fields, and tennis courts.

Environmental Justice. No effects would be expected.

Protection of Children. Short-term minor adverse effects on the protection of children would be expected because construction sites can be enticing to children. Construction activity could be an increased safety risk. In addition, hazardous waste generated from demolition and renovation activities would result in a minor short-term increase in the amount of hazardous waste generated at Fort Benning.

Porter Village

EIFS Model Results. Short-term direct and indirect minor beneficial effects would be expected. The expenditures associated with construction and renovation of family housing at Porter Village would increase sales volume, employment, and income in the ROI.

Housing. Long-term minor beneficial effects would be expected. The proposed action would improve and maintain the condition and aesthetic appeal of the housing through revitalization (e.g., painting).

Quality of Life. Long-term minor beneficial effects on quality of life would be expected as a result of the continued maintenance of and improvements to Porter Village housing.

Law Enforcement and Fire Protection. No effects on law enforcement or fire department services would be expected.

Schools. Long-term beneficial effects would be expected. If the RCI program were implemented, more primary and secondary school-age children would live at Porter Village. These children would continue to attend the public school system, but their federal impact aid status would change from Military B to Military A. Therefore, the public school district would receive a higher level of funding for these students.

Recreation. Long-term minor beneficial effects would be expected. Under the proposed action, a village center and outdoor pool will be built, expanding and enhancing recreational opportunities at Porter Village.

Environmental Justice. No effects would be expected.

Protection of Children. Short-term minor adverse effects on the protection of children would be expected because construction sites can be enticing to children. Construction activity could be an increased safety risk.

5.1.1.10 Transportation

Short- and long-term minor adverse and long-term beneficial effects on transportation would be expected. Short-term adverse effects would occur during the construction and renovation phase. There would include increased traffic congestion and wear and tear on Installation roads from construction vehicles, a temporary increase in maintenance activities, and temporary road closures to accommodate utility construction and installation.

Long-term beneficial effects on traffic would be expected from implementation of a well-executed CDMP and strategic road improvements, configurations, and supporting maintenance.

Porter Village. Short-term minor adverse effects on transportation might occur during the construction phase in the form of short-term traffic delays.

5.1.1.11 Utilities

Potable Water

Main Post. Short- and long-term negligible adverse and long-term negligible beneficial effects would be expected. Water requirements for construction activities would create a short-term effect on the water supply. A long-term increase in demand for water would result from the on-post population increase from the addition of 124 family housing units. Water-efficient devices, such as low-flow showerheads, faucets, and toilets, would be installed in all new facilities to reduce the demand on the potable water supply. No shortage of potable water would be expected if a net small increase in demand resulted from the proposed action. The water supply system has been privatized, and the private utility company would assume all responsibility for ensuring the adequacy of the system and its maintenance.

Porter Village. Long-term negligible adverse effects would be expected from the addition of 37 family housing units.

Sanitary Wastewater

Main Post. Long-term negligible adverse effects would be expected. The projected increase of 124 housing units would place an additional demand on the wastewater system, and the installation of low-flow water devices in new and renovated housing units would lessen the impact of the increased demand. The net increase in demand would not exceed the system's capacity. The wastewater treatment system at Fort Benning has been privatized, and the private utility company would assume all responsibility for ensuring the adequacy of the system and its maintenance.

Porter Village. Long-term negligible adverse effects would be expected from the addition of 37 family housing units.

Storm Water

Main Post. Short-term minor adverse and long-term minor beneficial effects would be expected. The projected increase of 124 housing units would be expected to increase the amount of impervious surface and could strain the existing drainage system. Long-term minor beneficial effects would be expected. Storm water runoff from construction sites would be collected and allowed to settle in retention ponds. The quality of storm water from family housing areas would not be expected to be affected in the long term. Adherence to RCI guidelines and planning principles would be expected to minimize the effects of the increase on streams, and the private utility company with responsibility for the infrastructure system would ensure the adequacy of the system. Fort Benning Family Communities LLC would assume all responsibility for ensuring the adequacy of the system and its maintenance.

Porter Village. Long-term negligible adverse effects would be expected from the addition of 37 family housing units. Draft development plans for Porter Village include an increase in units at Camp Merrill (in Dahlonega). The storm water runoff from Camp Merrill (with zero current and 37 new units) would increase, but adherence to RCI guidelines and planning principles would be expected to minimize the effects of the increase.

Energy

Main Post. Long-term minor beneficial effects would be expected. The projected increase of 124 housing units would increase the number of family housing units needing to be served by the electricity infrastructure; however, 3,667 of the 4,200 end-state units would be new construction that would have Energy Star-compliant fixtures and appliances. The net increase in electrical demand, if any, would be expected to be minor. Any new electrical lines would be installed below ground by Flint Electric and Georgia Power.

Porter Village. Long-term negligible adverse effects would be expected because of the increased energy demand from the addition of 37 family housing units.

Communications

Main Post. Long-term negligible adverse effects would be expected. New communication lines would be installed by Bell South Company in the undeveloped areas where housing is to be built, creating a negligible additional demand.

Porter Village. Long-term negligible adverse effects would be expected. All new housing units would be supplied with communication lines, and the new lines would create a negligible additional demand.

Solid Waste and Recycling

Main Post. Short- and long-term adverse moderate effects would be expected. Short-term effects would occur from the increased volume of solid waste generated by construction, renovation, and demolition of family housing units. Concrete, asphalt, and wood generated by demolition and renovation activities could be recycled, reducing the volume of solid waste disposed of in the inert or solid landfills. Debris from construction, renovation, and demolition of family housing units would increase relative to the volume of solid waste generated annually by the Installation. *DoD Measures of Merit for Non-Hazardous Solid Waste Diversion Rate* states that the nonhazardous solid waste diversion rate should be greater than 40 percent by the end of FY2005. To help Fort Benning achieve this goal, any solid waste (e.g., concrete, asphalt, and wood) generated from demolition and renovation activities should be recycled, thereby reducing the volume of solid waste disposed of in the inert or solid waste landfills. Solid waste volume would also increase over the long term with the addition of new housing units.

However, Fort Benning would continue to encourage residents to recycle, reducing the volume of waste landfilled.

Porter Village. Short-term moderate and long-term minor adverse effects would be expected. Short-term effects would occur from the increased volume of solid waste generated by construction, renovation, and demolition of family housing units. Concrete, asphalt, and wood generated by demolition and renovation activities could be recycled, reducing the volume of solid waste disposed of in the inert or solid landfills. Debris from construction, renovation, and demolition of family housing units that could not be recycled or reused would increase relative to the volume of solid waste generated annually by the residents of Porter Village. *DoD Measures of Merit for Non-Hazardous Solid Waste Diversion Rate* states that the nonhazardous solid waste diversion rate should be greater than 40 percent by the end of FY05. To help Fort Benning achieve this goal, any solid waste (e.g., concrete, asphalt, and wood) generated from demolition and renovation activities should be recycled, thereby reducing the volume of solid waste disposed of in the inert or solid waste landfills. The solid waste volume would also increase over the long term with the addition of new housing units. However, Fort Benning would continue to encourage residents to recycle, reducing the volume of waste landfilled by the City of Dahlonega.

5.1.1.12 Hazardous and Toxic Substances

Main Post. Long-term beneficial effects would be expected. Actual and potential ACM, interior and exterior LBP, and potential PCB-containing light ballasts would be removed from post housing units or encapsulated during renovation or demolition activities. There would be an overall reduction in harzardous material in residential areas. Upon removal, hazardous materials would be handled in a manner consistent with applicable rules and regulations. Installation SPCC requirements would be followed at all times during construction and the use or storage of hazardous materials.

Porter Village. No effects would be expected.

5.1.1.13 Cumulative Effects

In addition to the RCI, numerous construction activities on the Installation are planned over the next several years. During this period of activity there could be long-term minor adverse cumulative effects on air quality, biological resources (wildlife and its habitat), water resources, and transportation.

Air Quality. Minor adverse cumulative effects on air quality would result from minor, but increased, short-term and long-term loading of pollutants to the air shed.

Biological Resources. Minor adverse cumulative effects on biological resources would result from the transformation and removal of vegetation and habitat for the construction of housing, roads, and other planned facilities.

Water Resources. Minor adverse cumulative effects on water resources would result from increased pollutant loadings and flows to streams as additional construction projects replaced permeable ground surfaces (native vegetation, wildlife habitat, and landscaped areas) with impervious surfaces such as parking lots, roads, roofs, and sidewalks.

Transportation. Minor adverse cumulative effects on transportation would result from the continuing development of highways, which would ultimately lead to further human uses of resources.

5.1.1.14 Best Management Practices and Mitigation Measures

A combination of best management practices (BMPs) and mitigation measures would be expected to reduce, avoid, or compensate for most adverse effects. Refer to Table 4-20 in Section 4.14 for a summary of proposed BMPs and mitigation measures.

5.1.2 Consequences of the No Action Alternative

Only those resources that would be affected by the no action alternative are discussed below (see Table 5-1).

5.1.2.1 Aesthetic and Visual Resources

Main Post. Long-term minor adverse effects would be expected in the housing areas. Under the no action alternative, the Army would continue to be responsible for maintenance and renovation of existing housing and construction of new housing as necessary. The current lack of sufficient funding for housing construction and an extensive backlog of work indicate that the housing units would be expected to deteriorate over time, which would adversely affect visual and aesthetic resources on the Installation.

Porter Village. The long-term minor adverse effects stated for Fort Benning would be expected.

5.1.2.2 Noise

Main Post. Long-term moderate adverse effects would be expected. Some residents in on-post family housing would continue to be subjected to undesirable noise levels because the houses are already in Noise Zones II and III. The Army lacks funding to modify housing units in a manner that would reduce noise.

5.1.2.3 Cultural Resources

Main Post. Minor or moderate adverse effects are possible for the status quo because of the minimal funding for family housing and the potential for structures beginning to deteriorate to continue to do so. This deterioration might result in the loss of the structures' historical integrity or even demolition by neglect.

5.1.2.4 Socioeconomics

Main Post

Housing and Quality of Life. Long-term moderate adverse effects would be expected. Continuation of the present family housing programs would perpetuate deficiencies in quality of life for many Soldiers and their dependents.

Protection of Children. Long-term minor adverse effects on the protection of children would be expected. As homes deteriorate, the risk that children would be exposed to hazardous materials (for example, chipping LBP or cracked asbestos tiles) would increase.

Porter Village

Housing and Quality of Life. Long-term minor adverse effects could occur. Over the years, some housing units could deteriorate to the point that they would become unsuitable for living, thereby

decreasing the inventory of family housing at Camp Merrill and forcing Soldiers and their families to find housing outside Porter Village.

5.1.2.5 Cumulative Effects

The no action alternative would not be expected to result in any cumulative effects.

5.2 CONCLUSIONS

Based on the analysis performed in this EA, implementation of the preferred alternative would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment if the mitigation described in this EA was implemented. Preparation of an Environmental Impact Statement is not required. Issuance of a Finding of No Significant Impact would be appropriate.

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APPENDIX A

Community Development and Management Plan
Development Brief

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CLARK PINNACLE
FAMILY COMMUNITIES LLC

DEVELOPMENT BRIEF

FORT BENNING

14 April 2005

DEVELOPMENT BRIEF
TABLE OF CONTENTS

NOTE: THIS DOCUMENT IS REPRESENTATIVE OF THE CURRENT SCOPE FOR THE RCI DEVELOPMENT AS OF 14 APRIL 2005. AS THE CDMP IS FURTHER DEVELOPED, THE DETAILS OF THIS DOCUMENT MAY CHANGE.

EXECUTIVE SUMMARY

FORT BENNING

14 April 2005

1. EXECUTIVE SUMMARY

Fort Benning Family Communities, LLC (FBFC) will be a company comprised of Clark Pinnacle Benning, LLC and the United States Government, formed specifically to develop and manage military housing for Fort Benning. As part of this partnership, Clark Pinnacle will meet Fort Benning's housing requirements during the ten-year initial development period (IDP) by creating timeless communities with striking homes and streetscapes, safe neighborhoods, and year-round recreational and community activities.

To execute our vision, we created a development plan that involved an interactive process between our designers, developer, general contractor, property manager, and Installation residents and stakeholders through on-site focus groups, town hall meetings, and design charettes.

1.1 Development Overview

The following table reflects the IDP scope by neighborhood:

Neighborhood	Existing	End State	Description of Scope
Patton Village (Area J)	0	804	Build 804 new homes – 656 for Junior Enlisted (E1-E6) and 148 for Senior Enlisted (E7-E8); build Village Center and outdoor pool
McGraw Manor	952	601	Demolish 952 homes and build new 601 homes – 554 for Junior Enlisted (E1-E6) and 47 for Senior Enlisted (E7-E8); build Village Center and outdoor pool
Custer Terrace	872	772	Demolish 872 homes and build 772 new homes – 735 for Junior Enlisted (E1-E6) and 37 for Senior Enlisted (E7-E8); build Village Center and rehabilitate existing outdoor pool
Upatoi Terrace	150	138	Demolish 150 homes and build 138 new homes – 123 for Junior Enlisted (E1-E6) and 15 for Senior Enlisted (E7-E8)
Indianhead Terrace (non-historic)	436	312	Demolish 436 homes and build 312 new homes—298 for Junior Enlisted (E1-E6) and 14 for Senior Enlisted (E7-E8); build Neighborhood Center and outdoor pool
Bouton Heights/ Davis Hill	710	663	Demolish 630 homes, renovate 80 homes (E1 – E6), and build 583 new homes – 531 for Junior Enlisted (E1-E6) and 52 for Senior Enlisted (E7-E8); build Village Center and outdoor pool.
Perkins Place	180	228	Demolish 180 homes and build 228 new homes – 72 for Senior Enlisted (E7-E8), 114 for Company Grade Officers (O1-O3), and 42 for Field Grade Officers (O4-O5); build cabana and outdoor pool
Norton Court	112	112	Renovate 112 townhomes for Junior Enlisted
Porter Village	40	77	Build an additional 37 single family homes within the Porter Village footprint—15 for Junior Enlisted (E1-E6), 13 for Senior Enlisted (E7-E9), six for Company Grade Officers (O1-O3), and three for Field Grade Officers (O4-O5); build cabana and outdoor pool
Historic Main Post	493	493	Renovate 272 historic units

Neighborhood	Existing	End State	Description of Scope
Area M	0	0	Currently planned as construction staging area and borrow pit--no current plan for development; however, this area is reserved as project flex space
Area I	0	0	No current plan for development; however, this area is reserved as project flex space
Area T	0	0	No current plan for development; however, this area is reserved as project flex space

1.2 Key Development Assumptions

Utilities

Natural gas, water, sewer, telephone, cable, and electricity at Fort Benning and Porter Village are privatized. Ownership and operation of the utility infrastructure will continue to be the responsibility of the private utility provider. The development plan assumes maximum reuse of roads and utility infrastructure. Water, sewer, electricity, and gas commodity will be purchased from Fort Benning at the Installation's bulk rate.

Storm Water Management

During construction, we will implement best management practices to control runoff and sedimentation to include installation of erosion control devices and sediment control basins. Construction in existing neighborhoods is not expected to significantly increase impervious surface area; therefore, permanent storm water detention ponds will not be required per Fort Benning Environmental Management Division (EMD) guidance. Patton Village (Area J) and the build-out at Porter Village however, are "green field" developments and will require best management practices for storm water treatment.

Noise

Noise from training ranges currently affects neighborhoods that are scheduled to be transferred to FBFC as part of the RCI family-housing privatization at Fort Benning. Specifically, portions of the neighborhoods of Davis Hill and Bouton Heights, and Area M lie within Noise Zones 2 and 3. Noise Zone 3 (70 decibels CDNL and above) is considered incompatible with sensitive land uses—such as residential housing—and therefore, no housing units within this zone will be transferred to FBFC.

Clark Pinnacle will treat the new and renovated homes within the affected areas of Davis Hill and Bouton Heights accordingly, designing and implementing noise attenuation measures that meet or exceed the reduction guidelines set forth in the AR 200-1, Chapter 7, "Environmental Noise Management Program," dated February 1997, and noise zone contour corrections received March 31, 2005. Currently, no development is scheduled within Area M; however, noise attenuation would be required as portions of this area are within Zone 2.

Natural Resources

Fort Benning has coordinated the development approvals associated with tree-cutting in Patton Village (Area J) with the United States Fish and Wildlife Service (USFWS). USFWS concurred that the removal of trees in this area would not adversely impact the Red-Cockaded Woodpecker (RCW) as the area has been assessed and deemed unsuitable RCW foraging habitat. There are no known or suspected RCW colonies within the RCI footprint. There are no wetlands located within the RCI footprint; however, there are several streams that will require appropriate treatment or permitting through the Georgia Department of Natural Resources if construction or development activities will disturb more than 300 feet of any one stream.

Bats

Fort Benning's Family Housing Office has recently identified a bat infestation problem in several housing areas at Fort Benning. Fort Benning is currently working to remediate the bat problem, although the exact number of affected houses is still under investigation. Many of the affected homes are located in historic districts of Fort Benning, and will not be demolished but must be abated in accordance with applicable laws governing bat remediation. Fort Benning has contracted with licensed pest control operators to deal with this issue, and will continue to be responsible for all bat problems identified prior to closing.

Cultural Resources

We have designed each new Fort Benning neighborhood to avoid impacting areas identified as historic properties. There are four known cultural resource areas within or adjacent to our new construction sites:

State Site Number	Description	Location
9ME992	Historic Cemetery	Northwest portion of Area J
9ME1029	Aboriginal artifact scatter	Upatoi Terrace
9CE2020	Historic Cemetery	Davis Hill
9Lu52	19th Century Gold-Mining Hand Ditch	Porter Village

The cemeteries have been removed from the RCI footprint; however, it was not practical to exclude the cultural resources within Upatoi Terrace or Porter Village. These areas will require special treatment in accordance with the guidelines of the Secretary of the Interior's Standards for Rehabilitation of Historic Properties and the Programmatic Agreement (PA) between Fort Benning and the Georgia State Historic Preservation Officer (SHPO).

DEVELOPMENT OVERVIEW

CDMP
FORT BENNING

14 April 2005

2. DEVELOPMENT PLAN

2.1 Development Goals

In February 1996, the Defense Authorization bill, now Public Law 104-106 was signed into law. As codified in 10 U.S.C. 2871 et seq. are provisions collectively known as the Military Housing Privatization Initiative, which provide the Services with alternative authorities for construction and improvement of military housing (family and unaccompanied personnel). Under these authorities, the Services can leverage appropriated housing construction funds and government-owned assets to attract private capital in an effort to improve the quality of life for our military personnel and their families. This legislation provides a way to maximize use of limited appropriated funds, land, and existing facilities to encourage private sector investment.

Under the Residential Communities Initiative (RCI), the Army will establish long-term business relationships with private sector developers for the purpose of improving military family housing communities. These developers will become the master community developers for the Army Installation. At Fort Benning, Clark Pinnacle Benning LLC (Clark Pinnacle) will partner with the Army, forming Fort Benning Family Communities, LLC (FBFC) for the Post's housing privatization project. Clark Pinnacle Benning is a partnership between Clark Realty of Bethesda, Maryland and Pinnacle of Seattle, Washington. The Army will transfer Fort Benning's family housing (4039 units) to FBFC and provide FBFC a long-term interest in the land (approximately 2000 acres).

The RCI project that Clark Pinnacle will undertake at Fort Benning will include demolition of 3,220 housing units, construction of 3,438 homes, and renovation of 192 non-historic units and 272 historic housing units (221 historic units have been recently renovated and are "no touch" units) during the IDP with the ongoing maintenance and management of both. At Porter Village in Dahlonega, Georgia, Clark Pinnacle plans to upgrade the Porter Village amenities and construct 37 additional homes. The total ending inventory of 4,200 homes is consistent with the requirement defined in the Housing Market Analysis completed by the Army in November 2003.

Clark Pinnacle will enhance and restructure the existing housing areas into functional, livable communities. This will include the creation of community facilities and the addition of infrastructure. As part of the project, Clark Pinnacle will create and implement an Out-Year Development Plan for ongoing revitalization through the systematic renovation and replacement of existing structures and the continuous improvement of resident programs and services.

The goal of the RCI program is to eliminate inadequate military housing at installations across the United States. The objectives of the RCI program include:

- Creating quality residential communities;
- Leveraging assets and scarce funds; and
- Obtaining private sector expertise, creativity, innovation, and capital.

We have integrated these objectives into our development plan for Fort Benning. Our goal for Fort Benning is to transform the housing into quality, 21st century residential communities. The family housing at Fort Benning will be re-founded on the best aspects of their history and tradition and revitalized around five benchmark principles:

- Community
- Sense of Place
- Environment
- Health & Wellness
- Technology

Community

We have a vision and a plan to create communities where residents can live, work, play, worship, learn, and raise their families as part of a full life experience. These communities will leave military families with a once in a lifetime memory of their lives at Fort Benning as a great community that supported them in every way. Every family will be welcomed and served by a staff that really cares. Our management staff will always do their jobs as unobtrusively as possible to keep the community running smoothly, and will respond promptly when families are in need of special individualized service.

Our staff will provide a setting where the spirit of camaraderie among the military families at Fort Benning can be nurtured and personal connections can be made neighbor to neighbor. Our Resident Services Program will include activities such as block parties, welcome wagons, swap meets, educational classes, computer clinics and labs, and a full range of diverse activities for children.

Sense of Place

The character and tradition of the region, and the presence of Fort Benning in that region, represents the bedrock of our vision. We have designed the community, villages and homes to be of the character of the Southeastern region. With the exception of the beautiful historic houses of Main Post, we will replace the majority of the Fort Benning housing in the RCI footprint within the first ten years. We will renovate the majority of the historic and historically significant homes in a manner consistent with their traditional charm.

A sense of place, achieved through the cohesive interrelationship of the natural and man-made environment, is what makes residential communities highly desirable places to live. To achieve this, each home will be connected to the larger framework of the entire Fort Benning community. This framework will be linked to a hierarchy of residential communities — villages, blocks, and homes.

We will do this by first structuring the plan of the communities around the existing road and street network, and then move to creating an authentic set of parks, community

greens, and public buildings at centers of villages. In short, we will organize and design a powerful and memorable public realm that will become the image, symbol, and memory of each community. Traditional streetscapes and open space networks will connect blocks to create neighborhoods, and neighborhoods will combine to create villages. These special residential villages will be served by a mix of amenities and resident services. Recreation centers, swimming pools, and ample tot lots and play fields will all be part of the ancillary facilities package to support the full range of life's activity.

Blocks: Homes and buildings are contained on blocks in which neighbors regularly interact with one another. Blocks will contain recreation and playgrounds for safe and convenient use by families living on the block.

Neighborhoods: Groupings of families within approximately a ¼-mile radius to allow a five-minute walk from the center to the edge. The scale of the neighborhood is small enough for neighbors to know one another. Neighborhoods will contain recreation facilities, small parks and playgrounds for convenient use by residents of the neighborhood.

Villages: The coalescing of several neighborhoods into a village occurs as a result of working with what the land provides us. With three to four neighborhoods each, the scale of the village allows for recreational amenities such as swimming pools and village centers containing a property management office as well as business centers, meeting rooms, and fitness centers. A village represents an approximately 10-minute walk from edge to center.

Environment and Sustainable Design

Clark Pinnacle places a high priority on our long-term role as Community Stewards in the planning, design, development, operation and management of the Fort Benning family housing. We will proactively follow best management practices that will enable viable, sustainable, and safe living environments for the 50-year partnership. We will use sustainable materials, equipment, and systems that protect the environment and conserve utilities. In addition, our planning strategies maximize the protection of undisturbed land areas within our sphere of influence.

In support of regional efforts to clean up the Chattahoochee River and its tributaries, we will use low-impact design (LID) strategies, where practical, to limit the quantity and naturally improve the quality of storm water leaving our communities. Also, we have designed homes with roof overhangs, attic vents, and window sizes to act as solar controls from the hot Georgia sun to minimize heat gain. Clark Pinnacle has specified high-efficiency building materials and systems for all new homes and for replacements to existing homes as appropriate. ENERGYSTAR® appliances and building envelopes will improve energy efficiency by 30%.

Clark Pinnacle will create and maintain an Operations and Management Plan (O&M Plan) that will describe the program for environmental management and method of compliance for the treatment and disposal of hazardous waste, solid waste, hazardous materials and hazardous substances such as lead-based paint and asbestos containing materials. The O&M Plan will require manifest procedures to be employed in connection with the disposal of hazardous wastes.

Health & Wellness

We see wellness as a continuum of life from birth to old age. Our community forums will provide the opportunity to connect existing military health programs to our ongoing health/wellness programs and facilities. All of our efforts will be supplements to, and in cooperation with, Morale, Welfare and Recreation (MWR) and Army Community Services (ACS).

Each Village will have a complement of ball fields, tot lots, and playing courts that conveniently connect families from place to place. In addition to these amenities, we will provide services and programs that will teach and foster health and wellness to each of our residents.

As part of the health and wellness of personal well-being, we feel strongly about our stewardship of the natural environment and are deeply aware of our responsibilities to protect the Chattahoochee River ecosystem and the rich cultural and natural resources specific to the Fort Benning Installation.

Technology

Our communities must keep pace with the rapid advances in the technology and information revolution. A decade is a short time in the life of a community, but it can bring many changes to our lives in the form of technology. Look at the changes the computer and the Internet have already made in each and every one of our lives in such a short period of time.

During the initial construction and development period we will have a website that will allow families, the Army, and the community to track the progress of the project. A live web camera will allow interested parties to view the construction, enabling everyone access to the progress of their community. The website will also show house floor plans, construction schedules, and phasing plans to future Fort Benning residents.

The property manager will also have a website so that residents can make or check on the status of maintenance requests on a real-time basis.

We are dedicated to providing state-of-the-art connections to each of our homes and community facilities as we build them, and we will prioritize the review of any new technology that should be added to our communities as we improve them in the future.

We believe that with these founding principles of community, place, education, health, and technology, Fort Benning will be a community of quality and enduring value for the next 50 years. Once the partnership establishes these principles, we will annually re-evaluate and adjust our communities and services to be at the leading edge of each core principle.

2.2 Initial and Out-Year Plan

To execute our vision we created a development plan that resulted from an iterative process between our designers, development, construction, and property management staff through on-site resident focus groups, town hall meetings, and design charettes. More specifically, our plan, improved with valuable input from Fort Benning stakeholders and residents, will:

- Establish a strong partnership with the Army and Fort Benning to develop a strategic plan for the future of Fort Benning family housing;
- Demolish 3,220 units, construct 3,438 new homes, and renovate 192 non-historic homes at Fort Benning;
- Renovate 272 historic homes with emphasis on updating kitchens and baths and adding first floor powder rooms where necessary;
- Build 37 new homes at Porter Village in Dahlonega;
- Build four Village Centers, one Neighborhood Center, one Welcome Center, two pool cabanas, six outdoor pools (includes one pool and cabana located at Porter Village), and 51 tot lots (for an end state of 111 tot lots);
- Develop new, pedestrian-friendly neighborhoods and villages with Village and Neighborhood Centers designed to provide social, recreational, and aquatic amenities as a focal point for family activities at Fort Benning and Porter Village;
- Transform and connect the housing neighborhoods with new streetscapes, streets, sidewalks, and wooded pedestrian trails linked to courtyard housing arrangements, creating a vibrant community with a sense of place and cohesion and offering extensive community amenities in a pedestrian and environmentally friendly setting;
- Leverage existing assets (i.e. land, infrastructure, and ancillary facilities) to improve and sustain the quality of life for military families;
- Build a technology platform to reduce the cost, increase the availability, and improve the qualify of high speed data, video, and voice services to Soldiers and their families at Fort Benning and Porter Village;
- Comply with the RCI Construction Standards document published in December 2003;
- Achieve an equivalent of a Gold SPiRiT rating for residential development on all newly constructed homes; and
- Renovate all homes in the first 27 years after the IDP and build all new homes (excluding the historic homes) beginning in approximately year 41 of the partnership so that the military will have new, modern homes and systems at the end of the 50-year partnership.

Presented below is a list of the major, current housing deficiencies that the new communities in our development plan will correct in the IDP:

- Insufficient overall square footage of units compared to military and market standards;

- Lack of adequate interior and exterior storage;
- Lack of "eat-in" kitchens and family rooms in many existing units;
- No separate entry foyer;
- Lack of functional circulation;
- Lack of direct access to master bathroom from master bedroom in many existing units;
- Lack of second bathroom or powder room in many three-bedroom units;
- Insufficient square footage in bedrooms compared to military family requirements;
- Lack of separated laundry room;
- Inadequate covered parking or insufficient space for a second vehicle;
- Insufficient yard for safe play areas for small children; and
- Insufficient privacy for individual families.

The following chart illustrates how we accomplish all of the project requirements in the IDP.

Project Requirement	Fort Benning CDMP	Result
Historic renovation of 239 houses at Fort Benning to add first floor powder rooms	Renovate 272 houses with an emphasis on upgrading kitchens and bathrooms and adding a first floor powder room where necessary	Goal Achieved
Replace or conduct major renovation to 3,477 existing homes at Fort Benning	Demolish 3,220 and build 3,438 new homes at Fort Benning (includes deficit build-out), Renovate 192 non-historic homes.	Goal Achieved
Per the 2002 HMA, final inventory of 4,200 homes at Fort Benning and Dahlonega	Build-out the deficit of 124 homes at Fort Benning and 37 homes at Dahlonega	Goal Achieved

Our out-year development plan (ODP) provides the Army and the resident families a consistent quality and value for the life of the project. The ultimate goals of our ODP are to:

- Conform to the same standards of excellence that we will provide families during the IDP to the families residing at Fort Benning and Dahlonega in the out-years (Years 11-50); and

- Ensure that we protect the value of the Army's assets. The ODP will be comprised of renovations and replacements. Renovations will be minor to moderate, depending on the age of the unit, and will occur in the first 27 years after the IDP. New home construction will begin in approximately year 41 of the partnership so that the military will have new, modern homes and systems at the end of the 50-year partnership.

It is important to recognize that our ODP provides for the large-scale renovation or replacement of units over the life of the project. Pinnacle's Property Management and Operation Plan provides for the replacement of items (carpet, tile, appliances, etc.) that have service lives less than ten years as well as complete unit make-ready procedures each time a home changes occupancy. Pinnacle's make-ready procedures ensure that paint, carpet and all the components in each home are maintained to meet our exacting standards for quality.

During the out-years, we will continue to provide the highest level of amenities, service and recreational facilities to the entire portfolio. We will continue to respond to resident feedback in defining the recreational facilities and the resident programs and services offered. Throughout the partnership, we will ensure that we continually provide Fort Benning with the "best value."

Finally, we will continue to treat the historic homes with care, preserving and maintaining the 493 homes that comprise the Fort Benning Historic District. During the ODP, we will work with the Fort Benning EMD and the GA SHPO to receive the necessary treatment approvals for required upgrades and renovations. In addition to on-going maintenance—that will occur during both the IDP and ODP—we expect to perform minor renovations to all historic homes within the first 10 years of the ODP and major renovations during years 25-40 of the ODP.

MASTER PLAN

FORT BENNING

14 April 2005

3. MASTER PLAN

3.1 Existing Conditions

Fort Benning is located in one of the most picturesque regions of the country, approximately 110 miles southwest of Atlanta, Georgia. The historic city of Columbus, which is adjacent to Fort Benning, is the commercial center for the region and home to numerous cultural, recreational, and commercial attractions. Families can enjoy an afternoon repose, greet friends and neighbors, and enjoy the cultural heritage, outdoor activities, and southern hospitality of this vibrant, friendly, and comfortable community. These characteristic elements of living in this region are the same qualities of life we will emphasize in the new homes and neighborhoods we will build at Fort Benning and Camp Merrill.

The military families at Fort Benning enjoy a quality of life and outdoor lifestyle unique to the Columbus area and Tri-City region. From its beginning in 1918 as Camp Benning, Fort Benning has been the Home of the Infantry and now ranks as the Best Installation in the World. Fort Benning offers convenient access to numerous regional amenities including the 17-mile Riverwalk along the Chattahoochee River that extends from Fort Benning to downtown Columbus. There is a strong bond and partnership between the city of Columbus and Fort Benning, and they function as one community. Fort Benning's location combined with its excellent hospital and resources also make Fort Benning a popular place for Army retirees to call home.

The moderate climate and varied terrain of the region provide the necessary conditions for infantry and support training missions. Fort Benning's sub-Installation, Camp Merrill, located in Dahlonega, Georgia provides the appropriate terrain for the Mountain Phase of Ranger training.

In addition to being the Home of the Infantry, Fort Benning supports many other tenants and their missions to include:

- 11th Infantry Regiment;
- 29th Infantry Regiment;
- Basic Combat Training Brigade and Infantry Training Brigade;
- Ranger Training Brigade;
- Western Hemisphere Institute for Security Cooperation;
- 3rd Brigade, 3rd Infantry Division;
- 36th Engineer Group;
- Army's Marksmanship Unit;
- Martin Army Community Hospital;
- Army's 75th Ranger Regiment; and
- DODEA schools.

The Headquarters, U.S. Army Garrison, provides Installation support to the above tenant organizations. The Garrison provides quality of life programs, legal services,

housing management, security, fire and emergency services, building and grounds maintenance, and various logistical support for tenants and tenant activities.

Existing Site Layout

Located along the Chattahoochee River, Fort Benning occupies 184,000 acres of river valley terraces and rolling terrain. Fort Benning is accessible via U.S. 80 and 280 running east/west and U.S. 27 and Interstate 185 running north/south. Interstate 185 runs south from Interstate 85 at LaGrange, Georgia to the north and terminates at the Fort Benning boundary.

The Upatoi Creek runs through Fort Benning and acts as the dividing line between Muscogee County in the north and Chattahoochee County in the south. The Short Range Development Plan Map (see Figure 1.1 below) designates RCI areas on both halves. These originally designated RCI lands correspond to the location of the existing Post villages as well as additional deficit housing build-out areas. Existing family housing is grouped into 11 distinctly identifiable housing areas at Fort Benning and one housing area that supports Camp Merrill in Porter Village. The family housing areas are located throughout the cantonment area of the Post and occupy approximately 1,523 acres. The total acreage in the RCI footprint, including Porter Village, Dahlonega, is approximately 2,000 acres.

The Fort Benning community is served by a variety of commercial/retail, recreation and services facilities. There are also four shoppettes operated by AAFES. In addition to these facilities, Fort Benning has a variety of recreational and community support facilities to include:

- Chapel services
- Three Child Development Centers
- Three dental clinics
- Martin Army Community Hospital
- Youth Services Program
- Sports and Fitness Program
- Family Sports Complex
- Automotive Skills and Development Center
- Officer and NCO Clubs
- Two Bowling Centers
- Six fitness centers
- Riding stables
- RV trailer camp
- Picnic area at Russ Pond
- Two golf courses
- Dinner Theatre
- Swimming pools
- Three tennis courts

All of these facilities are essential to making Fort Benning an ideal place to live and work.

Existing Housing

The existing family housing at Fort Benning is comprised of a mixture of Capehart and Wherry-era, early 1970s MCA construction, and historic housing. Excluding the 40 homes at Porter Village, Fort Benning has had no new family housing built since 1976. The historic housing has been maintained in an outstanding manner. As the Post

developed, each neighborhood became a part of a larger community that shares amenities like Village Centers, youth centers, day care centers, recreation facilities, bike and jogging trails, and playfields. These existing amenities, however, are neither easily accessible from the housing areas, nor oriented exclusively toward families.

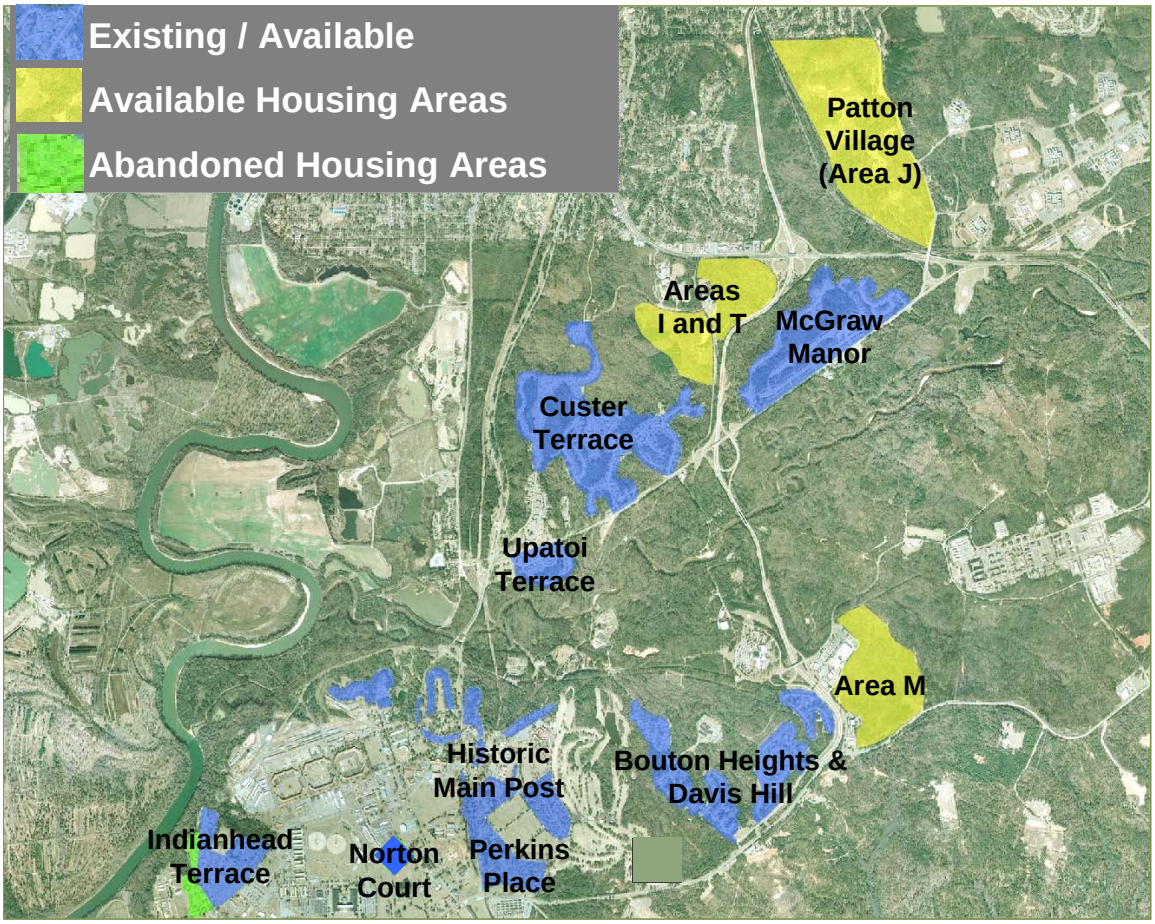
The family housing at Fort Benning can be divided into two broad categories, historic and non-historic housing. The drastic differences between these two categories create an environment of "haves" and "have nots." The historic homes on Main Post are the most desirable given their location and visual appeal despite their age and possible inefficiencies. The non-historic homes are scattered throughout the Post, and are not as desirable as the historic homes.

These existing non-historic neighborhoods need replacement due to the functional obsolescence of design and small room sizes. Many of the existing houses and neighborhoods were laid out in dense configurations that do not provide adequate living spaces, inside or out; do not allow for adequate parking; and do not connect neighborhood to neighborhood. The existing neighborhood road system in the enlisted neighborhoods typically follows the contours of the land, but needs adjustment to create a more "neighborhood-friendly feel." The historic homes need minor renovations within the guidelines established by the Army and the Georgia SHPO. As we revitalize each neighborhood, we will modify the neighborhood to expand indoor and outdoor recreation amenities and to improve parking, traffic circulation, and pedestrian access to amenities.

The housing villages have been built on both the flat and rolling terrain of the Post. The large, mature street trees in the historic neighborhoods give the area a friendly and inviting appearance and offer shade and solace in the hot Georgia summer. Throughout the rest of the housing, even though villages are adjacent, they are not interconnected, and the unusually long blocks (due to topography) discourage pedestrian activity and walking between neighborhoods. Adjacent villages possess little or no individual physical identity, allowing no distinction from one to village to the next.

The following map depicts the Fort Benning housing areas:

Fort Benning Site Map
Figure 3.1



Assessment of Historic Housing

In 1919, the Army purchased a 1,780-acre south Georgia plantation from the Bussey family. Fort Benning, originally known as Camp Benning, was founded on this land. It served as a new infantry and field artillery training school to supplement the overcrowded School of Musketry at Fort Sill, Ohio. For these purposes, existing structures on the property were reused. The Bussey family home, built in 1908 and still intact today, became home to the Post's Commanding General.

When the Post assumed permanent Installation status in 1922, it required formal planning endeavors. The charm and campus-like environment of Fort Benning's Main Post Historic District is the result of innovative, 1920s planning efforts and many years of commendable guardianship by Post personnel. Encompassing 493 homes across the sprawling military Installation, the Historic District's homes reinforce the general philosophy of Fort Benning's Installation planner, George B. Ford, hired by the Army

Quartermaster Corps during the 1920s to design the new Post. Ford, influenced by the early Garden City movement, believed that these stately homes should be located in outlying districts with ample open spaces and should be arranged around their own neighborhood centers. The Main Post Historic District neighborhoods exemplify both of these concepts.

Segregated from other building types, these homes are typically sited on an average lot size of ⅓ acre. This contributes greatly to the open, expansive feeling in these neighborhoods. The fronts of these homes face either a neighborhood common area or the street. The homes have stucco facades, red terra cotta tile roofs, and three floors including a full basement, a sleeping porch and a sun room.

The developments were organized into area designations and building types as follows:

- Area 14 - Contains Historic Housing Type G (Iron Triangle);
- Area 16 - Contains Historic Housing Type F (Rainbow Road);
- Area 17 - Contains Historic Housing Type A (White Elephants);
- Area 20 - Contains Historic Housing Types F, G, I, J, L (Austin Loop, Miller Loop and Sigerfoos Road);
- Area 21 - Contains Historic Housing Types H, K, M, Q (Lumpkin Road and Eames Avenue);
- Area 22 - Contains Historic Housing Types B, C, D (Sigerfoos Road, Austin Loop and Baltzell Avenue);
- Area 25 - Contains Historic Housing Types N, O (McDonald Manor); and
- Area 26 - Contains Historic Housing Type O (Indianhead).

While requiring infrastructure upgrades and exterior repairs over the years, the historic housing units are still in remarkable condition and are the most sought-after housing at Fort Benning. Both Riverside, formerly the Bussey family home, and the remaining housing units constructed between 1923 and 1934 are eligible for listing on the National Register as contributing properties to the Main Post Historic District.

The Army manages its historic properties in accordance with its responsibilities outlined in the National Historic Preservation Act of 1966. Also, Fort Benning protects these homes as historic properties as defined by Section 106 of the National Historic Preservation Act (NHPA).

Consequently, all alteration work thus far has required review by the Georgia SHPO and the possibly the Advisory Council on Historic Preservation.

Based on the provided ISR evaluations of the historic housing, 254 of the 493 historic homes were found to be in adequate condition. The remaining 239 homes would require renovations to meet ISR Green standards. Specifically, the homes that require renovations occupy Areas 14, 20, 21 and 22. Also included is 100 Vibbert Avenue, still in use as the home for the Post Commanding General.

In the past, the historic houses at Fort Benning have been upgraded, remodeled, and/or renovated on an as-needed or as-requested basis. Therefore, there are inconsistencies between like-style units on the exact required renovations to improve the livability of the houses (some units have received renovations that other like-units have not received). Areas 17 (White Elephants), 25 (McDonald Manor), and 26 (Indianhead Terrace) have recently received heavy renovations and upgrades and are currently ISR Green. Upon receiving resident feedback during the design charettes, it was clear that more work was needed to the homes that do not meet the ISR Green standard and even some homes that currently do meet the standard. Therefore, our plan now includes renovations of the roughly 272 remaining historic houses that have not been renovated. Our renovation plan includes kitchen and second-floor bathrooms upgrades and the addition of a first-floor powder room.

3.2 Integration with the Post Master Plan Process

There is an inextricable link between the preparation of the CDMP and the update to the Fort Benning Master Plan, and as a result, planning for both has been conducted concurrently. We have given careful consideration to the overall needs of the Installation, from administrative to recreational. To facilitate this concurrent planning, as well as elicit maximum participation from all of the Post's stakeholders, the architects and planners hosted a visioning workshop or "charette" in January 2005 allowing the CDMP designers and the various stakeholders including the residents and leaders of Fort Benning to share ideas and concerns with one another.

The resulting plan for the RCI areas reflects these numerous "brainstorming" sessions and adheres to the Installation's Master Plan. These sessions carefully considered (1) the overall space needs required for family housing and other existing or proposed uses on the Installation and (2) how these activities were enmeshed to improve functionality and enhance the quality of life for current and future Benning residents. Particular attention was paid to the locations on the Master Planning Map where family housing transitions to Installation–wide facilities.

In McGraw Manor, for example, a resident pointed out that an amenity building and a village green—centered between two new entry streets—created a potential traffic snarl with McBride Elementary School. As a result, the master plan was changed to reduce the size of the community building in McGraw Manor, transferring some of that space to community facilities in Patton Village, Custer Terrace, Bouton Heights, and Davis Hill. This solution reduces the vehicular ingress and egress issues into and out of McGraw while providing a more equitable distribution of amenities to other villages. In addition, this discussion also allowed the Post master planners to recognize an Installation need to consider long-term design changes for Custer Road.

At Davis Hill (where fencing has been erected to prevent pedestrians from cutting through the backyards of homes), the Post master planners expressed a desire for improved connectivity within the neighborhood. The resulting RCI plan provides a new

street (with sidewalk on one side) to connect two disparate neighborhood halves and to facilitate pedestrian access to the footbridge that leads to the PX and commissary.

The ongoing Master Planning process also identified areas of possible environmental sensitivity or insufficient infrastructure capacity. Potential areas for RCI expansion, which may have otherwise served nicely as family housing sites, were vetted against information gathered from these studies. Some areas were deemed more appropriate for other uses, while other sites were determined to be underserved by existing infrastructure and extremely topographically challenged. Ultimately, coordination of these parallel-planning processes concluded that the RCI development footprint should be one that rests almost exclusively on already disturbed residential areas with the exception of the undeveloped portion of Porter Village and Areas J (Patton Village), M, I and T.

Beyond the specific details of the CDMP, the collaboration and coordination between the Installation Master Planners and the CDMP process has enhanced the Post-wide awareness of the interrelatedness of family housing with the larger services and activities of Fort Benning. It is that interrelatedness that enhances a sense of community and helps to assure a positive residential experience for the Soldiers and their families residing on Fort Benning.

The ending inventory of 4,200 units for the IDP was determined by the Housing Market Analysis after taking into consideration the Master Planning RCI NEPA Analysis Map outlining land available for housing construction, and the projected environmental impacts of the proposed project. Fort Benning is currently updating its Master Plan, and upon completion, will identify additional suitable land for housing. Fort Benning and FBFC will then carefully consider environmental commitments, commercial feasibility, and other relevant information before deciding whether or not to proceed with an effort to construct additional homes within the upper limit identified by the then relevant Housing Market Analysis over the lifetime of the project. When the decision is made to construct additional family housing, it will be incorporated into FBFC and integrated with any existing housing communities on the Installation. Although no additional requirement has been identified beyond the 2003 Fort Benning HMA, if and when an additional housing need is identified, FBFC will work closely with Fort Benning to conduct any necessary site-specific NEPA analysis or meet other environmental requirements.

3.3 Determination of RCI Footprint

The RCI footprint, established by the Installation due diligence and further refined during the CDMP charette process, resulted from placing environmental stewardship at the top of the agenda. Lengthy studies of seven sites were conducted and ultimately, three of these sites were rejected as RCI sites. In the end, the deficit housing sites consisted of Sites J (now called Patton Village), I & T (located near Loyd Elementary School), M (located near the existing neighborhood of Davis Hill) and un-developed portion of Porter Village. Understanding the climate of today's Army, it is likely that Fort Benning will receive considerably more troops and subsequently will need an expanded development plan to accommodate the increases. To respond to this, we limited our initial development plan to Site J and conserved the other sites for future development; in the event of an increased need for housing, we would maximize the available land use at Sites M, I, and T. Additionally, if we are not able to achieve the current planned densities, Areas M, I, and T will become overflow housing sites.

The footprint study indicated that 80% of the homes at Fort Benning (78% of the new homes to be built) will sit upon the footprint of existing family housing villages. The remaining homes will be constructed at Patton Village (Area J) and the un-developed portion of Porter Village. This strategy of refilling existing villages and only building one new site assures the evolution of vital pedestrian-oriented communities consistent with "Smart Growth" and "New Urbanist" principles being adopted throughout the nation. By conserving additional sites, it also ensures that the development plan can easily expand to accommodate more troops and brigades. Additionally, the plan to rebuild in existing neighborhoods is environmentally friendly, as it allows for maximum reuse of infrastructure (roads, water and sewer distribution systems).

Master Plan

A sense of place, achieved through the cohesive interrelationship of the natural and man-made environment, makes well-planned residential communities highly desirable places to live. To achieve this, we will connect each home to the larger framework of the entire Fort Benning community through the hierarchy of blocks, neighborhoods and villages. We will do this by first structuring the plan of the communities with an identifiable set of organizing streets, streetscapes, parks, community greens, and public buildings. In short, we will create a powerful and memorable public realm that will become the image, symbol, and memory of each community. Homes and buildings will be sited on blocks, easily allowing neighbors the opportunity to interact with one another. Blocks will contain recreation and playgrounds for safe and convenient use by the children and families. Traditional streetscapes and open space networks will connect blocks to create neighborhoods and neighborhoods will be linked to create villages. These villages will be served by a mix of support and life-fulfilling uses including Neighborhood or Village Centers, ample tot lots, and play fields.

One of the most significant assets at Fort Benning is its historical legacy. The Clark Pinnacle team has spent significant time visiting the homes and facilities to develop our

plan of how we intend to build on the best assets of Fort Benning to create a first-class community. Key to our revitalization plans is to retain Fort Benning's historic core and to create new family amenity centers for the outlying villages. The historic homes and landscaping on Main Post are all outstanding examples of the kind of housing villages that Fort Benning families deserve. Using these wonderful well-planned villages as our models, we have designed the new homes and neighborhoods to offer many of the same opportunities. We envision a plan that will help reduce maintenance costs, improve the image and expand the enjoyment of the residents to take advantage of the recreational activities within the villages and encourage use of the new family amenities.

The new designs will also introduce concepts of street design and public open space networks. These will be scaled to create more connected residential groupings that reinforce a better sense of community among neighbors. Design concepts will also incorporate the following:

- The homes, amenities and open spaces will be designed on a human scale so that each village and block has a comfortable feel that encourages people to use the nearby amenities.
- Where appropriate, we have shortened long blocks of houses on existing streets by decreasing housing density and typically adding sidewalks on both sides to create a more pedestrian-friendly setting.
- Residents will have covered parking in two-car garages conveniently located to the side, rear, or set back from the front of each home, so that street views are attractive and the neighborhoods are pedestrian-friendly.

Well-lit streets, lined with shade trees and sidewalks, generally on both sides of the street, will allow pedestrians and cars to share the street and public realm. Slower traffic on residentially scaled streets will create a safer, pedestrian-friendly environment. Interconnected streets on shortened blocks, where topography permits, will offer a variety of routes so that pedestrians and cars can move more easily to conveniently located destinations within the community.

The physical arrangement of buildings and streets envisioned in this CDMP is based on a clear understanding of the scale. The physical layout and design of each village is based upon a hierarchy of scales from the design of each street, the streetscape, to the block, leading ultimately to the neighborhood as a whole and finally the aggregation of neighborhoods into a village with its own amenity center.

The Streetscape

This component of community design relates directly to the space adjacent to the dwelling. This is arguably the most highly valued and best understood part of the urban environment. Most people typically know six or more households on their street and will be greatly interested in its appearance and functionality, especially regarding safety and traffic.

The Block

This component is recognized as an area to walk around. Homes and buildings are contained on blocks that encourage interaction among families living on that block. The block designs minimize interference between the automobile and the pedestrian on the sidewalk. We further enhance pedestrian activity by intimately sizing blocks on a smaller scale where topography permits.

The Neighborhood

Groupings of families within approximately a ¼-mile radius to allow a five-minute walk from the center to the edge. The scale of the neighborhood is small enough for neighbors to know one another. Neighborhoods will contain recreation facilities, small parks and playgrounds for convenient use by residents of the neighborhood.

The Village

The style, character, and physical sense of cohesion for the revitalized residential communities at Fort Benning play an important role in defining the quality of life for all residents over the next 50 years and beyond. To provide residents with an overall sense of belonging and pride at a human scale, the primary focus of our community-building efforts is at the "village" level.

The aggregation of neighborhoods occurs at the scale of the village whose perimeter is determined by terrain. The village scale provides the context for significant public amenities such as swimming pools with changing facilities. Larger villages will have a Village Center which will contain a computer center, meeting rooms, fitness room, kitchenette, child play area, and property management offices.

Neighborhood and Village Structure

Throughout the CDMP planning process, the concept of the neighborhood and the village, already existing in Fort Benning's residential areas, has become even clearer and more cohesive with a planned mix of housing sizes and types, a diversity of facades and a balance of amenities designed to promote social interaction within and between villages. These important characteristics, found in most high quality homeownership communities across the nation and in Fort Benning's Main Post, are in contrast to the sparse neighborhoods of uniform housing types currently found in the outlying villages. To repeat, neighborhoods are generally sized no larger than a ¼-mile radius to allow a five-minute walk from the center to the edge. We cannot overemphasize the importance of this statistic. The scale of the neighborhood is small enough for neighbors to know one another. The Village is composed of three to four neighborhoods linked together. Villages are sized to be just large enough to support community facilities such as swimming pools and community buildings. Some neighborhoods will center on a common area, such as a green or small park, with playgrounds tot lots and/or picnic facilities, while others will center or a community

facility serving the village as a whole. These community facilities will feature common ancillary amenities so that the surrounding neighborhoods can share the same comforts as enjoyed on Main Post. We will construct our unique amenities by village to reinforce each village's distinct identity. For example, each village will have unique entries which provide identification and a sense of arrival for residents and visitors. We have coordinated the architectural style of the amenity buildings with the overall design to lend continuity of the architectural character as a whole.

We have designed the new community master plan, as embodied in the assemblage of village plans, landscape plans, and new homes to embrace the topography of the site. This strategy translates into a diversified set of community plans that share in a variety of park-like characteristics with lush vegetation and green open spaces. In addition, we have sited tot lots and playfields within the villages for maximum convenience to the residents and will encourage safe usage by all family members.

Our design plans maximize the use of open space within each of the family housing areas to beautify and preserve the character of Fort Benning. We have given great consideration to forested areas, wetlands, stream corridors, and other sensitive land areas. In addition to the generous open spaces and handsome streetscapes, we have designed the tot lots within a 2 ½-minute walk from every home and other recreation areas within a five-minute walk.

The Village "green" provides a setting for an identifiable Neighborhood or Village Center, reflecting that particular neighborhood or village's architectural character and providing a focus for small gatherings such as neighborly get-togethers and family birthday parties. We have provided this as an additional way to encourage interaction among residents and families. Larger greens will provide playing fields, basketball courts, and open space. Taken as a whole, this system of civic, recreational and natural greens, help to bring structure and orientation to each neighborhood and village.

Village centers will feature larger greens, which will provide the setting or the "front yard" for the Neighborhood or Village Center and other amenities. The Neighborhood Center in Indianhead Terrace will include a multipurpose meeting room and a fitness area. Each Village Center will have an outdoor swimming pool, a computer center, meeting rooms, fitness room, kitchenette, child play area, and property management offices. Together, this network of amenity buildings and village greens establishes a character and identity at important junctures throughout the Post providing a variety of amenities and assets to enhance the military families' quality of life.

Whether at one of the Village Greens or on a typical street, we have designed the villages for safe pedestrian activity and to promote interaction among neighbors. We have carefully crafted our streetscapes to promote pedestrian use through the design of these larger sidewalks, street tree plantings, and homes with stoops or front porches.

Street trees planted in a continuous strip will form a shaded canopy throughout the village. The trees will create a dense, enclosed atmosphere that also acts as a traffic-

calming device. Where terrain permits, additional streets will be created within the existing villages to increase connectivity, shorten blocks and provide a variety of ways to get from one place to another. The design quality of these streetscapes makes walking a safe, comfortable and overall pleasant experience.

As part of each neighborhood's redevelopment we will bury any existing overhead power lines that are within the footprint and exclusively serve housing, further enhancing the look and feel of the public realm and the streetscape. This action will allow for a more consistent tree planting and maintenance scheme, while providing additional shade and traffic calming effects.

Communities will be designed with street lighting within the housing areas themed to the architectural character of the neighborhood except where constrained by the use of approved lighting fixtures offered by the utility provider. We will ensure that community lighting is in working order at all times.

At the end of the IDP, there will be 111 tot lots throughout the communities. These tot lots will contain modern, long-lasting equipment. Where possible, we will reuse and rehabilitate existing tot lot equipment in good condition (currently, 60 existing tot lots are in good condition).

Each Village will have a complement of ball fields, tot lots, playing courts and Village Centers, Neighborhood Centers or Cabanas for conveniently located family amenities. At Fort Benning, these facilities will not only provide recreational opportunities, but will facilitate neighborly interaction, as a result of their central location in village centers and other public spaces.

Residents will have covered parking in two-car garages conveniently located at the side, rear or set back from the front of each home so that street views are attractive and the neighborhoods are pedestrian-friendly. We will accommodate visitor parking with parallel parking on one-side of each residential street under 32' in width and both sides of streets greater than 32'. Typically, new streets will be wide enough to accommodate two cars passing on the street as well as occasional parking on both sides of the street. Each new home will have two off-street parking spaces in addition to the garage for a total of four off-street parking spaces per home.

The breakdown of single family detached and attached is as follows:

- E1-E6: 50% detached/50% attached; and
- E7s and above: 100% detached.

The following image shows the block diagrams for the redevelopment of Fort Benning's housing and community areas:

Fort Benning Block Diagrams
Figure 3.2

Patton Village (Area J)

Site Plan

Summary

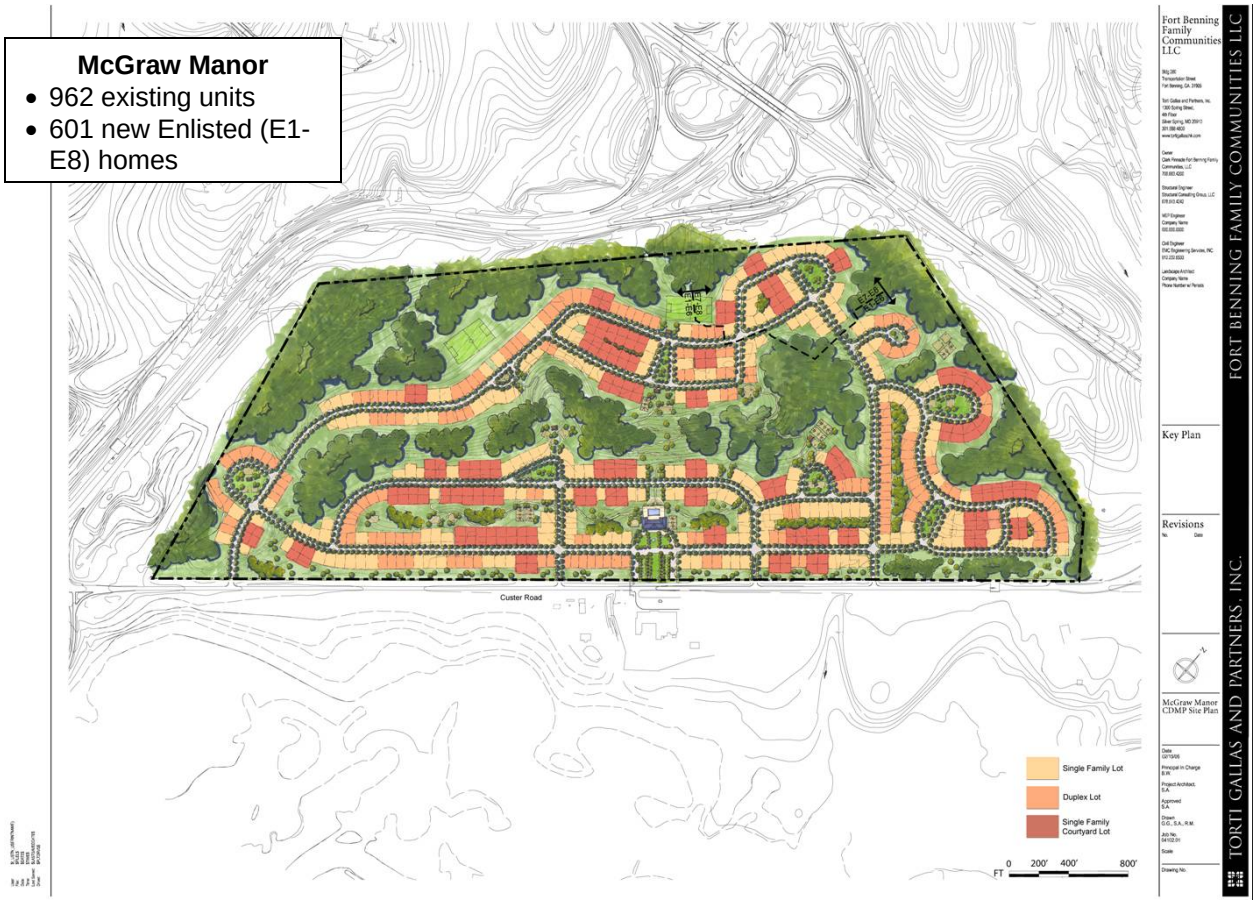
Patton Village is currently a Greenfield site with no existing homes. When completed, the approximately 335 acres of rolling terrain will be the site of 804 new homes. Upon completion, Patton Village will contain 804 new homes – 656 Junior Enlisted (E1-E6) and 148 Senior Enlisted (E7-E8). Our proposal for Patton Village takes as its point of departure the planning traditions of the historic midtown neighborhood of Columbus and the famed Ainsley Park neighborhood of Atlanta. Both are "romantic" suburbs where curving streets are designed with the land's contours in mind, and public spaces are adjusted to the uniqueness of the terrain.

Designed as four neighborhoods primarily along the natural ridges of the site, a meandering ridge road will link each of the neighborhoods with a large circular green. This symbolic entrance to Patton Village provides both a visual center for the community as well as a site for a Village Center and an outdoor pool serving the entire Village. Three neighborhoods surround this central area, each with at least one additional access to Custer Road – Old Cusseta Road (thus not burdening any one road with the traffic from other neighborhoods). To the south, the neighborhood follows an existing but abandoned street network. Its loosely rectangular street layout follows

existing roadbeds as much as possible while introducing several small greens for recreation and socializing. One of these is designed as a Village green and provides sites for a future shoppette (coordination with AAFES is on-going) and/or a Child Development Center (if deemed necessary by the Installation). North of the central neighborhood, two additional neighborhoods are designed to closely follow the contours of the site. Nestled within the center of each of these two neighborhoods are oval shaped greens, providing an exclusive enclave for distinctive private areas for Senior Enlisted (E7-E8) families.

McGraw Manor Village

Site Plan



Summary

McGraw Manor's 962 existing housing units are comprised of duplexes and fourplex and eightplex townhouses. We will demolish these and reduce the density significantly by rebuilding 601 homes – 554 Junior Enlisted (E1-E6) and 47 Senior Enlisted (E7-E8) families. This reduced density, as well as careful house placement, allows us to ensure adequate usable yard space for every home in the neighborhood without substantial regrading or causing unnecessary site disturbance.

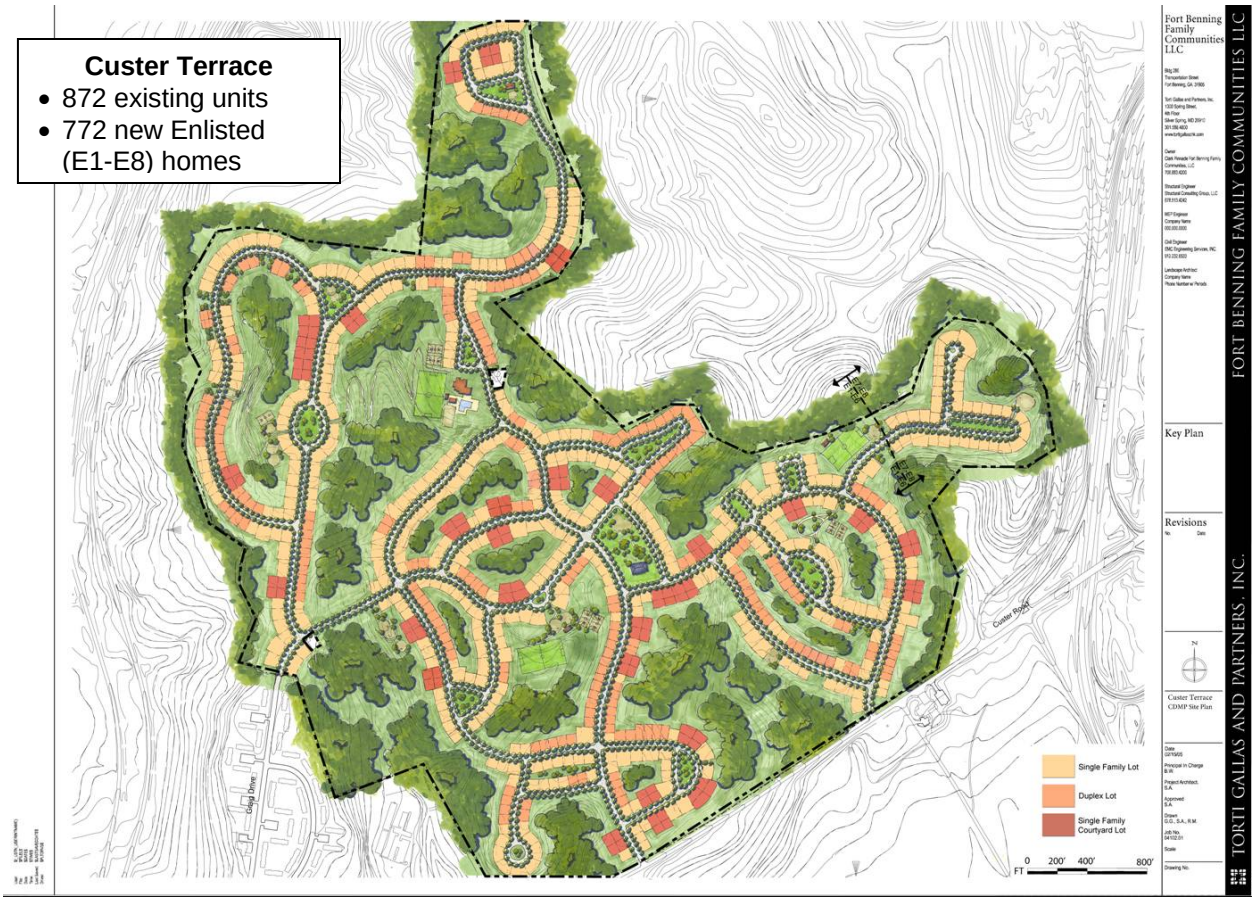
The Clark Pinnacle plan for this Village reuses the existing sanitary sewer, water, and street framework, taking advantage of the presence of McBride Elementary School on the south side of Custer Road to guide us in locating a new public park as the centerpiece of the revitalized neighborhood. This park is the new gateway to the Village and acts as a forecourt to a Village Center. Along the park's perimeter, our design adds two new one-way streets opposite the school's access roads to provide a new vehicular entrance to the Village and provide parking consistent with the force protection guidelines for the Village Center. This relatively flat area will be bordered by single family homes, in the great tradition of the Village Commons concept.

The Village Center sits at the head of this park as a civic complement to McBride Elementary School. The park itself will be naturally landscaped and include tot lots and play lots, all in keeping with its status as a Village Commons to support families. As the cultural, recreational, and civic heart of McGraw Manor Village, the park is the focus for a landscaped pedestrian sequence extending northwest of the Village Center to an outdoor plaza that includes a fenced pool. The pedestrian sequence described by this arrangement then continues to the northwest in an informal manner, ascending the bluff separating this lower neighborhood from an upper one, terminating in a cone-shaped green space at the top of the hill, which becomes the center of the upper neighborhood. Our plan reveals a mix of single family attached and detached homes that front streets, and where the depth of lots permit, single family four-unit courtyard arrangements. Occasionally these arrangements are broken up by small neighborhood green spaces, adding variety to the streetscape and providing additional places for family recreation and neighborhood gatherings. Linking these public spaces, pedestrian walkways traverse areas too steep for roadways, allowing greater interaction and connectivity throughout the Village.

We have taken care in the Village design to assure that walking is not only possible, but pleasurable. This assures that the proximity of these homes is supported by an environment as friendly to the pedestrian as it is to the automobile. The trails and walkways through the woods and tree-shaded sidewalks, as well as the provision of the Village Center with its amenities, will allow many families to rely less on the automobile, particularly when it comes to chauffeuring children to many social and recreational activities, thus enhancing quality of life of all the residents.

Custer Terrace Village

Site Plan



Summary

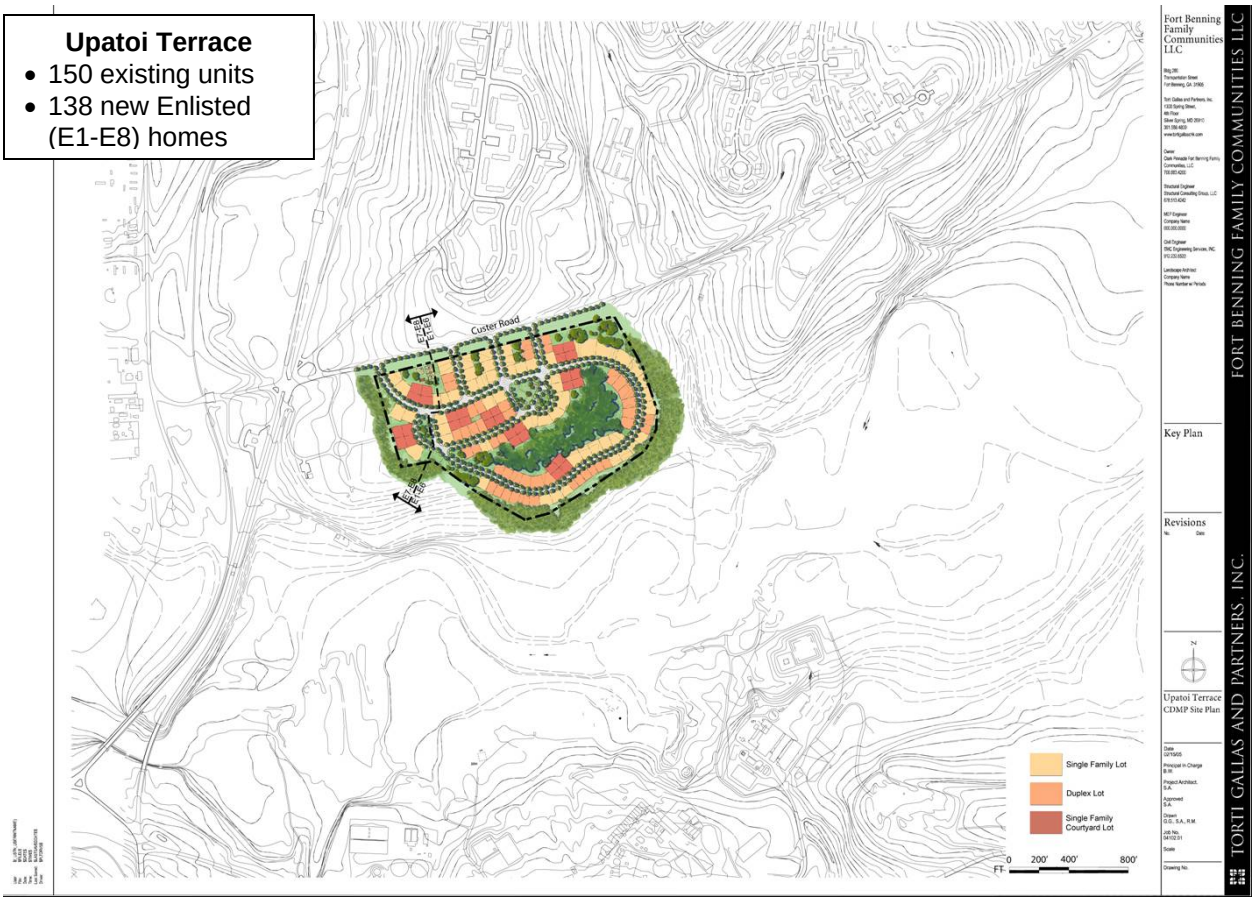
Custer Terrace Village is the largest in land area of any of the existing villages. We will demolish the existing 872 multiplexes and replace them with 772 new homes – 735 for Junior Enlisted (E1-E6) and 37 for Senior Enlisted (E7-E8). Custer Terrace Village is an assemblage of three new neighborhoods, each centered on a public space or building. The most central of these neighborhoods will have the Village Center building at its core, in the location currently occupied by the Post Office, Chapel, and Community Life Office (at the intersection of Kessler and Craig Drives). The Post Office, Chapel, and Community Life Office will not be relocated as part of the RCI program. In order to calm traffic at this location and make it safer for pedestrians, we have created a small roundabout. The western neighborhood is centered on the existing Village Pool, while a third neighborhood, to the northeast, has a small neighborhood park at its center. Utilizing a strategy similar to that of McGraw Manor Village - minimizing site disturbance and maximizing the reuse of existing infrastructure – we will replace the existing mix of duplex and townhouse units of Custer Terrace with 772 new homes in a mix of four-unit courtyard arrangements (with all single family detached homes) and single family detached and attached homes that simply line the existing road network. Where terrain permits, slight modifications to the existing road network allow greater interconnectivity

of residence to amenity and neighborhood to neighborhood. Bike and pedestrian trails and walkways further enhance this interconnectivity, allowing children easy and safe access to community facilities such as the pool and the Village Center.

Upatoi Terrace Village

Site Plan

Upatoi Terrace
- 150 existing units
- 138 new Enlisted (E1-E8) homes



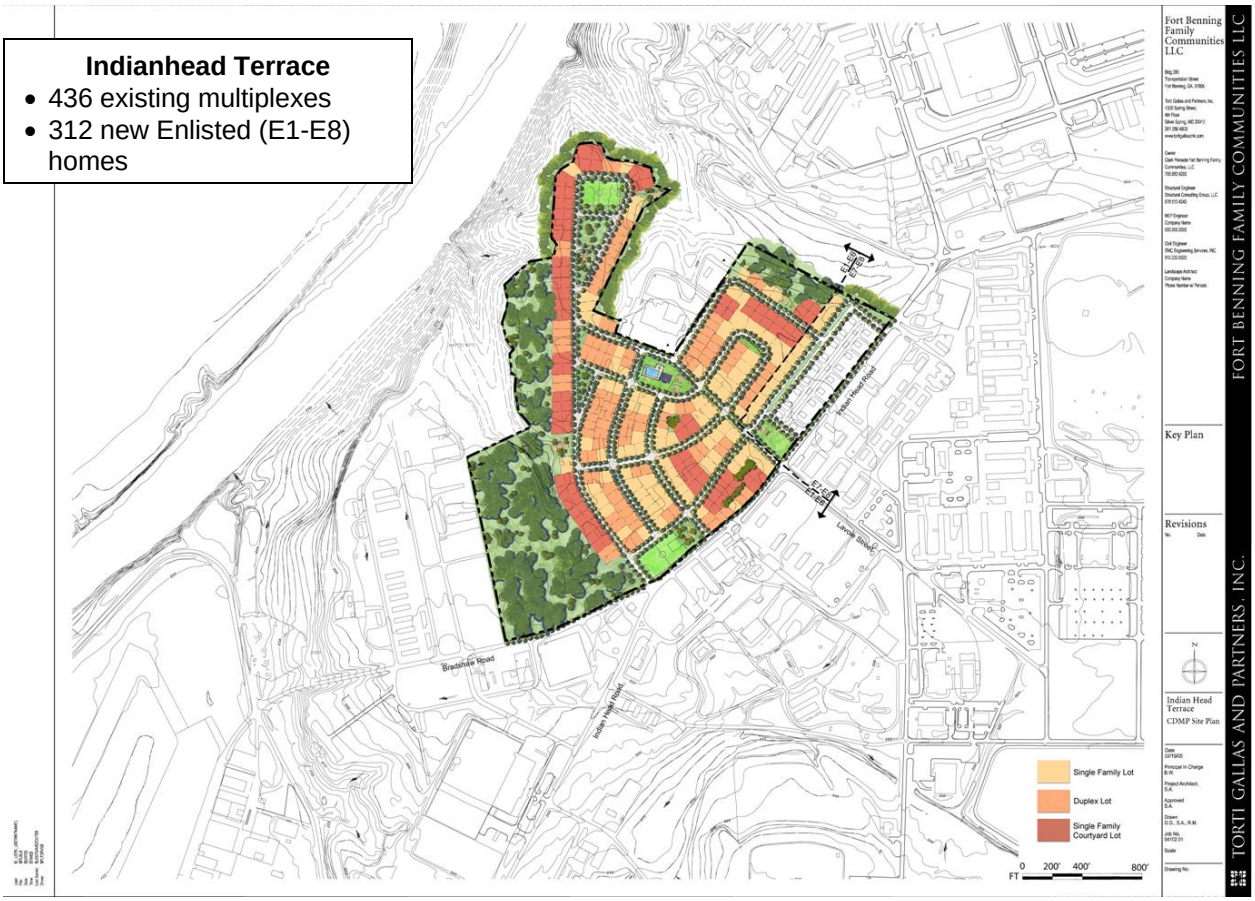
Summary

Sitting above the Fort Benning Post Cemetery on the southeast side of Custer Road, Upatoi Terrace is convenient to the Fort Benning Boulevard Gate and to Main Post. We will demolish 150 homes and replace them with 138 new homes – 123 Junior Enlisted (E1-E6) and 15 Senior Enlisted (E7-E8) with strategically located small green spaces to provide play areas for all ages within a short walk from every home. Utilizing a consistent infrastructure reutilization strategy, we plan to minimize site disturbance and maximize reuse of existing infrastructure.

Moreover, we designed a small green in the center of Upatoi Terrace that may serve as a new trail head for extending the 17-mile River Walk along the Chattahoochee River. Beginning here, the trail extends down to Upatoi Creek, and from there the Army could choose to connect to the trail that now terminates near the Infantry Museum. This extension of the River Walk, which connects to Downtown Columbus, would provide an extraordinary amenity for the Soldiers and their families, not only for those in Upatoi Terrace, but also those in Custer Terrace and McGraw Manor Villages.

Indianhead Terrace Village

Site Plan



Summary

We will demolish the existing 436 multiplex units and replace them with 312 new Mission style attached homes—14 Senior Enlisted (E7-E8) and 298 Junior Enlisted (E1-E6) blending with the 18 existing Mission style historic homes. Complementing the existing green at the entrance, the Village will center on a new Village park opposite Wilson Elementary School. This space will contain a Neighborhood Center and pool, as well as tot lots and play fields. The relatively flat site allows us to supplement the existing street network with additional roadways, creating smaller, more interconnected blocks that facilitate easier pedestrian access to the amenities of the Village.

The redevelopment plan of Indianhead Terrace will return approximately 30 acres to the Installation, after demolishing the houses that occupy the land, for future non-RCI use.

Development Brief

14 April 2005

Bouton Heights and Davis Hill

Site Plan

Summary

In Bouton Heights/Davis Hill, we will demolish 630 duplex and fourplex units and replace them with 583 new homes – 531 Junior Enlisted (E1-E6) and 52 Senior Enlisted (E7-E8). In addition, we will renovate 80 existing duplexes. A majority of the existing houses and available land within the Bouton Heights / Davis Hill footprint lies within Noise Zone 2 and will thus require attenuation in accordance with the requirements of AR 200-1, Chapter 7, "Environmental Noise Management Program," dated February 1997 (the footprint will not include any land or housing units within Noise Zone 3). Clark Pinnacle will implement attenuation measures with new construction and renovation activities (currently scheduled late in the IDP) to reduce the indoor noise disturbance. The specific scope of work has not yet been determined; however, we have allocated $10,000 per affected unit and will continue to work with our acoustical engineer to determine the attenuation scope. As in other neighborhoods, we will retain the existing street network, supplementing it with new streets where the terrain permits. This strategy, coupled with a housing type that provides two-car garages and private driveways that can park two additional vehicles, allows us to frame a series of newly created open spaces with single family detached and attached homes, many with front

porches. This will eliminate the unsightly parking lots that now dominate the neighborhood. We have also paid special attention to preserving many of the mature trees that dominate the existing green spaces and help to maintain an established neighborhood character. A new Village Center and swimming pool in Davis Hill will service both Bouton Heights and Davis Hill.

Davis Hill will contain two distinct neighborhoods. These two neighborhoods are separated by a steep slope with a mature forest that effectively creates an upper and lower portion of the Village. The upper and lower areas will be connected by a new roadway and sidewalk, at last linking these two parts of the neighborhood. A new Village Green will be located at the heart of the lower neighborhood at the top of the hill, complete with a new Village Center, outdoor play areas, and an outdoor pool. The Upper Davis neighborhood has a park with children's play areas and a picnic pavilion for community gatherings. There are a variety of playfields and sport courts located on the west side of this open space. Supplementing the existing street network in each portion of Davis Hill Village, new roadways and several pedestrian trails connect seamlessly throughout the rest of the neighborhood. Sidewalks will connect to existing pedestrian trails that link Davis Hill with Bouton Heights Village.

Development Brief
14 April 2005

Perkins Place Village

Site Plan

Summary

At Perkins Place, we will demolish 180 existing units and replace them with 228 new homes – 72 Senior Enlisted (E7-E8), 114 Company Grade Officers (O1-O3), and 42 Field Grade Officers (O4-O5). On the northern neighborhood edge, the Field Grade Officers will face onto the existing parade ground. Perkins Place is adjacent to the Historic District, and the new homes will reflect the existing character, the historic charm, and the appropriate detailing for Mission Style homes nearby. The new homes proposed for Perkins Place will also face onto Lumpkin Road, adding to the picturesque ensemble that exists there now, composed of beautiful historic homes. The existing topography in Perkins is minimal and allows for the introduction of new streets, which promote interconnectivity within the redeveloped neighborhood. A new central green will contain a new cabana and outdoor pool for the convenience of the residents. This green becomes a community asset, adjacent to the larger Fort Benning Parade Grounds, and is visually linked through the use of mature shade trees and open vistas. Additionally, Perkins Place will contain the Property Management Welcome Center. This center will serve as the starting point for all new families wishing to live in family housing and will contain the management headquarters.

Norton Court

During the IDP, we will renovate the existing 112 multiplexes at Norton Court. We will target Junior Enlisted families with no children or one child for these homes. As part of the ODP, we will demolish the existing 112 multiplexes and redevelop the site with new construction.

Porter Village

Site Plan

Summary

There are 40 existing single family homes at Porter Village (Dahlonega, GA) that were built in 1996. The project will retain these 40 well-maintained units and will build an additional 37 single family homes within the Porter Village footprint—15 Junior Enlisted (E1-E6), 13 Senior Enlisted (E7-E9), six Company Grade Officer (O1-O3), and three Field Grade Officer (O4-O5). The end-state inventory of 77 homes will be supplemented with an amenity package consisting of a cabana and outdoor swimming pool. Clark Pinnacle recognizes that there is a historic hand ditch (state site number 9Lu52) within the Porter Village footprint and will thus coordinate with the Fort Benning Cultural Resources Manager, in accordance with the PA, prior to construction.

Village and Neighborhood Centers

The Fort Benning community is served by four shoppettes, a Post Exchange (PX) and Commissary, PX gas station, six fitness centers and various other retail and recreation facilities that support the military community. Other amenities include the Officer NCO Clubs, bowling centers, riding stables, RV trailer camp, picnic area, outdoor equipment checkout, two golf courses, a Dinner Theatre, swimming pools, and tennis courts. Other conveniences for the residents include an Automotive Skills and Development Center, PX gas station, car and truck rentals, Wachovia Bank, and various retail facilities as well as the Post library, chapels, three Child Development Centers, hospital and other support activities.

All of these facilities are essential to making Fort Benning a great place to live and work. Clark Pinnacle has developed a master plan that supplements these amenities and connects them to the residential villages by providing better access for the military family on Fort Benning through a network of improved roadways and trails that interconnects the family housing villages. Moreover, our CDMP plans for Village and Neighborhood Centers and amenities throughout the new neighborhoods so that residents that live farther from Main Post will have amenities within walking distance of their homes. This allows the villages to be independent but still share each other's amenities to support the entire Post's needs. This community support structure is important to ensure interaction between the residents and the interrelated nature of all of the villages.

In addition, by locating family oriented recreation activities within the various housing villages, we have emphasized a greater sense of community, added safety and security, and encouraged family activities through convenient access within each village.

Village Linkages

The connection or linkage of villages is a critical component of the Development Plan. Whether that linkage is a physical one or symbolic one, understanding and realizing a sense of the whole is an important part of the Fort Benning residential experience. Quite simply, this sense of the whole enables a sense of community to grow throughout the Post.

A connection to the environment provides the symbolic glue uniting each of these communities. Whether a family lives in Patton Village, McGraw Manor or Upatoi Terrace, they are never more than a few steps away from a wonderful natural amenity. Moreover, each of these Villages is designed around consistent themes of walkability and a central Village center. Each is also designed around the idea of creating a distinct sense of place.

Easy access to new and/or improved community and recreational facilities is assured by interspersing these amenities throughout the neighborhoods. At the same time, access

to the other community facilities as well as other neighborhoods is provided by increased pedestrian access via trails and sidewalks.

We will construct new community and recreational amenities in the center of villages and/or along the linking roadway so that they are easily accessible from any of the villages on Post. These new amenities include four Village Centers, one Neighborhood Center, two cabanas, and six outdoor pools.

Throughout the entire Installation, our commitment to connectivity will be evident within each village by establishing clear links between all the homes through the network of streets. Significant natural features such as creeks, tree stands, and trails, which exist today, will be integrated into the neighborhoods. All sidewalks adjacent to the roadways will be concrete.

Village Landscape

The objectives of the Fort Benning Installation Landscaping plan are to improve the physical and psychological well-being of people who live and work on Post through careful flora selection, planting, and planning. The plan also challenges designers to harmoniously blend built structures with the natural environment, provide scale and comfort to pedestrian environments, visually reinforce the hierarchy of the road network, screen unsightly views, and buffer incompatible land uses.

Fort Benning's master plan also stresses the importance of open spaces. A large belt of buffer land surrounds family housing areas. Fingers of open space also extend in among the mixed land uses in the cantonment areas, providing an open appearance and welcome separation of incompatible activities. Our development plans will emphasize these open spaces and continue the strategy throughout the new housing areas.

The plant material palette for each neighborhood will be tailored to the solar orientation, topography, natural setting, and architectural scale. We will carefully choose perennial flowers and bulbs for each neighborhood and match them to the shrubs and trees selected for that neighborhood. Residents will receive a palette of recommended plant material and garden ideas that would carry out the theme and landscape character for their own yards.

The formal public open space in each neighborhood will reflect a manicured and urbane character. The streetscape will feature wide tree yards of four to seven feet between the curb line and sidewalk. These tree yards will contain broad shade trees spaced to provide a continuous leafy canopy over the streets as they mature. The street tree palette will further define the neighborhood uniqueness and identity.

Military housing is notoriously lacking in a "layered" approach to landscaping; however, we are proposing to provide such an approach. In addition to the large street trees, we will plant lower under-story ornamentals. These ornamentals provide a changing

palette of color to the neighborhoods. A layer of hedges and shrubs will soften the transition from yard to buildings providing an evergreen definition of individual yards. Finally, we will use a groundcover and low shrubs layer to accentuate entrances and add interest to the streetscape.

The landscape treatment for the historic housing areas will be a three-fold approach of restoration, replacement and renewal. Our goal will be to maintain as much of the existing plant material as possible. In some cases the existing plant material may need special attention to restore life back into the specimens. This can be accomplished through various techniques including pruning, feeding and soil amendments.

Each neighborhood has at least one community green, designed in the manner of Early American town greens. These community spaces occupy a central and prominent location in each village, with many of the neighborhood streets and major drives leading into the green. These greens will also be unique in design for each neighborhood. While the landscape treatments will be more formal and gardenesque than community parks, they will accommodate a wide range of passive and active community functions. For example, several will be large enough for informal playing fields, while others will include naturalized planting areas or gardens to facilitate ground water quality improvements. In selected villages, the focal point of the greens will be a recreation and civic building designed in character with the architectural style of the neighborhood.

Community ancillary facilities and parks distributed throughout the community will provide residents with large playfields and more structured play and recreation. However, these parks will be more than just large expanses of grass. They will be landscaped with trees and shrubs breaking down large expanses into several outdoor “rooms” containing multipurpose fields with shade trees along the perimeter.

INITIAL DEVELOPMENT PLAN

FORT BENNING

14 April 2005

4. INITIAL DEVELOPMENT PLAN

4.1 New Housing

The care and attention to detail in the community design is also found in the design of the homes. In all of our new home designs, our goal is to exceed RCI standards relative to the sizes of living spaces, interior and exterior storage, the quality of materials, systems and appliances, and to offer unique features that accommodate the frequency with which military families relocate. Our "best value" approach to all of our designs makes family quality of life the ultimate goal.

Our new homes at Fort Benning will have an enduring quality and architectural style derived from the local and regional architecture in and around Columbus, and from the stately historic homes on Fort Benning. All of our new homes will have ample family living spaces and generous interior and exterior storage spaces that exceed RCI standards and incorporate modern materials, fixtures, and energy efficient components. These charming homes will include an open, family-oriented indoor living area that flows into a fenced yard that provides a safe and private outdoor activity area for the family.

Again we have taken very special care to make our village plans and our home designs unique and authentic in style of this region so as to create a home that is truly desirable. We have adapted our original designs with feedback from residents and stakeholders during the design charettes. Not only did we refine the architectural styles used, we also refined the interior of the homes and floor plans. For example, we replaced our originally proposed Victorian style with Colonial Vernacular and Arts & Crafts after discussion with residents during the focus groups and charette. Our final styles have adopted traditional styles from the local region: Mission, Colonial Vernacular and Arts & Crafts.

The architectural styles and designs of the homes and villages match the quality and standards set by Clark and Pinnacle in their most successful residential communities, and complement the styles of the region. Housing types, facades, colors and details are mixed to create unique, diverse streetscapes. This diversity avoids the monolithic appearance common to many modern residential (both private and military) neighborhoods.

Noise Issues

Noise from firing ranges currently affects neighborhoods that are scheduled to be transferred to FBFC as part of the RCI family-housing privatization at Fort Benning. Specifically, housing units within the neighborhoods of Davis Hill and Bouton Heights lie within Noise Zones 2 and 3 (although the Army will not transfer any housing and will not lease any land within Zone 3).

The noise issues were outlined in the *Check Copy Final Environmental Assessment* December 2004 and state that "Even with the noise-attenuating materials, the housing within the Zone 3 noise contour will still be incompatible with the noise levels."

Therefore, the Army will not transfer any housing or will not lease any land within Noise Zone 3 as part of the RCI project at Fort Benning. Noise Zone 3 is defined as the areas where noise meets or exceeds 70 decibels CDNL.

The noise-related data used to create the Fort Benning Noise Contour Map was provided by Fort Benning and prepared by the U.S. Army Center for Health and Preventive Medicine (USACHPPM). AR 200-1 outlines specific land use guidelines, which are compatible or incompatible, referenced to levels and types of noise produced at the source. These guidelines are largely based upon research by Federal regulatory agencies (EPA, FICUN, DOD, and FAA) which separate the noise into specific "zones" applicable to complaints in particular noise environments. These zones are delineated Noise Zone 1 through Noise Zone 3 and include a Land Use Planning Zone, or LUPZ, which represents the transition between Noise Zone 1 and Noise Zone 2. It is important to note that these are the same guidelines applicable to market-rate neighborhoods located outside of Fort Benning.

To summarize AR 200-1:

1. Noise Zone 1 and the LUPZ (57 decibels CDNL max.) are considered generally compatible with residential land use.

2. Noise Zone 2 (62-70 decibels CDNL) is not considered generally compatible with residential land use and thus requires attenuation measures (i.e. noise level reduction of 25 to 30 A-weighted decibels (ADNL) from outside to inside). Clark Pinnacle will treat the new and renovated homes within the affected areas of Davis Hill and Bouton Heights accordingly, designing and implementing noise attenuation measures that meet or exceed the reduction guidelines.

3. Noise Zone 3 (70 decibels CDNL and above) is considered incompatible with sensitive land uses—such as residential housing—and therefore, no housing units within this zone will be transferred to FBFC.

FBFC's new and renovated homes in the affected Davis Hill and Bouton Heights RCI residential areas will meet or exceed the guidelines and regulations set forth in AR 200-1, February 1997, in reference to the Noise Zone Contour Map corrections received March 31, 2005. Clark Pinnacle has engaged an acoustic and vibration consultant in order to best address this issue and has been in close collaboration with the U.S. Army Center for Health and Preventive Medicine (USACHPPM) acoustic engineer and the Fort Benning Noise Program Manager.

Proposed New Housing

With the exception of the historic homes, all of the existing houses at Fort Benning have exceeded or are rapidly approaching the end of their useful lives as comfortable, functional houses. Proposed new homes at Fort Benning prudently exceed current RCI standards, reflecting our desire to provide truly exceptional homes with a high quality

living experience. The new housing will be three- and four-bedroom attached and detached single family homes. Each home will have its own private, usable fenced yard. This constitutes a significant improvement over existing conditions especially in neighborhoods like Custer Terrace, McGraw Manor, and Upatoi Terrace where small, severely sloped front and rear yards are the norm. By reducing overall housing density in these areas and carefully placing new two-story home pads, we have rectified this problem to provide each new home with a larger, flatter, and ultimately more usable yard.

Taking into consideration the frequency with which military families move in and move out of the housing at Fort Benning, we have designed wider than normal stairwells in the new housing units to facilitate the movement of furniture throughout the house and to minimize damage and maintenance expenses that often occur during the moving process. All homes will also have nine-foot ceilings on the first floor, which will make the units feel even more spacious. We will use high quality and energy efficient appliances, materials, and systems to ensure durability and reliability. All homes will also have separate laundry rooms and generous interior and exterior storage to accommodate the special needs of military families.

To enhance the connection of the families to the outdoors, each house will have a rear patio accessible from the family room. Also, fenced back or side yards will provide more privacy for safe play for small children, family activities, or quiet entertainment.

Each village at Fort Benning will have its own consistent style of architecture to reinforce the unique character of the community. The homes in the villages adjacent to the historic homes will be in Mission style in deference to the style of the historic area. The other villages, which are generally larger, will have homes in a mixture of Colonial Vernacular and Arts and Crafts styles. This will allow for a diversity of home types with distinct features, including architectural details and treatments, materials, colors, and rooflines, to reinforce the unique identity that each family has with the place they call “home”. Streetscapes will be enhanced by mixing three-bedroom, four-bedroom, courtyards, and single-story accessible homes.

We have designed five percent (5%) of the homes to comply with handicap accessibility requirements under the Uniform Federal Accessibility Standards (UFAS). These homes will be interspersed throughout each village, with careful attention to their placement in the flatter areas of the site. This percent figure was mandated through the RCI construction standards and is in-line with Post historic handicapped occupancy and Exceptional Family Member Program (EFMP) data.

We will use low-maintenance, energy efficient materials and systems to ensure long-term durability and high-quality maintainability throughout the villages. All the new homes have been designed to meet all applicable local building codes and ENERGYSTAR® requirements.

Homes will be wired for high-speed Internet access, allowing friends and families to stay in touch via cutting-edge communication technology. Within the homes, we will maintain fire and safety standards to include hardwired smoke detection alarms.

The new housing neighborhoods at Fort Benning will include a mix of single family attached and detached homes for Junior Enlisted families and single family detached homes for all other grades as exhibited below:

Grade	Single Family Detached	Single Family Attached
E1-E6 (Junior Enlisted)	50%	50%
E7-E8 (Senior Enlisted)	100%	0%
O1-O3 (Company Grade)	100%	0%
O4-O5 (Field Grade)	100%	0%

Some of our new homes incorporate an innovative Courtyard Design. This four-home ensemble allows the Clark Pinnacle team to provide new single family attached or detached homes by designing a cost-effective development model that uses existing street infrastructure efficiently. Moreover, the courtyard concept provides a high quality streetscape consistent with the Installation Design Guide by locating the servicing of homes, such as two-car garages and two off-street parking spaces for automobiles and trash can storage concealed from the street. This will free the street front for use by the residents of the neighborhood for casual interaction and visitor parking. With one on-street visitor parking spot per home, we have provided a total of five parking spaces per new home.

The courtyard configuration offers the residents another scale of community interaction: four homes share a common entryway and form a spatial enclosure distinct to those homes. The hardscape within the courtyards becomes a great area for young children to play basketball or hopscotch or learn to ride a bicycle, all within the protective enclosure and the watchful eyes of four families.

Typical Courtyard Plan

We have developed unique designs for these homes that take advantage of Fort Benning's rolling terrain. Contemporary floor plans with nine-foot high first floor ceilings and ample windows encourage family activities both inside and in the private outside space. The houses will be carefully placed on the site, with unique materials and façades to maximize the individuality of each home. Where possible, we will take advantage of graded sites in the various existing villages to reduce expensive re-grading, and we will make every effort to retain as many existing trees as possible within these villages.

All of the new homes will have two-car garages set back from the street or court to allow for maximum views to the street from inside the homes and to create streetscapes that encourage pedestrian usage.

The following pages display several of the proposed homes for Fort Benning. Proposed houses inspired by existing regional vernacular:

Mission Style (1890ca. -1920)

Mission style homes are characterized by the following:

- Tile roofs;
- Usually open eaves;
- Porches supported by large piers (commonly arched above);
- Stucco wall surfaces; and
- Two types:
  - Symmetrical: simple square or rectangular plans;
  - Asymmetrical: usually super-imposed on a square/rectangular plan.

Arts and Crafts Style (1905ca.-1930)

Arts and Crafts style homes are characterized by the following:

- Low pitched, gabled roof (occasionally hipped) with wide overhanging eaves and exposed roof rafters;
- Porches supported by wood piers with decorative brackets;
- Corner boards, brackets, embellished gable ends; and
- Grouped windows and shed dormers with ribbon windows.

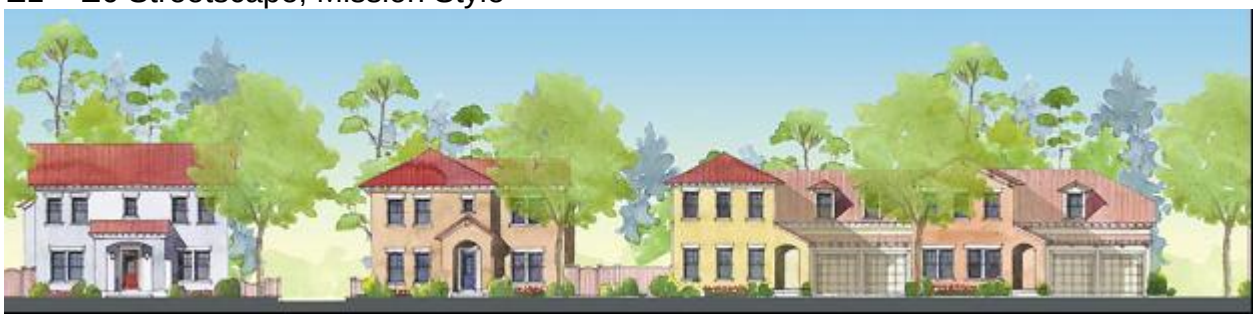
Colonial Vernacular (1890ca.-1940)

Colonial Vernacular style homes are characterized by the following:

- Simple low-pitched roof forms;
- 6 over 6 double hung windows with shutters;
- Porches with classical columns; and
- Accentuated front door with classical surround.

Examples of New Housing Streetscapes Planned for Fort Benning

E1 – E6 Streetscape, Mission Style



E7 – E8 Streetscape, Mission Style

E7 – E8 Streetscape, Arts and Crafts and Colonial Vernacular Style

The new homes for enlisted personnel as well as for officers reflect increasingly refined features and architectural amenities inside and out that are appropriate to rank.

The Partnership will receive an inventory of existing homes that are scheduled to receive:

- Abatement and demolition of 3,220 townhouses and duplexes;
- Historic renovation of 272 historic homes; and
- Abatement and renovation of 80 homes in Bouton Heights/Davis Hill and 112 homes in Norton Court.

New construction is scheduled to provide the following inventory of homes and amenity buildings:

- 3,475 single family attached (duplex) and detached homes;
- Four Village Centers;
- One Neighborhood Center;
- Two Cabanas; and
- Six neighborhood pools.

New single family attached and detached homes will consist of one and two-story wood framed structures containing the following basic design criterion:

- Type 5B (non rated) residential construction;
- One-hour fire walls on single family attached units;
- Conventional slab on grade (basements in a few cases where topography dictates);
- Wood framed walls;
- Open web floor and roof trusses or TJI's as selected by Clark Pinnacle;
- ½" gypsum drywall at walls and ceilings throughout per code;
- Attached garages; and
- All homes to meet ENERGYSTAR® requirements based upon a whole house calculation.

The following charts depict the inventory of new home construction. Unit types have been delineated by grade/bedroom count, façade style, neighborhood location, and quantity. The final mix of façade style and neighborhood location may be altered as necessary to achieve the final master design.

The following table illustrates the inventory at the end of the IDP:

TOTAL END STATE INVENTORY

LOCATION	GRADE	2BR	3BR	4BR+	TOTAL
Fort Benning:					
East Main Post (Historic)	O7+			2	2
East Main Post (Historic)	O6			26	26
East Main Post (Historic)	O4-O5		147	5	152
East Main Post (Historic)	O1-O3		182		182
East Main Post (Historic)	E9		30		30
East Main Post (Historic)	E7-E8				-
MacDonald Manor (Historic)	E1-E6	83			83
Indianhead (Historic)	E1-E6		18		18
Indianhead Terrace (New)	E1-E6		194	104	298
Indianhead Terrace (New)	E7-E8		8	6	14
Perkins Place (New)	O1-O3		64	50	114
Perkins Place (New)	O4-O5			42	42
Perkins Place (New)	E7-E8		42	30	72
Custer Terrace (New)	E1-E6		478	257	735
Custer Terrace (New)	E7-E8		22	15	37
McGraw Manor (New)	E1-E6		360	194	554
McGraw Manor (New)	E7-E8		27	20	47
Bouton / Davis Hill (New)	E1-E6		345	186	531
Bouton / Davis Hill (New)	E7-E8		30	22	52
Bouton / Davis Hill (Renovation)	E1-E6	52		28	80
Upatoi Terrace (New)	E1-E6		80	43	123
Upatoi Terrace (New)	E7-E8		8	7	15
Patton (New)	E1-E6		426	230	656
Patton (New)	E7-E8		86	62	148
Norton Court	E1-E6		112		112
FORT BENNING SUBTOTAL		**135**	**2,659**	**1,329**	**4,123**
Dahlonega:					
Dahlonega (Existing)	E1-E6	15	11	3	29
Dahlonega (Existing)	E7-E9		4	4	8
Dahlonega (Existing)	O1-O3	1		1	2
Dahlonega (Existing)	O4-O5			1	1
Dahlonega (New)	E1-E6		10	5	15
Dahlonega (New)	E7-E9		7	6	13
Dahlonega (New)	O1-O3		3	3	6
Dahlonega (New)	O4-O5			3	3
DAHLONEGA SUBTOTAL		**16**	**35**	**26**	**77**
Recap:					
Total Historic		83	377	33	493
Total New		-	2,190	1,285	3,475
Total non-replaced units		68	127	37	232
TOTAL		**151**	**2,694**	**1,355**	**4,200**

The following table illustrates the various housing style that will be built in each neighborhood.

Neighborhood	Housing Style
McGraw Manor	Colonial/Arts and Crafts
Custer Terrace	Colonial/Arts and Crafts
Upatoi Terrace	Colonial/Arts and Crafts
Davis Hill	Colonial/Arts and Crafts
Perkins Place	Mission
Indianhead	Mission
Patton	Colonial/Arts and Crafts
Dahlonega	Colonial/Arts and Crafts

The new houses will be characterized by:

- The equivalent of a Gold SPiRiT rating for residential development;
- Foyers with tiled floors and closets;
- ENERGYSTAR® appliances;
- Nine-foot high ceilings on first floor;
- Eat-in kitchen/breakfast bar;
- Corian or equal countertops;
- Microwave/range hood combination;
- Broom closet/pantry;
- Wider than normal stairwells to accommodate the frequent moves required of military families;
- Quality appliances, materials, systems and finishes;
- Quality vinyl windows
- Water conserving plumbing fixtures;
- Elongated water closets;
- Covered entries on many homes;
- Natural flow throughout living spaces;
- Kitchens with separate laundry rooms;
- Powder rooms on the first floor;
- Bedrooms that meet or exceed the RCI Standards for size;
- Double sink vanity in master bathroom;
- Walk-in closet in master bedroom;
- Closets that meet or exceed RCI standards;
- Two full bathrooms on the second floor and ½ bath on the ground floor;
- Designated trash can and recycling bin areas;
- Landscaped yards using sustainable design;
- Use of modern technologies and materials that meet state codes and standards;
- Smart wiring for Internet access and cable TV;
- Attached garages with automatic garage door opener; and

- Basements (where topography requires) both finished and unfinished permitting a fifth bedroom that will accommodate larger families or offer “bonus” space.

The new homes reflect increasingly refined features and architectural amenities inside and out that are appropriate to rank. Based on feedback during our design charettes, we added more upgrades for Senior Enlisted and Officers. Senior Enlisted and Officer homes will include the following upgrades above the high quality standard features, materials, and systems included in all Junior Enlisted homes:

- Garden tub in master bathroom;
- 42” tall wall cabinets in kitchen; and
- Upgraded first-floor flooring.

The following is a description of each of the new homes proposed for Fort Benning:

Unit Type	Paygrade	# of Bedrooms	Heated SF
Unit 101	E1-E6	3	1,631
Unit 102	E7-E8/O1-O3	3	1,741
Unit 201	E1-E6	3	1,631
Unit 202	E7-E8/O1-O3	3	1,741
Unit 301	E1-E6	3	1,693
Unit 302	E1-E6	4	1,941
Unit 303	E7-E8/O1-O3	3	1,770
Unit 304	E7-E8/O1-O3	4	2,012
Unit 501	E1-E6	3	1,703
Unit 402	E1-E6	4	1,943
Unit 403	E7-E8/O1-O3	3	1,780
Unit 501	04-05	4	2,136
Unit 601	All	3	1,880
Unit 602	All	4	2,164
Unit 701	All	5	2,703

The following pages display several of the proposed elevations and floor plans for Fort Benning.

Some of the New Housing Planned for Fort Benning

Unit 101A, E1 – E6 , 3 Bedroom:

Unit 304B, E7-E8/O1-O3, 4 Bedroom:

Unit 501C, O4-O5, 4 Bedroom:

4.2 Renovation Plans

The renovation units in Norton Court, Davis Hill, and Bouton Heights will require hazardous material abatement in the basements, kitchens, bathrooms, and mechanical closets—this process will commence prior to any remedial work. Additionally, renovated units in Noise Zone 2 will require noise attenuation materials to achieve attenuation goals. We have yet to determine the exact scope of attenuation but have included an allowance of $10,000 per home to reach the necessary noise reductions.

We plan the following interior renovation actions:

- Replace electrical and mechanical systems to comply with applicable current building codes;
- Replace mechanical equipment and ductwork to incorporate forced heat and air units;
- Replace plumbing fixtures and associated piping;
- Replace kitchen cabinetry and countertops;
- Replace outdated refrigerators, dishwashers, disposals, non-vented hoods, and ranges;
- Refinish interior walls with texture and new paint;
- Replace, refinish, or repair carpet, vinyl, and wood flooring as needed;
- Replace interior door and trim as needed;
- Replace windows as needed; and,
- Replace door hardware.

Exterior renovations will include:

- Replace 3 tab asphalt shingles;
- Patch and paint stucco;
- Replace aluminum siding locations with vinyl;
- Pressure wash existing brick;
- Add 48” wood fence with one gate to each back yard;
- Select grading to achieve proper drainage; and
- Patch and seal asphalt roadways within the neighborhood as needed.

4.3 Historic Housing

Preservation Requirements

All of the historic homes at Fort Benning (493 units) are eligible for listing on the National Register of Historic Places and are included in this property transfer and ground lease of the underlying land.

FBFC will retain all of these units and manage them as historic properties—272 of which will be renovated, as required, to add first floor powder rooms, upgrade kitchens, and improve outdated bathrooms. In view of the historic importance of these buildings, all additions, alterations or modifications by FBFC, its assignees or sub-lessees will comply with the guidelines of the Secretary of the Interior's Standards for Rehabilitation of Historic Properties and the Programmatic Agreement (PA) between Fort Benning and the Georgia State Historic Preservation Officer (SHPO). In order to facilitate the review and approval process, Clark Pinnacle shall abide by the regulations for the "Protection of Historic Properties" (36 CFR Part 800) and coordinate with the Fort Benning Cultural Resources Manager (CRM), in accordance with the procedures outlined in the PA, prior to finalization or implementation of conceptual designs for construction and rehabilitation. Guidance with respect to the preparation of required documentation will be provided by the Army, as the situation warrants.

The property manager will perform the routine maintenance and repair of the historic buildings and structures in accordance with the Ground Lease. Clark Pinnacle will maintain the documentation of completed maintenance and repair work.

All proposed work on historic properties at Fort Benning will be undertaken in accordance with the PA between Fort Benning and the Georgia SHPO as a part of the Section 106 consultation process as required by the National Historic Preservation Act of 1966, as amended.

Rehabilitation of Historic Housing

All rehabilitation of historic housing, including interior and exterior work, and additions to the houses, will be carried out in accordance with the PA. The final design of each unit type will be submitted by Clark Pinnacle to the CRM for review and comment.

Upon commencement of the IDP, Clark Pinnacle will begin preparation of construction documents for the rehabilitation of the historic housing at Fort Benning with the goal of both improving the historic housing and maintaining their historic character as required by the Army and the Department of the Interior, and as outlined in the PA with the Georgia SHPO. During the out-years of the project (years 11 to 50), substantial funding will be available to insure the proper care for the historic resources at Fort Benning.

Our design team and construction team has extensive experience in renovating historic residential structures in the United States. We bring this experience to the rehabilitation of the historic units at Fort Benning, by involving individuals in our organizations with residential historic rehabilitation experience on the Fort Benning project and by hiring necessary personnel that meet the requirements of 36CFR61, Appendix A, Professional Qualification Standards, as required.

Actions that do not require Consultation

The following undertakings do not require consultation with the SHPO, or the Advisory Council on Historic Preservation (Council) provided that: they are carried out in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Rehabilitation and, where applicable, the National Park Service Preservation Briefs:

- General operation and maintenance, demolition, and new construction outside the historic district, provided such construction is not visible from the Main Post Historic District and other NRHP-eligible historic properties;

- Temporary installation of facilities to provide access to historic properties by disabled persons provided these changes make no permanent modification to NRHP eligible or potentially eligible historic properties;

- Any change to the mechanical, electrical or plumbing systems and kitchen, bathroom, attic or basement spaces of historic properties, as long as such change does not affect any significant exterior or interior historic character-defining elements of the structure, that may include but are not limited to historic plaster walls and ceilings, historic floors, layout of floor plan, exterior finishes and trim, and window and door openings;

- General operation of, and routine and cyclical maintenance to, NRHP-eligible properties;

- Replacement in kind, matching the configuration, material, size, detail, color and construction of the historic fabric;

- Refinishing in kind, e.g. painting previously painted surfaces with the same or original materials and same or original color; and

- Energy conservation measures that are not visible or that do not alter, damage or detract from those qualities that make the property NRHP-eligible.

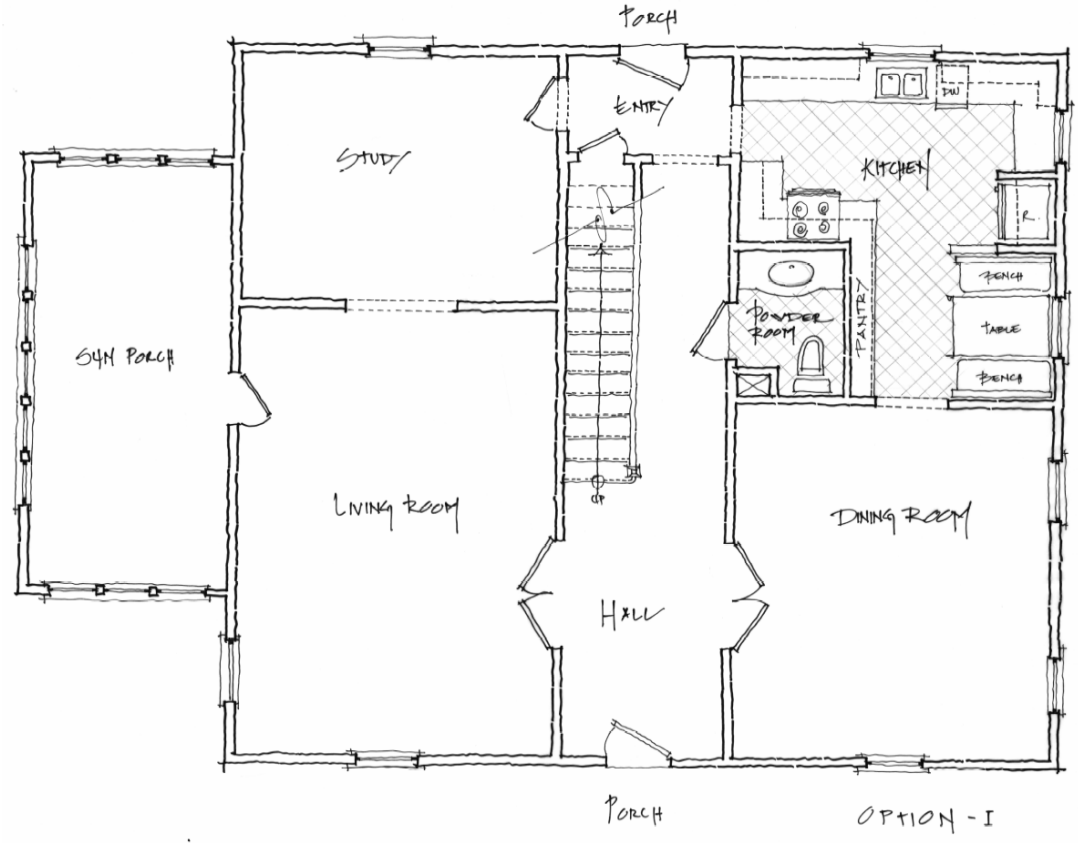
Fort Benning Historic Rehabilitation Plans

The extent of the rehabilitation work will be determined on a case-by case basis, with emphasis on updating kitchens and baths and adding first-floor powder rooms where necessary. Clark Pinnacle is assessing the costs of historic rehabilitation, and will begin rehabilitation work on the 272 houses that require upgrades as a part of the IDP. To the extent the cost of these rehabilitations and additions exceed that allowance, work will be performed during the out years. Some of the work indicated may be done in the out years of the project as funds are available.

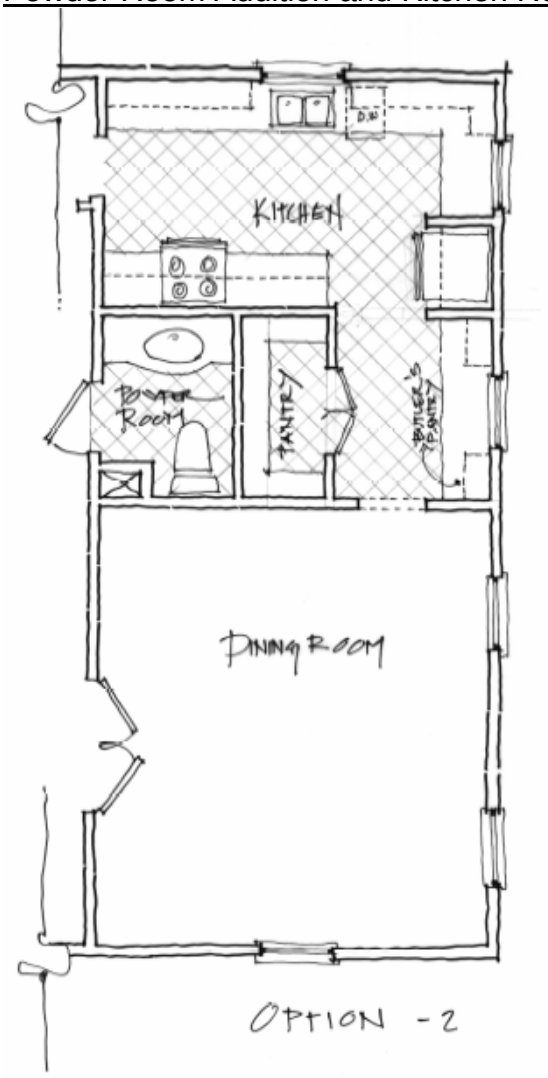
We will perform the following rehabilitation work in the typical historic home:

- Renovate bathrooms;
- Renovate kitchens;
- Add first floor powder room; and
- Mitigate basement flooding problems.

Powder Room Addition and Kitchen Renovation Option 1:



Powder Room Addition and Kitchen Renovation Option 2:



Archeological Resources

Although unlikely, it is possible for surface disturbing undertakings on the property included in the land leased from the Army to expose prehistoric or historic archeological features and deposits. Such archeological resources on Federal land are protected by Federal legislation. Primarily, these are Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations for the "Protection of Historic Properties" (36 CFR Part 800); the Archeological and Historic Preservation Act of 1975; the Archeological Resources Protection Act of 1979; and the Native American Graves Protection and Repatriation Act of 1990.

Therefore, should we discover archeological features or deposits during any construction, demolition, excavation, grading, landscaping, related actions or any other undertaking, FBFC shall suspend all activity that would affect the discovered archeology and shall immediately notify the Garrison Commander of Fort Benning. No activity shall be permitted that would affect the discovered archeological feature or deposit until an appropriate treatment plan can be developed and implemented in consultation with the Fort Benning CRM and other consulting parties, as required.

4.4 Ancillary Facilities

Building the infrastructure of new homes and streets is only the first step in the transformation of Fort Benning family housing. Adding the right mix and number of amenities is a critical second step to creating great communities.

Amenities at Fort Benning will include new tot lots, soccer fields, basketball courts, volleyball courts, picnic shelters, walking/jogging trails, four Village Centers, one Neighborhood Center, one Welcome center, six swimming pools, and two Cabanas.

The amenities are well distributed throughout Fort Benning, such that the neighborhoods depend on each other to support the villages' needs. All new fitness courts and playing fields will be constructed around existing and new neighborhood and village centers. Play fields, of different sizes (small, medium and large), allow enjoyment for all age groups. We have also developed a system of sidewalks and street access within the boundary of our communities for jogging, biking and fitness. These support facilities are important to ensure interaction between the residents.

The chart below illustrates the proposed number of community facilities.

NEIGHBORHOOD	HOMES	VILLAGE CENTER (6000SF)	WELCOME CENTER	NEIGHBORHOOD CENTER (3600SF)	CABANA	POOL	TOT LOTS	BASKETBALL	PLAYFIELDS
Indianhead	312			1		1	2	1	2
Perkins Place	228		1		1	1	6	1	
Custer Terrace	772	1				*	29	8	3
McGraw Manor	601	1				1	23	7	2
Bouton Heights / Davis Hill	663	1				1	24	8	3
Upatoi Terrace	138						3	1	0
Patton Place (New)	804	1				1	21	9	4
Historic Homes	493								
Norton Court	112						2		
BENNING SUBTOTAL	**4,123**	**4**	**1**	**1**	**1**	**5**	**110****	**35**	**14**
Dahlonega	77				1	1	1	1	
TOTAL	**4,200**	**4**	**1**	**1**	**2**	**6**	**111**	**36**	**14**

* Existing Pool

** Re-use existing Tot Lot equipment from 60 new Tot Lots

Village Center Program

In planning the new communities with the participation of the current Fort Benning residents, it became apparent that there was a need for additional family oriented recreation facilities to serve the Fort Benning residential community. The existing Morale, Welfare and Recreation (MWR) facilities on Fort Benning are predominately on Main Post, and there is a need for smaller facilities located in closer proximity to the neighborhoods. These new facilities will offer a wide variety of activities, not just for adjacent residents, but for all Fort Benning military families thus becoming a focal point for the community. There will be four Village Centers, each 6,000 SF, located at Custer Terrace, McGraw Manor, Bouton Heights/Davis Hill, and Patton Village. In addition, Indianhead Terrace will receive a 3,600 SF Neighborhood Center that will be on a slightly smaller scale than the Village Center. The redeveloped Perkins Place neighborhood will include a Cabana and pool for the neighborhood and also the Welcome Center that will serve as the starting point for all new families wishing to live in family housing. At Porter Village, we will construct a Cabana to accompany a new pool

for the 77 families. These centers not only offer great recreational facilities and activities, but will also serve as a gathering place for families with many new amenities that will expand the resident's opportunities to interact with their neighbors year round.

We will build, equip and maintain these new Village Centers. Here, the residents will have free access to a variety of amenities encouraging physical fitness for each family. Within walking distance from the homes in each Village, the Centers will be places where the entire village can interact and interrelate, encouraging cohesiveness and familiarity within the community. In this way, families and individuals would have an opportunity to get to know one another outside of work or school.

The new Village Center shall consist of a one story structure with the following basic design criterion:

- Type 5A (1 hour rated) construction;
- Conventional slab on grade;
- Wood framed walls and floors as required by code; and
- ½" and 5/8" gypsum drywall at walls and ceilings throughout per code.

These facilities will have an outdoor swimming pool, dressing rooms, meeting rooms, space for a coffee shop, computer center, flexible spaces for classes and social gatherings, kitchen, exercise room, and management offices.

Village Center Program

Pool
Seven total swimming pools (six new and one renovation) will provide the village residents a place to relax during the sweltering Georgia summer.

Exercise Room
This space will accommodate work-out machines, such as rowing and bike machines, as well as free weights, state of the art strength machines, treadmills, and stair masters. The floors of this room will be designed to withstand high impacts, and the walls will have mirrors and an acoustic absorbing material.

Child Play Area
A small space adjacent to the Exercise Room will provide a place for young children while their parents exercise.

Shower/Restrooms
Male and female shower/restrooms, designed to meet local codes, are adjacent to the pool deck.

Kitchen
A kitchenette within the facility can be used to support social functions.

Party Room
Two medium-sized rooms can be combined to make a large multipurpose room.

Computer Center
The computer center will have a computer, fax machine, and access to high speed Internet so that residents can stay in touch with friends and family.

Game Room/Teen Hangout
This area will be used by the teenagers to play games and socialize.

Circulation/Control Desk
A central desk used for check-in and general information will be located at the front entry.

Offices
Offices for the management of the facility will be located near the front entry along with a circulation/control desk.

Circulation / Mechanical
Additional circulation and mechanical space will occupy the balance of the building

This 6,000 square foot facility will be an important Center for year-round activities for all ages. In providing this community amenity, Clark Pinnacle anticipates the opportunity to substantially enhance the quality of life for the military families living at Fort Benning.

Neighborhood Center Program

CLARK PINNACLE will staff and operate one new Neighborhood Center at Indianhead Terrace.

The Neighborhood Center will be a one-story building consisting of the following basic design criterion:

- Type 5B (non rated) construction;
- Conventional slab on grade;
- Wood framed walls;
- Prefabricated roof trusses; and
- ½" gypsum drywall at walls and ceilings throughout per code.

The Neighborhood Center will include:

- Multipurpose meeting rooms;
- Exercise room;
- Child play area;
- Computer center;
- Bathrooms;

- Warming kitchen; and
- Property management office.

The following depicts the elevation rendering and floor plan for the Neighborhood Center at Indianhead Terrace.

Cabana Program

We will build two (2) new cabanas to support neighborhood pool facilities in Perkins Place and Porter Village. The Cabanas will include changing rooms and showers.

Welcome Center Program

We will build a new Welcome Center in Perkins Place. This will provide a focal point for all the activities that will be associated with the privatization of family housing during the IDP and throughout the partnership. The Welcome Center will be located in an area of high visibility and exposure to those who live and work at Fort Benning.

The primary purpose of the Welcome Center is to give those military families who are moving to Fort Benning a “first look” at the family housing areas and an overview of all Post facilities. As new families arrive at Fort Benning, they will be directed to the Welcome Center where our team of professionally trained Placement Specialists will greet them. We will then give the residents an intensive orientation about their new home, a film about the history of Fort Benning and a description of all the activities they will be able to enjoy while they live in Fort Benning’s revitalized communities.

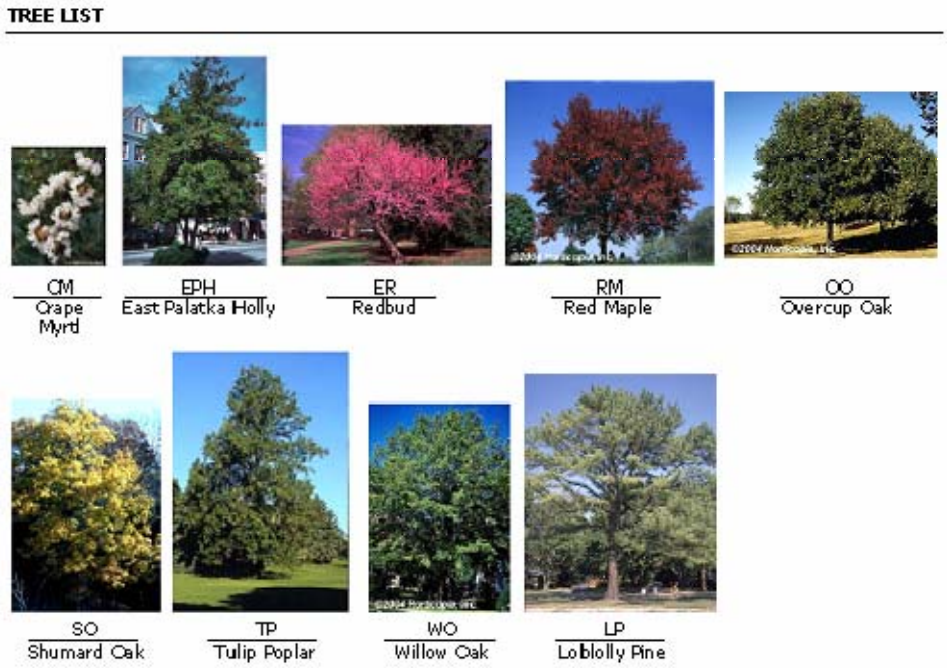
4.5 Open Space and Landscaping Plan

We have tailored our landscaping plan to the climate and region of Fort Benning. This specifically tailored landscaping plan identifies different landscaping techniques for the housing, streetscape, and Village Centers.

The following diagrams outline the landscape choices for shrubbery, trees, and groundcover and perennials.

We will use the following shrubs throughout our neighborhoods:

The following set of trees will create shaded streetscapes and front yards over the years:



These groundcover and perennials will brighten up the landscaping near the homes and amenity buildings:

Landscaping for New Homes

Since the architectural design of each home type is unique, the landscape design treatment will also be unique and enhance the architectural features of each home. Each home will have outdoor living spaces as well as individual garden areas so that the residents will have an opportunity to add their own gardening personality to the landscape. We will plant foundation plantings at least 2' from each building. Lawns will be established in phases. Front yards will receive sod, while less visible side yards and back yards will be sprigged. We have chosen Bermuda turf for its drought tolerance and its durability. A xeriscape approach will stress the need for water conservation in the landscape. With this approach in mind, the plant material chosen, once established, requires little water. We will amend all planting beds to conserve water and mulch with a 3" layer of hardwood mulch to prevent water evaporation. The plant palettes chosen for each housing unit where chosen because of their relatively low maintenance requirements.

The following table outlines where we will use the shrubs, trees, and groundcover and perennials that were listed above. These will be used throughout the housing for single family detached and attached and also courtyard homes.

SHRUB LIST

UNIT 1	UNIT 2	UNIT 3	SYM	COMMON NAME	BOTANICAL NAME	SIZE	CONDITION	REMARKS
17			DYH	DWARF YAUPON HOLLY	ILEX VOMITORIA 'NANA'	12-18"	CONT.	FULL IN CONTAINER
8		12	IH	INDIAN HAWTHORN	RAPHIOLEPSIS INDICA 'CLARA'	12-18"	CONT.	FULL IN CONTAINER
		28	HH	HELLER HOLLY	ILEX CRENATA 'HELLERI'	12-18"	CONT.	FULL IN CONTAINER
	10	20	CH	CARISSA HOLLY	ILEX CORNUTA 'CARISSA'	12-18"	CONT.	FULL IN CONTAINER
		6	DL	DWARF LOREPETALLUM	LOREPETALLUM CHINENSE 'RUBY'	12-18"	CONT.	FULL IN CONTAINER
	6		VS	VIRGINA SWEET SPIRE	ITEA VIRGINICA	12-18"	CONT.	FULL IN CONTAINER
		2	PJ	PARSON'S JUNIPER	JUNIPERUS PROCUMBENS	12-18"	CONT.	FULL IN CONTAINER
2			TV	TINUS VIBURNUM	VIBURNUM TINUS	28-30"	CONT.	FULL IN CONTAINER
	1		CL	CURLEY LEAF LIGUSTRUM	LIGUSTRUM JAPONICUM 'RECURVIFOLIUM'	28-30"	CONT.	FULL IN CONTAINER
2		6	DBH	DWARF BURFORD HOLLY	ILEX CORNUTA 'BURFORD NANA'	28-30"	CONT.	FULL IN CONTAINER
		4	JC	JAPANESE CLEYERA	TERNSTROEMIA GYMNANTHERS	28-30"	CONT.	FULL IN CONTAINER
	1		TO	TEA OLIVE	OSMANTHUS FRAGRANS	28-30"	CONT.	FULL IN CONTAINER

TREE LIST

UNIT 1	UNIT 2	UNIT 3	SYM	COMMON NAME	BOTANICAL NAME	HEIGHT	CONDITION	REMARKS
2			CM	CRAPE MYRTLE	LAGERSTROEMIA INDICA 'NATCHEZ'	6-8'	CONT.	MULTI-TRUNK SPECIMEN
		1	TP	TULIP POPULAR	LIRIODENDRON TULIPYERA	8-10'	CONT.	STRAIGHT TRUNK SPECIMEN
	1		ER	EASTERN REDBUD	CERCIS CANADENSIS	8-10'	CONT.	STRAIGHT TRUNK SPECIMEN
		2	PJ	EASTERN REDBUD	CERCIS CANADENSIS	8-10'	CONT.	STRAIGHT TRUNK SPECIMEN

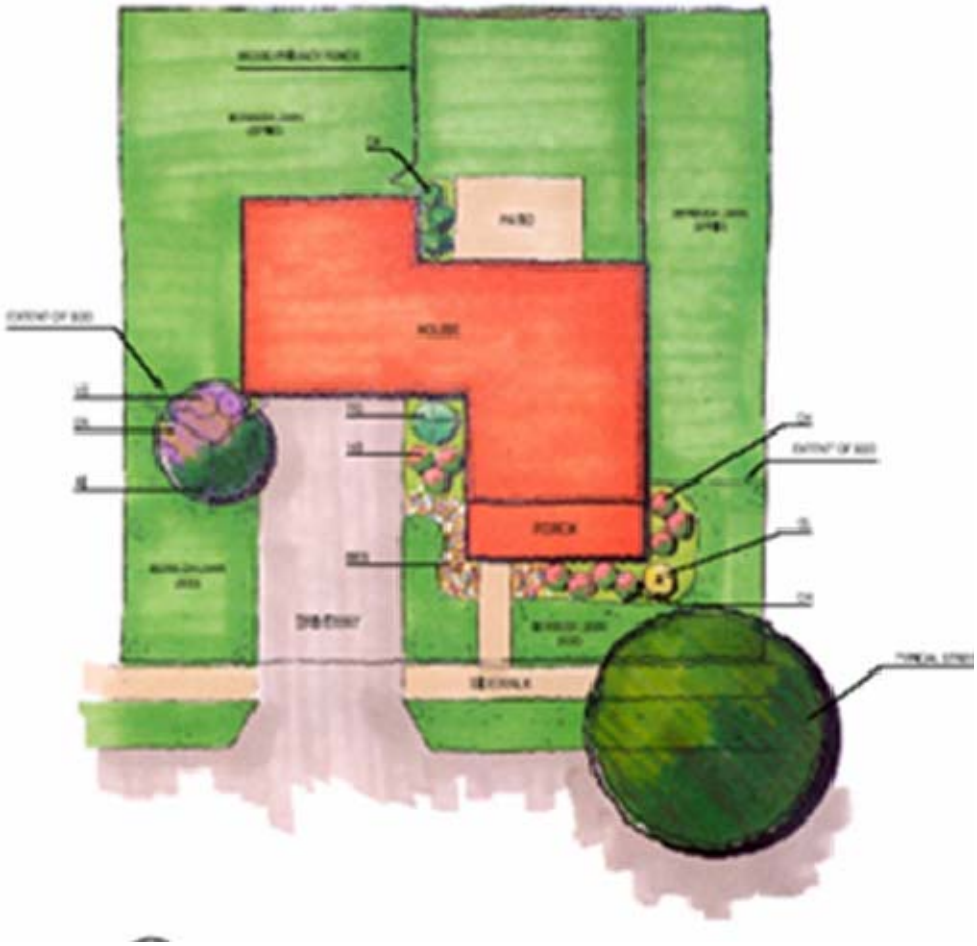
GROUNDCOVER & PERENNIALS

UNIT 1	UNIT 2	UNIT 3	SYM	COMMON NAME	BOTANICAL NAME	HEIGHT	CONDITION	REMARKS
	35		BBL	BIG BLUE LIRIOPE	LIRIOPE MUSCARI 'BIG BLUE'	8-10"	CONT.	FULL IN CONTAINER
50			BES	BLACK-EYED SUSAN	RUDBECKIA FULGIDA 'GOLDSTRUM'	8-10"	CONT.	FULL IN CONTAINER
		10	DAY	DAYLILY	HEMEROCALLIS "HAPPY RETURNS"	8-10"	CONT.	FULL IN CONTAINER
30	15	40	AI	AFRICAN IRIS	DIETES SPECIES	8-10"	CONT.	FULL IN CONTAINER
20		45	GL	GOLD LANTANA	LANTANA X 'NEW GOLD'	8-10"	CONT.	FULL IN CONTAINER
				BERMUDA GRASS (SOD)			ROLLS	WEED FREE
				BERMUDA GRASS (SPRIG)			PLUGS	WEED FREE

Single family Homes

The landscape treatment for each single family home will include perennials, ground covers, various deciduous and evergreen shrubs, and ornamental trees. Each home will receive a foundation planting along the front façade. This will enhance the streetscape experience. The plant palette chosen offers four season appeal through the bloom cycles and fragrance of the plants. Each home will receive one ornamental tree. Front yards will receive sod,. All other lawn spaces are sprigged with Bermuda plugs.

The following picture shows the landscaping for a typical single family home:

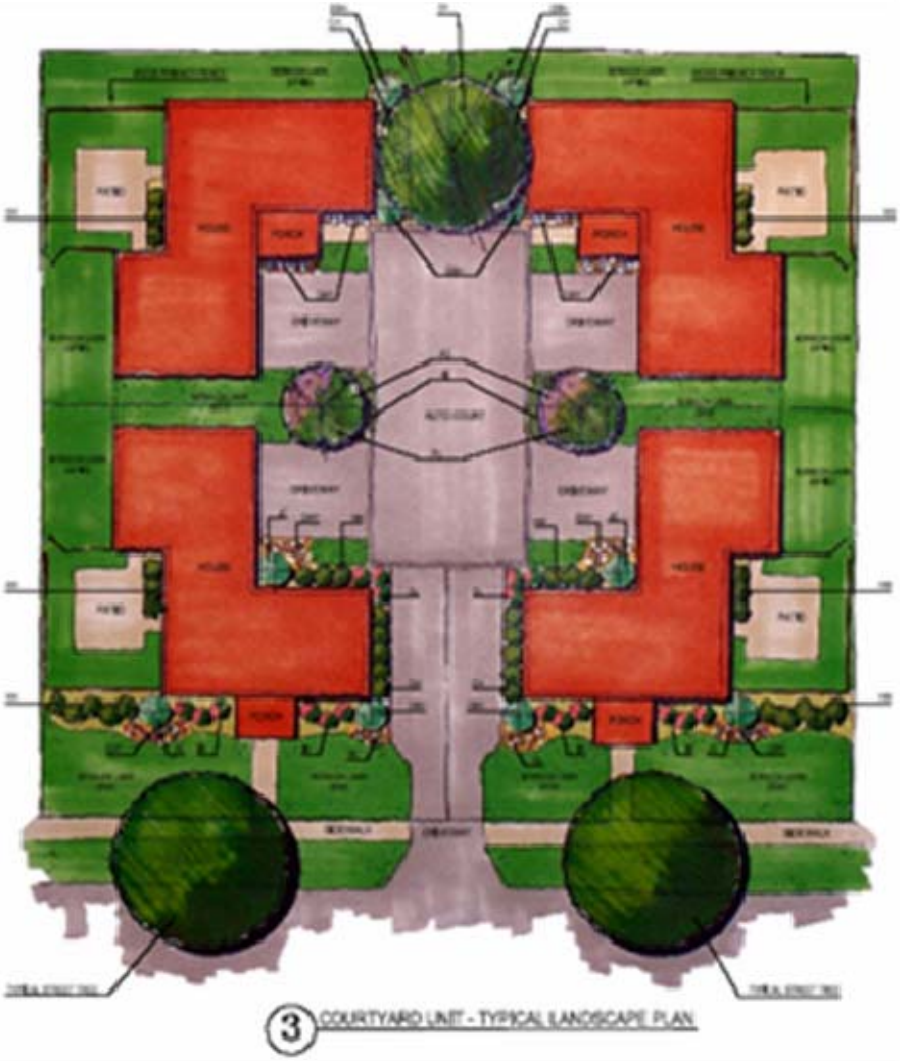


Single Family Attached Homes

The landscape treatment for each single family attached home will include perennials, ground covers, various deciduous and evergreen shrubs, and ornamental trees. Each home will receive a foundation planting along the front façade. This will, again, enhance the streetscape experience. The plant palette chosen offers four season appeal through the bloom cycles and fragrance of the plants. We will plant ornamental trees near the entrance to each home to provide both shade and color. Front yards will receive sod. All other lawn spaces are sprigged with Bermuda plugs. The following diagram depicts the typical landscaping for a single family attached home.

Courtyard Homes

The landscape treatment for each single family courtyard home will include perennials, ground covers, various deciduous and evergreen shrubs, and ornamental trees. Each home fronting the street will receive a foundation planting along the front façade. This will enhance the streetscape experience. The rear courtyard home will receive perennial beds at the front entrance to each home. They will also receive foundation plantings along one side of each house. A canopy tree will separate these two houses. An ornamental tree with shrubs and perennials serves to separate the front homes from the rear homes and provide an added sense of privacy to each family. The plant palette chosen offers four season appeal through the bloom cycles and fragrance of the plants. Each home will receive one ornamental tree. Front yards will receive sod. All other lawn spaces are sprigged with Bermuda plugs.



Streetscape Landscaping

The Fort Benning community is comprised of several unique villages. Typically, each neighborhood will have its own identity reflected in the individual street tree palette chosen for that neighborhood. We will plant street trees in the landscape strip between the street curb and the sidewalk. The hierarchy of streets will be enhanced by the type and quantity of trees planted. For instance, streetscape trees shown on these design development plans are Oak trees. The major arterial roads on this plan will be Willow Oaks. We will plant them approximately 75' from each other on both sides of the road. We will plant secondary roads with Shumard Oaks. Again, they will be planted approximately 75' apart, but on alternating sides of the road. Tertiary roads will be planted in the same manner as the secondary roads, but with Overcup Oaks. We chose these Oak trees because they are native to this region creating a link to the natural flora of the Fort Benning area. All street right-of-ways will be fully sodded with Bermuda grass. As shown on these plans, the entrances to the subdivisions will receive a vegetative entry feature of a combination of trees, shrubs, and perennials. On the streetscape plan shown, another vegetative feature was created in the circular node near the Village Center. Again, a combination of canopy trees, ornamental trees, shrubs, groundcovers, and perennials was used. As with the entry planting, this planting will have four season color appeal. The following diagram further describes the trees and ground cover we will use.

TREE LIST

SYM	COMMON NAME	BOTANICAL NAME	SIZE	CONDITION	REMARKS REMARKS
WO	WILLOW OAK	QUERCUS PHELLOS	10"-12"	CONT.	MULTI-TRUNK SPECIMEN
LP	LOBLOLLY PINE	PINUS TAEDA	8-10'	CONT.	STRAIGHT TRUNK SPECIMEN
SO	SHUMARD OAK	QUERCUS SHUMARDII	6-8'	CONT.	STRAIGHT TRUNK SPECIMEN
CM	CRAPE MYRTLE	LAGERSTROEMIA INDICA 'NATCHEZ'	6-8'	CONT.	STRAIGHT TRUNK SPECIMEN
RJ	EASTERN REDBUD	CERCIS CANADENSIS	8-10'	CONT.	STRAIGHT TRUNK SPECIMEN
MAG	SOUTHERN MAGNOLIA	MAGNOLIA GRANDIFLORS	8-10'	CONT.	FULL TO GROUND

GROUND COVER

SYM	COMMON NAME	BOTANICAL NAME	SIZE	CONDITION	REMARKS
DAY	DAYLILY	HEMEROCALLIS 'HAPPY RETURNS'	8-10"	CONT.	FULL IN CONTAINER
	BERMUDA GRASS (SOD)			ROLLS	WEED FREE
	BERMUDA GRASS (SEED)			BAGS	WEED FREE

The following image shows what a sample streetscape in Patton Village would look like with a mixture of these trees and ground cover described above.

Village Center Master Plan

The Village Center is the social hub of the neighborhood and provides several recreational opportunities. First of all, a four foot deep swimming pool will service the neighborhood. With a wide range of residents, we have integrated a wide variety of activities such as water basketball, water volleyball, and a lap pool into the design of the pool. We have designed the pool decking to accommodate several lounge areas for the residents to relax. Planting islands will help break up the expansive pool decking, thus softening the feel of the pool area. The pool area is enclosed by an ornamental fence with entry access confined to two locations. Second, we have located three basketball courts at the typical Village Center. Benches eight feet long have been located between the courts for spectators. Third, we have incorporated a series of three tot lots into the Village Center fabric to provide outdoor play for children ages two to five. These tot lots are connected by a five foot sidewalk, and each tot lot has at least two benches for parents to observe their children. We will choose the tot lot structures to provide a well rounded play experience for the children. Large open lawn spaces will provide the

space for open play for children. Even though the village layout encourages pedestrian circulation, we have provided parking for eight vehicles.

As with the individual home landscape designs, the village center landscape design will include perennials, ground covers, various deciduous and evergreen shrubs, and ornamental and canopy trees. Flowering shrubs and perennials are located so as to provide color throughout the landscape. Flowering trees provide focal points and define spaces. The pool area is enclosed by tall shrubs creating a hedge for privacy. Shade trees are located so as to allow shade along the sidewalk and at seating areas. The following lists the trees, shrubs, and groundcover and perennials that will landscape the village centers.

TREE LIST

SYM	COMMON NAME	BOTANICAL NAME	HEIGHT	CONDITION	REMARKS
CM	CRAPE MYRTLE	LAGERSTROEMIA INDICA 'NATCHEZ'	6-8'	CONT.	MULTI-TRUNK SPECIMEN
RM	RED MAPLE	ACER RUBRUM	8-10'	CONT.	STRAIGHT LEADER: SPECIMAN
EPH	EAST PALATKA HOLLY	ILEX X 'EAST PALATKA'	6-8'	CONT.	STRAIGHT LEADER: SPECIMAN

SHRUB LIST

SYM	COMMON NAME	BOTANICAL NAME	SIZE	CONDITION	REMARKS
DYH	DWARF YAUPON HOLLY	ILEX VOMITORIA 'NANA'	12-18"	CONT.	FULL IN CONTAINER
IH	INDIAN HAWTHORN	RAPHIOLEPSIS INDICA 'CLARA'	12-18"	CONT.	FULL IN CONTAINER
NRSH	+NELLIE R. STEVENS HOLLY	ILEX X 'NELLIE R STEVENS'	4-6'	CONT.	FULL IN CONTAINER
CH	CARISSA HOLLY	ILEX CORNUTA 'CARISSA'	12-18"	CONT.	FULL IN CONTAINER
DL	DWARF LOREPETALLUM	LOREPETALLUM CHINENSE 'RUBY'	12-18"	CONT.	FULL IN CONTAINER
SV	SANDANKWA VIBURNUM	VIBURNUM SUSPENSUM	28-30"	CONT.	FULL IN CONTAINER
KR	KNOCKOUT ROSE	ROSA POLYANTHA 'KNOCKOUT'	6-8'	CONT.	FULL IN CONTAINER
DBH	DWARF BURFORD HOLLY	ILEX CORNUTA 'BURFORD NANA'	28-30"	CONT.	FULL IN CONTAINER
JC	JAPANESE CLEYERA	TERNSTROEMIA GYMNANTHERS	28-30"	CONT.	FULL IN CONTAINER

GROUNDCOVER & PERENNIALS

SYM	COMMON NAME	BOTANICAL NAME	HEIGHT	CONDITION	REMARKS
DAY	DAYLILY	HEMEROCALLIS 'HAPPY RETURNS'	8-10"	CONT.	FULL IN CONTAINER
BES	BLACK-EYED SUSAN	RUDBECKIA FULGIDA 'GOLDSTRUM'	8-10"	CONT.	FULL IN CONTAINER
DAY	DAYLILY	HEMEROCALLIS 'HAPPY RETURNS'	8-10"	CONT.	FULL IN CONTAINER
AI	AFRICAN IRIS	DIETES SPECIES	8-10"	CONT.	FULL IN CONTAINER
GL	GOLD LANTANA	LANTANA X 'NEW GOLD'	8-10"	CONT.	FULL IN CONTAINER
	BERMUDA GRASS ('SOD)			ROLLS	WEED FREE
	BERMUDA GRASS (SIPRIG)			PLUGS	WEED FREE

The following image demonstrates the landscaping found in Patton Village complete with pool, basketball courts, tot lots, and open play areas.

APPENDIX B

Agency Correspondence

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DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY INFANTRY CENTER
FORT BENNING, GEORGIA 31905-5000

13 July 2004

REPLY TO
ATTENTION OF

Residential Communities Initiative

Dr. W. Ray Luce
Deputy State Historic Preservation Officer
Department of Natural Resources
Historic Preservation Division
47 Trinity Avenue, SW, Suite 414-H
Atlanta, GA 30334

Dear Dr. Luce:

The purpose of this letter is to introduce an Army initiative, Residential Communities Initiative (RCI), whereby the United States Army will be privatizing family housing at various military installations throughout the United States. Fort Benning is scheduled to undergo privatization in fiscal year 2005.

As part of the process, Fort Benning will prepare an Environment Baseline Study and an Environmental Assessment (EA) of the properties affected. The purpose of these studies is to identify potential effects on environmental resources that may be caused by the U.S. Army's privatization initiative. The family housing areas to be included in this initiative are portrayed on the enclosed map. The Army proposes to grant leases for all the land within the RCI footprint. The Army, however, would retain those areas within the RCI footprint that are necessary to Army operations and maintenance. Changes in the housing would be achieved
through a combination of the demolition of old units and the construction of new units. In addition, renovation and modernization work would bring units, not slated for demolition, up to Army standards of acceptability.

Fort Benning proposes to transfer responsibility for providing housing and ancillary supporting facilities to a Development Entity, a limited liability company (LLC) composed of the Army and a future Development Partner. Fort Benning would convey all on-post military housing units and selected ancillary supporting facilities and grant a 50-year ground lease for areas on which the housing and facilities are located to the future Development Partner. Fort Benning would also lease additional acreage for the Development Partner's use to construct new housing and too operate ancillary supporting facilities. The Army would convey this property with encumbrances, notices, and requirements obligating the Development Partner to Partner to maintain historic properties and will impose a requirement for consultation with the SHPO prior to any actions affecting such properties. The Development Partner would operate and maintain for 50 years
all existing and new family housing and ancillary supporting facilities, including associated parking lots and sidewalks, in accordance with the quality standards established in the Community Development Management Plan (CDMP). At Fort Benning's option, the Installation my extend the period of operation and maintenance and the leases of land supporting family housing for and additional 25 years.

Construction, demolition, neighborhood extension, and/or renovation is planned for a number of housing communities. At Table 1 is a listing of existing communities. The developer selected by the Army and Fort Benning would be expected to improve the appearance and functions of the existing residential communities, while preserving and protecting historic properties as well as meeting environmental stewardship responsibilities and mitigating any adverse impacts. In the event that any historical or archeological items would be discovered, the Development Partner would be required immediately to notify the Garrison Commander or his or her designated representative and protect the site and the material from further disturbance until the Garrison Commander or designated representative provided clearance to proceed.

Table 1
Fort Benning Housing Area Information

Neighborhood	Grade	No. Units	Description
Indianhead Terrace	E1 - E6	454	3 & 4 bedrooms
Norton Court	O1 - O3	112	3 bedrooms
McDonald Manor	E1 - E6	83	2 bedrooms
East Main Post	Officers-CSM's	392	3 & 4 bedrooms
Perkins Place	O1 - O3	180	3 & 4 bedrooms
Upatoi Terrace	E1 - E6	150	2 & 3 bedrooms
Custer Terrace	E1 - E6	872	2 & 3 bedrooms
McGraw Manor	E1 - E6	952	3 & 4 bedrooms
Bouten Hts/Davis Hills	E1 - E8	804	4 & 5 bedrooms
Porter Village	All Ranks	40	2,3,4,&5 bedrooms

The Fort Benning Main Post Historic District (MPHD) that is eligible for the National Register of Historic Places is included in the housing footprint to be transferred to the Development Entity. The MPHD includes 493 housing units and associated structures and landscape features that are contributing properties to the overall significance of the MPHD. The construction dates for those units range from 1918 to 1935. Refer to the attached map for the housing footprint.

There are 1201 housing units, two of which are scheduled for demolition, that are currently covered by the Program Comments for Capehart and Wherry Era Army Family Housing and Associated Structures and Landscape Features (1949-1963). The Program Comment meets Section 106 compliance for these housing units on actions including: maintenance and repair; rehabilitation; layaway and mothballing; renovation; demolition; demolition and replacement; and transfer, sale, or lease out of Federal control.

The EA will be prepared pursuant to the National Environmental Policy Act (NEPA) and implementing regulations of the Council of Environmental Quality. In accordance with the NEPA, an evaluation of the potential environmental impacts (both positive and negative) associated with implementing the Army's proposed action on the existing resources at Fort Benning and within the study area is required. The EA will assess effects of the transfer of housing, and the leasing of underlying property. No property transfer will occur until SHPO coordination is completed. The No Action alternative will also be identified and evaluated, as required.

Under the process established by the NEPA, Fort Benning will provide for participation by members of the public and private sectors to provide input to the Army concerning potential environmental issues associated with implementing the proposed action. Participation includes response to this letter of notification, and comments that you or other interested parties of stakeholders may submit regarding the Draft EA.

If you have any comments on the proposed action, written comments should be sent to:

Commander
Attn: DPW, Historic Architect
Fort Benning, GA 31905

Thank you for your assistance. If you have any questions, or require additional information, please call either Larry Jones, Historic Architect, at 545-1471 or Ron Smith, RCI Program Manager, at 545-9843.

1 Encl
Overall RCI Footprint Map

RICARDO R. RIERA
Colonel, U.S. Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY INFANTRY CENTER
FORT BENNING, GEORGIA 31905-5000

8 August 2004

REPLY TO
ATTENTION OF

Residential Communities Initiative

U.S. Fish and Wildlife Service
North Georgia Office
247 Sough Milledge Avenue
Athens, GA 30605

Dear Sir/Madame:

The U.S. Army is preparing an Environmental Assessment for the implementation of the Residential Communities Initiative (RCI) Program at Fort Benning, GA. Fort Benning is located 90 minutes south of Atlanta via I-185.

The purpose of the EA is to discuss the potential effects on environmental resources associated with the RCI program, which will privatize the renovation, construction and management of housing facilities at Fort Benning. The sizes, configurations, safety, and condition of existing installation housing units are substantially below the Army's standards of acceptability. Under the proposed action, family housing would be brought up to acceptable standards through renovation or demolition of old units and construction of new units. To exercise ownership and control over the housing, the Army will convey present family housing and execute a land lease to the Development Partner for a period of 50 years.

Family housing currently consists of 4,039 housing units occupying approximately 1416 acres. An additional 499 acres will be leased to the Development Partner to accommodate proposed construction of new housing units. The initial development will be implemented over a 10-year period beginning in 2006. For quick reference, the project areas can be found on the attacted location map of Fort Benning.

In accordance with the National Environmental Policy act (NEPA) of 1969, the EA will evaluate the potential environment impacts (both positive and negative) associated with implementing this action. To assist in the evaluation, request your input concerning this action with regard to your organization's area of expertise and specific areas of concern under your cognizance. Please submit any comments of concerns about the project by 1 October 2004. Address them to Ron Smith, ATZB-PWR, 280 Transportation St, Fort Benning, GA 31905. Your comments/concerns will be addressed in the Environmental Assessment, scheduled to be available for public comment in late 2004.

Your prompt consideration and response is greatly appreciated. If you need additional information please contact Mr. Ron Smith, (706) 545-9843.

1 Encl
Overall RCI Footprint Map

RICARDO R. RIERA
Colonel, U.S. Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY INFANTRY CENTER
FORT BENNING, GEORGIA 31905-5000

REPLY TO
ATTENTION OF

11 February 2005

Residential Communities Initiative

U.S. Fish and Wildlife Service North Georgia Office
105 West Park Drive
Athens, GA 30606

Dear Sir/Madame:

The U.S. Army is preparing an Environmental Assessment (EA) for the implementation of the Residential Communities Initiative (RCI) Program at Porter Village, Dahlonega, GA. Porter Village is located in Dahlonega, GA, 65 miles north of Atlanta. Porter Village provides housing for Soldiers and their families assigned to the U.S. Army training base, Camp Merrill.

The purpose of the EA is to discuss the potential effects on environmental resources associated with the RCI program, which will privatize the renovation, construction, and management of housing facilities at Porter Village.

Family housing at Porter Village currently consists of 40 housing units occupying approximately 95 acres. The Partner will build an additional 37 houses on the current 95 acres. The initial development will be implemented over a 10-year period beginning in December 2005. For quick reference, the project area may be found on the attached location map of Porter Village.

Under the proposed action, existing family housing units will be maintained to acceptable standards and the new units constructed on the present site. To enable the developer to exercise ownership and control over the housing, the Army will convey current family housing and execute a land lease to the Development Partner for a period of 50 years.

In accordance with the National Environmental Policy Act (NEPA) of 1969, the EA will evaluate the potential environmental impacts (both positive and negative) associated with implementing this action. To assist in the evaluation, request your input concerning this action with regard to your organization's area of expertise and specific areas of concern under your cognizance. Please submit any comments of concerns about the project by 7 March 2005. Please address them to Mr. James R. Smith, ATZB-PWR, Building 280 Transportation Street, Fort Benning, GA 31905. Your comments/ concerns will be incorporated in the Environmental Assessment for this project.

2 Encl
Location Map for Porter Village
Footprint Map of Porter Village

RICARDO R. RIERA
Colonel, U.S. Army
Garrison Commander

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY INFANTRY CENTER
FORT BENNING, GEORGIA 31905-5000

REPLY TO ATTENTION OF

RECEIVED
FEB 22 2005
ATHENS, GA

11 Februa[illegible] FILE

2/25/05 Requested copies of maps

Residential Communities Initiative

U.S. Fish and Wildlife Service North Georgia Office
105 West Park Drive
Athens, GA 30606

Dear Sir/Madame:

The U.S. Army is preparing an Environmental Assessment (EA) for the implementation of the Residential Communities Initiative (RCI) Program at Porter Village, Dahlonega, GA. Porter Village is located in Dahlonega, GA, 65 miles north of Atlanta. Porter Village provides housing for Soldiers and their families assigned to the U.S. Army training base, Camp Merrill.

The purpose of the EA is to discuss the potential effects on environmental resources associated with the RCI program, which will privatize the renovation, construction, and management of housing facilities at Porter Village.

Family housing at Porter Village currently consists of 40 housing units occupying approximately 95 acres. The Partner will build an additional 37 houses on the current 95 acres. The initial development will be implemented over a 10-year period beginning in December 2005. For quick reference, the project area may be found on the attached location map of Porter Village.

Under the proposed action, existing family housing units will be maintained to acceptable standards and the new units constructed on the present site. To enable the developer to exercise ownership and control over the housing, the Army will convey current family housing and execute a land lease to the Development Partner for a period of 50 years.

In accordance with the National Environmental Policy Act (NEPA) of 1969, the EA will evaluate the potential environmental impacts (both positive and negative) associated with implementing this action. To assist in the evaluation, request your input concerning this action with regard to your organization's area of expertise and specific areas of concern under your cognizance. Please submit any comments of concerns about the project by 7 March 2005. Please address them to Mr. James R. Smith, ATZB-PWR, Building 280 Transportation Street, Fort Benning, GA 31905. Your comments/ concerns will be incorporated in the Environmental Assessment for this project.

2 Encl
Location Map for Porter Village
Footprint Map of Porter Village

RICARDO R. [illegible]
Colonel, U.S. Army
Garrison Commander

Yahoola and Ward Creeks

FAX: 706-544-6570

U. S. Fish and Wildlife Service
105 West Park Dr., Suite D
Athens, GA 30606
706-613-9493 Fax 706-613-6059

FWS Log No.
4-6-05-254-LWOP

Based on the information you provided, no further action is required under Section 7(a)(2) of the Endangered Species Act. However, obligations under the Act must be reconsidered if the project is modified, if it may affect newly listed species or designated critical habitat, or if new information indicates it may affect listed species or critical habitat in a manner not considered in our review

Sandra E. Tucker, Field Supervisor

2/25/05
Date

United States Department of the Interior

Fish and Wildlife Service
West Park Center. Suite D
105 West Park Drive
Athens. Georgia 30606

West Georgia Sub Office
P.O. Box 52560
Ft. Benning, Georgia 31995-2560

Coastal Sub Office
4270 Norwich Street
Brunswick, Georgia 31520

FEB 15 2005

Mr. John Brent
Chief, Environmental Management Division
Headquarters United States Army Infantry Center
Fort Benning, GA 31905-5000

Re: FWS Log No. 05-0544

Dear Mr. Brent:

The U.S. Fish and Wildlife Service (Service) has reviewed your letter received January 26, 2005, for a new housing development in the Northeast Cantonment Area. The proposed project will remove approximately 241.7 acres of potential red-cockaded woodpecker (RCW) habitat. We submit the following comments under provisions of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531, *et seq.*).

The 241.7 acres are located in the Northeast Cantonment Area, which currently has military housing and is located adjacent to the City of Columbus, Georgia. Your letter states the 241.7 acres is not currently occupied but was included in calculating Fort Benning's RCW recovery goals. Habitat management, especially prescribed burning, will be difficult to implement due to the acreage being located close to major roads, the City of Columbus, Georgia, and Sand Hill.

Based on the information you provided, no further action is required under section 7(a)(2) of the Endangered Species Act. However, if new information or changes in the project involve federally listed species, further consultation with the Service will be required. In regards to your proposal to reduce the excess number of clusters needed for recovery from 19 to 18 (calculated from the Biological Assessment for the Digital Multi-Purpose Range Complex), we believe that the revised INRMP and ESMP should include a re-assessment of current and potential RCW habitat based on new forest stand inventory data. We will withhold our comments on excess number of clusters until the re-assessment is complete.

Thank you for the opportunity to provide comments on the proposed project. If you require additional assistance, please contact Nancy Jordan, staff biologist, at our West Georgia Sub Office (706)544-7519.

Sincerely,

for Stephen D. Parris

Sandra S. Tucker
Field Supervisor

cc: file, FWS Athens
R. Costa, Clemson FO

APPENDIX C

Programmatic Agreement
between
Fort Benning, Georgia
and the
Georgia State Historic Preservation Office

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PROGRAMMATIC AGREEMENT

between

FORT BENNING, GEORGIA,
and the
GEORGIA STATE HISTORIC PRESERVATION OFFICER

for the

PRIVATIZATION OF FAMILY HOUSING AT FORT BENNING, GEORGIA

WHEREAS, Fort Benning, pursuant to the Military Housing Privatization Initiative (P.L. 104-106, 110 Stat. 544, Title XXVIII, Subtitle A, Section 2801), which amends 10 U.S.C. 169 by addition of a new subchapter, IV—Alternative Authority for Acquisition and Improvement of Military Housing, has determined to privatize family housing at Fort Benning, Georgia, including Porter Village at Dahlonega, Georgia, through the Residential Communities Initiative (RCI) (Undertaking); and

WHEREAS, under RCI, Fort Benning Land LLC (Partnership) will implement the privatization of current and future family housing and ancillary facilities at Fort Benning and Porter Village; and

WHEREAS, the Partnership will be a separate legal entity known as a Limited Liability Company (LLC) that will be formed after Congressional review of the Fort Benning RCI project. The partners of the Partnership will be the Department of the Army (Fort Benning), acting through the Garrison Commander of Fort Benning, and Clark Pinnacle Benning LLC, a Georgia limited liability company ("Clark Pinnacle"); and

WHEREAS, the Partnership will be granted a ground lease for the land associated with the existing Fort Benning and Porter Village housing areas and the proposed construction sites, and the stipulations of this Programmatic Agreement will be made an exhibit to the ground lease so that the stipulations become an integral part of the ground lease; and

WHEREAS, the privatization of the housing at Fort Benning and Porter Village will result in the transfer of a long-term interest in the construction, demolition, renovation, rehabilitation, operation, and maintenance of housing and other ancillary facilities at Fort Benning largely independent of direct government control, but intended for the use of Soldiers and their families; and

WHEREAS, Fort Benning has determined that implementation of the Undertaking has the potential to adversely affect historic properties eligible for listing in the National Register of Historic Places (NRHP) and has consulted with the Georgia State Historic Preservation Officer (SHPO) in accordance with sections 106 and 111 of the National Historic Preservation Act (the Act), as amended, (16 U.S.C. 470 et. seq.) and the implementing regulations found at 36 CFR Part 800 (2001); and

WHEREAS, Fort Benning has invited the Advisory Council on Historic Preservation (Council) to participate in the resolution of adverse effects to properties eligible for listing in the NRHP pursuant to 36 CFR 800.36(a)(1) and by letter dated February 16, 2005, has declined to participate, and;

WHEREAS, the Area of Potential Effect (APE) for the RCI program at Fort Benning includes approximately 1,468 acres of existing housing areas including portions of the Main Post Historic District plus approximately 95 acres in Camp Merrill, Porter Village housing complex, Dahlonega, Georgia, and supporting amenities, approximately 576 acres of land for new construction, and approximately 2 acres of land to be used as temporary construction staging areas, all areas that will be directly impacted by the undertaking (Attachment A); and

WHEREAS, Fort Benning has determined that the Porter Village area is within the APE because there is an eligible historic property, 9Lu52, portions of a hand ditch dug for 19th century gold mining known at that location; and

WHEREAS, Fort Benning has conducted inventories of historic properties within the APE identifying historic buildings, structures, and archeological sites that are eligible or may be eligible for listing in the NRHP (Attachment B) and

WHEREAS, Fort Benning has completed its NRHP eligibility determinations for historic housing assets outside of the Main Post Historic District in accordance with Section 110(a)(2) of the Act and determined said assets eligible for listing in the NRHP, and the SHPO has concurred with these determinations; and

WHEREAS, Fort Benning anticipates that the Undertaking will not result in demolition or alterations that will adversely effect the historic properties eligible or potentially eligible for the NRHP which are listed and depicted in Attachment C; and

WHEREAS, all Capehart and Wherry Era housing on Fort Benning is covered by an Army-wide Program Comment by the Council and there are no further preservation or consultation requirements for these housing units pursuant to 36 CFR Part 800; and

WHEREAS, Fort Benning has notified the Federally recognized Indian Tribes (Tribes) with historic ties to the Fort Benning area [Alabama/Quassarte Tribal Town, Alabama-Coushatta Tribe of Texas, Chickasaw Nation, Coushatta Tribe of Louisiana, Kialegee Tribal Town, Muscogee (Creek) Nation of Oklahoma, Poarch Band of Creek Indians, Seminole Nation of Oklahoma, Seminole Tribe of Florida, Thlopthlocco Tribal Town, United Keetoowah Band of the Cherokee Indians in Oklahoma, Jena Band of Choctaw Indians, Choctaw Nation of Oklahoma, Mississippi Band of Choctaw Indians (Tribes)] and afforded these Federally recognized Indian Tribes through government to government consultation the opportunity to review and comment on the Undertaking and draft language for an agreement document; and has considered comments of each responding Federally recognized Indian Tribe when drafting this Agreement, but has not provided for Tribal signatures as no change in the status of historic properties of Tribal origin for their placement on the National Register of Historic Places, nor change in the treatment of historic resources of Tribal origin will result from this Undertaking; and

WHEREAS, Fort Benning has identified the National Infantry Association (NIA) as a potential consulting party pursuant to 36 CFR 800.2, and has afforded the NIA the opportunity to consult on

the Undertaking and draft language for an agreement document; but the NIA did not respond to the inquiry so is not considered a consulting party or signatory to this Agreement; and

WHEREAS, Clark Pinnacle has been provided the opportunity to review and comment on this agreement and has been invited to concur with the agreement pursuant to 36 CFR 800.6(c)(3); and

WHEREAS, Fort Benning shall provide the public, the Tribes, and reviewing agencies an opportunity to comment on this Undertaking through Fort Benning's National Environmental Policy Act process and shall consider the recommendations of the public, Tribes, and reviewing agencies to modify this Agreement, as necessary;

NOW THEREFORE, Fort Benning and the SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties.

STIPULATIONS

Fort Benning will ensure that the following measures are carried out:

I. APPLICABILITY, BASELINE INFORMATION, AND PROFESSIONAL QUALIFICATIONS STANDARDS

A. Based on analysis of the residential infrastructure and proposed construction sites, Fort Benning has determined in consultation with the SHPO that no other existing, residential buildings, structures, objects, districts or landscapes affected by the Undertaking, except those listed herein or in Appendix C, are now NRHP - eligible or potentially eligible under NRHP criteria.

B. Fort Benning will conduct a survey of all buildings, structures, and landscapes within the APE that have reached fifty years of age since the previous survey, completed within 1 year of execution of this Agreement in accordance with Section 110 of the Act. The survey will be conducted in consultation with the SHPO and in accordance with The Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation [48 FR 44720-44726], as revised. Any new NRHP eligible properties recognized through this process and administered or affected by Partnership that are recognized through this process and concurred to by the SHPO will be subject to the provisions of this Agreement. This stipulation does not limit any other evaluation and possible nomination that may occur at the discretion of the Partnership, as long as the nomination includes only units administered by the Partnership, and the Partnership coordinates with the Fort Benning Cultural Resources Manager (CRM) and staff in the preparation of the nomination. Before any survey, finding or report regarding properties administered or affected by the Partnership is presented to the SHPO, Fort Benning will present it to the Partnership and permit the Partnership to perform its own analysis and survey to determine if it concurs. In the event of disagreements, the decision of the Garrison Commander will prevail. In the event of disagreement between Fort Benning and the SHPO, a formal determination of eligibility will be requested of the Keeper of the National Register of Historic Places in accordance with 36 CFR 63.

C. Fort Benning shall document existing interior and exterior conditions at all types of NRHP-eligible structures, buildings, and landscapes in the historic housing areas within three years

of execution of this Agreement. The documentation must meet Historic American Building Survey/Historic American Engineering Record (HABS/HAER) standards. No HABS/ HAER documentation is required for structures, buildings, and landscapes that are ineligible for the NRHP. Fort Benning will provide the documentation to the signatories to this Agreement in electronic and paper formats, including still photographs. Fort Benning will supplement the documentation as necessary to maintain accuracy and record modifications to historic properties. One copy of the documentation and any supplemental materials, as they are developed, shall be provided to the SHPO. This documentation will serve as a reference throughout the term of this Agreement.

D. For the purposes of this Agreement, the Fort Benning staff will, at a minimum, consist of an individual (Fort Benning CRM) who will serve as the point of contact with the SHPO and Council. Fort Benning CRM will have access to Qualified Staff. For the purposes of this Agreement, "Qualified Staff" is defined as an individual who meets 36 CFR 61, Appendix A, Professional Qualification Standards for Architectural History, Historical Architect, Archeologist, or other appropriate profession. Qualified Staff will have professional qualifications, training, and experience relevant to the technical requirements of a given undertaking. For example: Architectural Historians or Historical Architects will be utilized to survey historic buildings, while Archaeologists or Anthropologists will be utilized to perform archaeological investigations.

E. For the purposes of this Agreement, the Partnership staff will, including consultants, have access to an individual who meets Qualified Staff requirements. The Partnership's qualified staff will coordinate the preparations, development and review of rehabilitation plans, proposed projects and work requirements that affect historic properties. The Partnership's qualified staff will act on behalf of the Partnership and participate in consultation efforts between Fort Benning and the SHPO concerning plans, projects, and work requirements as listed above.

II. CONVEYANCE ACTIVITIES

A. The Army will convey long-term interests in land associated with family housing units and ancillary improvements to the Partnership by real estate instrument, i.e. a ground lease. To ensure that the ground lease shall contain such terms and conditions as necessary and appropriate to meet the requirements of Sections 110, 106 and 111 of the Act to provide for adequate consideration and treatment of historic properties that may be affected by the RCI program, this Programmatic Agreement shall be incorporated into and made part of the Ground Lease.

B. Before execution of any conveyance or finalization of the Ground Lease for the Undertaking, Fort Benning shall provide the Partnership access to all previously compiled information on any historic properties within the APE to guide the Partnership in the management and use of the properties. Fort Benning shall indicate that historic properties are subject to alternate and more stringent management requirements than non-historic pursuant to Stipulations III, IV and V.

C. Renewal or any modifications to the Ground Lease that may affect historic properties shall be subject to consultation among the signatories to determine whether such renewal or modifications constitute a new federal undertaking subject to provisions of the Act.

III. HISTORIC PROPERTY MANAGEMENT

A. When conducting maintenance, preservation, rehabilitation or restoration measures for historic properties, Fort Benning shall require the Partnership to conform to the management standards and guidelines for treatment of historic properties established by the Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings (Treatment Standards).

B. The Partnership will provide the draft landlord/tenant agreement to Fort Benning at least 60 days prior to any residential lease by the Partnership. Fort Benning shall ensure that the SHPO is provided the opportunity to review and comment on the landlord/tenant agreement with respect to historic properties.]

C. Project Review and Consultation

The Army will monitor the activities of the Partnership and the activities of the property management agent (expected to be American Management Services East LLC, and/or its successors and assigns) using the review process specified in C.1 through 6, below. Fort Benning will be responsible for creating and keeping a record of each project review. The documentary record of each project review will be maintained in Fort Benning environmental archives.

1. The Partnership will submit to Fort Benning on a Fort Benning Form 144-R, Record of Environmental Consideration, all proposed projects. Fort Benning will review the project and plans and respond to the Partnership within 10 working days with a determination regarding the potential for an adverse effect on historic properties. If a determination of No Adverse Effect or No Effect is made by Fort Benning, then the project may proceed as planned subject to any other requirements that may be made under environmental analysis of the project.

2. The SHPO may at any time request to review and comment on a project submitted to Fort Benning if it has reason to believe that a historic property may be adversely affected by a proposed undertaking.

3. If Fort Benning makes a determination of Adverse Effect, alterations to the project plans will be recommended to avoid or minimize the adverse effect. These recommendations will be made in accordance with the Treatment Standards for Rehabilitation with a goal of minimizing the project impact to a determination of Conditional No Adverse Effect, to be forwarded to the SHPO for review and comment.

4. If the Partnership does not accept these recommendations, Fort Benning will initiate the process to resolve the adverse effect pursuant to 36 CFR 800.6 or within the process as may be defined under the Army Alternate Procedures as adopted.

5. If the Partnership proposes demolition or substantial alteration, i.e. actions that do not meet the criteria for exempted activities, that will adversely effect a historic property, the Partnership shall perform an economic feasibility analysis to evaluate the economic feasibility for the Partnership to preserve, maintain, or adaptive reuse of specific historic properties in accordance with the Treatment Standards. The Partnership will submit the economic feasibility analysis and their

recommended course of action for the historic properties in question to Fort Benning for review and consultation with the SHPO. The SHPO will be given 30 days to review and comment on the economic analysis and recommended course of action. If the SHPO agrees in writing with the economic analysis findings and the treatment recommendation, or if the SHPO does not provide any response within the 30-day timeframe, then Fort Benning may inform the Partnership that they may proceed with the action. If a determination of adverse effect is made, Fort Benning will consult with the SHPO to resolve the adverse effect pursuant to 36 CFR 800.6 or within the process as may be defined under the Army Alternate Procedures as adopted. Resolution may consist of HABS/HAER documentation of the adversely affected property. Should the SHPO disagree with the recommended course of action and if an acceptable compromise cannot be reached, the Army shall provide for the Council to consult with the Army's Federal Preservation Officer (FPO) [Deputy Assistant Secretary for the Army (Environment, Safety, and Occupational Health)] and/or provide comments to the FPO or installation for documented consideration. The Army may then elect to terminate consultation pursuant to 36 CFR 800.7 or within the process as may be defined under the Army Alternate Procedures as adopted.

6. In the case of an emergency, the Partnership will perform those actions necessary for the protection of the historic properties with coordination and review as soon as possible with Qualified Staff. The Partnership is not required to consult with Fort Benning in advance of emergency actions affecting historic properties. Where possible, such emergency measures will be undertaken in a manner that is consistent with the Treatment Standards. The Partnership will notify the Fort Benning CRM, who will notify the SHPO, following execution of all emergency measures affecting historic properties. This emergency provision is limited to undertakings initiated within 30 days of the emergency.

D. Fort Benning will report to the SHPO on the status of the Fort Benning historic housing properties annually in a month to be agreed upon by the SHPO, the Partnership, and Fort Benning. This report will include information on the current condition of the historic properties, actions taken by the Partnership to maintain the properties in accordance with the Treatment Standards and descriptions of unanticipated problems that could affect the integrity or upkeep of the historic properties, or any other activities or policies that affect or may affect the historic properties, including the documentation of project reviews carried out under Stipulation III.C, above.

E. Tax Credits

1. Fort Benning shall encourage the Partnership to explore Federal historic preservation tax credit benefits via the established application process with the SHPO and National Park Service (NPS) and IAW AR 200-4, 3-2c(2)-(3) before the start of rehabilitation projects involving historic buildings. In the event the Partnership determines to seek the historic preservation Federal tax credits, the proposed project will, upon receipt of an approved Part II certification from the NPS, be exempt from Stipulation III.C, above.

2. Fort Benning shall encourage the Partnership to explore state historic preservation tax credit benefits via the established application process with the SHPO before the start of rehabilitation projects involving historic buildings.

IV. EXEMPT ACTIVITIES

A. The following activities will be carried out consistent with the Treatment Standards and Fort Benning may determine them to be exempt from SHPO consultations:

1. General operation and maintenance, demolition, and new construction outside the historic district, provided such construction is not visible from the Main Post Historic District and other NRHP-eligible historic properties.

2. Temporary installation of facilities to provide access to historic properties by disabled persons provided these changes make no permanent modification to NRHP eligible or potentially eligible historic properties.

3. Any change to the mechanical, electrical or plumbing systems and kitchen, bathroom, attic or basement spaces of historic properties, as long as such change does not affect any significant exterior or interior historic character-defining elements of the structure, that may include but are not limited to historic plaster walls and ceilings, historic floors, layout of floor plan, exterior finishes and trim, and window and door openings.

4. General operation of, and routine and cyclical maintenance to, NRHP-eligible properties.

5. Replacement in kind, matching the configuration, material, size, detail, color and construction of the historic fabric.

6. Refinishing in kind, e.g. painting previously painted surfaces with the same or original materials and same or original color.

7. Energy conservation measures that are not visible or that do not alter, damage or detract from those qualities that make the property NRHP-eligible.

B. Activities not listed above or in accordance with the Army Alternate Procedures as adopted shall be completed as directed in Stipulation III.C, above.

C. In the event that the parties to this Agreement concur in writing that additional exemptions are appropriate, such exemptions may be enacted in accordance with Stipulation VIII of this Agreement.

V. ARCHEOLOGICAL RESOURCES

A. If the Fort Benning CRM determines that known NRHP-eligible or potentially eligible archeological resources will be affected by the undertaking as defined by 36 CFR 800.5 or within the process as may be defined under the Army Alternate Procedures as adopted, Fort Benning will continue consultation with Federally recognized Indian Tribes in accordance with 36 CFR 800.6 or within the process as may be defined under the Army Alternate Procedures as adopted, to determine how to avoid or resolve an adverse effect on the property.

B. In the event of an unanticipated discovery of archeological materials during any of its activities, the Partnership shall immediately stop work in the area of discovery and notify the Fort Benning CRM. The Partnership shall protect the discovery until Fort Benning has complied with 36 CFR 800.13(b) or within the process as may be defined under the Army Alternate Procedures as adopted and any other legal requirements.

C. Human remains, funerary objects and other resources protected by the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 et. seq.) (NAGPRA) that are encountered during the course of actions taken as a result of this agreement shall be treated in the manner consistent with the provision of NAGPRA, AR200-4, and 43 CFR Part 10, including consultation with the Federally recognized Indian Tribes. Any remains discovered must be protected in place. The Cultural Resource Manager shall be notified immediately to determine NAGPRA applicability of discovered remains.

VI. FISCAL REQUIREMENTS AND SOURCES

The stipulations of this Agreement are subject to the provisions of the Anti-Deficiency Act. If compliance with the Anti-Deficiency Act alters or impairs Fort Benning's ability to implement the stipulations of this Agreement, Fort Benning will consult in accordance with the dispute resolution and amendment stipulations as specified in Stipulations VII and VIII below.

VII. DISPUTE RESOLUTION

A. Should the Partnership, SHPO, the Council, or a Federally recognized Indian Tribe object within 30 days to any plans or other documents provided by Fort Benning or others for review pursuant to this Agreement, Fort Benning will consult with the objecting party to resolve the objection. If Fort Benning determines it cannot resolve the objection, Fort Benning shall forward to the Council all dispute-relevant documentation and a recommended course of action following 36CFR800.2(b)(2). Within 30 days after receipt of documentation, the Council will either:

1. Provide Fort Benning with recommendations, which Fort Benning will take into account in reaching a final decision regarding the dispute; or

2. Notify Fort Benning that it will or will not comment pursuant to 36 CFR 800.7(c). Fort Benning will take into account any comment the Council provides in response to such request and do so in accordance with 36 CFR 800.7(c)(4) with reference to the subject of the dispute.

B. Any recommendation or comment that the Council provides pertains only to the subject of the dispute. Fort Benning's responsibility to carry out all other actions under this Agreement, other than those disputed will not change.

VIII. AMENDMENT AND TERMINATION

A. If a change occurs in the Undertaking that creates new circumstances that Fort Benning must address, or, if Fort Benning is unable to carry out the terms of this Agreement, any party to this Agreement may request an amendment in accordance with 36 CFR Part 800.6(c)(7).

B. Should the parties to this Agreement not agree on an amendment or in the event of Fort Benning's failure to comply with the stipulations of this Agreement prior to execution of a Ground Lease, this Agreement shall be terminated. In such an event, Fort Benning may elect not to execute a Ground Lease that has the potential to adversely affect historic properties until applicable stipulations of the Agreement are met or it obtains alternative documentation from the Council that it has met the requirements of the Act.

IX. EFFECTIVE DATE, END DATE, APPLICABILITY

A. This Programmatic Agreement is effective on the last date that all signatories sign. Fort Benning will comply with all terms and stipulations from that date forward.

B. This Programmatic Agreement will be incorporated into the ground lease as an exhibit and will become an integral part of the ground lease. The Programmatic Agreement will become applicable to the Partnership after the Partnership is formed and upon the execution of the ground lease. The Ground lease is expected to be a 50-year lease, with an option to renew that lease for 25 more years upon mutual agreement with the parties.

C. This Agreement will be in effect so long as the Ground Lease is in effect, unless previously terminated under the provisions of VIII, above. If the parties to the ground lease agree to extend the ground lease, the parties to this Agreement will consult on the need to renew or amend this Agreement at the same time as the ground lease is being considered for renewal.

D. This Programmatic Agreement will be reviewed every ten years of the 50-year ground lease by the signatories to agree on its continual applicability or on the need to amend this Agreement.

Execution of this Programmatic Agreement and implementation of its terms evidence that Fort Benning has afforded the Council an opportunity to comment on the Undertaking to privatize family housing at Fort Benning and Porter Village, and its effects on historic properties, and that Fort Benning has taken into account the effects of the Undertaking on historic properties.

FORT BENNING, GEORGIA

By: _____ Date: 28 MAR 05

Ricardo R. Riera
Colonel, U.S. Army
Garrison Commander

GEORGIA STATE HISTORIC PRESERVATION OFFICER

By: W. Ray Luce Date: 3/29/05

W. Ray Luce
Deputy State Historic Preservation Officer

CONCUR:

Clark Pinnacle Benning LLC has reviewed the above terms and stipulations of this Programmatic Agreement. We acknowledge that the terms and stipulations will become part of the ground lease and that they will become binding on Fort Benning Land LLC, a limited liability corporation that Clark Pinnacle Benning LLC and the Army will form after the RCI project at Fort Benning is approved by Congress.

CLARK PINNACLE BENNING LLC, a Georgia limited liability company

By: Clark Realty Capital, L.L.C., a Delaware limited liability company, Manager

By: _____ Date: _____
W. Cleveland Johnson
Manager

By: CEI Realty, Inc., a D.C. corporation, Manager

By: _____ Date: _____
Lawrence C. Nussdorf
President

By: Pinnacle Benning LLC, a Washington limited liability company, Manager

By: _____
Stanley J. Harrelson, Manager

REFERENCES

Elliott, Daniel T, Grace F. Keith, George D. Price, Rita F. Elliott, Tracy M. Dean, Debra J.
2001 Wells, Robbie F. Ethridge, and David S. Leigh. "A Cultural Resources Survey of the Main Post, Fort Benning Military Reservation Chattahoochee and Muscogee Counties, Georgia. Ellerslie, Georgia: Southern Research Historic Preservation Consultants.

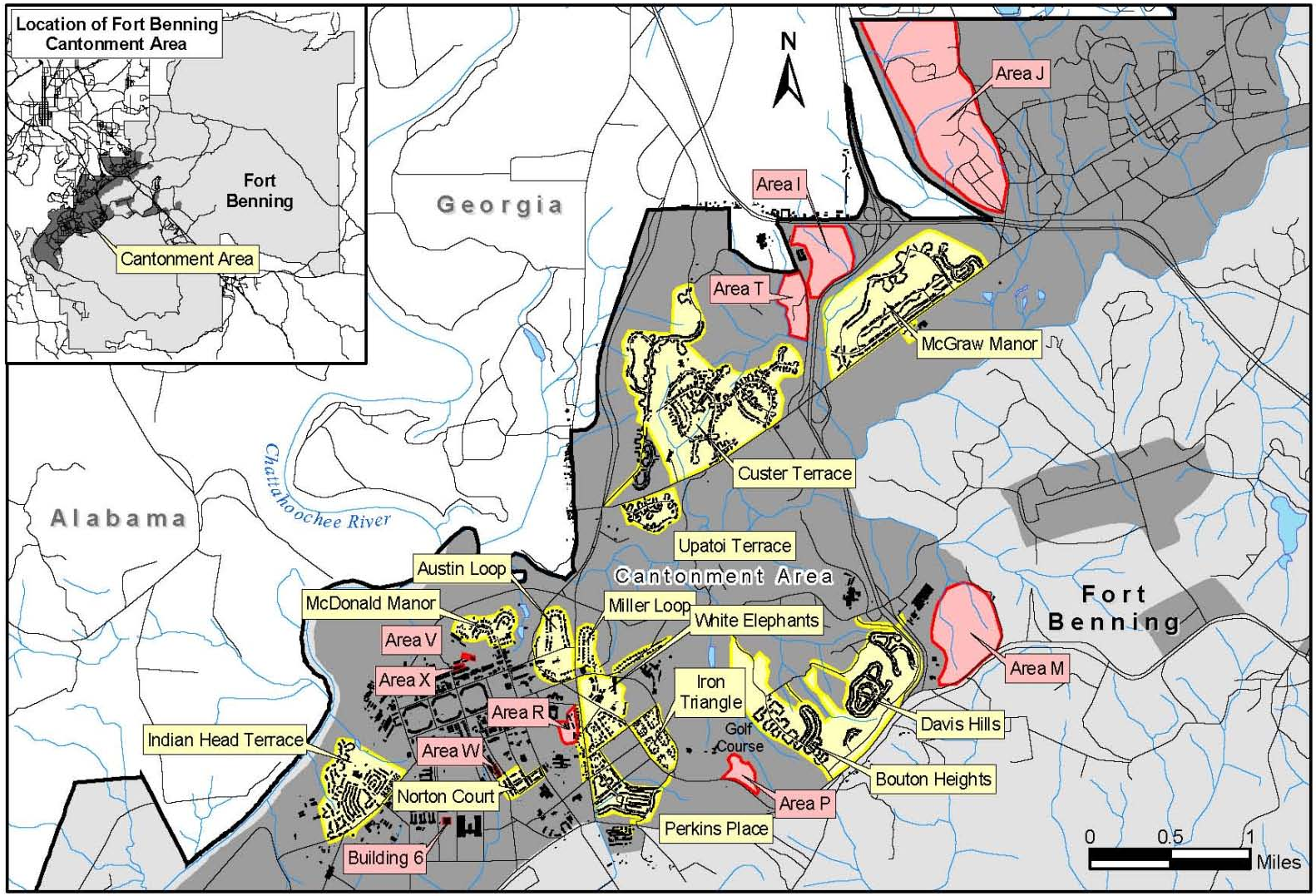
Gulf Engineers and Consultants, Inc and Southeastern Archeological Services
1994 Cultural Resource Survey of Two Housing Tracts for Camp Merrill Lumpkin County, Georgia: Final Report.

Jaeger Company and Southern Research Historic Preservation Consultants, Inc.
1997 Fort Benning Historic Resource Survey Update, Volume One: Survey Report.

Attachment A

RCI Footprint in Main Cantonment Area and Porter Village

Fort Benning, Georgia



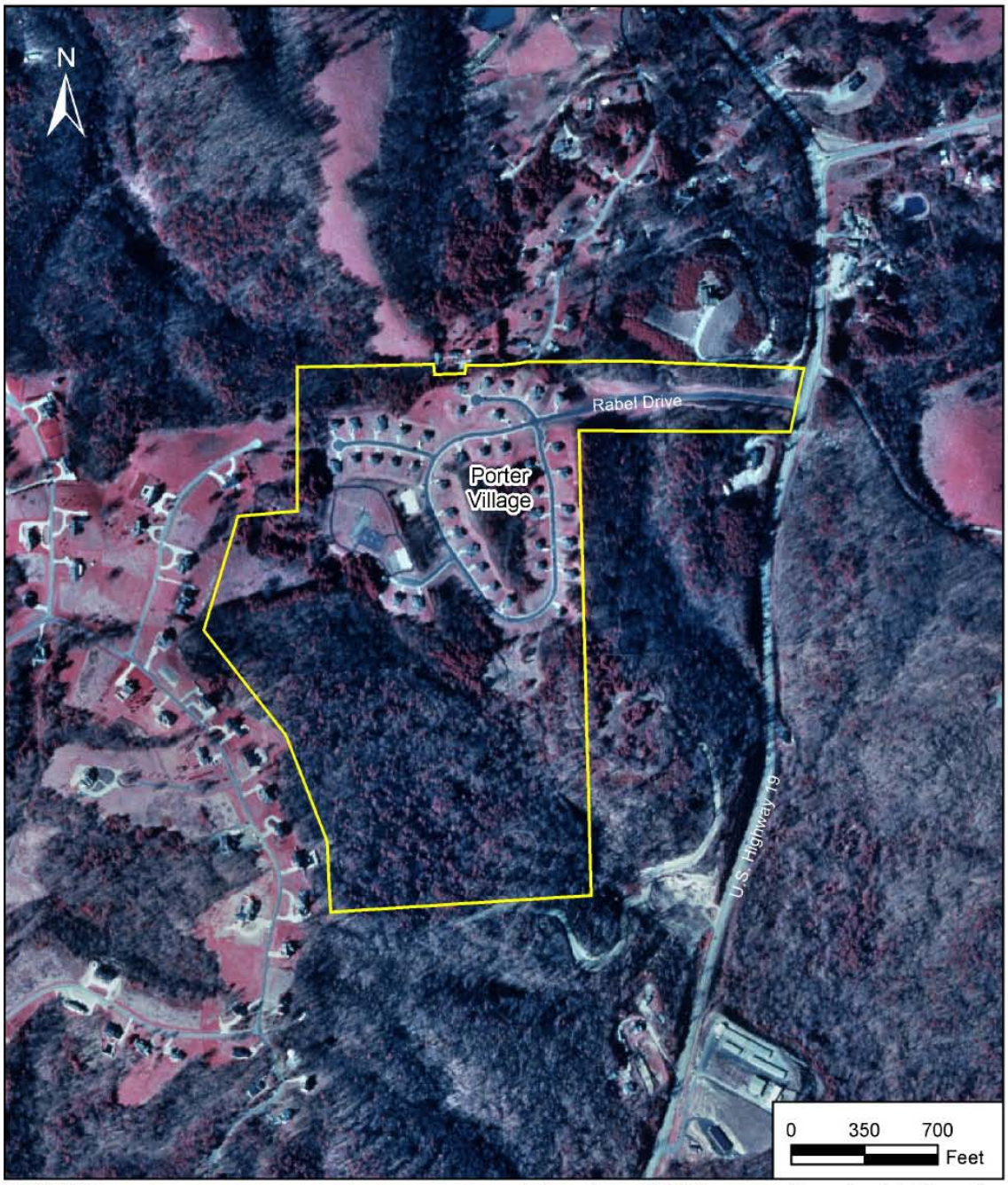
LEGEND

- RCI Footprint: Existing Housing Area
- RCI Footprint: Undeveloped Area/Ancilliary Facility
- Fort Benning Installation Boundary
- Fort Benning Cantonment Area

Source: Fort Benning GIS, 2004.

RCI Footprint

December 2004



LEGEND

Installation Boundary and RCI Footprint

Porter Village Aerial Photo

Source: Fort Benning GIS, 2004.

Figure 2-6

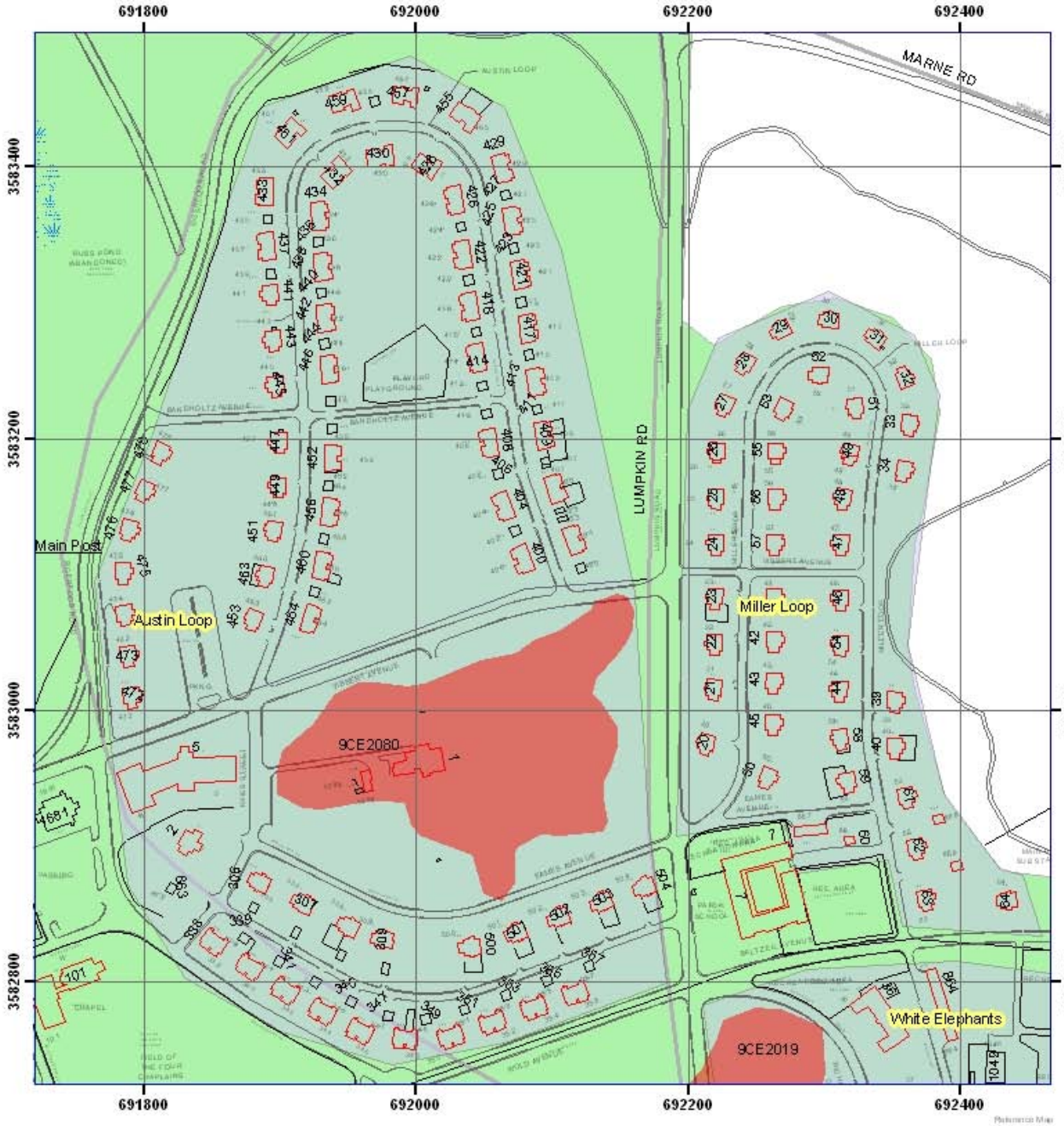
Attachment B

Area Maps of Affected Historic Properties

Fort Benning
Residential Community Initiative
BMD #432905

FOR OFFICIAL USE ONLY
NOT FOR PUBLIC RELEASE

UTM Grid in Meters, NAD83, Zone 16N



Legend
HISTORIC DISTRICT
Ammunition Storage Area
Army Ground Forces Board #3
Lawson Army Airfield
Main Post
Parachute Jump Tower
Cemetery
STATUS
Historic/PROTECTED
Not Eligible
potential housing
existing housing

Ground Disturbing Activity without Permit in Protected Areas is PROHIBITED

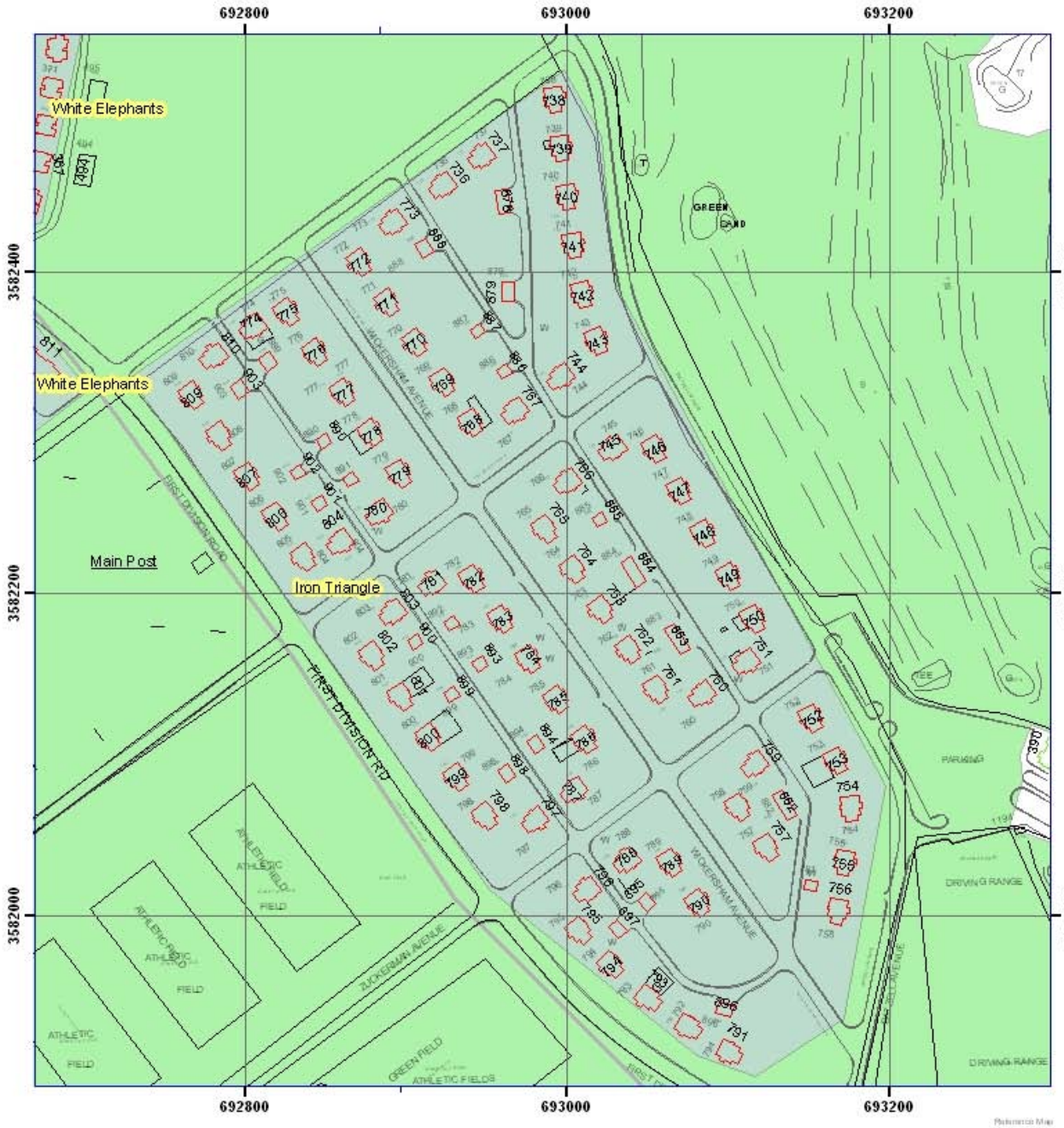
1:3,800

Directorate of Public Works
Environmental Management Division
CEH

Fort Benning
Residential Community Initiative
BMD #432905

FOR OFFICIAL USE ONLY
NOT FOR PUBLIC RELEASE

UTM Grid in Meters, NAD83, Zone 16N



Legend

HISTORIC DISTRICT
- Ammunition Storage Area
- Army Ground Forces Board #3
- Lawson Army Airfield
- Main Post
- Parachute Jump Tower
- Cemetery

STATUS
- Historic/PROTECTED
- Not Eligible
- potential housing
- existing housing

Ground Disturbing Activity without Permit in Protected Areas is PROHIBITED

1:3,200

0 .001 .002 .004 .006 .008 Miles

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Fort Benning
Residential Community Initiative
BMD #432905

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UTM Grid in Meters, NAD83, Zone 16N

Legend

HISTORIC DISTRICT
- Ammunition Storage Area
- Army Ground Forces Board #3
- Lawson Army Airfield
- Main Post
- Parachute Jump Tower
- Cemetery

STATUS
- Historic/PROTECTED
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- potential housing
- existing housing

Ground Disturbing Activity without Permit in Protected Areas is PROHIBITED

1:3,800

0 0.0125 0.025 0.05 0.075 0.1 Miles

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Reference Map

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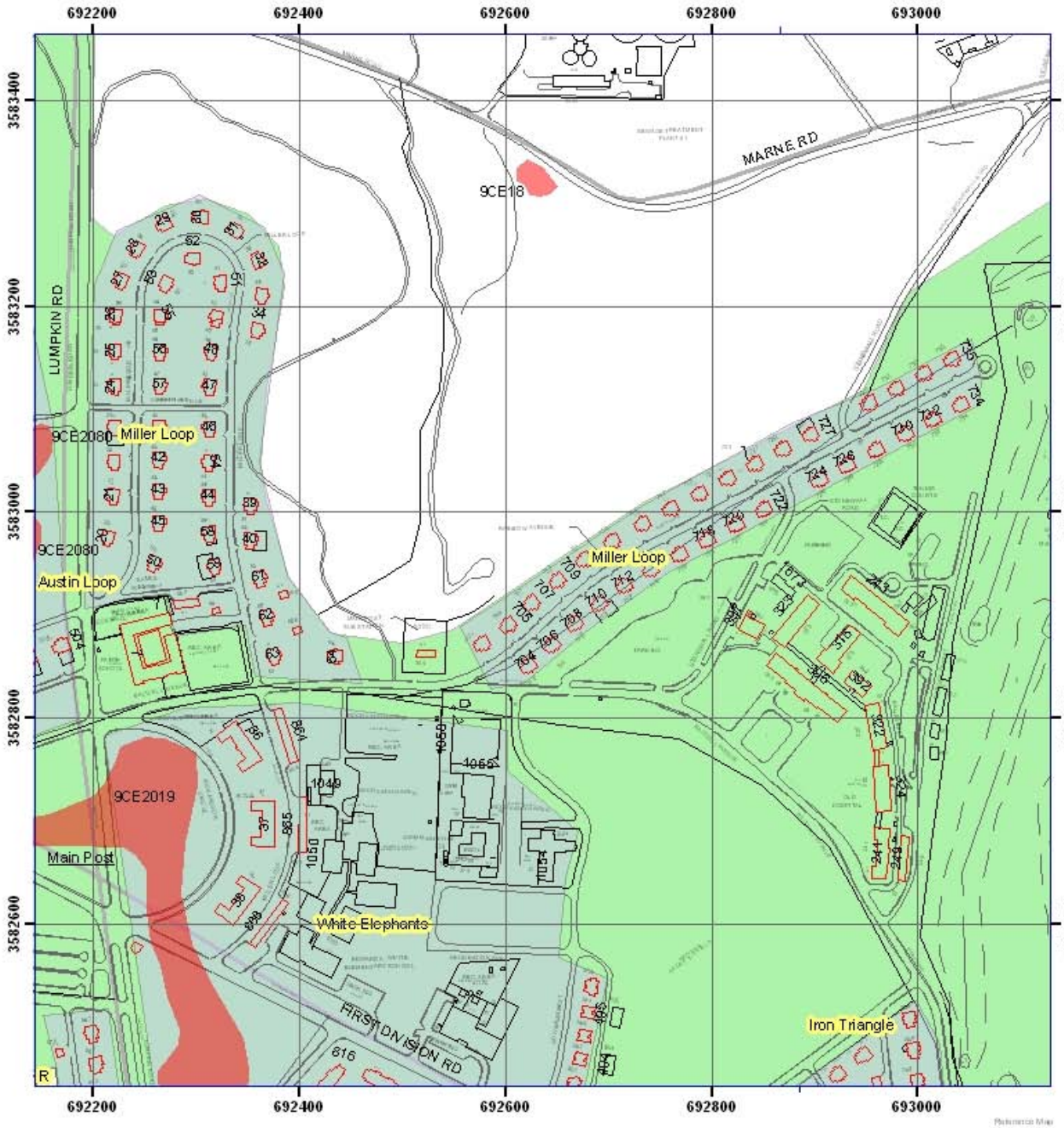
UTM Grid in Meters, NAD83, Zone 16N



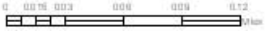
Legend

HISTORIC DISTRICT
- Ammunition Storage Area
- Army Ground Forces Board #3
- Lawson Army Airfield
- Main Post
- Parachute Jump Tower
- Cemetery

STATUS
- Historic/PROTECTED
- Not Eligible
- potential housing
- existing housing

Ground Disturbing Activity without Permit in Protected Areas is PROHIBITED

1:5,100



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Residential Community Initiative
BMD #432905

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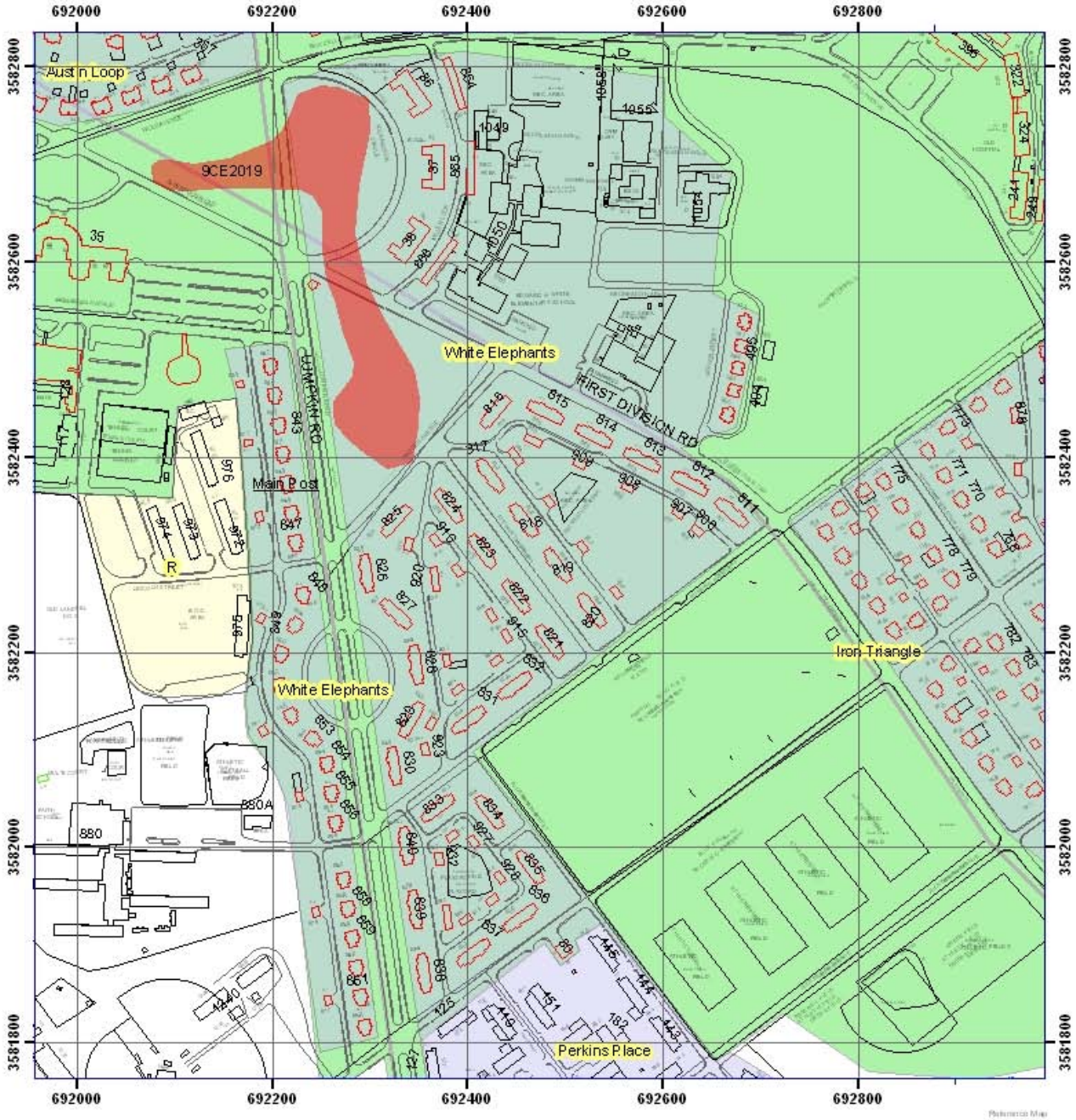
UTM Grid in Meters, NAD83, Zone 16N



Legend
HISTORIC DISTRICT
Ammunition Storage Area
Army Ground Forces Board #3
Lawson Army Airfield
Main Post
Parachute Jump Tower
Cemetery
STATUS
Historic/PROTECTED
Not Eligible
potential housing
existing housing

Ground Disturbing Activity without Permit in Protected Areas is PROHIBITED

1:5,300

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Residential Community Initiative
EMD #432905

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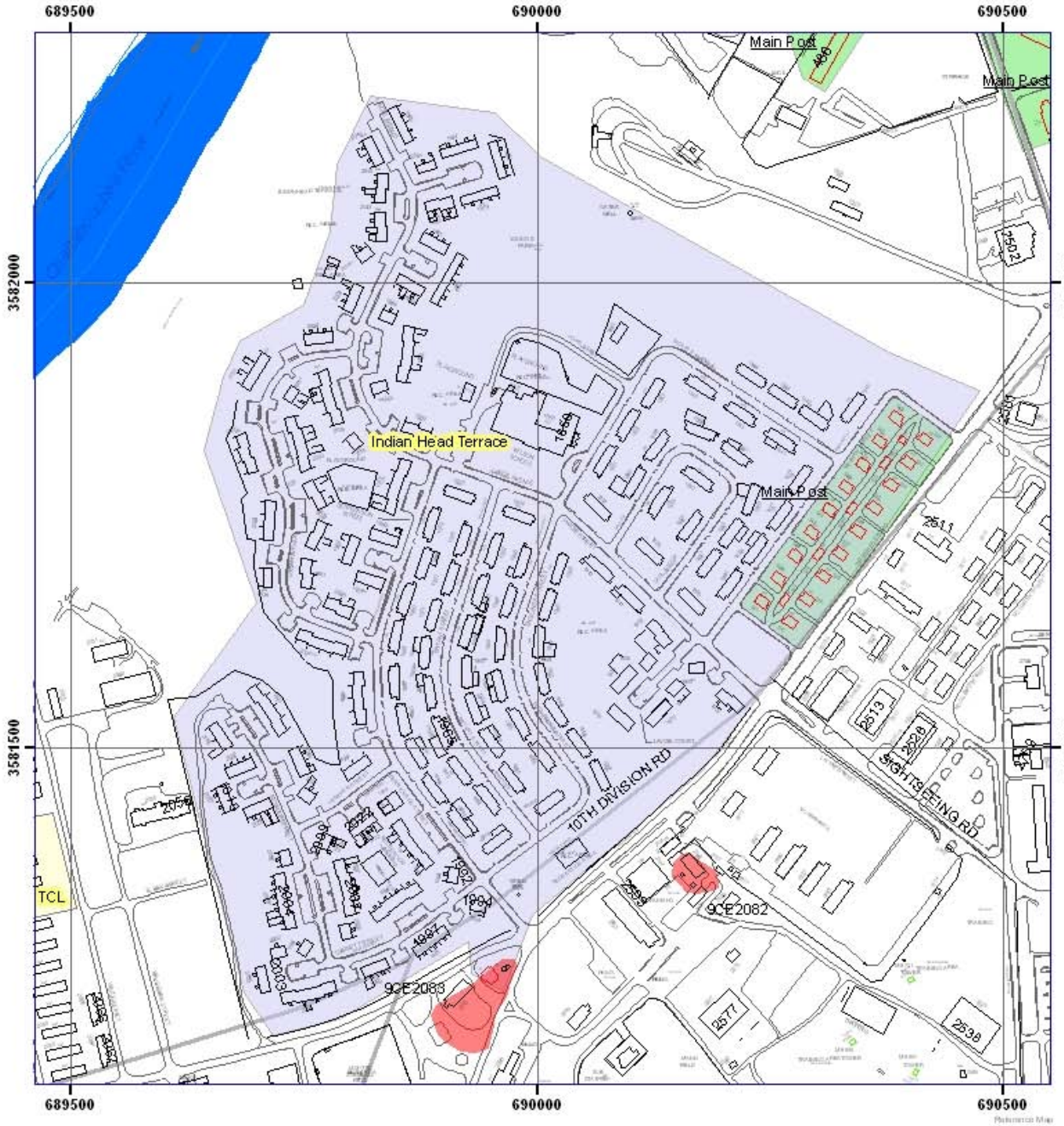
UTM Grid in Meters, NAD83, Zone 16N



Legend
HISTORIC DISTRICT
Ammunition Storage Area
Army Ground Forces Board #3
Lawson Army Airfield
Main Post
Parachute Jump Tower
Cemetery
STATUS
Historic/PROTECTED
Not Eligible
potential housing
existing housing

Ground Disturbing Activity without Permit in Protected Areas is PROHIBITED

1:5,600

0 0.025 0.05 0.1 0.15 0.2 Miles

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Environmental Management Division
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Residential Community Initiative
BMD #432905

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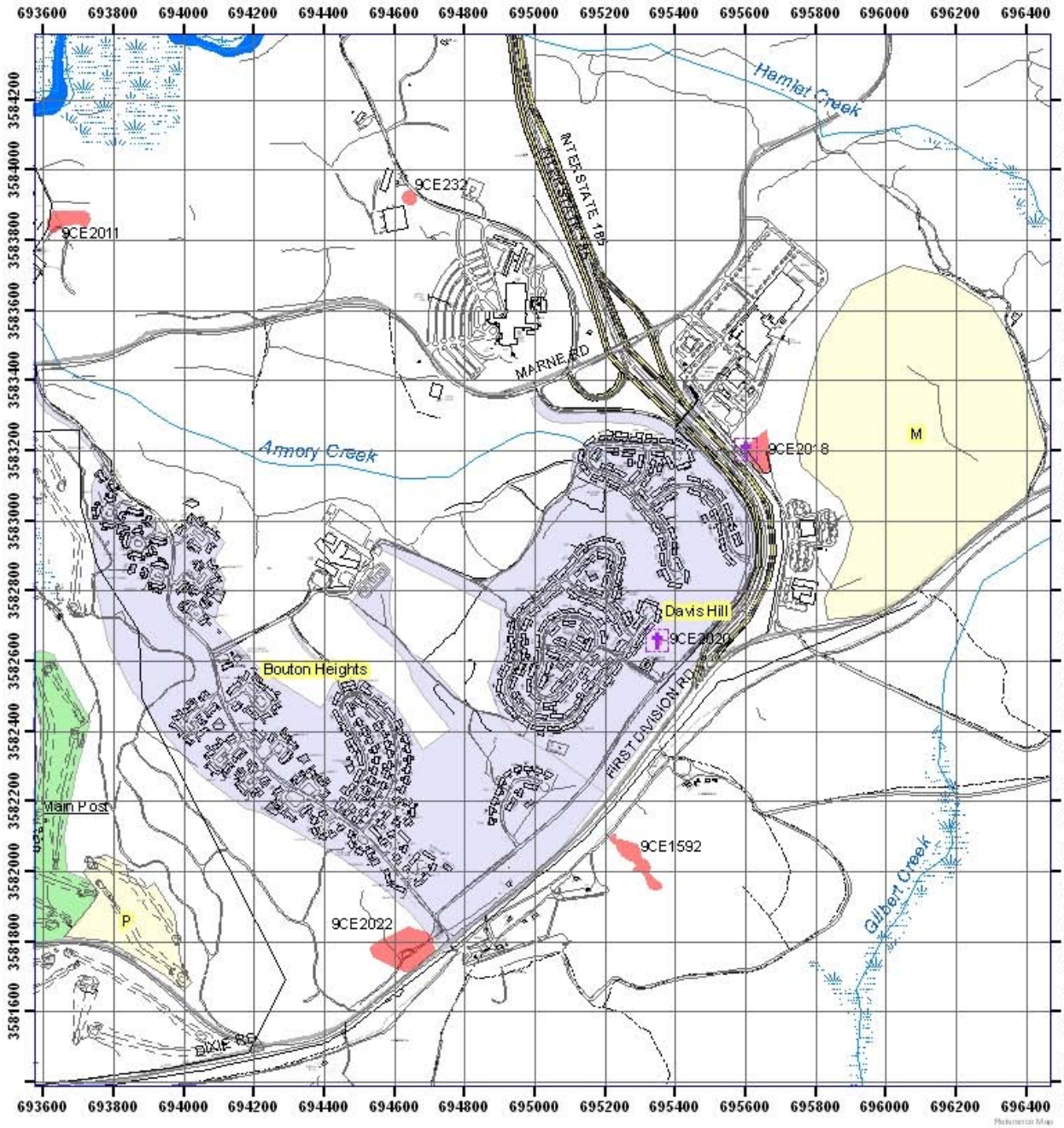
UTM Grid in Meters, NAD83, Zone 16N



Legend
HISTORIC DISTRICT
Ammunition Storage Area
Army Ground Forces Board #3
Lawson Army Airfield
Main Post
Parachute Jump Tower
Cemetery
STATUS
Historic/PROTECTED
Not Eligible
potential housing
existing housing

Ground Disturbing Activity without Permit in Protected Areas is PROHIBITED

1:15,000

Directorate of Public Works
Environmental Management Division
DEH

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BMD #432905

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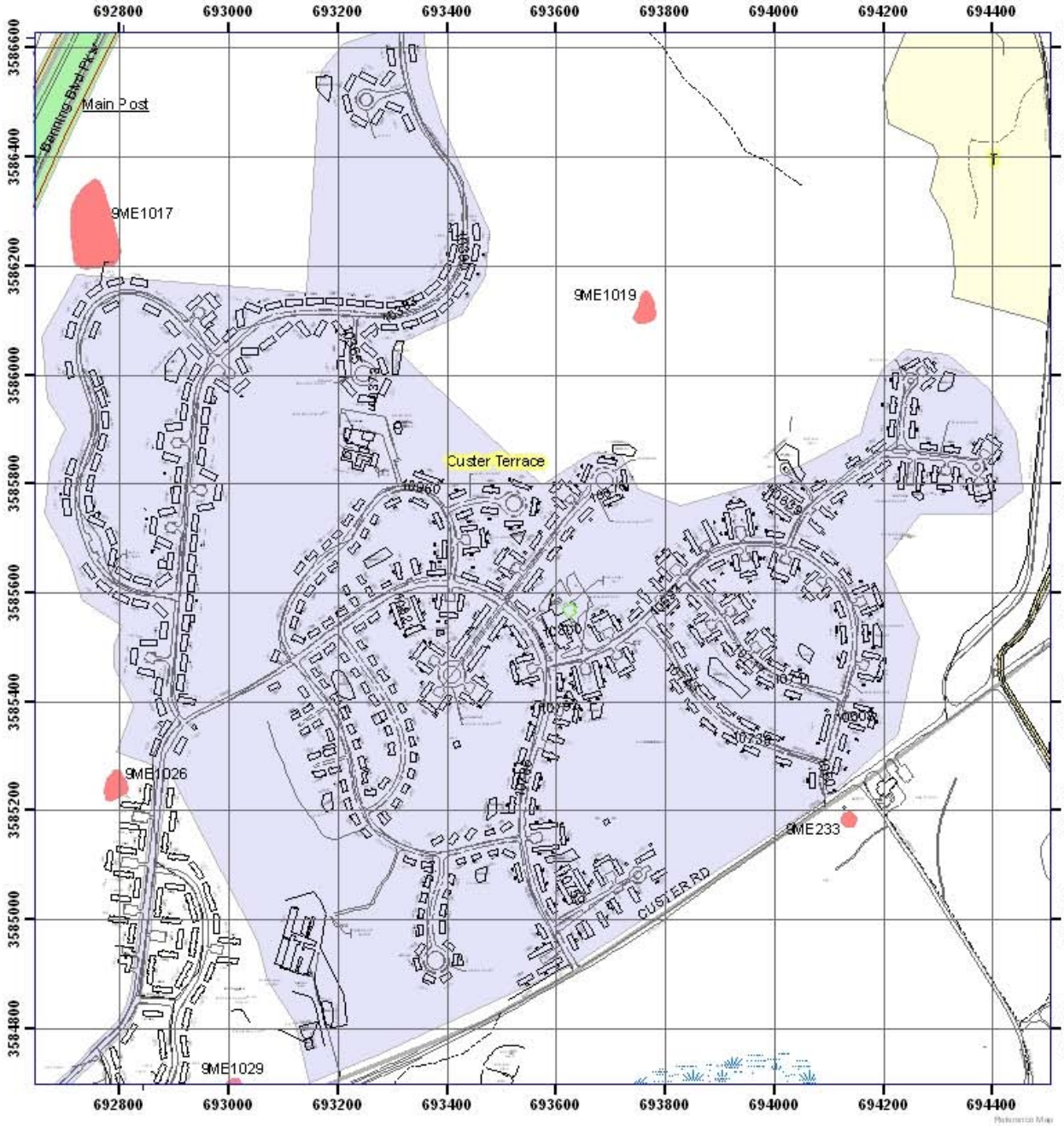
UTM Grid in Meters, NAD83, Zone 16N



Legend
HISTORIC DISTRICT
Ammunition Storage Area
Army Ground Forces Board #3
Lawson Army Airfield
Main Post
Parachute Jump Tower
Cemetery
STATUS
Historic/PROTECTED
Not Eligible
potential housing
existing housing

Ground Disturbing Activity without Permit in Protected Areas is PROHIBITED

1:9,600

0 .0035 .007 .014 .021 .028 Miles

Directorate of Public Works
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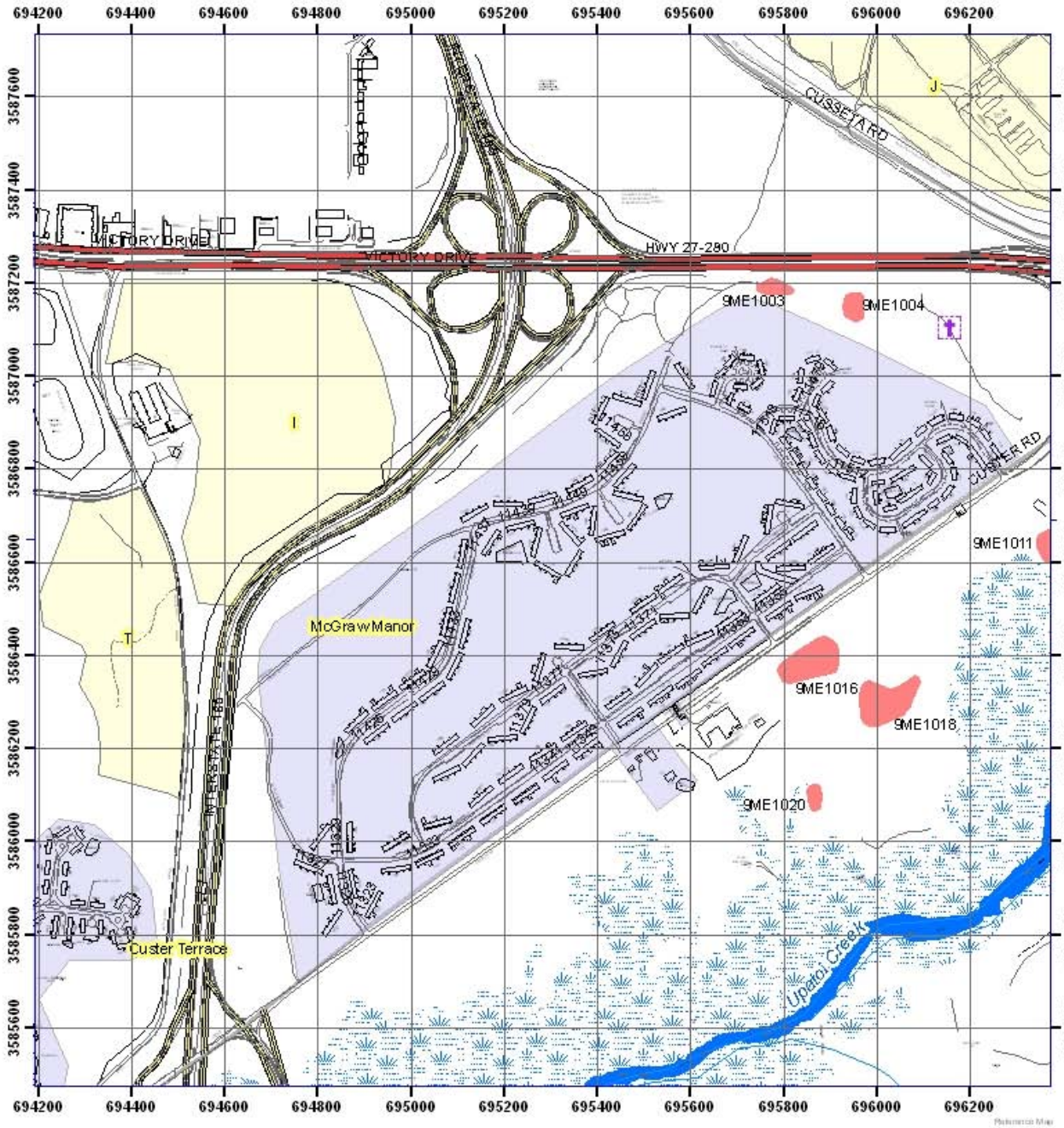
UTM Grid in Meters, NAD83, Zone 16N



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HISTORIC DISTRICT
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Main Post
Parachute Jump Tower
Cemetery
STATUS
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existing housing

Ground Disturbing Activity without Permit in Protected Areas is PROHIBITED

1:11,000

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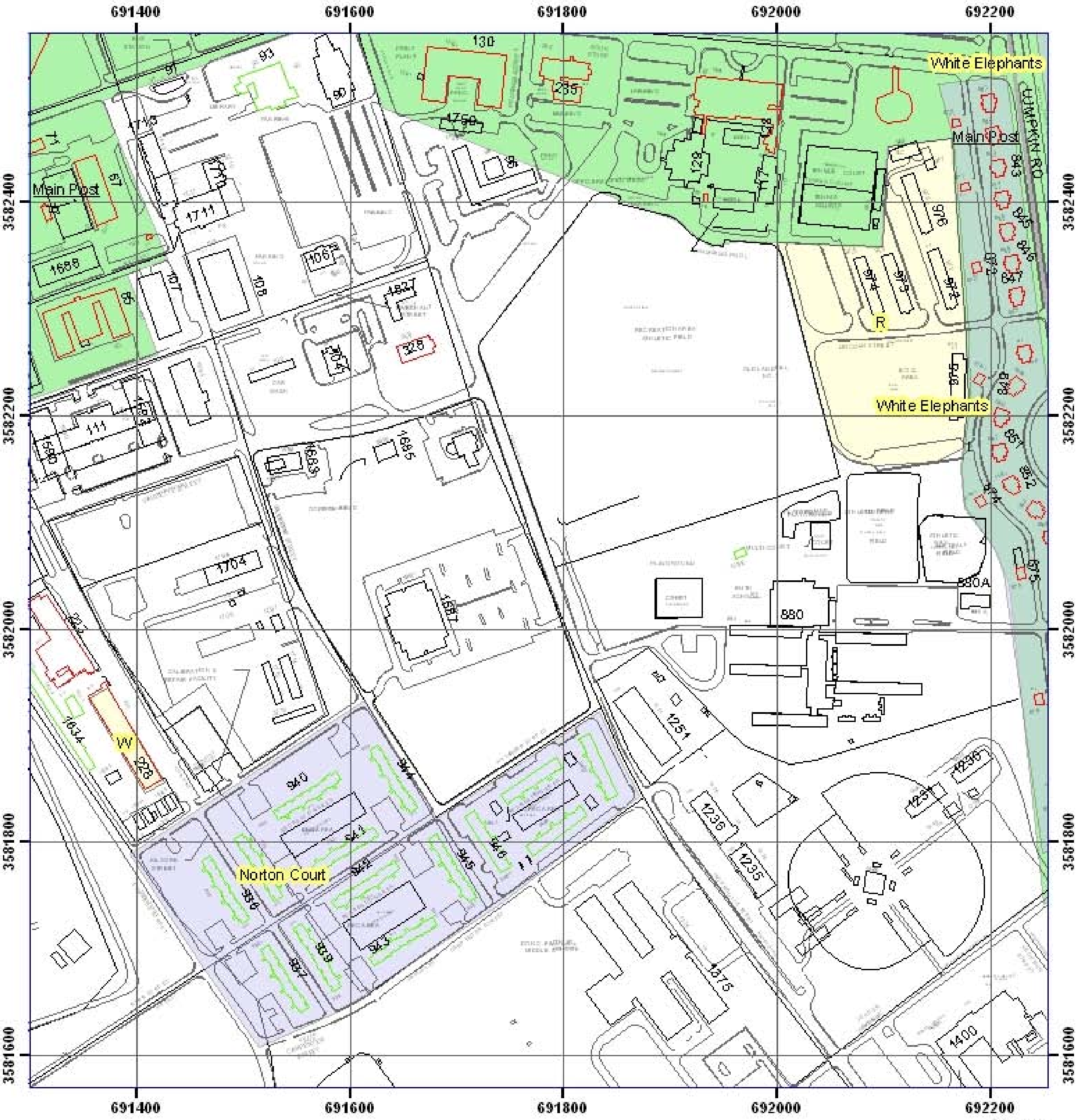
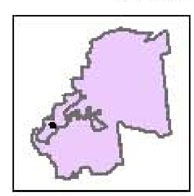


Ground Disturbing Activity without Permit in Protected Areas is PROHIBITED

1:4,900

Reference Map



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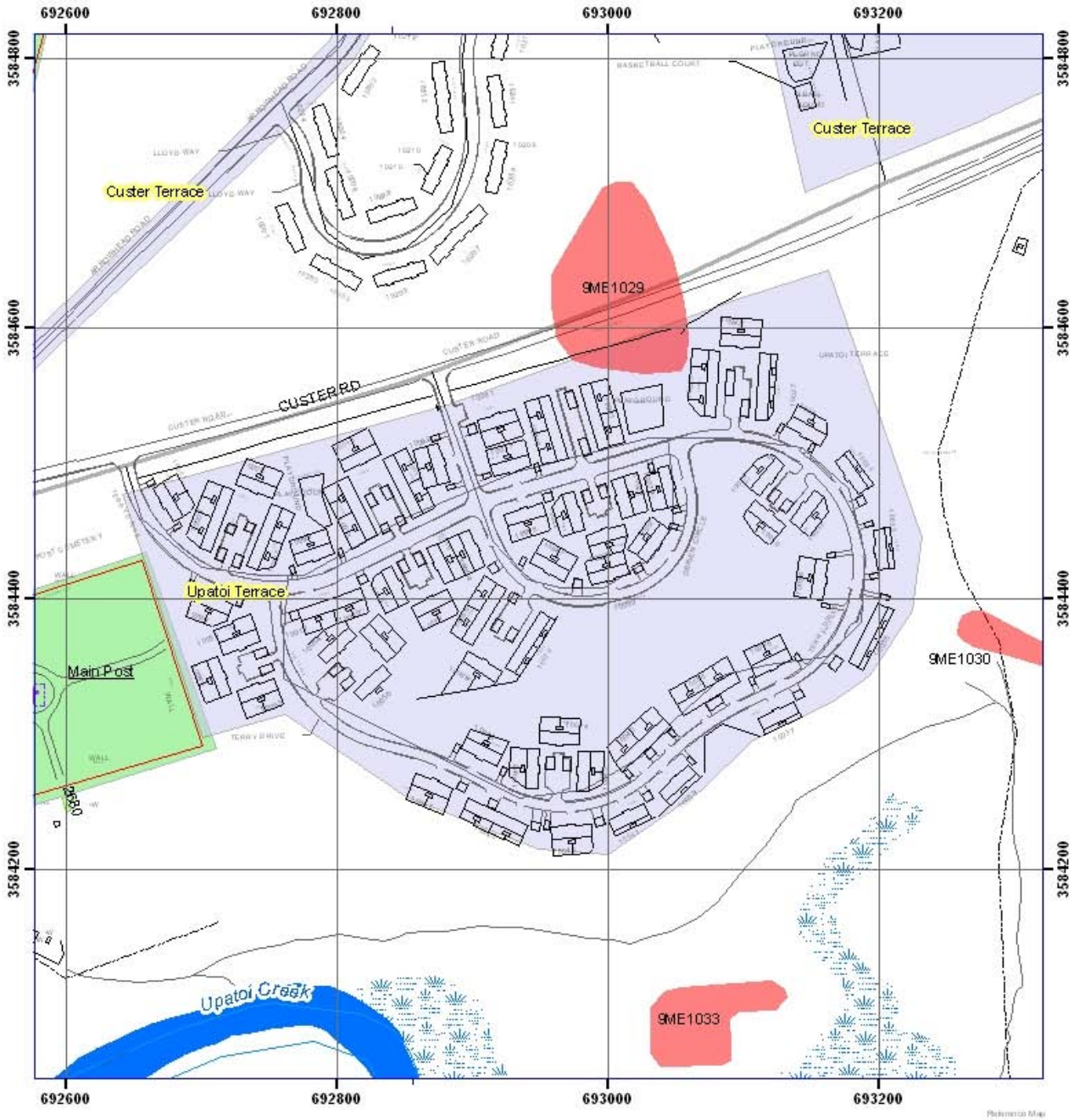

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1:3,800

0 0.0125 0.025 0.05 0.075 0.1 Miles

Directorate of Public Works
Environmental Management Division
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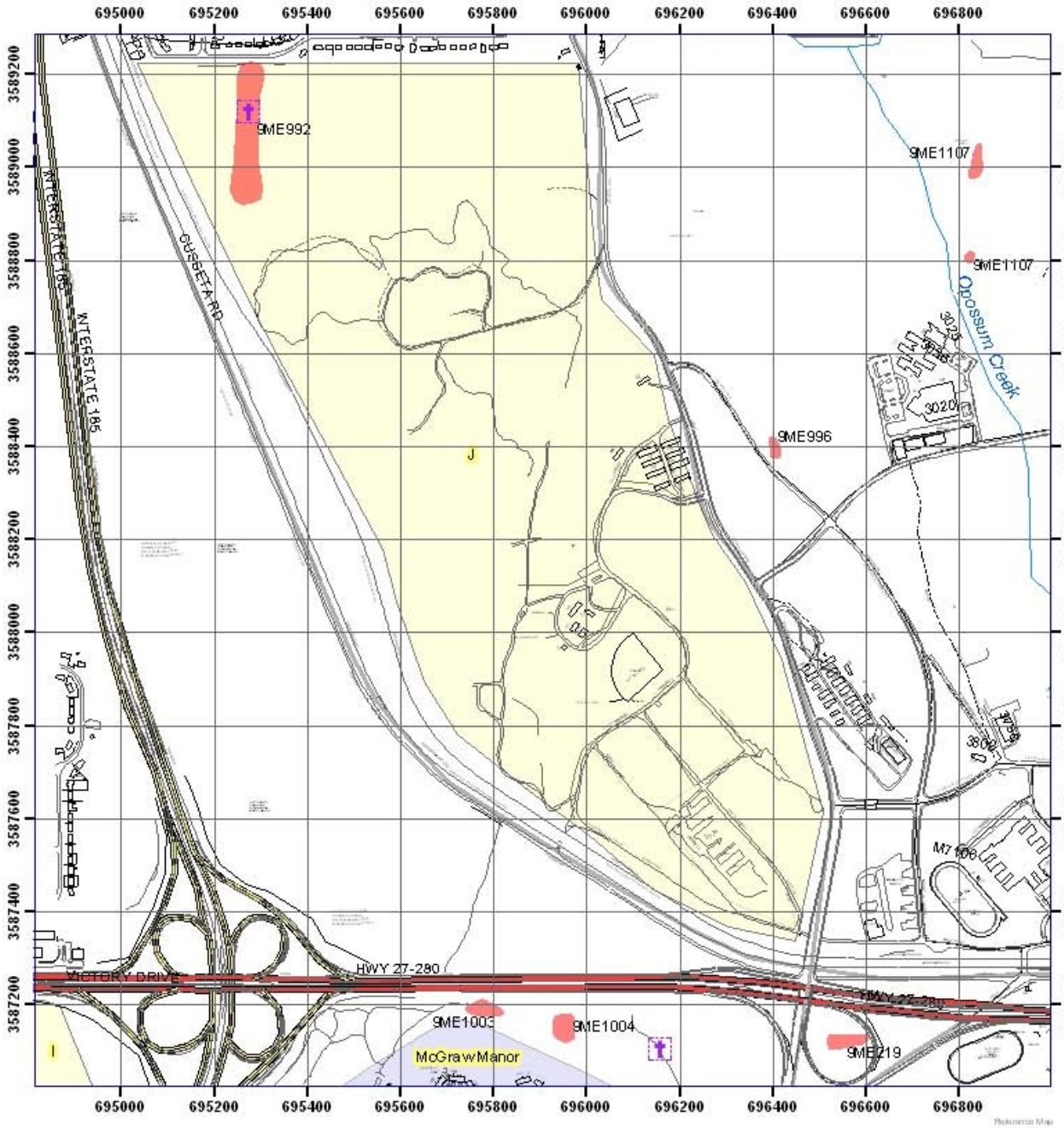

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1:11,000

Directorate of Public Works
Environmental Management Division
DEH

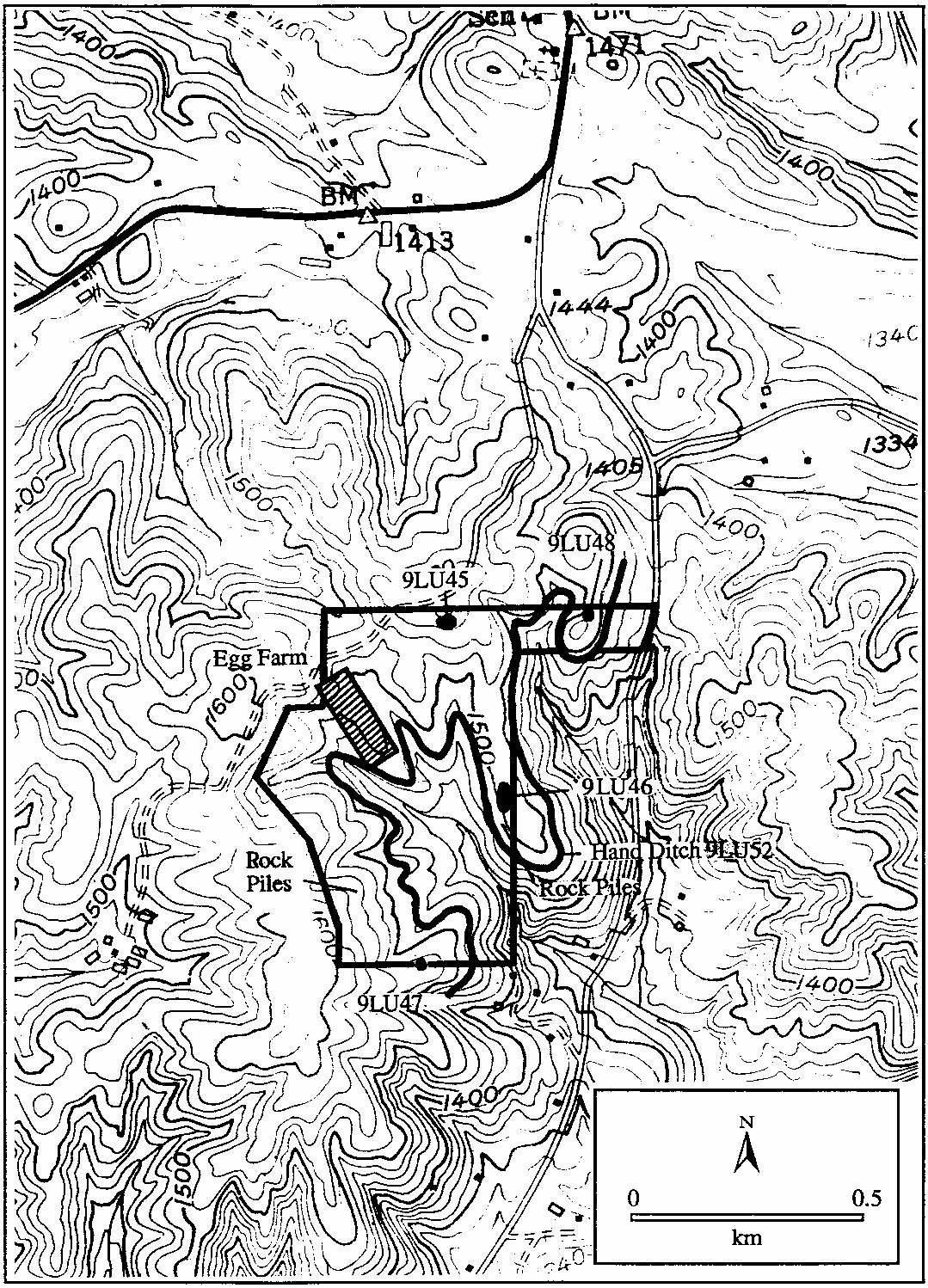

Figure 9. Location of Sites on the Dahlonega Tract (Map source: USGS 7.5' Dahlonega quadrangle).

Attachment C

List of NRHP Eligible or Potentially Eligible Historic Properties within the RCI Footprint

Historic Homes

	Street Address	Facility Number	Unit Sq Ft	Bedrooms	Unit Category	Date Costructed	Housing Area
Indian Head							
1	300 Meehan	00549	992	3	71116	1931	26
2	301 Indianhead /	00532	992	3	71116	1931	26
3	302 Meehan /	00548	992	3	71116	1931	26
4	303 Indianhead /	00533	992	3	71116	1931	26
5	304 Meehan /	00547	992	3	71116	1931	26
6	305 Indianhead /	00534	992	3	71116	1931	26
7	306 Meehan /	00546	992	3	71116	1931	26
8	307 Indianhead /	00535	992	3	71116	1931	26
9	308 Meehan /	00545	992	3	71116	1931	26
10	309 Indianhead /	00536	992	3	71116	1931	26
11	310 Meehan /	00544	992	3	71116	1931	26
12	311 Indianhead /	00537	992	3	71116	1931	26
13	312 Meehan /	00543	992	3	71116	1931	26
14	313 Indianhead /	00538	992	3	71116	1931	26
15	314 Meehan /	00542	992	3	71116	1931	26
16	315 Indianhead /	00539	992	3	71116	1931	26
17	316 Meehan /	00541	992	3	71116	1931	26
18	317 Indianhead /	00540	992	3	71116	1931	26
MacDonald Manor							
1	106 Ingersoll /	00572	992	2	71116	1931	05
2	107 Ingersoll /	00565	992	2	71116	1931	05
3	108 Ingersoll /	00574	992	2	71116	1931	05
4	109 Ingersoll /	00567	992	2	71116	1931	05
5	110 Ingersoll /	00576	992	2	71116	1931	05
6	111 Ingersoll /	00569	992	2	71116	1931	05
7	112 Ingersoll /	00578	992	2	71116	1931	05
8	114 Ingersoll /	00580	992	2	71116	1931	05
9	115 Ingersoll /	00573	992	2	71116	1931	05
10	116 Ingersoll /	00582	992	2	71116	1931	05
11	117 Ingersoll /	00575	992	2	71116	1931	05
12	118 Ingersoll /	00584	992	2	71116	1931	05
13	119 Ingersoll /	00577	992	2	71116	1931	05
14	120 Ingersoll /	00586	992	2	71116	1931	05
15	121 Ingersoll /	00579	992	2	71116	1931	05
16	122 Ingersoll /	00588	992	2	71116	1931	05
17	123 Ingersoll /	00581	992	2	71116	1931	05
18	124 Ingersoll /	00590	992	2	71116	1931	05
19	125 Ingersoll /	00583	992	2	71116	1931	05
20	126 Ingersoll /	00592	992	2	71116	1931	05
21	127 Ingersoll /	00585	992	2	71116	1931	05
22	128 Ingersoll /	00594	992	2	71116	1931	05
23	129 Ingersoll /	00587	992	2	71116	1931	05
24	131 Ingersoll /	00589	992	2	71116	1931	05
25	133 Ingersoll /	00591	992	2	71116	1931	05
26	135 Ingersoll /	00593	992	2	71116	1931	05
27	137 Ingersoll /	00595	992	2	71116	1931	05
28	139 Ingersoll /	00597	992	2	71116	1931	05
29	141 Ingersoll /	00599	992	2	71116	1931	05
30	500 Harris Cir /	00602	961	2	71116	1931	06
31	501 Gaines Cir /	00690	992	2	71116	1931	06
32	501 Harris Cir /	00601	992	2	71116	1931	06
33	502 Harris Cir /	00604	961	2	71116	1931	06

Historic Homes

	Street Address	Facility Number	Unit Sq Ft	Bedrooms	Unit Category	Date Costructed	Housing Area
34	503 Gaines Cir /	00688	992	2	71116	1931	06
35	503 Harris Cir /	00603	992	2	71116	1931	06
36	504 Harris Cir /	00606	961	2	71116	1931	06
37	505 Gaines Cir /	00686	992	2	71116	1931	06
38	505 Harris Cir /	00605	992	2	71116	1931	06
39	506 Harris Cir /	00608	992	2	71116	1931	06
40	507 Gaines Cir /	00684	992	2	71116	1931	06
41	507 Harris Cir /	00607	992	2	71116	1931	06
42	508 Harris Cir /	00610	992	2	71116	1931	06
43	509 Gaines Cir /	00682	992	2	71116	1931	06
44	509 Harris Cir /	00609	992	2	71116	1931	06
45	510 Harris Cir /	00612	992	2	71116	1931	06
46	511 Gaines Cir /	00680	992	2	71116	1931	06
47	511 Harris Cir /	00611	992	2	71116	1931	06
48	512 Harris Cir /	00614	1000	2	71116	1931	06
49	513 Harris Cir /	00613	992	2	71116	1931	06
50	514 Harris Cir /	00616	992	2	71116	1931	06
51	515 Harris Cir /	00615	992	2	71116	1932	06
52	516 Harris Cir /	00618	992	2	71116	1931	06
53	517 Harris Cir /	00617	992	2	71116	1931	06
54	518 Harris Cir /	00620	992	2	71116	1931	06
55	519 Harris Cir /	00619	992	2	71116	1931	06
56	520 Harris Cir /	00622	992	2	71116	1931	06
57	522 Harris Cir /	00624	992	2	71116	1931	06
58	524 Harris Cir /	00626	992	2	71116	1931	06
59	526 Harris Cir /	00628	992	2	71116	1931	06
60	121 Gillesp Lp /	00652	992	2	71116	1931	07
61	123 Gillesp Lp /	00650	992	2	71116	1931	07
62	125 Gillesp Lp /	00648	992	2	71116	1931	07
63	127 Gillesp Lp /	00646	992	2	71116	1931	07
64	129 Gillesp Lp /	00644	992	2	71116	1931	07
65	131 Gillesp Lp /	00642	992	2	71116	1931	07
66	138 Gillesp Lp /	00643	992	2	71116	1931	07
67	140 Gillesp Lp /	00641	992	2	71116	1931	07
68	142 Gillesp Lp /	00639	992	2	71116	1931	07
69	144 Gillesp Lp /	00637	992	2	71116	1931	07
70	300 Vogel Ave /	00557	961	2	71116	1930	08
71	301 Vogel Ave /	00556	961	2	71116	1930	08
72	302 Vogel Ave /	00555	961	2	71116	1930	08
73	303 Vogel Ave /	00554	961	2	71116	1930	08
74	304 Vogel Ave /	00553	961	2	71116	1930	08
75	305 Vogel Ave /	00552	961	2	71116	1930	08
76	307 Vogel Ave /	00550	961	2	71116	1930	08
77	400 Ingersoll /	00596	992	2	71116	1931	08
78	401 Gaines Cir /	00696	992	2	71116	1931	08
79	402 Ingersoll /	00598	961	2	71116	1930	08
80	403 Gaines Cir /	00694	961	2	71116	1931	08
81	404 Ingersoll /	00600	961	2	71116	1930	08
82	405 Gaines Cir /	00692	961	2	71116	1931	08
83	306 Vogel Ave /	00551	961	2	71116	1930	25

Historic Homes

	Street Address	Facility Number	Unit Sq Ft	Bedrooms	Unit Category	Date Costructed	Housing Area
East Main Post							
1	100 Rainbow Av /	00703	2554	3	71113	1923	01
2	101 Rainbow Av /	00704	2554	3	71113	1923	01
3	102 Rainbow Av /	00705	2554	3	71113	1923	01
4	103 Rainbow Av /	00706	2554	3	71113	1923	01
5	104 Rainbow Av /	00707	2554	3	71113	1923	01
6	105 Rainbow Av /	00708	2554	3	71113	1923	01
7	106 Rainbow Av /	00709	2554	3	71113	1923	01
8	107 Rainbow Av /	00710	2554	3	71113	1923	01
9	108 Rainbow Av /	00711	2554	3	71113	1923	01
10	109 Rainbow Av /	00712	2554	3	71113	1923	01
11	110 Rainbow Av /	00713	2554	3	71113	1923	01
12	111 Rainbow Av /	00714	2554	3	71113	1923	01
13	112 Rainbow Av /	00715	2554	3	71113	1923	01
14	113 Rainbow Av /	00716	2554	3	71113	1923	01
15	114 Rainbow Av /	00717	2554	3	71113	1923	01
16	115 Rainbow Av /	00718	2554	3	71113	1923	01
17	116 Rainbow Av /	00719	2554	3	71113	1923	01
18	117 Rainbow Av /	00720	2554	3	71113	1923	01
19	118 Rainbow Av /	00721	2554	3	71113	1923	01
20	119 Rainbow Av /	00722	2554	3	71113	1923	01
21	120 Rainbow Av /	00723	2554	3	71113	1923	01
22	121 Rainbow Av /	00724	2554	3	71113	1923	01
23	122 Rainbow Av /	00725	2554	3	71113	1923	01
24	123 Rainbow Av /	00726	2554	3	71113	1923	01
25	125 Rainbow Av /	00728	2554	3	71113	1923	01
26	126 Rainbow Av /	00729	2554	3	71113	1923	01
27	127 Rainbow Av /	00730	2554	3	71113	1923	01
28	128 Rainbow Av /	00731	2554	3	71113	1923	01
29	129 Rainbow Av /	00732	2554	3	71113	1923	01
30	130 Rainbow Av /	00733	2554	3	71113	1923	01
31	131 Rainbow Av /	00734	2554	3	71113	1923	01
32	132 Rainbow Av /	00735	2554	3	71113	1923	01
33	100 Miller Lp /	00020	2985	3	71113	1934	02
34	101 Miller Lp /	00050	2876	3	71113	1934	02
35	102 Miller Lp /	00021	2985	3	71113	1934	02
36	103 Miller Lp /	00045	2876	3	71113	1934	02
37	104 Miller Lp /	00022	2985	3	71113	1934	02
38	105 Miller Lp /	00043	2876	3	71113	1934	02
39	106 Miller Lp /	00023	2985	3	71113	1934	02
40	107 Miller Lp /	00042	2876	3	71113	1934	02
41	109 Miller Lp /	00041	2876	3	71113	1934	02
42	200 Baltzell A /	00064	2876	3	71113	1934	02
43	200 Miller Lp /	00024	2985	3	71113	1934	02
44	201 Miller Lp /	00057	2554	3	71113	1934	02
45	202 Miller Lp /	00025	2985	3	71113	1934	02
46	203 Miller Lp /	00056	2554	3	71113	1934	02
47	204 Miller Lp /	00026	2985	3	71113	1934	02
48	205 Miller Lp /	00055	2554	3	71113	1934	02
49	206 Miller Lp /	00027	2985	3	71113	1934	02
50	207 Miller Lp /	00053	2510	3	71113	1934	02
51	208 Miller Lp /	00028	2510	3	71113	1934	02
52	209 Miller Lp /	00052	2510	3	71113	1934	02
53	210 Miller Lp /	00029	2510	3	71113	1934	02
54	211 Miller Lp /	00051	2510	3	71113	1934	02

Historic Homes

	Street Address	Facility Number	Unit Sq Ft	Bedrooms	Unit Category	Date Costructed	Housing Area
55	212 Miller Lp /	00030	2510	3	71113	1934	02
56	213 Miller Lp /	00049	2554	3	71113	1934	02
57	214 Miller Lp /	00031	2510	3	71113	1934	02
58	215 Miller Lp /	00048	2554	3	71113	1934	02
59	216 Miller Lp /	00032	2510	3	71113	1934	02
60	217 Miller Lp /	00047	2554	3	71113	1934	02
61	218 Miller Lp /	00033	2510	3	71113	1934	02
62	220 Miller Lp /	00034	2554	3	71113	1934	02
63	300 Miller Lp /	00039	2554	3	71113	1934	02
64	301 Miller Lp /	00046	2554	3	71113	1934	02
65	302 Miller Lp /	00040	2554	3	71113	1934	02
66	303 Miller Lp /	00054	2876	3	71113	1934	02
67	304 Miller Lp /	00061	2876	3	71113	1934	02
68	305 Miller Lp /	00044	2554	3	71113	1934	02
69	306 Miller Lp /	00062	2876	3	71113	1934	02
70	307 Miller Lp /	00058	2876	3	71113	1934	02
71	308 Miller Lp /	00063	2876	3	71113	1934	02
72	309 Miller Lp /	00059	2876	3	71113	1934	02
73	100 Austin Lp /	00400	1565	3	71114	1923	03
74	101 Austin Lp /	00401	1565	3	71114	1923	03
75	102 Austin Lp /	00400	1565	3	71114	1923	03
76	103 Austin Lp /	00401	1565	3	71114	1923	03
77	104 Austin Lp /	00404	1565	3	71114	1923	03
78	105 Austin Lp /	00405	1565	3	71114	1923	03
79	106 Austin Lp /	00404	1565	3	71114	1923	03
80	107 Austin Lp /	00405	1565	3	71114	1923	03
81	108 Austin Lp /	00408	1565	3	71114	1923	03
82	109 Austin Lp /	00409	1565	3	71114	1923	03
83	110 Austin Lp /	00408	1565	3	71114	1923	03
84	111 Austin Lp /	00409	1565	3	71114	1923	03
85	200 Austin Lp /	00414	1565	3	71114	1923	03
86	201 Austin Lp /	00413	1565	3	71114	1923	03
87	202 Austin Lp /	00414	1565	3	71114	1923	03
88	203 Austin Lp /	00413	1565	3	71114	1923	03
89	204 Austin Lp /	00418	1565	3	71114	1923	03
90	205 Austin Lp /	00417	1565	3	71114	1923	03
91	206 Austin Lp /	00418	1565	3	71114	1923	03
92	207 Austin Lp /	00417	1565	3	71114	1923	03
93	208 Austin Lp /	00422	1565	3	71114	1923	03
94	209 Austin Lp /	00421	1565	3	71114	1923	03
95	210 Austin Lp /	00422	1565	3	71114	1923	03
96	211 Austin Lp /	00421	1565	3	71114	1923	03
97	212 Austin Lp /	00426	1565	3	71114	1923	03
98	213 Austin Lp /	00425	1565	3	71114	1923	03
99	214 Austin Lp /	00426	1565	3	71114	1923	03
100	215 Austin Lp /	00425	1565	3	71114	1923	03
101	216 Austin Lp /	00428	1565	3	71114	1934	03
102	217 Austin Lp /	00429	1703	3	71114	1924	03
103	219 Austin Lp /	00429	1703	3	71114	1923	03
104	221 Austin Lp /	00455	1887	3	71114	1934	03
105	223 Austin Lp /	00457	1887	3	71114	1934	03
106	218 Austin Lp /	00430	1887	3	71114	1934	04
107	220 Austin Lp /	00432	1887	3	71114	1934	04
108	222 Austin Lp /	00434	1565	3	71114	1923	04
109	224 Austin Lp /	00434	1565	3	71114	1923	04

Historic Homes

	Street Address	Facility Number	Unit Sq Ft	Bedrooms	Unit Category	Date Costructed	Housing Area
110	225 Austin Lp /	00459	1887	3	71114	1934	04
111	226 Austin Lp /	00438	1565	3	71114	1923	04
112	227 Austin Lp /	00461	1887	3	71114	1934	04
113	228 Austin Lp /	00438	1565	3	71114	1923	04
114	229 Austin Lp /	00433	1703	3	71114	1923	04
115	230 Austin Lp /	00442	1565	3	71115	1923	04
116	231 Austin Lp /	00433	1703	3	71115	1923	04
117	232 Austin Lp /	00442	1565	3	71115	1923	04
118	233 Austin Lp /	00437	1703	3	71115	1923	04
119	234 Austin Lp /	00446	1565	3	71115	1923	04
120	235 Austin Lp /	00437	1703	3	71115	1923	04
121	236 Austin Lp /	00446	1565	3	71115	1923	04
122	237 Austin Lp /	00441	2985	3	71115	1934	04
123	239 Austin Lp /	00443	2985	3	71115	1934	04
124	241 Austin Lp /	00445	2985	3	71115	1934	04
125	300 Austin Lp /	00452	1707	3	71115	1923	04
126	301 Austin Lp /	00447	2985	3	71115	1934	04
127	302 Austin Lp /	00452	1707	3	71115	1923	04
128	303 Austin Lp /	00449	2985	3	71115	1934	04
129	304 Austin Lp /	00456	1703	3	71115	1923	04
130	305 Austin Lp /	00451	2985	3	71115	1934	04
131	306 Austin Lp /	00456	1703	3	71115	1923	04
132	307 Austin Lp /	00463	2554	3	71115	1934	04
133	308 Austin Lp /	00460	1703	3	71115	1923	04
134	309 Austin Lp /	00453	2985	3	71115	1934	04
135	310 Austin Lp /	00460	1703	3	71115	1923	04
136	312 Austin Lp /	00464	1703	3	71115	1923	04
137	314 Austin Lp /	00464	1703	3	71115	1923	04
138	100 Eames Ave /	00504	2851	4	71112	1934	09
139	101 Sigerfoos /	00346	1707	3	71114	1923	09
140	102 Eames Ave /	00503	2851	4	71112	1934	09
141	103 Sigerfoos /	00346	1707	3	71114	1923	09
142	104 Eames Ave /	00502	2851	4	71112	1934	09
143	105 Baltzell A /	00356	1690	3	71114	1930	09
144	105 Sigerfoos /	00344	1707	3	71114	1923	09
145	106 Eames Ave /	00501	2851	4	71112	1934	09
146	107 Baltzell A /	00356	1690	3	71114	1930	09
147	107 Sigerfoos /	00344	1707	3	71114	1923	09
148	108 Eames Ave /	00500	2851	4	71112	1934	09
149	109 Baltzell A /	00354	1690	3	71114	1930	09
150	109 Sigerfoos /	00342	1707	3	71114	1923	09
151	110 Eames Ave /	00309	3126	4	71112	1934	09
152	111 Baltzell A /	00354	1690	3	71114	1930	09
153	111 Sigerfoos /	00342	1707	3	71114	1923	09
154	112 Eames Ave /	00308	3126	4	71112	1934	09
155	113 Baltzell A /	00352	1690	3	71114	1930	09
156	113 Sigerfoos /	00340	1707	3	71114	1923	09
157	114 Eames Ave /	00307	3126	4	71112	1934	09
158	115 Baltzell A /	00352	1690	3	71114	1930	09
159	115 Sigerfoos /	00340	1707	3	71114	1923	09
160	116 Eames Ave /	00306	3126	4	71112	1934	09
161	117 Baltzell A /	00350	1690	3	71114	1930	09
162	117 Sigerfoos /	00338	1707	3	71114	1923	09
163	118 Eames Ave /	00002	2716	4	71111	1934	09
164	119 Baltzell A /	00350	1690	3	71114	1930	09

	Street Address	Facility Number	Unit Sq Ft	Bedrooms	Unit Category	Date Costructed	Housing Area
165	119 Sigerfoos /	00338	1707	3	71114	1923	09
166	121 Baltzell A /	00348	1690	3	71114	1930	09
167	123 Baltzell A /	00348	1690	3	71114	1930	09
168	201 Sigerfoos /	00472	2554	3	71115	1934	09
169	203 Sigerfoos /	00473	2554	3	71115	1934	09
170	205 Sigerfoos /	00474	2554	3	71115	1934	09
171	207 Sigerfoos /	00475	2554	3	71115	1934	09
172	209 Sigerfoos /	00476	2554	3	71115	1934	09
173	211 Sigerfoos /	00477	2554	3	71115	1934	09
174	213 Sigerfoos /	00478	2554	3	71115	1934	09
175	201 Lumpkin Rd /	00841	3164	4	71113	1934	10
176	203 Lumpkin Rd /	00842	3164	4	71113	1934	10
177	205 Lumpkin Rd /	00843	3164	4	71113	1934	10
178	207 Lumpkin Rd /	00844	3164	4	71113	1934	10
179	209 Lumpkin Rd /	00845	3164	4	71113	1934	10
180	211 Lumpkin Rd /	00846	3164	4	71113	1934	10
181	213 Lumpkin Rd /	00847	3164	4	71113	1934	10
182	301 Lumpkin Rd /	00848	3164	4	71113	1934	10
183	303 Lumpkin Rd /	00849	3164	4	71113	1934	10
184	305 Lumpkin Rd /	00850	3164	4	71113	1934	10
185	307 Lumpkin Rd /	00851	3164	4	71113	1934	10
186	309 Lumpkin Rd /	00852	3164	4	71113	1934	10
187	311 Lumpkin Rd /	00853	3164	4	71113	1934	10
188	313 Lumpkin Rd /	00854	3164	4	71113	1934	10
189	315 Lumpkin Rd /	00855	3164	4	71113	1934	10
190	317 Lumpkin Rd /	00856	3164	4	71113	1934	10
191	401 Lumpkin Rd /	00857	3164	4	71113	1934	10
192	403 Lumpkin Rd /	00858	3164	4	71113	1934	10
193	405 Lumpkin Rd /	00859	3164	4	71113	1934	10
194	407 Lumpkin Rd /	00860	3164	4	71113	1934	10
195	409 Lumpkin Rd /	00861	3164	4	71113	1934	10
196	411 Lumpkin Rd /	00862	3164	4	71113	1934	10
197	100 Running Av / A	00831	1914	3	71114	1935	11
198	100 Running Av / B	00831	1914	3	71114	1935	11
199	100 Running Av / C	00831	1914	3	71114	1935	11
200	100 Running Av / D	00831	1914	3	71114	1935	11
201	101 Madden Ave / A	00825	1914	3	71114	1935	11
202	101 Madden Ave / B	00825	1914	3	71114	1935	11
203	101 Madden Ave / C	00825	1914	3	71114	1935	11
204	101 Madden Ave / D	00825	1914	3	71114	1935	11
205	300 Lumpkin Rd / A	00826	1914	3	71114	1935	11
206	300 Lumpkin Rd / B	00826	1914	3	71114	1935	11
207	300 Lumpkin Rd / C	00826	1914	3	71114	1935	11
208	300 Lumpkin Rd / D	00826	1914	3	71114	1935	11
209	301 Stewart Av / A	00824	1914	3	71114	1935	11
210	301 Stewart Av / B	00824	1914	3	71114	1935	11
211	301 Stewart Av / C	00824	1914	3	71114	1935	11
212	301 Stewart Av / D	00824	1914	3	71114	1935	11
213	302 Lumpkin Rd / A	00827	1914	3	71114	1935	11
214	302 Lumpkin Rd / B	00827	1914	3	71114	1935	11
215	302 Lumpkin Rd / C	00827	1914	3	71114	1935	11
216	302 Lumpkin Rd / D	00827	1914	3	71114	1935	11
217	303 Stewart Av / A	00823	1914	3	71114	1935	11
218	303 Stewart Av / B	00823	1914	3	71114	1935	11
219	303 Stewart Av / C	00823	1914	3	71114	1935	11

	Street Address	Facility Number	Unit Sq Ft	Bedrooms	Unit Category	Date Costructed	Housing Area
220	303 Stewart Av / D	00823	1914	3	71114	1935	11
221	304 Lumpkin Rd / A	00828	1914	3	71114	1935	11
222	304 Lumpkin Rd / B	00828	1914	3	71114	1935	11
223	304 Lumpkin Rd / C	00828	1914	3	71114	1935	11
224	304 Lumpkin Rd / D	00828	1914	3	71114	1935	11
225	305 Stewart Av / A	00822	1914	3	71114	1935	11
226	305 Stewart Av / B	00822	1914	3	71114	1935	11
227	305 Stewart Av / C	00822	1914	3	71114	1935	11
228	305 Stewart Av / D	00822	1914	3	71114	1935	11
229	306 Lumpkin Rd / A	00829	1914	3	71114	1935	11
230	306 Lumpkin Rd / B	00829	1914	3	71114	1935	11
231	306 Lumpkin Rd / C	00829	1914	3	71114	1935	11
232	306 Lumpkin Rd / D	00829	1914	3	71114	1935	11
233	307 Stewart Av / A	00821	1914	3	71114	1935	11
234	307 Stewart Av / B	00821	1914	3	71114	1935	11
235	307 Stewart Av / C	00821	1914	3	71114	1935	11
236	307 Stewart Av / D	00821	1914	3	71114	1935	11
237	308 Lumpkin Rd / A	00830	1914	3	71114	1935	11
238	308 Lumpkin Rd / B	00830	1914	3	71114	1935	11
239	308 Lumpkin Rd / C	00830	1914	3	71114	1935	11
240	308 Lumpkin Rd / D	00830	1914	3	71114	1935	11
241	201 Madden Ave / A	00816	1914	3	71114	1934	12
242	201 Madden Ave / B	00816	1914	3	71114	1934	12
243	201 Madden Ave / C	00816	1914	3	71114	1934	12
244	201 Madden Ave / D	00816	1914	3	71114	1934	12
245	301 1ST Div Rd / A	00815	1914	3	71114	1934	12
246	301 1ST Div Rd / B	00815	1914	3	71114	1934	12
247	301 1ST Div Rd / C	00815	1914	3	71114	1934	12
248	301 1ST Div Rd / D	00815	1914	3	71114	1934	12
249	302 Stewart Av / A	00817	1914	3	71114	1935	12
250	302 Stewart Av / B	00817	1914	3	71114	1935	12
251	302 Stewart Av / C	00817	1914	3	71114	1935	12
252	302 Stewart Av / D	00817	1914	3	71114	1935	12
253	303 1ST Div Rd / A	00814	1914	3	71114	1934	12
254	303 1ST Div Rd / B	00814	1914	3	71114	1934	12
255	303 1ST Div Rd / C	00814	1914	3	71114	1934	12
256	303 1ST Div Rd / D	00814	1914	3	71114	1934	12
257	304 Stewart Av / A	00818	1914	3	71114	1935	12
258	304 Stewart Av / B	00818	1914	3	71114	1935	12
259	304 Stewart Av / C	00818	1914	3	71114	1935	12
260	304 Stewart Av / D	00818	1914	3	71114	1935	12
261	305 1ST Div Rd / A	00813	1914	3	71114	1934	12
262	305 1ST Div Rd / B	00813	1914	3	71114	1934	12
263	305 1ST Div Rd / C	00813	1914	3	71114	1934	12
264	305 1ST Div Rd / D	00813	1914	3	71114	1934	12
265	306 Stewart Av / A	00819	1914	3	71114	1935	12
266	306 Stewart Av / B	00819	1914	3	71114	1935	12
267	306 Stewart Av / C	00819	1914	3	71114	1935	12
268	306 Stewart Av / D	00819	1914	3	71114	1935	12
269	307 1ST Div Rd / A	00812	1914	3	71114	1934	12
270	307 1ST Div Rd / B	00812	1914	3	71114	1934	12
271	307 1ST Div Rd / C	00812	1914	3	71114	1934	12
272	307 1ST Div Rd / D	00812	1914	3	71114	1934	12
273	308 Stewart Av / A	00820	1914	3	71114	1935	12
274	308 Stewart Av / B	00820	1914	3	71114	1935	12

	Street Address	Facility Number	Unit Sq Ft	Bedrooms	Unit Category	Date Costructed	Housing Area
275	308 Stewart Av / C	00820	1914	3	71114	1935	12
276	308 Stewart Av / D	00820	1914	3	71114	1935	12
277	309 1ST Div Rd / A	00811	1914	3	71114	1934	12
278	309 1ST Div Rd / B	00811	1914	3	71114	1934	12
279	309 1ST Div Rd / C	00811	1914	3	71114	1934	12
280	309 1ST Div Rd / D	00811	1914	3	71114	1934	12
281	400 Wickersham /	00772	2876	3	71112	1934	13
282	401 Baltzell A /	00738	2876	3	71112	1934	13
283	402 Wickersham /	00771	2876	3	71112	1934	13
284	403 Baltzell A /	00739	2876	3	71112	1934	13
285	404 Wickersham /	00770	2876	3	71112	1934	13
286	405 Baltzell A /	00740	2876	3	71112	1934	13
287	406 Wickersham /	00769	2876	3	71112	1934	13
288	407 Baltzell A /	00741	2876	3	71112	1934	13
289	408 Wickersham /	00768	2876	3	71112	1934	13
290	409 Baltzell A /	00742	2876	3	71112	1934	13
291	411 Baltzell A /	00743	2876	3	71112	1934	13
292	500 Wickersham /	00765	2876	3	71112	1934	13
293	501 Baltzell A /	00746	2876	3	71112	1934	13
294	501 Running Av /	00773	2876	3	71112	1934	13
295	501 Yeager Ave /	00766	2876	3	71112	1934	13
296	501 Zuckerman /	00759	2876	3	71112	1923	13
297	502 Wickersham /	00764	2876	3	71112	1934	13
298	502 Yeager Ave /	00767	2876	3	71112	1923	13
299	502 Zuckerman /	00760	2876	3	71112	1934	13
300	503 Baltzell A /	00747	2876	3	71112	1934	13
301	503 Running Av /	00736	2876	3	71112	1923	13
302	503 Yeager Ave /	00745	2876	3	71112	1923	13
303	504 Wickersham /	00763	2876	3	71112	1934	13
304	504 Yeager Ave /	00744	2876	3	71112	1923	13
305	504 Zuckerman /	00751	2876	3	71112	1934	13
306	505 Baltzell A /	00748	2876	3	71112	1934	13
307	505 Running Av /	00737	2876	3	71112	1934	13
308	506 Wickersham /	00762	2876	3	71112	1934	13
309	507 Baltzell A /	00749	2876	3	71112	1934	13
310	508 Wickersham /	00761	2876	3	71112	1934	13
311	509 Baltzell A /	00750	2876	3	71112	1934	13
312	600 Wickersham /	00758	2876	3	71112	1934	13
313	601 Baltzell A /	00752	2876	3	71112	1934	13
314	602 Wickersham /	00757	2876	3	71112	1934	13
315	603 Baltzell A /	00753	2876	3	71112	1934	13
316	605 Baltzell A /	00754	2876	3	71112	1934	13
317	607 Baltzell A /	00755	2876	3	71112	1934	13
318	609 Baltzell A /	00756	2876	3	71112	1934	13
319	400 1ST Div Rd /	00809	2876	3	71112	1934	14
320	401 Running Av /	00810	2876	3	71112	1934	14
321	401 Wickersham /	00775	2876	3	71112	1934	14
322	401 Yeager Ave /	00803	2876	3	71112	1934	14
323	401 Zuckerman /	00796	2876	3	71112	1923	14
324	402 1ST Div Rd /	00808	2876	3	71112	1934	14
325	402 Yeager Ave /	00804	2876	3	71112	1934	14
326	402 Zuckerman /	00797	2876	3	71112	1923	14
327	403 Running Av /	00774	2876	3	71112	1934	14
328	403 Wickersham /	00776	2876	3	71112	1934	14
329	403 Yeager Ave /	00781	2876	3	71112	1934	14

	Street Address	Facility Number	Unit Sq Ft	Bedrooms	Unit Category	Date Costructed	Housing Area
330	403 Zuckerman /	00788	2876	3	71112	1923	14
331	404 1ST Div Rd /	00807	2876	3	71112	1934	14
332	404 Yeager Ave /	00780	2876	3	71112	1923	14
333	404 Zuckerman /	00787	2876	3	71112	1934	14
334	405 Wickersham /	00777	2876	3	71112	1934	14
335	406 1ST Div Rd /	00806	2876	3	71112	1934	14
336	407 Wickersham /	00778	2876	3	71112	1934	14
337	408 1ST Div Rd /	00805	2876	3	71112	1934	14
338	409 Wickersham /	00779	2876	3	71112	1934	14
339	500 1ST Div Rd /	00802	2876	3	71112	1934	14
340	501 Wickersham /	00782	2876	3	71112	1934	14
341	502 1ST Div Rd /	00801	2876	3	71112	1934	14
342	503 Wickersham /	00783	2876	3	71112	1934	14
343	504 1ST Div Rd /	00800	2876	3	71112	1934	14
344	505 Wickersham /	00784	2876	3	71112	1934	14
345	506 1ST Div Rd /	00799	2876	3	71112	1934	14
346	507 Wickersham /	00785	2876	3	71112	1934	14
347	508 1ST Div Rd /	00798	2876	3	71112	1934	14
348	509 Wickersham /	00786	2876	3	71112	1934	14
349	600 1ST Div Rd /	00795	2876	3	71112	1934	14
350	601 Wickersham /	00789	2876	3	71112	1934	14
351	602 1ST Div Rd /	00794	2876	3	71112	1934	14
352	603 Wickersham /	00790	2876	3	71112	1934	14
353	604 1ST Div Rd /	00793	2876	3	71112	1934	14
354	606 1ST Div Rd /	00792	2876	3	71112	1934	14
355	100 Yeager Ave / A	00837	1914	3	71114	1935	20
356	100 Yeager Ave / B	00837	1914	3	71114	1935	20
357	100 Yeager Ave / C	00837	1914	3	71114	1935	20
358	100 Yeager Ave / D	00837	1914	3	71114	1935	20
359	101 Running Av / A	00833	1914	3	71114	1935	20
360	101 Running Av / B	00833	1914	3	71114	1935	20
361	101 Running Av / C	00833	1914	3	71114	1935	20
362	101 Running Av / D	00833	1914	3	71114	1935	20
363	102 Yeager Ave / A	00836	1914	3	71114	1935	20
364	102 Yeager Ave / B	00836	1914	3	71114	1935	20
365	102 Yeager Ave / C	00836	1914	3	71114	1935	20
366	102 Yeager Ave / D	00836	1914	3	71114	1935	20
367	400 Lumpkin Rd / A	00840	1914	3	71114	1935	20
368	400 Lumpkin Rd / B	00840	1914	3	71114	1935	20
369	400 Lumpkin Rd / C	00840	1914	3	71114	1935	20
370	400 Lumpkin Rd / D	00840	1914	3	71114	1935	20
371	401 Bjornstad / A	00834	1914	3	71114	1935	20
372	401 Bjornstad / B	00834	1914	3	71114	1935	20
373	401 Bjornstad / C	00834	1914	3	71114	1935	20
374	401 Bjornstad / D	00834	1914	3	71114	1935	20
375	402 Lumpkin Rd / A	00839	1914	3	71114	1935	20
376	402 Lumpkin Rd / B	00839	1914	3	71114	1935	20
377	402 Lumpkin Rd / C	00839	1914	3	71114	1935	20
378	402 Lumpkin Rd / D	00839	1914	3	71114	1935	20
379	403 Bjornstad / A	00835	1914	3	71114	1935	20
380	403 Bjornstad / B	00835	1914	3	71114	1935	20
381	403 Bjornstad / C	00835	1914	3	71114	1935	20
382	403 Bjornstad / D	00835	1914	3	71114	1935	20
383	404 Lumpkin Rd / A	00838	1914	3	71114	1935	20
384	404 Lumpkin Rd / B	00838	1914	3	71114	1935	20

Historic Homes

	Street Address	Facility Number	Unit Sq Ft	Bedrooms	Unit Category	Date Costructed	Housing Area
385	404 Lumpkin Rd / C	00838	1914	3	71114	1935	20
386	404 Lumpkin Rd / D	00838	1914	3	71114	1935	20
387	124 Rainbow Av /	00727	2554	3	71113	1923	16
388	102 Running Av / A	00832	1914	3	71114	1935	17
389	102 Running Av / B	00832	1914	3	71114	1935	17
390	102 Running Av / C	00832	1914	3	71114	1935	17
391	102 Running Av / D	00832	1914	3	71114	1935	17
392	100 Vibbert Av /	00001	4901	5	71111	1918	08

493 **Total**

Grey Highlight - N/E
Red Highlight - Demolished
Green Highlight - HABS/HAER

	NATIONAL REGISTER ELIGIBILITY INVENTORY: ASSESSMENT OF NATIONAL REGISTER ELIGIBILITY FOR FORT BENNING HISTORIC RESOURCES CONSTRUCTED PRIOR TO THE YEAR 1953						Survey Form	Fort Benning Historic Housing Areas		Reference of Work Completed			
	Facility Number	Other/Old Facility Number	Original Use of Facility	Date of Construction	1997 Determination of Eligibility	Explanation of Eligibility if Different from 1987 Determination	Year	Housing Area	Housing Type	Maint. & Repair Plan	Interior Survey	Exteiror Survey	Treatment Plan
1	00513		3 car garage	1932	C - MP		1987						
2	00514		5 car garage	1932	C - MP		1987						
3	00515		5 car garage	1932	C - MP		1987						
4	00516		5 car garage	1932	C - MP		1987						
5	00517		4 car garage	1932	C - MP		1987						
6	00518		4 car garage	1932	C - MP		1987						
7	00519		4 car garage	1932	C - MP		1987						
8	00520		6 car garage	1932	C - MP		1987						
9	00521		9 car garage	1932	C - MP		1987						
10	00522		4 car garage	1932	C - MP		1987						
11	00523		6 car garage	1932	C - MP		1987						
12	00524		6 car garage	1932	C - MP		1987						
13	00525		6 car garage	1932	C - MP		1987						
14	00526		8 car garage	1932	C - MP		1987						
15	00527		4 car garage	1932	C - MP		1987						
16	00528		4 car garage	1932	C - MP		1987						
17	00529		4 car garage	1932	C - MP		1987						
18	00530		4 car garage	1932	C - MP		1987						
19	00531		2 car garage	1932	C - MP		1987						
20	00863		2 car Garage	1934	C - MP		1987						
21	00864		9 & 18 car garage	1934	C - MP		1987						
22	00865		9 & 18 car garage	1934	C - MP		1987						
23	00866		9 & 18 car garage	1934	C - MP		1987						
24	00867		8 car garage	1934	C - MP		1987						
25	00868		2 car garage	1934	C - MP		1987						
26	00869		2 car garage	1934	C - MP								
27	00870		2 car garage	1934	C - MP								
28	00871		2 car garage	1934	C - MP		1987						

E - Eligible
N/E - Not Eligible
C - Contributing Property in H.D.
N/C - Non-Contributing in H.D.

MP - Main Post
LF - Lawson Field
PJT - Parachute Jump Towers
ASA - Ammunition Storage Area
AGFB - Army Ground Forces Board #3

Grey Highlight - N/E
Red Highlight - Demolished
Green Highlight - HABS/HAER

	NATIONAL REGISTER ELIGIBILITY INVENTORY: ASSESSMENT OF NATIONAL REGISTER ELIGIBILITY FOR FORT BENNING HISTORIC RESOURCES CONSTRUCTED PRIOR TO THE YEAR 1953						Survey Form	Fort Benning Historic Housing Areas		Reference of Work Completed			
	Facility Number	Other/Old Facility Number	Original Use of Facility	Date of Construction	1997 Determination of Eligibility	Explanation of Eligibility if Different from 1987 Determination	Year	Housing Area	Housing Type	Maint. & Repair Plan	Interior Survey	Exteiror Survey	Treatment Plan
29	00872		3 car garage	1934	C - MP		1987						
30	00873		3 car garage	1934	C - MP		1987						
31	00874		3 car garage	1934	C - MP		1987						
32	00875		3 car garage	1934	C - MP		1987						
33	00876		3 car garage	1934	C - MP		1987						
34	00877		3 car garage	1934	C - MP		1987						
35	00878		5 car garage	1934	C - MP		1987						
36	00879		4 car garage	1934	C - MP		1987						
37	00881		2 car garage	1934	C - MP		1987						
38	00882		6 car garage	1934	C - MP		1987						
39	00883		6 car garage	1934	C - MP		1987						
40	00884		6 car garage	1934	C - MP		1987						
41	00885		2 car garage	1934	C - MP		1987						
42	00886		2 car garage	1934	C - MP		1987						
43	00887		2 car garage	1934	C - MP		1987						
44	00888		3 car garage	1934	C - MP		1987						
45	00889		3 car garage	1934	C - MP		1987						
46	00890		2 car garage	1934	C - MP		1987						
47	00891		2 car garage	1934	C - MP		1987						
48	00892		2 car garage	1934	C - MP		1987						
49	00893		2 car garage	1934	C - MP		1987						
50	00894		3 car garage	1934	C - MP		1987						
51	00895		3 car garage	1934	C - MP		1987						
52	00896		3 car garage	1934	C - MP		1987						
53	00897		3 car garage	1934	C - MP		1987						
54	00898		3 car garage	1934	C - MP		1987						
55	00899		2 car garage	1934	C - MP		1987						
56	00900		2 car garage	1934	C - MP		1987						

E - Eligible
N/E - Not Eligible
C - Contributing Property in H.D.
N/C - Non-Contributing in H.D.

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	NATIONAL REGISTER ELIGIBILITY INVENTORY: ASSESSMENT OF NATIONAL REGISTER ELIGIBILITY FOR FORT BENNING HISTORIC RESOURCES CONSTRUCTED PRIOR TO THE YEAR 1953						Survey Form	Fort Benning Historic Housing Areas		Reference of Work Completed			
	Facility Number	Other/Old Facility Number	Original Use of Facility	Date of Construction	1997 Determination of Eligibility	Explanation of Eligibility if Different from 1987 Determination	Year	Housing Area	Housing Type	Maint. & Repair Plan	Interior Survey	Exteiror Survey	Treatment Plan
57	00901		2 car garage	1934	C - MP		1987						
58	00902		2 car garage	1934	C - MP		1987						
59	00903		3 car garage	1934	C - MP		1987						
60	00904		5 car garage	1934	C - MP		1987						
61	00905		6 car garage	1934	C - MP		1987						
62	00906		4 car garage	1934	C - MP		1987						
63	00907		4 car garage	1934	C - MP		1987						
64	00908		4 car garage	1934	C - MP		1987						
65	00909		4 car garage	1934	C - MP		1987						
66	00910		6 car garage	1934	C - MP		1987						
67	00911		6 car garage	1934	C - MP		1987						
68	00912		4 car garage	1934	C - MP		1987						
69	00913		4 car garage	1934	C - MP		1987						
70	00914		4 car garage	1934	C - MP		1987						
71	00915		4 car garage	1934	C - MP		1987						
72	00916		4 car garage	1934	C - MP		1987						
73	00917		4 car garage	1934	C - MP		1987						
74	00918		4 car garage	1934	C - MP		1987						
75	00919		4 car garage	1934	C - MP		1987						
76	00920		8 car garage	1934	C - MP		1987						
77	00921		4 car garage	1934	C - MP		1987						
78	00922		4 car garage	1934	C - MP		1987						
79	00923		4 car garage	1934	C - MP		1987						
80	00924		4 car garage	1934	C - MP		1987						
81	00925		4 car garage	1934	C - MP		1987						
82	00926		4 car garage	1934	C - MP		1987						
83	00927		4 car garage	1934	C - MP		1987						
84	00928		4 car garage	1934	C - MP		1987						

E - Eligible
N/E - Not Eligible
C - Contributing Property in H.D.
N/C - Non-Contributing in H.D.

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LF - Lawson Field
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	NATIONAL REGISTER ELIGIBILITY INVENTORY: ASSESSMENT OF NATIONAL REGISTER ELIGIBILITY FOR FORT BENNING HISTORIC RESOURCES CONSTRUCTED PRIOR TO THE YEAR 1953						Survey Form	Fort Benning Historic Housing Areas		Reference of Work Completed			
	Facility Number	Other/Old Facility Number	Original Use of Facility	Date of Construction	1997 Determination of Eligibility	Explanation of Eligibility if Different from 1987 Determination	Year	Housing Area	Housing Type	Maint. & Repair Plan	Interior Survey	Exteiror Survey	Treatment Plan
85	00929		4 car garage	1934	C - MP		1987						
86	00930		4 car garage	1934	C - MP		1987						
87	00931		8 car garage	1934	C - MP		1987						
88	00932		4 car garage	1934	C - MP		1987						
89	01098		Servant's Quarters for Riverside (Quarters One)	1919	C - MP, Included in the National Register Nomination for "Riverside"	RIVERSIDE	1997						

E - Eligible
N/E - Not Eligible
C - Contributing Property in H.D.
N/C - Non-Contributing in H.D.

MP - Main Post
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APPENDIX D

Economic Impact Forecast System

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Economic Impact Forecast System Model

Socioeconomic Impact Assessment

Socioeconomic impacts are linked through cause-and-effect relationships. Military payrolls and local procurement contribute to the economic base for the ROI. In this regard, construction and renovation of family housing at Fort Benning and Porter Village would have a multiplier effect on the local and regional economy. With the proposed action, direct jobs would be created (e.g., construction, property management, property maintenance), generating new income and increasing personal spending. Such spending typically creates secondary jobs, increases business volume, and increases revenues for schools and other social services.

The Economic Impact Forecast System

The U.S. Army, with the assistance of many academic and professional economists and regional scientists, developed EIFS to address the economic impacts of NEPA-requiring actions and to measure their significance. As a result of the model's designed applicability, and in the interest of uniformity, EIFS should be used in NEPA assessments for RCI. The entire system is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand, but they still have a firm, defensible bases in regional economic theory.

EIFS is implemented as an on-line system supported by the U.S. Army Environmental Policy Institute (AEPI) through the Computer Information Science Department of Clark Atlanta University in Georgia. The system is available to anyone with an approved user ID and password. University staff and the staff of AEPI are available to assist with the use of EIFS.

The databases in EIFS are national in scope and cover the approximately 3,700 counties, parishes, and independent cities that are recognized as reporting units by federal agencies. EIFS allows the user to define an economic ROI by identifying the counties, parishes, or cities to be analyzed. Once the ROI is defined, the system aggregates the data, calculates multipliers and other variables used in the various models in EIFS, and prompts the user for forecast input data.

The EIFS Model

The basis of the analytical capabilities of EIFS is the calculation of multipliers that are used to estimate the impacts resulting from Army-related changes in local expenditures or employment. In calculating the multipliers, EIFS uses the economic base model approach, which relies on the ratio of total economic activity to basic economic activity. Basic, in this context, is defined as the production or employment engaged to supply goods and services outside the ROI or by federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to basic income is measurable (as the multiplier) and sufficiently stable so that future changes in economic activity can be forecast. This technique is especially appropriate for estimating aggregate impacts and makes the economic base model ideal for the EA and EIS process.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its base sector; for example, a dollar increase in local expenditures due to an expansion of its military installation. EIFS estimates its multipliers using a location quotient approach based on the concentration of industries within the region relative to the industrial concentrations for the nation.

The user inputs into the model the data elements that describe the Army action: the change in expenditures, or dollar volume of the construction project(s); change in civilian or military employment; average annual income of affected civilian or military employees; percentage of civilians expected to relocate due to the Army's action; and percentage of military persons living on-post. Once these are entered into the EIFS model, a projection of changes in the local economy is provided. These are projected changes in sales volume, income, employment, and population. These four indicator variables are used to measure and evaluate socioeconomic impacts. Sales volume is the direct and indirect change in local business activity and sales (total retail and wholesale trade sales, total selected service receipts, and value-added by manufacturing). Employment is the total change in local employment due to the proposed action, including not only the direct and secondary changes in local employment but also those personnel who are initially affected by the military action. Income is the total change in local wages and salaries due to the proposed action, which includes the sum of the direct and indirect wages and salaries, plus the income of the civilian and military personnel affected by the proposed action. Population is the increase or decrease in the local population as a result of the proposed action.

The RCI initiative at Fort Benning would require renovation of some existing housing, demolition of some existing housing, construction of new housing, and construction of supporting facilities such as roads, biking and walking trails, community centers, totlots, and swimming pools. The current working estimate for the cost of demolition, renovation, and construction of these facilities ($601,500,000) was divided over the projected 8-year initial development period (2005 through 2013) and entered into the EIFS model as the change in expenditures ($75,187,500 per year). Under the proposed action, an estimated 15 jobs in the Fort Benning housing office would be lost, but the RCI developer would hire about 3 people, for a net loss of 12 jobs. This number was entered in EIFS as the change in civilian employment. The average annual income of the affected civilian personnel is $36,500 (Clark Pinnacle, 2004).

The RCI initiative at Porter Village would result in the renovation of some existing housing and construction of new housing. The current working estimate for the cost of renovation and construction ($11,000,000) was divided over the projected 8-year initial development period (2005 through 2013) and entered into the EIFS model as the change in expenditures ($1,375,000 per year).

The Significance of Socioeconomic Impacts

Once model projections are obtained, the Rational Threshold Value (RTV) profile allows the user to evaluate the significance of the impacts. This analytical tool reviews the historical trends for the defined region and develops measures of local historical fluctuations in sales volume, income, employment, and population. These evaluations identify the positive and negative changes within which a project can affect the local economy without creating a significant impact. The greatest historical changes define the boundaries that provide a basis for comparing an action's impact on a defined region to historical fluctuation in that region. Specifically, EIFS sets the boundaries by multiplying the maximum historical deviation of the following variables:

		Increase	***Decrease***
Sales Volume	X	100%	75%
Income	X	100%	67%
Employment	X	100%	67%
Population	X	100%	50%

These boundaries determine the amount of change that will affect an area. The percentage allowances are arbitrary but sensible. The maximum positive historical fluctuation is allowed with expansion because economic growth is beneficial. Although cases of damaging economic growth have been cited, and although the zero-growth concept is being accepted by many local planning groups, military base reductions and closures generally are more injurious to local economies than is expansion.

The major strengths of the RTV are its specificity to the region under analysis and its basis in actual historical data for the region. The EIFS impact model, in combination with the RTV, has proven successful in addressing perceived socioeconomic impacts. The EIFS model and the RTV technique for measuring the intensity of impacts have been reviewed by economic experts and have been deemed theoretically sound.

The following are the EIFS input and output data and the RTV values for each ROI. The results for the Main Post (Fort Benning) are presented first, followed by the results for Porter Village. These data form the basis for the socioeconomic impact analysis presented in Section 4.9.2.1.

EIFS REPORT: Main Post (Fort Benning, GA)

PROJECT NAME

Main Post (Fort Benning, GA) RCI EA

STUDY AREA

13053 Chattahoochee County, GA
13145 Harris County, GA
13197 Marion County, GA
13215 Muscogee County, GA
01113 Russell County, AL

FORECAST INPUT

Change In Local Expenditures	$75,187,500
Change In Civilian Employment	-12
Average Income of Affected Civilian	$36,500
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	2.54	
Income Multiplier	2.54	
Sales Volume – Direct	$74,835,350	
Sales Volume – Induced	$115,246,400	
Sales Volume – Total	$190,081,800	1.81%
Income – Direct	$12,858,540	
Income - Induced	$20,380,770	
Income – Total (place of work)	$33,239,310	0.56%
Employment – Direct	322	
Employment – Induced	515	
Employment – Total	837	0.52%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	10.86%	10.16%	5.10%	3.06%
Negative RTV	-8.27%	-6.15%	-9.54%	-2.17%

RTV DETAILED

SALES VOLUME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	732828	3202458	0	0	0
1970	709089	2928538	-273921	-322714	-11.02
1971	751551	2976142	47604	-1189	-0.04
1972	784450	3004443	28301	-20492	-0.68
1973	849227	3065709	61266	12473	0.41
1974	924855	3005779	-59931	-108724	-3.62
1975	980641	2922310	-83469	-132262	-4.53
1976	1107697	3123705	201395	152602	4.89
1977	1240824	3275775	152070	103277	3.15
1978	1380673	3396456	120680	71887	2.12
1979	1466245	3240402	-156054	-204847	-6.32
1980	1585289	3075461	-164941	-213734	-6.95
1981	1709727	3009120	-66341	-115134	-3.83
1982	1847574	3066973	57853	9060	0.3
1983	1964895	3163481	96508	47715	1.51
1984	2275230	3503854	340373	291580	8.32
1985	2461289	3667321	163467	114674	3.13
1986	2626695	3834975	167654	118861	3.1
1987	2810922	4356929	521954	473161	10.86
1988	2936663	3993862	-363067	-411860	-10.31
1989	3004020	3875186	-118676	-167469	-4.32
1990	3149638	3874055	-1131	-49924	-1.29
1991	3259285	3845956	-28099	-76892	-2
1992	3550685	4047781	201825	153032	3.78
1993	3627369	4026380	-21401	-70194	-1.74
1994	3754523	4054885	28505	-20288	-0.5
1995	3861496	4054571	-314	-49107	-1.21
1996	4066843	4148180	93609	44816	1.08
1997	4394675	4394675	246495	197702	4.5
1998	4657727	4564573	169898	121105	2.65
1999	4881874	4686599	122026	73233	1.56
2000	5122399	4763831	77232	28439	0.6

INCOME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	823006	3596536	0	0	0
1970	826040	3411545	-184991	-274286	-8.04
1971	885190	3505352	93807	4512	0.13
1972	935671	3583620	78267	-11028	-0.31
1973	1023186	3693701	110081	20786	0.56
1974	1131473	3677287	-16414	-105709	-2.87
1975	1212160	3612237	-65050	-154345	-4.27
1976	1351163	3810280	198043	108748	2.85
1977	1487595	3927251	116971	27676	0.7
1978	1652513	4065182	137931	48636	1.2
1979	1788531	3952654	-112528	-201823	-5.11
1980	1976792	3834977	-117677	-206972	-5.4
1981	2213109	3895072	60095	-29200	-0.75
1982	2408403	3997949	102877	13582	0.34
1983	2559229	4120359	122410	33115	0.8
1984	2928614	4510065	389707	300412	6.66
1985	3171557	4725620	215555	126260	2.67
1986	3371907	4922984	197364	108069	2.2
1987	3599370	5579023	656039	566744	10.16
1988	3817395	5191657	-387366	-476661	-9.18
1989	3945598	5089821	-101836	-191131	-3.76
1990	4159143	5115746	25925	-63370	-1.24
1991	4374706	5162153	46407	-42888	-0.83
1992	4775461	5444025	281873	192578	3.54
1993	4912667	5453060	9035	-80260	-1.47
1994	5118480	5527959	74898	-14397	-0.26
1995	5282162	5546270	18311	-70984	-1.28
1996	5526115	5636637	90367	1072	0.02
1997	5905796	5905796	269159	179864	3.05
1998	6320766	6194351	288555	199260	3.22
1999	6602399	6338303	143952	54657	0.86
2000	6939765	6453981	115679	26384	0.41

EMPLOYMENT

Year	Value	Change	Deviation	%Deviation
1969	139279	0	0	0
1970	122706	-16573	-17474	-14.24
1971	120087	-2619	-3520	-2.93
1972	115208	-4879	-5780	-5.02
1973	116521	1313	412	0.35
1974	117077	556	-345	-0.29
1975	115001	-2076	-2977	-2.59
1976	119849	4848	3947	3.29
1977	124545	4696	3795	3.05
1978	127496	2951	2050	1.61
1979	126251	-1245	-2146	-1.7
1980	125954	-297	-1198	-0.95
1981	123931	-2023	-2924	-2.36
1982	126570	2639	1738	1.37
1983	126667	97	-804	-0.63
1984	134417	7750	6849	5.1
1985	137593	3176	2275	1.65
1986	140208	2615	1714	1.22
1987	142790	2582	1681	1.18
1988	145167	2377	1476	1.02
1989	143793	-1374	-2275	-1.58
1990	142974	-819	-1720	-1.2
1991	139630	-3344	-4245	-3.04
1992	143466	3836	2935	2.05
1993	146237	2771	1870	1.28
1994	147668	1431	530	0.36
1995	149230	1562	661	0.44
1996	154669	5439	4538	2.93
1997	159481	4812	3911	2.45
1998	164681	5200	4299	2.61
1999	165951	1270	369	0.22
2000	168109	2158	1257	0.75

POPULATION

Year	Value	Change	Deviation	%Deviation
1969	251025	0	0	0
1970	254664	3639	2666	1.05
1971	253660	-1004	-1977	-0.78
1972	246940	-6720	-7693	-3.12
1973	237599	-9341	-10314	-4.34
1974	244309	6710	5737	2.35
1975	249515	5206	4233	1.7
1976	255031	5516	4543	1.78
1977	253528	-1503	-2476	-0.98
1978	259685	6157	5184	2
1979	260109	424	-549	-0.21
1980	259921	-188	-1161	-0.45
1981	259295	-626	-1599	-0.62
1982	263318	4023	3050	1.16
1983	261838	-1480	-2453	-0.94
1984	262983	1145	172	0.07
1985	264556	1573	600	0.23
1986	266407	1851	878	0.33
1987	267567	1160	187	0.07
1988	266586	-981	-1954	-0.73
1989	265634	-952	-1925	-0.72
1990	266931	1297	324	0.12
1991	266314	-617	-1590	-0.6
1992	275715	9401	8428	3.06
1993	277655	1940	967	0.35
1994	280889	3234	2261	0.8
1995	279663	-1226	-2199	-0.79
1996	279725	62	-911	-0.33
1997	280896	1171	198	0.07
1998	280686	-210	-1183	-0.42
1999	280899	213	-760	-0.27
2000	282157	1258	285	0.1

****** End of Report ******

EIFS REPORT: Porter Village

PROJECT NAME

Camp Merrill/Porter Village, GA RCI EA

STUDY AREA

13187 Lumpkin County, GA

FORECAST INPUT

Change In Local Expenditures	$1,375,000
Change In Civilian Employment	0
Average Income of Affected Civilian	$0
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	1.94	
Income Multiplier	1.94	
Sales Volume – Direct	$1,375,000	
Sales Volume – Induced	$1,292,500	
Sales Volume – Total	$2,667,500	1.01%
Income – Direct	$261,411	
Income - Induced	$245,726	
Income – Total (place of work)	$507,137	0.14%
Employment – Direct	8	
Employment – Induced	8	
Employment – Total	16	0.21%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	10.72%	8.57%	5.65%	3.00%
Negative RTV	-11.62%	-13.04%	-5.61%	-2.72%

RTV DETAILED

SALES VOLUME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	11546	50456	0	0	0
1970	11638	48065	-2391	-7450	-15.5
1971	13059	51714	3649	-1410	-2.73
1972	13452	51521	-192	-5251	-10.19
1973	15640	56460	4939	-120	-0.21
1974	16857	54785	-1675	-6734	-12.29
1975	17889	53309	-1476	-6535	-12.26
1976	20260	57133	3824	-1235	-2.16
1977	23370	61697	4564	-495	-0.8
1978	27275	67097	5400	341	0.51
1979	29848	65964	-1132	-6191	-9.39
1980	32519	63087	-2877	-7936	-12.58
1981	36429	64115	1028	-4031	-6.29
1982	36630	60806	-3309	-8368	-13.76
1983	42067	67728	6922	1863	2.75
1984	49674	76498	8770	3711	4.85
1985	55516	82719	6221	1162	1.4
1986	61385	89622	6903	1844	2.06
1987	68422	106054	16432	11373	10.72
1988	78307	106498	443	-4616	-4.33
1989	87865	113346	6848	1789	1.58
1990	95718	117733	4387	-672	-0.57
1991	98379	116087	-1646	-6705	-5.78
1992	109745	125109	9022	3963	3.17
1993	121868	135273	10164	5105	3.77
1994	130636	141087	5813	754	0.53
1995	140862	147905	6818	1759	1.19
1996	154822	157918	10013	4954	3.14
1997	170424	170424	12506	7447	4.37
1998	199856	195859	25435	20376	10.4
1999	223675	214728	18869	13810	6.43
2000	228320	212338	-2390	-7449	-3.51

INCOME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	21792	95231	0	0	0
1970	21719	89699	-5532	-16265	-18.13
1971	24208	95864	6164	-4569	-4.77
1972	27647	105888	10024	-709	-0.67
1973	35334	127556	21668	10935	8.57
1974	35617	115755	-11800	-22533	-19.47
1975	42693	127225	11470	737	0.58
1976	46822	132038	4813	-5920	-4.48
1977	51929	137093	5055	-5678	-4.14
1978	59607	146633	9541	-1192	-0.81
1979	65184	144057	-2577	-13310	-9.24
1980	72360	140378	-3678	-14411	-10.27
1981	81941	144216	3838	-6895	-4.78
1982	86959	144352	136	-10597	-7.34
1983	97201	156494	12142	1409	0.9
1984	118263	182125	25631	14898	8.18
1985	128742	191826	9701	-1032	-0.54
1986	144045	210306	18480	7747	3.68
1987	151268	234465	24160	13427	5.73
1988	170554	231953	-2512	-13245	-5.71
1989	192305	248073	16120	5387	2.17
1990	204979	252124	4051	-6682	-2.65
1991	213152	251519	-605	-11338	-4.51
1992	232890	265495	13975	3242	1.22
1993	255620	283738	18244	7511	2.65
1994	278560	300845	17107	6374	2.12
1995	300710	315745	14901	4168	1.32
1996	330926	337545	21799	11066	3.28
1997	368903	368903	31358	20625	5.59
1998	415922	407604	38701	27968	6.86
1999	444868	427073	19470	8737	2.05
2000	471694	438675	11602	869	0.2

EMPLOYMENT

Year	Value	Change	Deviation	%Deviation
1969	2716	0	0	0
1970	2706	-10	-201	-7.43
1971	2729	23	-168	-6.16
1972	2771	42	-149	-5.38
1973	3031	260	69	2.28
1974	3114	83	-108	-3.47
1975	3071	-43	-234	-7.62
1976	3010	-61	-252	-8.37
1977	3165	155	-36	-1.14
1978	3263	98	-93	-2.85
1979	3353	90	-101	-3.01
1980	3429	76	-115	-3.35
1981	3589	160	-31	-0.86
1982	3639	50	-141	-3.87
1983	3822	183	-8	-0.21
1984	4134	312	121	2.93
1985	4441	307	116	2.61
1986	4718	277	86	1.82
1987	5028	310	119	2.37
1988	5233	205	14	0.27
1989	5473	240	49	0.9
1990	5562	89	-102	-1.83
1991	5656	94	-97	-1.71
1992	5870	214	23	0.39
1993	6224	354	163	2.62
1994	6412	188	-3	-0.05
1995	6957	545	354	5.09
1996	7005	48	-143	-2.04
1997	7627	622	431	5.65
1998	8099	472	281	3.47
1999	8584	485	294	3.42
2000	8827	243	52	0.59

POPULATION

Year	Value	Change	Deviation	%Deviation
1969	8445	0	0	0
1970	8786	341	-57	-0.65
1971	9058	272	-126	-1.39
1972	9345	287	-111	-1.19
1973	9421	76	-322	-3.42
1974	9515	94	-304	-3.19
1975	9670	155	-243	-2.51
1976	9887	217	-181	-1.83
1977	10260	373	-25	-0.24
1978	10107	-153	-551	-5.45
1979	10559	452	54	0.51
1980	10827	268	-130	-1.2
1981	11069	242	-156	-1.41
1982	11364	295	-103	-0.91
1983	11542	178	-220	-1.91
1984	11927	385	-13	-0.11
1985	12226	299	-99	-0.81
1986	12676	450	52	0.41
1987	13086	410	12	0.09
1988	13640	554	156	1.14
1989	14084	444	46	0.33
1990	14715	631	233	1.58
1991	15179	464	66	0.43
1992	15545	366	-32	-0.21
1993	16004	459	61	0.38
1994	16507	503	105	0.64
1995	17090	583	185	1.08
1996	17771	681	283	1.59
1997	18731	960	562	3
1998	19709	978	580	2.94
1999	20547	838	440	2.14
2000	21172	625	227	1.07

****** End of Report ******

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APPENDIX E

Potable Water, Sewer, and Energy Calculations
for the Proposed Action

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FORT BENNING

Potable Water

To calculate the effect of increased population on the potable water supply, the projected population increase was multiplied by the per capita use of potable water. This amount represents the total increase in on-post potable water demand:

Projected population increase[1]: 496

Per capita use: 120 gal/day

496 × 120 gal per capita/day = 59,520 gal/day

Sewer

To calculate the effect of increased population on the sewer collection and treatment capabilities, the projected population increase was multiplied by the per capita production of sewer water. This amount represents the total increase in on-post sewer water production:

Projected population increase[1]: 496

Per capita use: 84 gal/day

496 × 84 gal per capita/day = 41,664 gal/day

Electricity

To calculate the increase in electricity demand per year, the approximate per capita use of electricity was multiplied by the projected increase in population. This amount represents the total increase in the demand for electricity:

Projected population increase[1]: 496

Average per capita electricity usage: 9,000 kilowatt-hours (KWH)/yr

496 × 9,000 KWH per capita/yr = 4,464,000 KWH/yr

[1] Projected population increase assumes 100 percent occupancy in new housing. The number is based on 248 adults and 248 children living in 124 units.

Natural Gas

To calculate the increase in natural gas demand per year, the average per capita use of natural gas was multiplied by the projected increase in population. This amount represents the total increase in natural gas demand:

Projected population increase[1]: 496

Average per capita natural gas usage: 40 thousand cubic feet (mcf)

496 × 40 mcf per capita/yr = 19,840 mcf/yr

Solid Waste

To calculate the effect of increased construction debris, the number of units to be constructed was multiplied by the estimated gross square footage of the properties and the construction and demolition (C&D) factor. This amount represents the total increase in C&D waste in pounds:

Number of units to be constructed: 3,667

Gross square footage: 6,500,000 ft^2

6,500,000 ft^2 × 4.38 lb/ft^2 = 28,470,000 lb of waste from new construction

28,470,000 lb × 0.0005 = 14,235 tons of waste from new construction

To calculate the effect of renovation debris, the number of units to be renovated was multiplied by the estimated gross square footage of the properties and the C&D factor. This amount represents the total increase in C&D waste in pounds:

Number of units to be renovate: 533

Gross square footage: 875,000 ft^2

875,000 ft^2 × 19.8 lb/ft^2 = 17,325,000 lb of waste from new construction

17,325,000 lb × 0.0005 = 8,662 tons of waste from new construction

To calculate the effect of increased demolition debris, the number of units to be demolished was multiplied by the estimated gross square footage of the properties and the C&D factor. This amount represents the total increase in C&D waste in pounds:

Number of units to be demolished: 3,394

Gross square footage: 5,400,000 ft^2

5,400,000 ft^2× 115 lb/ft^2 = 621,000,000 lb of waste from demolition

621,000,000 lb × 0.0005 = 310,500 tons of waste from demolition

Total estimated waste in tons = 14,235 + 8,662 + 310,500 = 333,397

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ACRONYMS and ABBREVIATIONS

AAFES	Army and Air Force Exchange Service
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing materials
ACP	access control point
ADNL	A-weighted decibels
AECATS	*Air Emissions Calculations and Tracking System*
AEDBR	Army Environmental Database Restoration
AEPI	U.S. Army Environmental Policy Institute
AR	Army Regulation
ASP	Ammunition Supply Point
AST	aboveground storage tank
ATM	automatic teller machine
BAH	Basic Allowance for Housing
BCTB	Basic Combat Training Brigade
BCT	Brigade Combat Team
Bldg	building
BMP	best management practice
BO	Biological Opinion
BOCA	Building Officials and Code Administrators
BR	bedroom
CAA	Clean Air Act
CAP	central accumulation point
C&D	construction and demolition
CDMP	Community Development and Management Plan
CDNL	C-weighted decibels
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council of Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CHMCC	Central Hazardous Material Control Center
CO	carbon monoxide
CWA	Clean Water Act
CWW	Columbus Water Works
dB	decibels
dBA	A-weighted decibels
dBC	C-weighted decibels
dBP	linear decibels
DDESS	Domestic Dependent Elementary and Secondary Schools
DoD	Department of Defense
DMPTR	Digital Multi-Purpose Training Range
DPW	Department of Public Works
DRMO	Defense Reutilization and Marketing Office
DS/GS	Direct Support/General Support
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EIFS	Economic Impact Forecast System
EMD	Environmental Management Division
EPD	Environmental Protection Division
ESA	Endangered Species Act
ESCA	Georgia Erosion and Sedimentation Control Act
ESMP	Endangered Species Management Plan
ESPCP	Erosion, Sedimentation, and Pollution Control Plan
°F	degrees Fahrenheit
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
FHMA	Family Housing Market Analysis
FNSI	Finding of No Significant Impact
FOSL	Finding of Suitability to Lease
FOST	Finding of Suitability to Transfer
FPPA	Farmland Protection Policy Act (of 1981)
ft^2	square feet
FY	fiscal year
GA DNR	Georgia Department of Natural Resources
GA EPD	Georgia Environmental Protection Division
GFC	Georgia Forestry Commission
GIS	Geographic Information System
gmp	gallons per minute
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HUD	U.S. Department of Housing and Urban Development
HWMP	Hazardous Waste Management Plan
ID	Infantry Division
INRMP	Integrated Natural Resources Management Plan
IONMP	Installation Operational Noise Management Plan
IPBC	Infantry Platoon Battle Course
kV	kilovolt
kWh	kilowatt-hour

LAAF	Lawson Army Airfield
LBP	lead-based paint
L_{dn}	day-night noise level
LEED	Leadership in Energy & Environmental Design
LLC	limited liability company
LUPZ	Land Use Planning Zone
MAHC	Maximum Acceptable Housing Cost
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
METRA	Metropolitan Transport System
MGD	million gallons per day
MHPI	Military Housing Privatization Initiative
MOA	Memorandum of Agreement
MP	Military Police
MSA	Metropolitan Statistical Area
msl	mean sea level
MVA	megavolt-ampere
NAAQS	National Ambient Air Quality Standards
NAF	Non-Appropriated Fund
NCO	noncommissioned officer
NEPA	National Environmental Policy Act
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NO_X	nitrous oxides
NOV	notice of violation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
OCGA	Official Code of Georgia Annotated
OMA	Operations and Maintenance
OOP	out-of-pocket
OSHA	Occupational Safety and Health Administration
PCBs	polychlorinated biphenyls
PCi/L	picocuries per liter
PCPI	per capita personal income
PM	particulate matter
PM2.5	particulate matter 2.5
PM10	particulate matter 10
ppm	parts per million
RCI	Residential Communities Initiative
RCRA	Resource Conservation and Recovery Act
RCW	Red Cockaded Woodpecker
RD	Residential Density
RFI	RCRA Facility Investigation
RFQ	Request for Qualifications
ROI	Region of Influence
RONA	Record of Nonapplicability
RTV	rationale threshold values
S/A	due to similar appearance
SASC	School Age Service Center
SAPs	Satellite Accumulation Points
SHPO	State Historic Preservation Office
SMP	Smoke Management Program
SOP	Standard Operating Procedure
SO_X	sulphur oxides
SPCCP	Spill Prevention, Control, and Countermeasures Plan
SPiRiT	Sustainable Project Rating Tool
SWMP	Storm Water Management Plan
SWMU	Solid Waste Management Unit
SWPPP	Storm Water Pollution Prevention Plan
TCE	trichloroethylene
TCPs	Traditional Cultural Properties
TMDL	Total Maximum Daily Load
TSCA	Toxic Substances Control Act
UEA	Unique Ecological Area
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service
UST	underground storage tank
UXO	unexploded ordnance
VOC	volatile organic compounds
VSI	visual site inspection
WLA	waste load allocation