

CHATHAM COUNTY, NORTH CAROLINA



ENVIRONMENTAL IMPACT REPORT SUNSET GROVE

Prepared For:

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Submitted To:

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LIST of ACRONYMS

DWQ	North Carolina Department of Water Quality
E&S	erosion and sedimentation
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FWS	United States Fish and Wildlife Service
GIS	Geographic Information System
HUC	Hydrologic Unit Code
LID	low-impact development
MSL	mean sea level
Mt	mount
NAAQS	National Ambient Air Quality Standards
NCDENR	North Carolina Department of Environment and Natural Resources
NCSHPO	North Carolina State Historic Preservation Office
NHD	National Hydrography Dataset
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
ppm	parts per million
T&E	threatened and endangered
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WUS	Waters of the United States

1.0 EXECUTIVE SUMMARY

Pursuant to Chatham County Subdivision Ordinance (dated July 1980, revised December 2008, and most recently amended December 2014) and North Carolina General Statute §113A-4(2) in conjunction with United States Code (USC) §4332(C), and on behalf of Bryan Properties, Inc., Timmons Group has prepared an Environmental Impact Assessment (EIA) for the proposed Sunset Grove (previously named "Copper Ridge") subdivision located on Mount (Mt.) Gilead Church Road in Pittsboro, Chatham County, North Carolina (hereafter the "subject property", "project site", or "proposed project").

Currently, the project site is comprised of undeveloped woodlands. The proposed project will encompass three (3) contiguous parcels totaling approximately 107.85 acres and will consist of a subdivision containing single-family residences on 55 lots, with varying lot sizes, and 7,200 linear feet of public roadway. The subject property is bordered by single-family residences and Valley Lane to the north, undeveloped woodlands to the east, single-family residences and Bartlett Drive to the south, and single-family residences and Mt. Gilead Church Road to the west.

The need for the proposed project stems from an 8.2% increase in the population of Chatham County between 2010 and 2014 which is nearly double the overall population increase for the state of North Carolina for the same period (4.3%). Statistics further indicate that for nearly the same period, approximately 88.2% of the Chatham County population resided the same house for at least one (1) year. As a result, the population increase and low housing turnover has created a demand for the construction of additional single-family residential housing.

Based on the undeveloped/unimproved nature and accommodating acreage of the Subject Property, no alternative sites were considered.

The direct and indirect environmental impact findings of the EIA are detailed as follows.

As a result of implementation, the proposed project may:

- result in extensive tree removal and loss of open green space;
- present potential risks to threatened and/or endangered species through a loss of terrestrial habitat and/or impacts to aquatic habitat associated with increases in stormwater runoff;
- increase the potential for increased stormwater runoff and depletion of groundwater recharge resulting from the associated construction of impervious surfaces;
- present potential impacts to documented cultural resources;
- affect approximately 56.8 acres of designated prime farmland and 32.6 acres of farmland of statewide importance;
- have the potential to generate fugitive dust as a result of site grading and the general operation of construction equipment. Similarly, the operation of diesel-powered construction equipment may have the potential to release particulate matter associated with fugitive emissions;
- have the potential to introduce sources of light pollution to the surrounding area;
- present a potential cumulative impact to the surrounding environment from lawn care and stormwater runoff from impervious surfaces with specific focus on affecting downstream aquatic species.

Based on the above, appropriate mitigation measures should be executed in conjunction with project implementation as discussed herein.

2.0 INTRODUCTION

2.1 Scope of Work

Timmons Group was contracted by Bryan Properties, Inc. to prepare an EIA in association with the development and construction of the proposed Sunset Grove subdivision (Appendix 1 and Appendix 2). The requirement for an EIA is pursuant to Chatham County Subdivision Ordinance (dated July 1980, revised December 2008, and most recently amended December 2014) and North Carolina General Statute §113A-4(2) or U.S.C. §4332(C). An EIA is required for: “any proposed non-residential development project of two (2) contiguous acres or more in extent that disturbs two (2) or more acres” or “any proposed residential development project of two (2) contiguous acres or more in extent that will include fifty (50) or more dwelling units, whether detached single family residences or in a multifamily structure or structures.”

Based on the results of the EIA, additional studies may be required, including but not limited to: an architectural or historic structures survey and detailed surveys for habitats of threatened, rare or endangered animal or plant species.

2.2 Objectives and Procedures

The purpose of the EIA is to:

- identify and discuss the potential environmental impacts of the proposed project so that the project design can be amended to avoid or mitigate significant adverse environmental impacts;
- represent a commitment by the proponent(s) to complete a reasonable and comprehensive review of the potential environmental impacts stemming from project development and a further commitment to implement design and mitigation actions specified in the document; and
- identify permitting requirements for the project to assist the proponents in the timely preparation of permit applications.

As required, the EIA includes the following subjects:

- Proposed project description and need.
- Descriptions of existing conditions and potential impacts to existing conditions (including geology, soils and prime farmland, land use, wetlands, public lands and scenic, recreational, and State Natural Areas, areas of archaeological and historical value, air quality, noise levels, surface and groundwater resources, fish and aquatic habitats, wildlife and natural vegetation, and hazardous materials).
- Analysis of potential environmental impacts and a discussion of impacts being avoided, minimized, or mitigated.
- Permits, maps, and plans being obtained for the proposed project including topographic maps, soils evaluations, stormwater and erosion control plans, utility plans, U.S. Army Corps of Engineers (USACE), and N.C. Department of Water Quality (DWQ).

2.3 Limitations

This EIA involved a reconnaissance of the project site, a review of preliminary design information, and a review of regulatory and historical information to identify potential environmental resources in the vicinity of the project site. Timmons Group will be contacted regarding potential changes if the site plans or design details are significantly altered following preparation of this EIA so that appropriate amendments can be made.

Detailed cultural resource and/or threatened and endangered (T&E) surveys were beyond the scope of this project. Furthermore, no soil, water, and/or air sampling/testing or contaminant screening was conducted during the completion of this report. The conclusions and recommendations presented within this EIA are based upon a reasonable level of inquiry in accordance with the standards and limits of

professional practice for a site of this particular geographic setting. All observations, conclusions and recommendations pertaining to the environmental conditions of the project site are limited to the conditions observed and/or materials reviewed at the time that the study was undertaken. No other warranty, expressed or implied, is made with regard to the conclusions and recommendations presented within this report.

This report is provided for the exclusive use of Bryan Properties, Inc. in their submittal to Chatham County. This report is not intended to be used or relied upon in connection with other projects or by other unidentified third parties. The use of this report by any undesignated third party or parties will be at the sole risk of the third party or parties, and Timmons Group disclaims liability for any such third party use or reliance.

3.0 PROPOSED PROJECT DESCRIPTION AND NEED

3.1 Project Identification

Project Name:	Sunset Grove
Jurisdiction:	Chatham County
Developer:	Bryan Properties, Inc.
Contact:	Sarah O'Brien
Contact Address:	Bryan Properties, Inc. 400 Market Street, Suite 115 Chapel Hill, North Carolina 27516
Contact Phone:	919-933-4422

3.2 Proposed Site Features

The proposed project includes the construction of a residential subdivision containing single-family residences on 55 variably-sized lots and several public roadways through the project site. The entirety of the proposed construction will be performed within the parcel limits and no demolition of any structures is planned prior to construction of the proposed project. The subject property will be located on Mt. Gilead Church Road in Pittsboro, Chatham County, North Carolina on approximately 107.85 acres (Appendix 1).

The project site is currently comprised of undeveloped woodlands bordered by single-family residences and Valley Lane to the north; undeveloped woodlands to the east; single-family residences and Bartlett Drive to the south; and single-family residences and Mt. Gilead Church Road to the west (Appendix 1).

The project site drains primarily to the east toward Parkers Creek and grades from a topographic low of approximately 400 feet to approximately 530 feet above mean sea level (MSL) with areas to the north and west topographically upgradient of the project site (Appendix 1). Waters of the United States (WUS) and wetlands are present within the proposed project limits with Parkers Creek transecting the northern region of the project site.

Project construction will result in substantial tree removal and loss of open green space. Furthermore, increases in impervious areas will occur; although at this time, only preliminary design and siting plans have been completed.

The need for the proposed project stems from an 8.2% increase in the population of Chatham County between 2010 and 2014 which is nearly double the overall population increase for the state of North Carolina for the same period (4.3%). Statistics further indicate that for nearly the same period, approximately 88.2% of the Chatham County population resided the same house for at least one (1) year. As a result, the population increase and low housing turnover has created a demand for the construction of additional single-family residential housing.

3.3 Site Plans

The following sections are based on the preliminary/conceptual site plan (i.e. Sunset Grove, Formerly Copper Ridge, First Plat Exhibit) for the single-family subdivision which is presented as Appendix 2. No final design or siting plans have been developed for presentation to Chatham County to evaluate conformance with existing ordinances/codes. Accordingly, the structural design details of the single family residences have not been identified. However, parking will assuredly be limited to residential driveways and roadways with no proposed community parking lots or parking decks.

3.3.1 Utility Plans

A water line connection will occur between Lot 13 and Lot 14 to an existing water line easement to the north of the project site with the new water lines to be constructed beneath the proposed roadways (Appendix 2).

3.3.2 Wastewater Management Systems

Each individual residential lot will have a septic system for wastewater management.

3.3.3 Impervious and Semi-pervious Surfaces

The impervious surface calculations for the proposed project are detailed below and in Appendix 2. Clearing on the project site will only occur for the roadways, utilities, building pads, and driveways.

- Roadway impervious = approximately (approx.) 159,500 square feet (sq ft)
 - Residential impervious = approx. 412,500 sq ft (approx. 7,500 sq ft per lot)
 - Miscellaneous impervious = approximately 10,000 sq ft
-
- Total impervious surfaces = approximately 582,000 sq ft or 13.36 acres
 - Overall project impervious percentage = 12.4%

Based on the low percentage of the overall area of impervious surfaces and the proposed minimal clearing of woodlands, the introduction of impervious surfaces to the project site may marginally impact the surrounding properties.

3.3.4 Stormwater Control Devices

Curbing will not be included in roadway design so stormwater runoff will be controlled by overland flow. Drainage ditches will flank the roadways as needed to intercept stormwater runoff which will be directed to either of three (3) proposed water quality ponds that will be designed to retain up to 90% of total suspended solids.

4.0 ALTERNATIVES ANALYSIS

The need for the proposed project stems from an 8.2% increase in the population of Chatham County between 2010 and 2014 which is nearly double the overall population increase for the state of North Carolina for the same period (4.3%). Statistics further indicate that for nearly the same period, approximately 88.2% of the Chatham County population resided the same house for at least one (1) year. As a result, the population increase and low housing turnover has created a demand for the construction of additional single-family residential housing.

Furthermore, the project site is zoned as "One Family Residential District (R-1)" as are the majority of the surrounding properties (Appendix 5). Therefore, the project site is appropriately zoned for the proposed development.

Based on the described need and zoning for the proposed project, no alternative project sites were proposed for consideration. Likewise, the "No Action" alternative was not weighed as a consideration.

5.0 EXISTING ENVIRONMENT AND PROJECT IMPACTS

5.1 Geography

5.1.1 Geographic Setting

The proposed Sunset Grove (previously named “Copper Ridge”) subdivision is located on Mt. Gilead Church Road in Pittsboro, Chatham County, North Carolina. The project site is located in the central region of North Carolina and the northeastern quadrant of Chatham County approximately six (6) miles from the Town of Pittsboro. U.S. Highway 64 is located to the south and Chapel Hill Road is to the north and west of the proposed project site.

5.1.2 Geology

The project site is located in the central region of the Piedmont Physiographic Province of North Carolina. Overall, the Piedmont Physiographic Province is underlain by crystalline bedrock formations that exhibit a high degree of geologic complexity; in addition, the region is characterized by the bedrock being overlain by a mantle of residual soil and saprolite. Saprolite is the product of in-situ chemical weathering of the crystalline bedrock that often retains the fabric, texture and structure of the parent bedrock. Saprolite is typically thickest on hilltops and in stream valleys and thinnest or absent altogether on hillsides (Legrand, 1988).

The 1991 Geologic Map of North Carolina indicates that the project site is underlain by felsic metavolcanic rock (map label CZfv) which is described below.

Felsic metavolcanic rock – metamorphosed dacitic to rhyolitic flows and tuffs, light gray to greenish gray; interbedded with mafic and intermediate metavolcanic rock, meta-argillite, and metamudstone.

Furthermore, based on the review of the Geologic Map of North Carolina (1991), the Subject Property is not recognized as being located in an area underlain by a geologic formation of scientific or economic significance.

5.1.3 Topography

The 1999 U.S. Geological Survey (USGS) 7.5 minute topographic map of the Farrington, North Carolina Quadrangle indicates that site elevations range from approximately 400 feet to 530 feet above MSL and surface drainage flows primarily to the east (Appendix 1). A grading plan has not yet been developed for this project.

5.1.4 Floodplain

Flood Insurance Rate Maps (FIRM) #3710977300J and #3710977200J published by the Federal Emergency Management Agency (FEMA) for Chatham County, North Carolina was reviewed to determine if the Subject Property is located within a floodplain. According to the FIRM, the Subject Property is located in Zone X which is outside of the 0.2% annual chance floodplain (Appendix 3).

5.2 Soils and Prime Farmlands

According to the U.S. Department of Agriculture (USDA) Web Soil Survey, soils beneath the project site are identified as approximately 39% Georgeville silt loam (2-6% slopes), 18% Badin-Nanford complex (15-30% slopes), 16% Nanford-Badin complex (6-10% slopes), 13% Nanford-Badin complex (2-6% slopes), 7% Nanford-Badin complex (10-15% slopes), 7% Cid-Lignum complex (2-6% slopes), and less than 1% Georgeville-Badin complex (10-15% slopes).

Of the units identified above, the USDA identified approximately 56.8 acres of the subject property as “prime farmland” and approximately 32.6 acres of the subject property as “farmland of statewide importance” (Appendix 4). Brief descriptions of the soil units are presented below:

Soil beneath the subject property	
Soil Unit	Description
(GaB) Georgeville silt loam, 2 to 6 percent slopes	This unit consists of well-drained soil that typically occurs on interfluves and summits. The parent material consists of residuum weathered from metavolcanics and/or argillite. All areas are prime farmland.
(BaE) Badin-Nanford complex, 15 to 30 percent slopes	This unit consists of well-drained soil that typically occurs on hillslopes on ridges. The parent material consists of residuum weathered from metavolcanics and/or argillite. This soil is not prime farmland.
(NaC) Nanford-Badin complex, 6 to 10 percent slopes	This unit consists of well-drained soil that typically occurs on hillslopes on ridges. The parent material consists of residuum weathered from metavolcanics and/or argillite. This soil is considered farmland of statewide importance.
(NaB) Nanford-Badin complex, 2 to 6 percent slopes	This unit is well drained soil that typically occurs on interfluves and summits. The parent material consists of residuum weathered from metavolcanics and/or argillite. All areas are prime farmland.
(NaD) Nanford-Badin complex, 10 to 15 percent slopes	This unit consists of well-drained soil that typically occurs on hillslopes on ridges. The parent material consists of residuum weathered from metavolcanics and/or argillite. This soil is considered farmland of statewide importance.
(CmB) Cid-Lignum complex, 2 to 6 percent slopes	This unit is moderately well-drained and typically occurs on interfluves and summits. The parent material consists of residuum weathered from metavolcanics and/or argillite. This soil is farmland of statewide importance.
(GkD) Georgeville-Badin complex, 10 to 15 percent slopes	This unit is well-drained and typically occurs on hillslopes on ridges. The parent material consists of residuum weathered from metavolcanics and/or argillite. This soil is farmland of statewide importance.

Timmons Group also completed a soil survey for the project site which is included in Appendix 4.

5.2.1 Agricultural Land

The project site and the adjoining properties are not currently utilized for agricultural purposes. The USDA Web Soil Survey Farmland Classification map indicates that approximately 82.3% of the project site is designated as prime farmland/farmland of statewide importance (Appendix 4).

5.3 Land Use

The project site is presently comprised of three (3) parcels of undeveloped woodlands. The project site is zoned as "One Family Residential District (R-1)" as are the majority of the surrounding properties (Appendix 5).

5.4 Existing and Natural Resources

5.4.1 Wetlands

A review of the United States Fish and Wildlife Service (FWS) National Wetland Inventory (NWI) mapping for the site depicts an absence of wetland habitats within the boundaries of the subject property (Appendix 6). However, a wetland delineation completed by Timmons Group's Scott Mitchell identified approximately 0.25 acres of wetlands onsite and approximately 9,200 linear feet of intermittent and perennial streams. These features have been confirmed by Chatham County and the USACE. Accordingly, appropriate erosion and sedimentation (E&S) controls will be implemented during construction to mitigate any potential wetland impacts on the project site (Appendix 6).

5.4.2 Temporary and Permanent Wetland Impacts

Temporary and permanent wetland impacts on the project site have been confirmed by the USACE (Appendix 4 and 6). Based on the current wetlands and streams delineated within the limits of the project site, appropriate E&S controls will address potential impacts.

5.5 Public Lands and Scenic, Recreational, and State Natural Areas

5.5.1 Parks and Recreation Areas

Per correspondence from North Carolina Department of Environment and Natural Resources (NCDENR) dated April 14, 2015, property owned by the USACE as part of the B. Everett Jordan Dam and Lake Project is located just over one (1) mile to the east and downstream from the subject property (Appendix 7). Furthermore, a portion of the USACE property is a Jordan Lake State Recreation Area which is managed by the North Carolina Division of Parks and Recreation and includes the Parkers Creek Campground and swimming area. Based on the preliminary site plan, no negative impacts are anticipated.

5.5.2 Scenic Resources

Based on reviewed data, scenic resources are not present within and/or within close proximity to the project site (Appendix 8).

5.5.3 Natural Areas

Based on reviewed resources and correspondence from NCDENR dated April 14, 2015, the northern portion of the project site is within the Big Woods Road Upland Forests natural area (Appendix 7). However, based on the scope of the proposed project, NCDENR does anticipate potential negative impacts.

5.5.4 Forest Land

According to the USDA Forest Service and the North Carolina Forest Service, the subject property is not located in the vicinity of a national or state forest. The nearest such resources is the Uwharrie National Forest located over 52 miles away. Implementation of the proposed project may locally result in extensive tree removal with some re-vegetation associated with site development.

5.6 Areas of Archaeological or Historical Value

A review of the North Carolina State Historic Preservation Office (NCSHPO) Geographic Information System (GIS) identified no cultural/historic resources in the vicinity of the project site that are listed on the state register or on the National Register of Historic Places (NRHP). However, during site reconnaissance, a cemetery of twelve (12) graves was observed near the eastern boundary of the project site in proximity to the ruins of a house (Appendix 9). In accordance with state and federal regulations, the cemetery should either be protected or relocated in conjunction with project development under supervision of a licensed archaeologist to ensure the preservation of integrity.

5.7 Air Quality

On March 12, 2008, the Environmental Protection Agency (EPA) promulgated to tighten the 1997 National Ambient Air Quality Standards (NAAQS) for ground level ozone from 0.08 parts per million (ppm) to 0.075 ppm. On May 21, 2012, U.S. EPA published the final designations for the ozone air quality standards that were promulgated in 2008 for all areas in the United States; shortly thereafter, on May 31, 2012, U.S. EPA completed the designations for the 2008 ozone standards when the U.S. EPA Administrator signed the final rule. According to the EPA's Mid-Atlantic Air Protection 8-Hour Ozone Maintenance Areas website, the Raleigh-Durham-Chapel Hill area (in which the project site resides) is identified as an area of attainment/maintenance for the 8-hour ozone standard (Appendix 10).

Air pollution emissions are expected to be very minimal from the proposed project and limited to periodic exhaust from construction equipment, which is neither anticipated nor expected to produce long term detrimental effects. Regardless, appropriate measures will be pursued to control fugitive dust and exhaust emissions during construction. Furthermore, vegetation cleared from the project site will not be burned.

5.8 Noise Levels

Currently, the overall noise levels across the project site are expected to be low and limited to air traffic and roadway noise with temporary impacts originating from NCDOT road maintenance.

Construction activity may temporarily increase noise levels as a result of logging, grading, utility work, and project construction. However, noise impacts via project construction will be minimized by only working during daytime hours and only on weekdays. After construction is completed, potentially impacting noise levels will cease.

5.9 Light Levels

The proposed project will increase residential density and associated home lighting in this area of Chatham County per the 55 lots proposed for construction. Overall impact is suspected to be minimal and all lighting from the proposed residences will meet the requirements of the Chatham County Zoning Ordinance.

5.10 Surface and Groundwater Resources and Watershed Area

5.10.1 Surface Waters

The National Hydrography Dataset (NHD) depicts Parkers Creek transecting the northern portion on the project site (Appendix 6). The NC Division of Water Resources identifies Parker Creek as Stream Index #16-41-8-(1) and the segment is measured from the source to Chatham County State Route 1716. The water is classified as WS-IV, B and NSW. The stream segment has not been rated for use support by NCDWR. Appropriate E&S controls will be implemented during construction to mitigate any potential impacts.

5.10.2 Groundwater Resources

The project site is within the North Chatham Water System and receives potable water from the Jordan Lake Water Treatment Plant. Chatham County does not utilize groundwater from Chatham County for consumption but purchases water from other suppliers. The Chatham County Utilities & Water Division collects water samples continuously to ensure the water leaving the Jordan Lake Water Treatment Plant meets EPA standards (Appendix 11).

5.10.3 Watersheds

The subject property is located within the Haw Watershed (Hydrologic Unit Code [HUC]: 03030002). Accordingly, appropriate E&S controls will be implemented during construction to mitigate any potential impacts.

5.11 Fish and Aquatic Habitats

Parkers Creek flows through the northern area of the project site and drains into Jordan Lake. Accordingly, Parkers Creek possesses the correct habitat for specific aquatic life (Appendix 6). Appropriate E&S controls will be implemented during construction to minimize any potential adverse effects to surface water associated with sedimentation and suspended solids.

5.12 Wildlife and Natural Vegetation

5.12.1 Threatened and Endangered Species

A search of the NCDENR Natural Heritage Program database was performed to identify T&E species within Chatham County (Appendix 12). The results indicate that the surrounding habitat is conducive to the presence of two (2) federal endangered/state endangered (FESE), five (5) state endangered (SE) species, and six (6) state threatened (ST) species as detailed below:

1. Cape Fear Shiner – FESE,
2. Harperella – FESE,
3. Brook Floater – SE,
4. Atlantic Pigtoe – SE,
5. Yellow Lampmussel – SE,
6. Savannah Lilliput – SE,
7. Carolina Creekshell – SE,
8. Triangle Floater – ST,
9. Roanoke Slabshell – ST,
10. Bald Eagle – ST,
11. Eastern Lampmussel – ST,
12. Carolina Redhorse – ST,
13. Creeper – ST.

Per NCDENR correspondence dated April 14, 2015, the project site is within the known range of a significantly rare (SR) species, the Carolina Ladle Crayfish (Appendix 7). The Carolina Ladle Crayfish has been documented within the reach of Parkers Creek that flows through the northern portion of the project site and is also documented within other nearby tributaries of Jordan Lake. Significantly rare species, per the North Carolina Natural Heritage Program, are those “which are not listed as Endangered, Threatened, or Special Concern species, but exists in NC in small numbers and have been determined to require monitoring.” Also, Significantly Rare species include “peripheral species, whereby North Carolina lies at the edge of the species’ range.” Accordingly, development of the project site has the potential to negatively impact the Carolina Ladle Crayfish. Appropriate E&S controls will be implemented during construction to mitigate any potential impacts.

5.12.2 Significant Habitats

Through a review of available resources, and supported by correspondence from NCDENR dated April 14, 2015, the subject property is not a designated area of significant habitat for designated federal and/or state threatened and/or endangered species (Appendix 7).

Twenty-four natural plant community types occur in Chatham County and 21 high quality plant community types have been documented as by element occurrences by the NCNHP. Most of these occur within Significant Natural Heritage Areas (SNHA). The project site is not within a SNHA. Natural plant communities and habitat types on the site include mesic mixed hardwoods, dry-mesic oak-hickory and bottomland hardwoods.

5.12.3 Unique/Important Terrestrial Vegetation

Per correspondence from NCDENR dated April 14, 2015, no unique/important/rare (i.e. federal/state threatened and/or endangered) terrestrial vegetation is located in the vicinity of the project site (Appendix 7).

5.12.4 Invasive Species

The clearing, grading, and development of the project site will have the potential to eliminate a wide array of vegetation on the Subject Property including various invasive species. Only Native plant species will be replanted for landscaping purposes along with the development of the project site.

5.12.5 Deforestation

Given that the project site is almost completely undeveloped woodlands, extensive tree removal will occur as a result of project development. The resulting potential displacement of species will be accommodated by the wooded and wetland areas to the east which maintain substantial habitat(s). Any potential increases in surficial erosion resulting from tree removal will be accommodated by appropriate E&S measures including temporary to permanent structures such as BMPs.

5.12.6 Wildlife

The site supports many species of mammals, birds, reptiles, and amphibians, as well as fish and aquatic and terrestrial invertebrates. During site visits, White-tailed Deer (*Odocoileus virginianus*) were observed. Anticipated impacts to wildlife habitat include the conversion of forest for residential development. Smaller species of wildlife and species such as terrestrial amphibians which require specific habitats will be directly affected the most.

5.13 Hazardous Materials

Construction equipment and vehicles will use diesel fuel throughout the proposed project phases. If a spill or leakage were to occur, maintenance and cleanup must be performed according to local, state, and/or federal standards with appropriate reporting, as necessary. Likewise, construction materials will require appropriate storage in accordance with local/state guidelines.

Various volumes of solid waste material may be temporarily stored in containers onsite during construction activities pending disposal at appropriate and permitted solid waste disposal facility(ies). Post construction wastes will be maintained by Chatham County Solid Waste and Recycling (a division of the Chatham County Department of Environmental Quality) in accordance with local and state guidelines.

5.14 State and Federal Permits Required

The following permits will be required for this project:

- North Carolina Department of Transportation (NCDOT) Driveway Permit,
- NCDOT Roadway Review (Public Roads),
- Stormwater Permit via Chatham County,
- Erosion and Sediment Control Permitting via Chatham County,
- Nationwide Permit via the USACE,
- 401 Water Quality Certification via NC Division of Water Resources
- North Carolina and Chatham County Potable Water,
- Chatham County Environmental Health (for individual septic fields).

6.0 ANTICIPATED IMPACTS OF THE PROJECT

The purpose of the proposed project is to provide Chatham County with increased single family housing for an expanding population.

The project site is located on Mt. Gilead Church Road on approximately 107.85 acres consisting of undeveloped woodlands. The proposed project is bordered by single-family residences and Valley Lane to the north, undeveloped woodlands to the east, single-family residences and Bartlett Drive to the south, and single-family residences and Mt. Gilead Church Road to the west.

Following a review of the project details, the subsequent potential impacts have been identified:

1. Project implementation may result in extensive tree removal and loss of open green space; however, the site development and associated tree clearing plans have not yet been finalized.
2. Project implementation may present potential risks to local populations of threatened and/or endangered species due to either a loss of terrestrial habitat through deforestation and/or impacts to aquatic habitat associated with increased stormwater runoff.
3. The proposed project may have the potential to impact surficial and groundwater resources both during construction and upon completion as a result of clearing vegetation and the construction of impervious surfaces. Project construction may present the potential for increased sedimentation into existing surficial drainage patterns in addition to increased stormwater runoff. The latter may likewise have the potential to promote a reduction of stormwater infiltration and groundwater recharge as will the increased area of impervious surfaces following construction.
4. Development of the proposed project will not impact historic/cultural resources registered with the state or listed on the NRHP; nonetheless, cultural resources have been documented on the project site that may be impacted as a result of site development. Accordingly, the identified resources will require management in compliance with state and federal statutes.
5. Project implementation would eliminate 56.8 acres of designated prime farmland and an additional 32.6 acres of farmland of statewide importance.
6. Construction activity may temporarily create an environment that is conducive to the generation of fugitive dust as a result of site grading and the general operation of construction equipment. Similarly, the operation of diesel-powered construction equipment may have the potential to release particulate matter associated with fugitive emissions.
7. Nighttime illumination of the completed subdivision may potentially serve as a source of light pollution to the surrounding area. However, the lighting schedule has yet to be finalized in conjunction with the facility design options.
8. Following construction, homeowners will likely use of fertilizers, pesticides and/or herbicides. The use of such maintenance chemicals presents a potential cumulative impact to the surrounding environment with specific focus on affecting downstream aquatic species.

7.0 MITIGATION

Previously mentioned, the project will produce a series of direct, indirect, and cumulative impacts. Measures to minimize the potential adverse effects will be considered by Chatham County to include the following:

1. Tree removal will be mitigated by designating tree preservation areas and repopulating disturbed areas with native species in landscape plantings. The loss of open green space will be mitigated through landscape design and the incorporation of open green space into the site plan.
2. As determined to be necessary by NCDENR, specific T&E species surveys may be conducted to ensure an absence of populations or a minimal potential for impact. Aquatic species will be offered further protection through the implementation of appropriate mitigation procedures to minimize potential impacts to peripheral streams and/or wetlands as discussed below.
3. Surface water resources will be protected during project construction through the maintenance and protection of buffers in accordance with local, state and federal requirements. Likewise, project construction activity will require the development and implementation of applicable E&S controls including silt fencing and temporary seeding. Specifications may further require contractors to clean mud and dust from the roadways during construction activity. Accordingly, an E&S control and a Stormwater Management Plan will be prepared and submitted to NCDENR for review once final design plans have been developed.

Potential groundwater impacts may be mitigated through the incorporation of stormwater retention ponds, bioswales, and stormwater low-impact development (LID) features into the final design plans which allow for the permeation of stormwater into the subsurface.

4. Potential impact(s) to the cultural resources identified onsite will be mitigated through either in-situ preservation/protection or relocation in accordance with local, state and/or federal statutes.
5. Airborne particulate matter resulting from the potential generation of fugitive dust during construction will be managed by the effective use of water or chemical based dust palliatives in addition to limiting the number and/or speed of vehicles onsite. Furthermore, and as necessary, earth moving/removal activities will be suspended during periods of high winds. Onsite machinery shall be regularly maintained during construction to ensure optimal operating conditions and limit fugitive exhaust emissions, including the use of low sulfur diesel fuel.
6. The potential for light pollution in public areas will be mitigated through the use of directional lighting in conjunction with timers or automatic dimmers to reduce or deactivate lighting during periods of inactivity.

8.0 IRREVERSIBLE ENVIRONMENTAL IMPACTS

The proposed project will likely result in the irreversible loss of the following: prime farmland, farmland of statewide importance, open green space, and forestlands although mitigation procedures are intended to minimize the extent of impact.

9.0 SUMMARY AND CONCLUSIONS

Timmons Group has prepared this EIA for the proposed Sunset Grove subdivision located on Mt. Gilead Church Road in Pittsboro, Chatham County, North Carolina.

The project site will consist of a subdivision containing single-family residences on 55 lots, with varying lot sizes, and 7,200 linear feet of public roadway.

Currently, the project site is comprised of undeveloped woodlands located on three (3) contiguous parcels totaling approximately 107.85 acres and is bordered by single-family residences and Valley Lane to the north, undeveloped woodlands to the east, single-family residences and Bartlett Drive to the south, and single-family residences and Mt. Gilead Church Road to the west.

The purpose of the proposed project is to provide Chatham County with increased numbers of single family housing.

As a result of the undeveloped nature of the project site, no alternative project sites were proposed for consideration. Likewise, the "No Action" alternative was not a consideration.

Based on a review of available resources, project implementation will produce potential direct, indirect, and cumulative impacts. Accordingly, appropriate mitigation measures have been proposed as applicable to offset recognized adverse effects.

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APPENDICES

APPENDIX 1
SITE VICINITY MAP

APPENDIX 2
PRELIMINARY SITE PLANS

APPENDIX 3

FEMA FIRM

APPENDIX 4

**USDA SOILS MAPPING AND FARMLAND CLASSIFICATION AND TIMMONS
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APPENDIX 5
CHATHAM COUNTY ZONING MAP

APPENDIX 6
SURFACE WATER RESOURCE MAPS

APPENDIX 7
NCDENR CORRESPONDENCE

APPENDIX 8

NORTH CAROLINA SCENIC RESOURCES

LINK TO FULL NC SCENIC BYWAYS DOCUMENT

http://www.ncdot.gov/download/travel/scenic_byways.pdf

APPENDIX 9

CULTURAL AND HISTORIC RESOURCE DOCUMENTATION

APPENDIX 10

NORTH CAROLINA CURRENT OZONE DESIGNATION

APPENDIX 11

NORTH CHATHAM WATER SYSTEM MAP

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NC DENR NATURAL HERITAGE PROGRAM REVIEW