

## **ENVIRONMENTAL ASSESSMENT**

For the Proposed  
Dresden – Heard County 500 kV Transmission Line  
& Associated Facilities Modifications Project  
Coweta and Heard Counties, Georgia

USDA Rural Utilities Service



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## **Executive Summary**

GTC has proposed the construction of a 6.29-mile 500 kV transmission line to connect the Dresden 500/230 kV Substation to the Heard County Power 500 kV Substation in Coweta and Heard Counties, Georgia. The construction of the transmission line and the necessary modifications to existing electrical infrastructure facilities collectively make up the Dresden – Heard County 500 kV Transmission Line & Associated Facility Modifications Project (the Project). Four (4) existing substations will be modified to accommodate the transmission line's construction. The Dresden 500/230 kV Substation will be expanded an additional 25-acres to accommodate the rerouting of the existing Wansley-O'Hara 500 kV transmission line and the installation of new equipment, including a new 500/230 kV transformer, autobanks, circuit breakers, and bus work. The existing Dresden – South Coweta 230 kV transmission line will also be rerouted at the Dresden 500/230 kV Substation to accommodate potential line crossings of the proposed Dresden – Heard County 500 kV transmission line. The Heard County 500 kV Substation's fence will be expanded by a 40' x 184' area to accommodate the installation of a new 500 kV breaker and the modification of the existing bus work. In addition, the existing 100' 500 kV tie line connecting the Heard County Substation and the Hawk Road Substation will be relocated to new bays on the south side of the substations. Switch # 133427 will be also replaced at the Union City Substation with at least a 2000A capacity switch on the East Point 230 kV line.

GTC intends to request financing to construct the Project from the United States Department of Agriculture Rural Utilities Service (RUS). In accordance with RUS's Environmental Policies and Procedures (7 CFR Part 1794), RUS considers the Project a major federal action subject to the National Environmental Policy Act of 1969 (NEPA). This Environmental Assessment (EA) has been prepared to fulfill the agency's NEPA requirements, and to also document the agency's compliance with all other federal environmental and historic preservation laws and regulations.

GTC has proposed the Project to ensure that adequate capacity is available to integrate increased generation at the Hal B Wansley Plant (Plant Wansley) into the electrical grid. Georgia Power Corporation (GPC) is contractually obligated to increase generating capacity from Unit #7 of Plant Wansley (Wansley 7), a GPC-owned natural gas combined-cycle generator, from 344 MW to 575 MW. The electric grid must therefore be upgraded to allow the increased capacity from the Wansley 7 generator to be integrated into the electrical grid in a safe and reliable manner. GTC considered multiple electrical alternatives for system upgrades that would provide sufficient transmission capacity for the Wansley 7 TSR to meet the need date (2014), including the no action alternative. GTC also considered electrical alternatives, including the No Action Alternative, and numerous alternative alignments. The proposed route was selected from several alignment alternatives; the alignments were evaluated based on environmental conditions, land use, existing linear infrastructure, engineering constraints, and overall project cost.

The Environmental Assessment concludes that the construction of the Project will:

- Not adversely affect threatened or endangered species

- Not adversely affect significant historic resources
- Not adversely impact floodplains
- Not adversely impact vegetation or streams
- Not significantly affect prime farmland soils
- Not impact any area protected by the Coastal Barrier Resource Act
- Not affect Wild and Scenic Rivers
- Not affect any National Forest System lands
- Not affect any state or federal park land
- Not adversely affect the reception signals for radio, television, or any other electronic advice
- Not produce any disproportionately high or adverse environmental or human health effects for minority and/or low-income communities
- Not adversely affect the natural, cultural, social, or economic environment

The Project will address the aforementioned loading problems in an environmentally responsible manner; it has been identified as the best alternative available to sustain reliable electric service and to conserve important cultural, social, economic, and natural resources. This Project marks an effort to confront the power delivery with foresight and care for local residents' views and concerns. It reflects GTC's commitment to protecting and sustaining the renewable and nonrenewable resources of the project area, and demonstrates the benefits of strong collaborations between a private corporation and the federal government.

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## LIST OF ACRONYMS

USACE – Army Corps of Engineers  
ACSR – Aluminum Conductor Steel Reinforced  
APE – Area of Potential Effect  
BMP – Best Management Practice  
CFR – Code of Federal Regulations  
CZMA – Coastal Zone Management Act  
DOI – Department of Interior  
DOT – Department of Transportation  
EA – Environmental Assessment  
EIS – Environmental Impact Statement  
EMC – Electric Membership Cooperative  
EMF – Electromagnetic Field  
EPRI – Electric Power Research Institute  
FAA – Federal Aviation Administration  
FEMA – Federal Emergency Management Agency  
FONSI – Finding of No Significant Impact  
GADNR – Georgia Department of Natural Resources  
GA-HPD – Georgia Historic Preservation Division  
GCMP – Georgia Coastal Management Program  
GIS – Geographic Information Systems  
GNHP – Georgia Natural Heritage Program  
GTC – Georgia Transmission Corporation  
ITS – Integrated Transmission System  
JJG – Jordan, Jones & Goulding Inc. (aka Jacobs Engineering)  
NCS – Nongame Conservation Service  
NEPA – National Environmental Policy Act  
NHPA – National Historic Preservation Act  
NOAA – National Oceanic & Atmospheric Administration  
NPDES – National Pollutant Discharge Elimination System  
NPS – National Park Service  
NRHP – National Register of Historic Places  
NWI – National Wetland Inventory  
NWR – National Wildlife Refuge  
RUS – Rural Utilities Service  
SAS – Southeastern Archeological Services, Inc.  
SHPO – State Historic Preservation Officer  
T/L – Transmission Line  
TSR – Transmission Service Request  
USC – United States Code  
USDA – United States Department of Agriculture  
USFWS – United States Fish and Wildlife Service

## 1. INTRODUCTION

The purpose of this Environmental Assessment (EA) is to evaluate the significance of environmental impacts associated with the proposed Dresden – Heard County 500 kV Transmission Line & Associated Facilities Modifications Project in Coweta and Heard Counties, Georgia (the Project). The Project involves the construction of 6.29-miles of 500 kV transmission line that will connect the Dresden 230 kV Substation in Coweta County to the Heard County 500 kV Substation. The construction of the transmission line will require modification of the Dresden and Heard County substations; equipment will also be installed at the Union City Substation though no new ground disturbance will be required. GTC has proposed this Project to ensure that adequate capacity is available to integrate increased generation at the Hal B Wansley Plant into the electrical grid.

GTC intends to request financing from the United States Department of Agriculture Rural Utilities Service (RUS) for the construction of the proposed Project, thereby making the proposed project a federal action subject to review by the National Environmental Policy Act of 1969 (NEPA), the National Historic Preservation Act of 1966 (NHPA), and all applicable federal environmental law and regulation. This EA was prepared in accordance with 7 CFR Part 1794, RUS Environmental Policies and Procedures, and 40 CFR Parts 1500-1508, the regulations promulgated by the Council on Environmental Quality for implementing the National Environmental Policy Act (NEPA). This EA will also address other laws, regulations, executive orders, and guidelines promulgated to protect and enhance environmental quality such as the Endangered Species Act, the National Historic Preservation Act, the Farmland Protection Policy Act, the Clean Water Act, and executive orders governing floodplain management, protection of wetlands, and environmental justice.

## 2. PROJECT PARTICIPANTS

Georgia Transmission Corporation (GTC) is an electric transmission cooperative established under the laws of the State of Georgia in 1996. The not-for-profit cooperative, headquartered in Tucker, Georgia, is engaged in the business of building, maintaining, and owning electric power transmission facilities (transmission lines, substations, and switching stations) to serve 39 of the 42 Georgia Electric Membership Corporations (EMCs). The 39 EMCs, also known as Member Systems, are local, consumer-owned distribution cooperatives that provide retail electric service on a not-for-profit basis. Membership of the distribution cooperatives consists of residential, commercial and industrial consumers, generally within specific geographic areas. The 39 Member Systems serve approximately 4.5 million residents and operate 183,133 miles of low voltage electric power lines. This distribution system comprises the largest distribution network in the state of Georgia.

GTC, through its member systems, serves all or portions of 157 of the 159 counties in the Georgia. As of October 1, 2012, GTC owns and maintains approximately 3,088 miles of transmission line and 650 transmission and/or distribution substations of various voltages. GTC provides transmission capacity to its Member Systems through participation in the Integrated Transmission System (ITS), the statewide transmission system jointly owned by GTC, the Georgia Power Company (GPC), the Municipal Electric Authority of Georgia (MEAG), and the City of Dalton Utilities. GTC and the ITS participants continuously monitor and assess the performance and capability of Georgia's electric system. The ITS is planned to ensure that Georgia's homes, farms and businesses, or "native load", have adequate electricity at all times including peak load conditions. The ITS serves as the backbone for the Georgia transmission grid, covering 90% of the state – 17,500 miles of the Georgia's 18,500 miles of transmission lines. Parity (expense or revenue) in ownership within the ITS depends on the load served by each of the owners, which varies from year to year and requires periodic financial adjustments. While the transmission of wholesale electrical power throughout the State of Georgia is dependent upon the cooperation of the owners of the ITS, each of these utilities competes for new loads above 900 kW within the state.

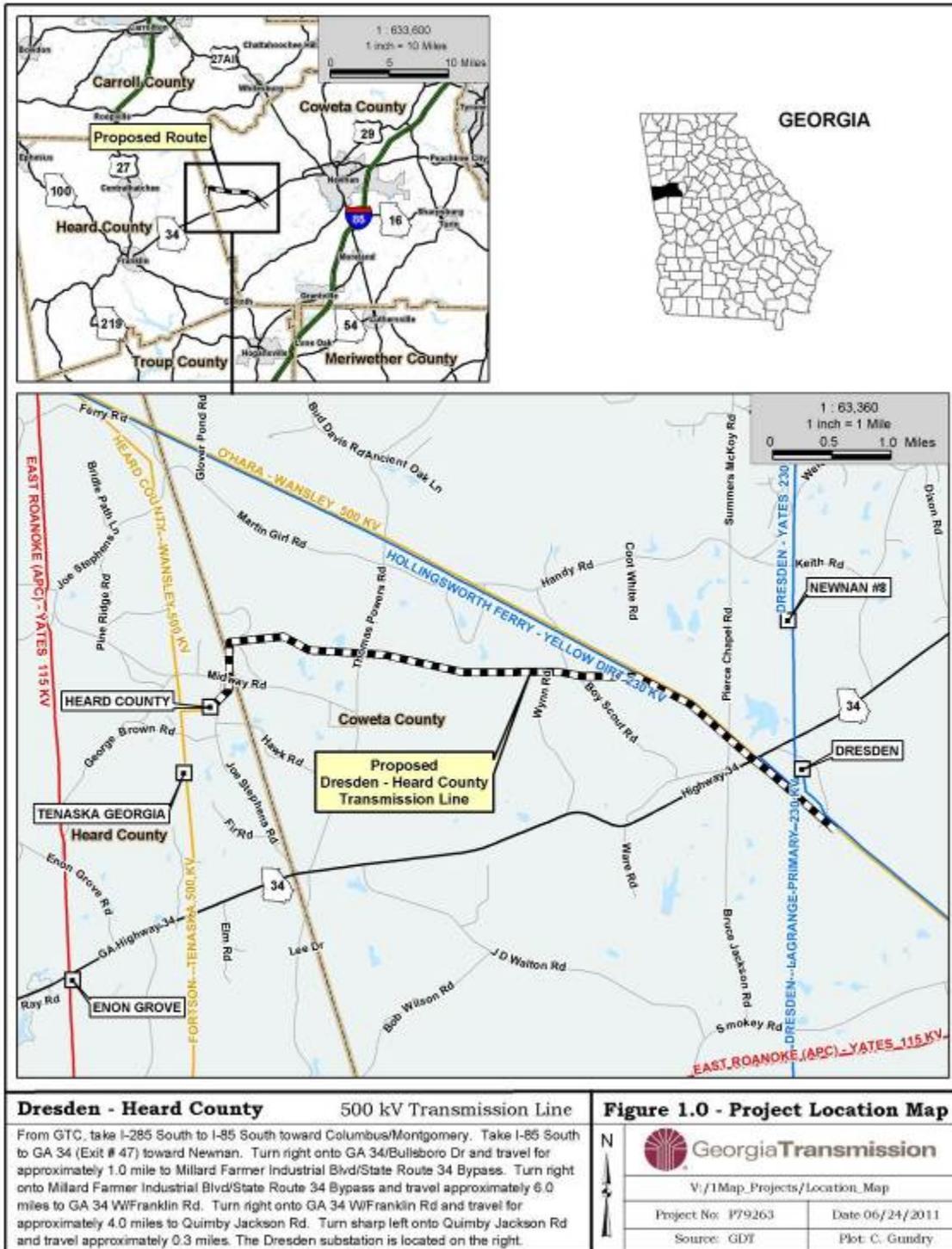


Figure 1 – Project Location Map



### 3. PROJECT DESCRIPTION

This Project proposes the construction a new 500 kV transmission line connecting the GTC’s Heard County 500 kV Substation in Heard County, Georgia to the Dresden 500/230 kV Substation in Coweta County, Georgia. The Project will also require the modification of four (4) substations, including expansion, installation of new equipment, and rerouting and relocation of existing equipment. The projects associated with this proposal include:

#### Dresden – Heard County (ITS) 500 kV Transmission Line

The proposed transmission line will connect the Heard County 500 kV Substation located adjacent to the Hawk Road Energy Facility in Heard County to the Dresden 500/230 kV Substation in Coweta County (**Figure 1**). The proposed transmission line will be approximately 6.29-miles long, and the right-of-way will be 150-180-feet wide. Transmission line structures will be constructed of lattice steel in a delta configuration and will vary in height from approximately 100-150-feet. The average distance between structures will be approximately 1,200-feet. Most access will be contained within the proposed transmission line easement from existing public roads. However, approximately 2,320-feet of off right-of-way access will be acquired in order to minimize environmental impacts and avoid steep terrain. These access roads are existing and proposed dirt roads and will be graveled as needed. The proposed transmission line is cross county and parallels property lines where possible; GTC will purchase necessary easements.

#### Dresden 500/230 kV Substation Expansion and Modification

The Dresden Substation is located on the east side of Quimby Jackson Road in Coweta County, Georgia (**Figure 2**). The Dresden Substation property is surrounded by land owned by the City of Newnan and can be characterized as wooded with some residential. The modification of the Dresden Substation will be achieved through three phases of construction, and will require 25-acres of expansion of the substation. The land will be purchased from the City of Newnan and the relocation of a section of Quimby Jackson Road.

The first phase focuses on expanding the existing fence to include four 672 MVA 500/230 kV autobanks, routing the existing Wansley – O’Hara 500 kV Transmission Line through the substation without interconnection, and adding 2000A 230 kV circuit breakers. The second focuses on expanding the 230 kV side of the substation, replacing four 230 kV circuit breakers and adding 230 kV bus work to accommodate the installation of a 500/230 kV transformer. The final phase will involve the rerouting of the Dresden – South Coweta (ITS) 230 kV Transmission Line to accommodate the proposed Dresden - Heard County 500 kV line crossing(s). Approximately 1,400-feet of Georgia Power’s existing 500 kV T/L would be

removed, and an approximate 3,000-feet of 500 kV TL will be added to loop the existing line in the expanded section of the Dresden Substation.

#### Heard County 500 kV Substation Modification

Heard County Substation is located in Heard County, Georgia off of Joe Stephens Road (**Figure 3**). The area surrounding the substation can be characterized as agricultural with some residential. Modifications to the Heard County Substation to accommodate the new Dresden – Heard 500 kV Transmission Line will include an approximately 40 x 184-foot fence expansion in the northern corner of the property.

An existing 500 kV tie line (approximately 100-feet long) exists between the Heard County Substation and the Hawk Road Substation which is opposite the Heard County Substation on the east side of Joe Stephens Road. To accommodate the new Dresden-Heard County Transmission Line, this existing tie line will be relocated from their existing bays to new bays on the south side of each substation. In addition, there will be a modification to the existing bus work within the substation to tie the new transmission line to the new 500/230 kV transformer. A 500 kV breaker will be added.

#### Hawk Road 500 kV Substation Modification

The Hawk Road Substation is located in Heard County, Georgia on the east side of Joe Stephens Road, opposite the Heard County Substation (**Figure 3**). The Hawk Road Substation is adjacent to and connected with the Tenaska Georgia Generating Station which is a 945 MW natural gas simple-cycle electric peaking generating facility. This facility is owned and operated by a private generator, Tenaska Georgia Partners, LLC.

As stated above, the existing 500 kV tie line to the Heard County Substation will be moved from a bay on the northern side of the substation and re-terminated at a new bay on the south side.

#### Union City 500/230 kV S/S Switch Replacement

Switch # 133427 will be replaced at the Union City Substation with at least a 2000A capacity switch on the East Point 230 kV line. There will be no ground disturbance. **Figure 4** shows the location of the Union City Substation in relation to Dresden – Heard County 500 kV T/L.

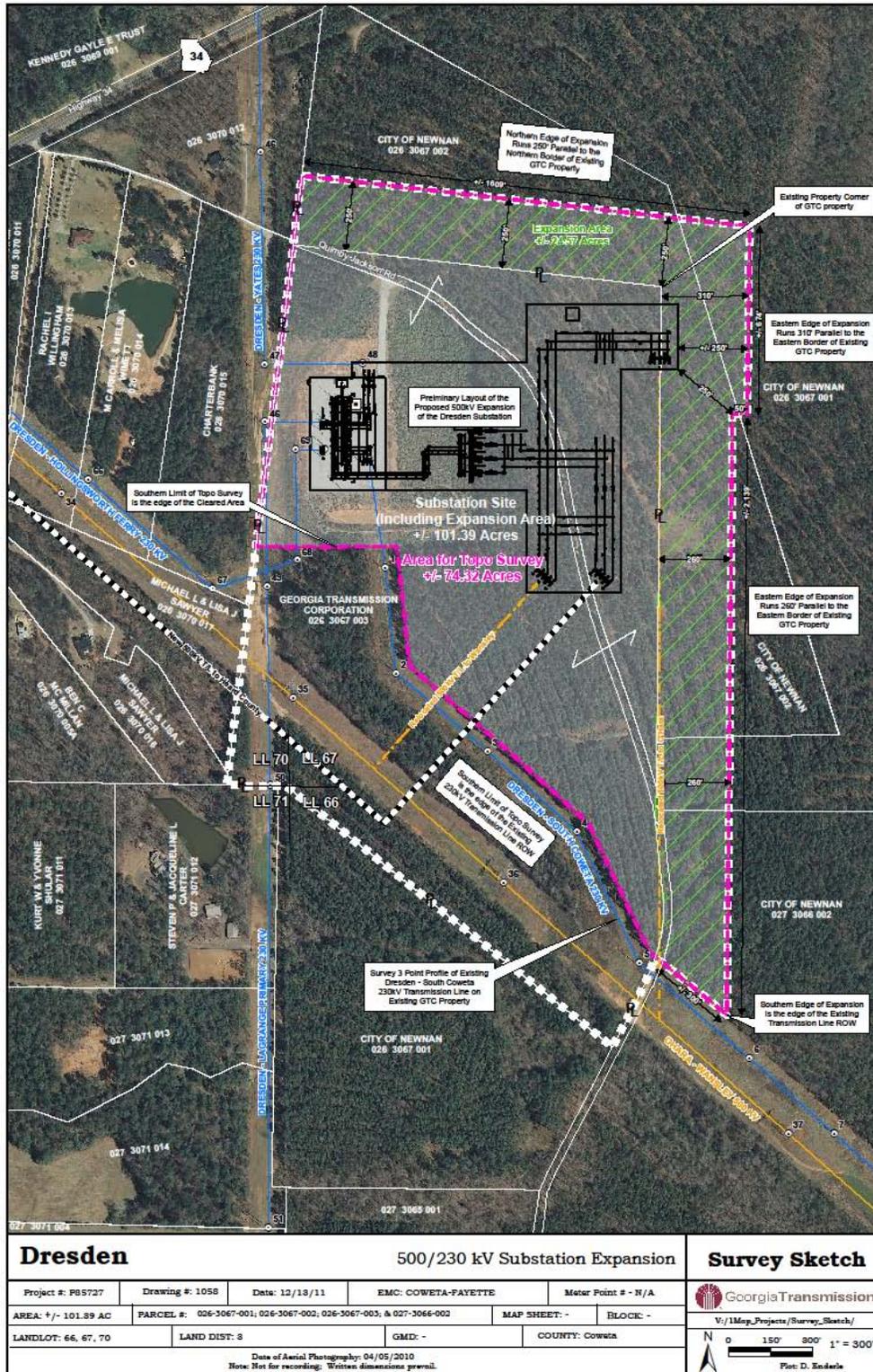
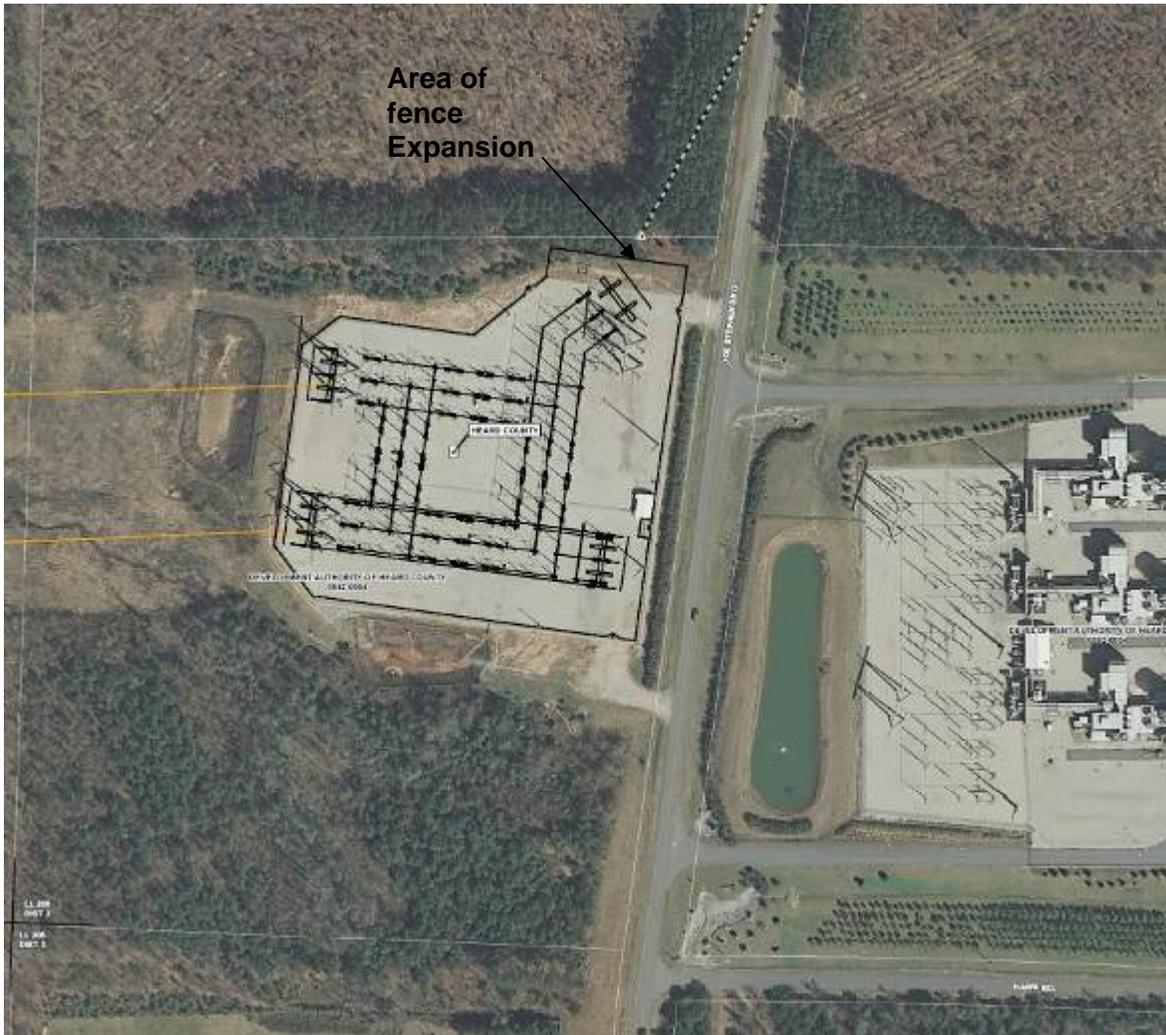


Figure 2 – Dresden Substation and Dresden – South Coweta Re-Route Modification



**Figure 3 – Heard County Power Substation Modification**

#### 4. PROJECT JUSTIFICATION

GTC has proposed the Project to ensure that adequate capacity is available to integrate increased generation at the Hal B Wansley Plant (Plant Wansley) into the electrical grid. Plant Wansley is a power plant in Heard County, Georgia. Its nine (9) units generate electricity from coal, oil, or natural gas. Various members of the Georgia ITS, including GPC, MEAG and Oglethorpe Power Corporation (OPC) own units at this plant. Plant Wansley's Unit #7 (Wansley 7), owned by GPC, is a natural gas-fired combined-cycle steam unit with a generating capacity of 575MW.

The Southern Scheduling Member Group, a consortium of electrical cooperatives in Georgia, has contracted with GPC for 575 MW of power from Wansley 7. A Transmission Service Request (Wansley 7 TSR) was issued to GTC in 2010 by Enervision, an energy management firm, to undertake various improvements to the electrical grid in support of the Southern Scheduling Member Group's contract (**Appendix A**). Although Wansley 7 is capable of producing up to 575 MW, its current output is limited by the existing electric grid, which can only carry up to 344 MW out of Wansley 7 under certain operating conditions. If the electric grid is subject to carrying more power than its capacity, serious outages can result for all Georgia's electric consumers. The electric grid must therefore be upgraded to allow the Wansley 7 generator to fulfill its contractual obligation by 2014 for safe and reliable delivery of 575 MW to the Southern Scheduling Member group subscribers.

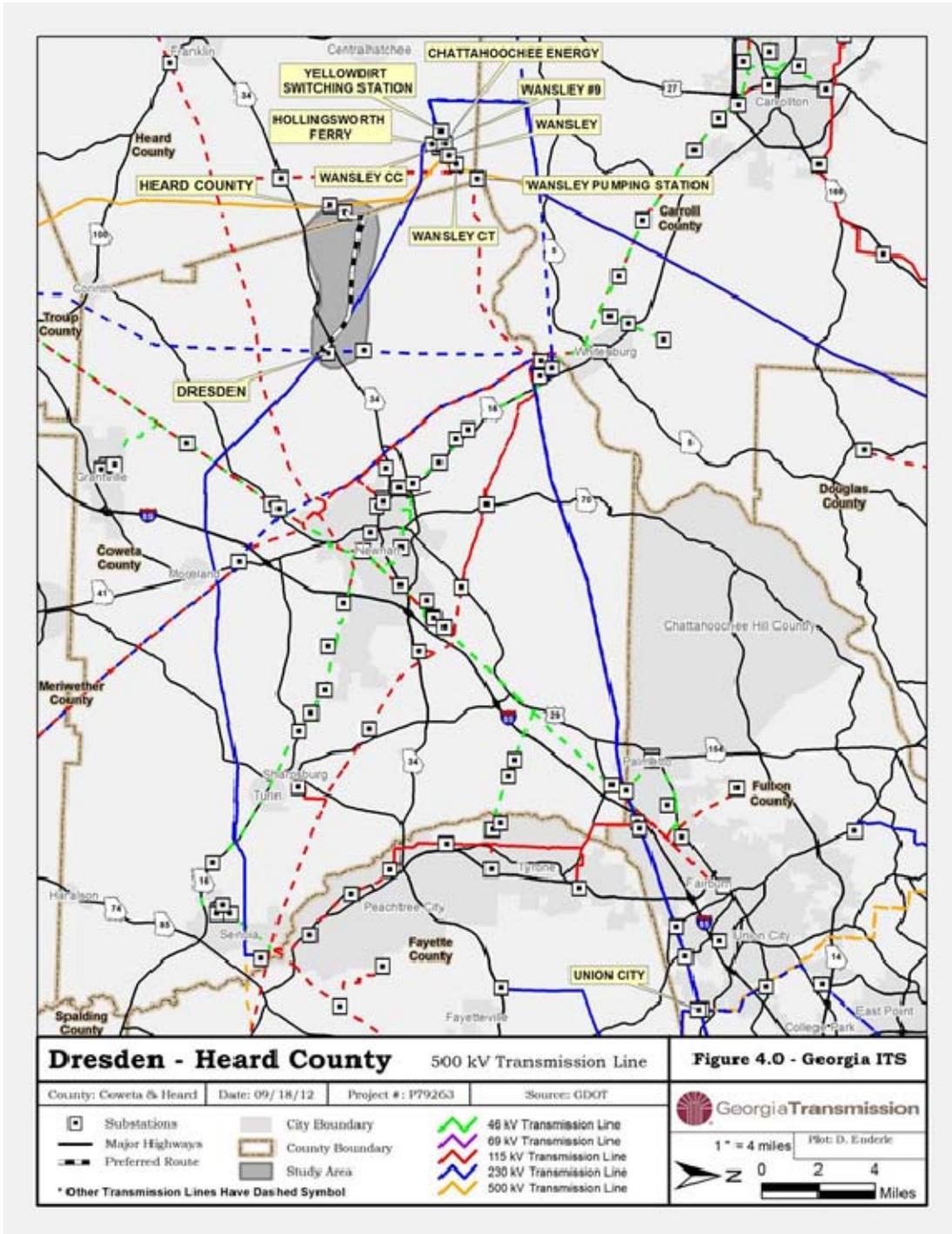


Figure 4 – Georgia Integrated Transmission System Map

## 5. PROJECT ALTERNATIVES

### 5.1 Electrical Alternatives

#### No Action Alternative

Under the “no action alternative” GTC would not construct the Project. Failing to construct the Project would limit the output of Unit #7 of Plant Wansley to 344 MW. In addition to curtailing generation at Wansley #7, GTC’s existing Wansley – Villa Rica 500 kV Transmission Line and the transformer at GPC’s existing Villa Rica 500/230 kV Substation will overload under contingency situations. The term “contingency situation” refers an emergency or system disruption to a component of the electrical grid. This can be caused by natural phenomena such as weather, tree fall, animal interaction, etc. or by equipment failure.

#### Construction Alternatives

GTC considered numerous alternative construction projects that would provide for the integration of Unit #7 of Plant Wansley to operate at full capacity beginning in 2014. These alternative projects included: the construction of a new Dresden – Heard County 500 kV Transmission Line, three (3) new 500 kV lines out of Plant Wansley, two (2) Dresden – Heard County 230 kV line configurations, and a 230 kV line out of Plant Wansley. The following subsections provide a description of each of the alternative projects considered and a discussion of the analysis used to determine the preferred electrical solution. Please refer to **Appendix A** for the Transmission Improvement Alternatives and the System Impact Study.

#### *Option 1: Dresden - Heard County 500 kV line (the proposed Project)*

The Dresden – Heard County 500 kV Transmission Line (the Project) would involve the construction of a 6.29-mile 500 kV transmission line from GTC’s existing Dresden 230 kV Substation to GTC’s existing Heard County 500/230 kV Substation. To accommodate this new transmission line, both of these substations would need to be modified.

At Dresden Substation, the existing substation pad will be expanded to terminate the new transmission line and accommodate a new 500/230 kV transformer. Also, the Dresden- Yates 230 kV Transmission Line will be modified by moving one of the 230 kV series reactors from the Villa Rica 500/230 kV Substation in Douglas County to this new pad at Dresden Substation. The Heard County Substation is on the west side of Joe Stephens Road. The new 500 kV transmission line will be terminated here. Other modifications are described in the Project Description in Section 3.

The new Dresden – Heard 500 kV Transmission Line and the modification of associated facilities would be constructed by 2014. The anticipated total project cost of option 1 is \$53M. It would create an additional transmission capacity of 2016 MVA.

*Option 2: Wansley – Villa-Rica 500 kV Line #2*

The Wansley – Villa Rica 500 kV Transmission Line project would involve constructing approximately 25-miles of new transmission line between GPC’s existing Wansley 500/230 kV Substation in Heard County to GPC’s Villa Rica 500/230 kV Substation in Douglas County. Currently, GTC owns the existing 500 kV transmission line between these two substations.

In the *Wansley CC 7 Transmission Improvements Alternatives Study*, two additional constraints were identified that would occur if the new Wansley–Villa Rica 500 kV Transmission Line was constructed. Both constraints would be caused by thermal overloading on existing 500 kV and 230 kV transmission lines and could only be alleviated by additional improvements to the electrical grid.

The Wansley – Villa Rica 500 kV Transmission Line #2 would require 6-years of construction, therefore it will not meet the required 2014 completion date. The anticipated total project cost of this alternative is \$75M. The new construction and system modifications would create 4624 MVA of additional transmission capacity.

*Option 3: Wansley – Union City 500 kV Line*

The Wansley – Union City 500 kV Line would involve constructing approximately 40-miles of new transmission line between GPC’s existing Wansley 500/230 kV Substation in Heard County to GTC’s existing Union City 500/230 kV Substation in Fulton County.

In the *Wansley CC 7 Transmission Improvements Alternatives Study*, additional constraints were identified that would occur if this new transmission line were to be constructed between the Wansley and Union City 500/230 kV Substations. These constraints would occur if electrical power was lost at critical 500/ 230 kV substations or transmission lines within the region. As a result of the loss of some or all of these facilities, three (3) existing 230 kV transmission lines would experience thermal overloading that could only be alleviated by significant improvements to the electrical grid.

The construction of this line and the required facilities modifications would require 8-years of construction, not meeting the required 2014 completion

date. The anticipated project cost of Option 3 is \$123M. It would create an additional 4525 MVA of additional transmission capacity.

*Option 4: Wansley – Yellow Dirt 500 kV Line*

The Wansley – Yellow Dirt 500 kV Transmission Line option would require installing a new 500/230 kV transformer at Yellow Dirt substation and constructing 1 mile of 500 kV line from GPC’s existing Wansley 500/230 kV Substation in Heard County to GTC’s existing Yellow Dirt 500/230 kV Substation in Heard County.

In the *Wansley CC 7 Transmission Improvements Alternatives Study*, two (2) constraints were identified that would occur with Option 4. These constraints would occur if electrical power was lost at critical 500/ 230 kV substations or transmission lines within the region. As a result of the loss of some or all of these facilities, two existing 230 kV transmission lines would experience thermal overloading which could only be alleviated by significant improvements to the electrical grid.

The construction of the Wansley– Yellow Dirt 500 kV Transmission Line and the required facilities modifications would require 5-years of construction, not meeting the required 2014 completion date. The anticipated total project cost of Option 4 is \$71M. It would create an additional 636 MVA of additional transmission capacity.

*Option 5a & 5b: Dresden – Heard County 230 kV Lines*

The Dresden – Heard County 230 kV Transmission Lines option would require installing a 500/230 kV transformer at GTC’s existing Heard County 500/230 kV Substation in Heard County and construct either three (3) 1351 ACSR lines from GTC’s existing Heard County 500/230 kV Substation In Heard County to GTC’s Dresden 230 kV Substation in Coweta County (**Option 5a, three 6-mile lines**) or two bundled 795 ACSR 230 kV lines from GTC’s existing Heard County 500/230 kV Substation to GTC’s existing Dresden 230 kV Substation (**Option 5b, two 6-mile lines**).

In the *Wansley CC 7 Transmission Improvements Alternatives Study*, two (2) constraints were identified that would occur either with Option 5a or 5b. These constraints would occur if electrical power was lost at critical 230 kV transmission lines within the region. As a result of the loss of these facilities, two (2) existing 230 kV transmission lines would experience thermal overloading which could only be alleviated by significant improvements to the electrical grid

The project cost of Option 5a is \$64M which results in creating additional transmission capacity of 1806 MVA. Option 5b project cost is \$61M and

results in 1732 MVA additional transmission capacity. Implementing this option requires 4 years and does not meet the required in service date for longer-term transmission improvements (2014).

*Option 6: Wansley – Union City 230 kV Line*

The Wansley- Union City 230 kV Transmission Line option would require installing a 500/230 kV transformer at GPC’s existing Wansley 500/230kV Substation in Heard County (\$36M) and construct a 230 kV line from Wansley to Union City in Fulton County (bundled 1351 ACSR, 40 miles, \$80M).

In the *Wansley CC 7 Transmission Improvements Alternatives Study*, multiple constraints were identified that would occur with Option 6. These constraints would occur if electrical power was lost at critical 500/ 230 kV transmission lines or substations within the region. As a result of the loss of these facilities, six (6) existing 230 kV or 115 kV transmission lines would experience thermal overloading which could only be alleviated by significant improvements to the electrical grid.

Implementing this option would require 7-years and does not meet the required in service date for longer-term transmission improvements (2014).The anticipated project cost of Option 6 is \$158M; it would create an additional transmission capacity of 3459 MVA.

Alternative Selection

Option 1, the proposed Dresden – Heard County 500 kV Transmission Line was found to be the preferred alternative when comparing the identified options’ required construction periods, costs, and created additional capacity (Table 1). A new 500 kV transmission line out of Plant Wansley (Options 2, 3 & 4) was not practical because the termination of the 500 kV line there would increase the length of the line by approximately 5-miles and require modifications to the existing Wansley – O’Hare 500 kV Transmission Line. Constructing new and rebuilding existing 230 kV transmission lines (Options 5a/b & 6) was not practical because they would require up to 40-miles of new construction, impacting many more properties. They would be at least twice as costly to build and would not provide the equivalent benefits of Option 1.

The “No Action Alternative” was eliminated from further consideration because it would fail to meet the purpose and need by limiting the capacity of Wansley 7 to 344 MW. In addition to curtailing generation at Wansley 7, GTC’s existing Wansley – Villa Rica 500 kV Transmission Line and the transformer at GPC’s existing Villa Rica 500/230 kV Substation would overload under contingency situations. GTC would fail to fulfill its

obligations to the members of the ITS ,and ultimately fail to ensure reliable service to its consumer members.

**Table 1: Alternatives Summary**

Option	Project Name	Required Construction Period	Cost	Additional Capacity
1	Dresden- Heard County 500 kV T/L	2 years (by 2014)	\$ 53M	2016 MVA
2	Wansley- Villa Rica 230 kV T/L #2	6 years (does not meet 2014 need date)	\$ 75M	4624 MVA
3	Wansley- Union City 500 kV T/L	8 years (does not meet 2014 need date)	\$ 123M	4525 MVA
4	Wansley- Yellow Dirt 500 kV T/L	5 years (does not meet 2014 need date)	\$ 71M	636 MVA
5a	500/230 kV transformer at Heard Co SS and three 230 kV T/L's	4 years (does not meet 2014 need date)	\$ 64M	1806 MVA
5b	500/230 kV transformer at Heard Co SS and two 230 kV T/L's	4 years (does not meet 2014 need date)	\$ 61M	1732 MVA
6	500/230 kV transformer at Wansley SS and Wansley- Union City 230 kV T/L	7 years (does not meet 2014 need date)	\$ 158M	3459 MVA

## 5.2 Transmission Line Route Alternatives

### Methodology

GTC uses a standardized GIS based software methodology developed in partnership with the Electric Power Research Institute (EPRI) for transmission line routing studies. The methodology utilizes a geographic feature layering system that creates a map of suitability areas in a continuum from most preferable areas to least preferable areas for transmission line construction. The geographic database contains layers such as hydrography, land use, land cover, slope, and potential habitat for threatened and endangered species, historic and archaeological resources, and any other structures within the study area. Land suitability analysis, using this software, begins once all related data within the project study area is acquired and entered into the geographic information system (GIS) database.

The first step of the methodology is to determine a study area to focus data collection (**Figure 5**). The study area is based on First Phase of Corridors (also known as Macro Corridors), with connectivity between the projects termination points. Phase one corridors are based on existing electrical transmission line corridors, existing transportation corridors, land use patterns, topographic slope and areas of least preference.

GTC evaluated corridors between the existing Dresden 230 kV Substation and the existing Heard County 500 kV Substation (**Figure 6**). Land use, topography,

existing and proposed development, transportation and utility corridors, parks, and the project’s electrical requirements were considered during the analysis. GTC and consultants performed research, data collection, analysis, mapping, and statistical evaluations together with figure and report preparation to determine the most suitable corridor for the proposed transmission line.

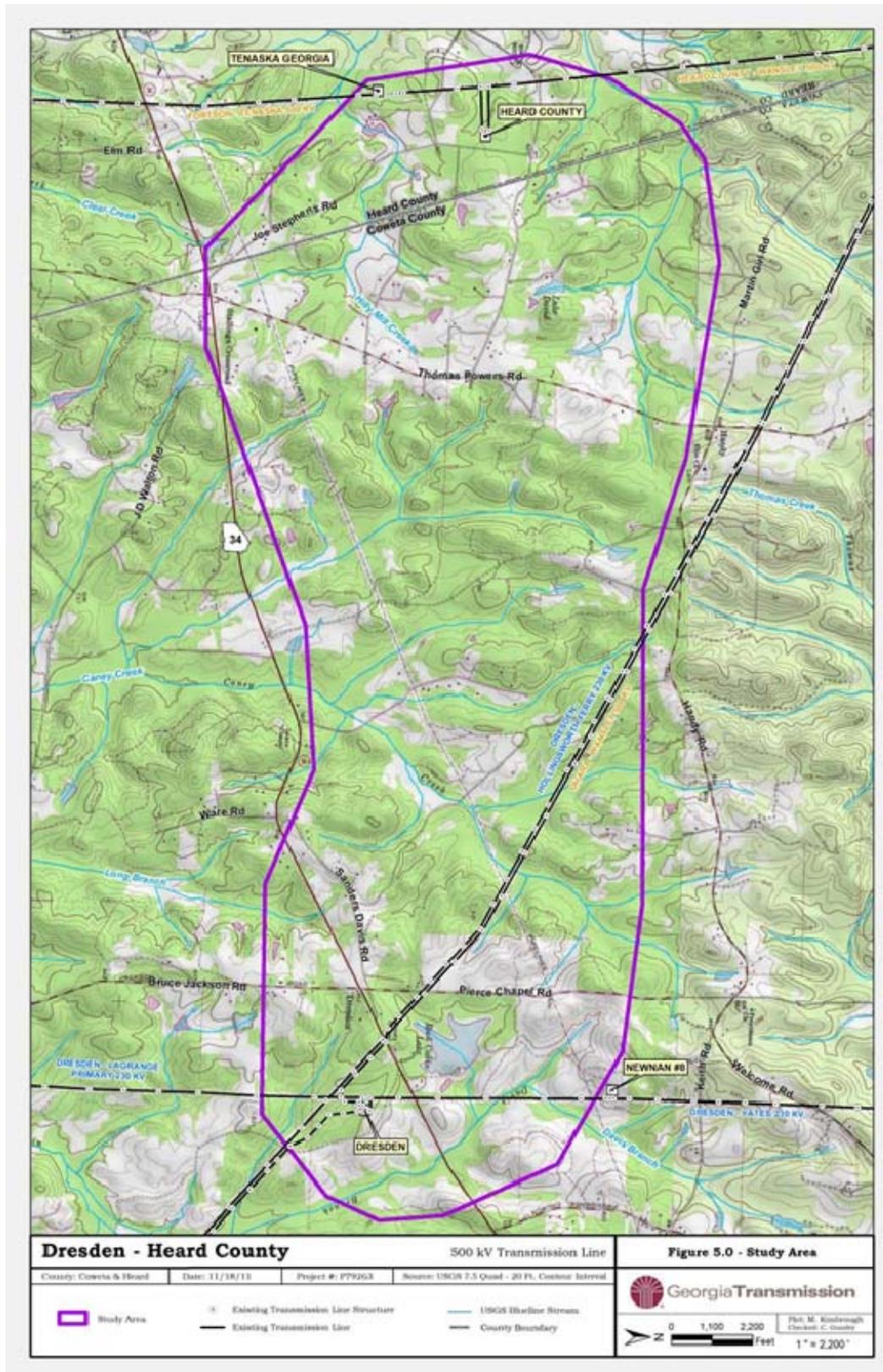
To create overall suitability values, data layers are given weights, and features within each layer are given a numerical preference values ranging from 1 to 9. Areas of higher preference for transmission lines are assigned lower numbers than less preferable areas. Weights and values are standardized for all new GTC transmission line routing projects.

The weights and values were assigned by stakeholders during workshops held in 2003 (**Appendix B**). The stakeholders included members of the Georgia electrical utility industry, government agencies, and non-government organizations. Stakeholders were divided into three groups based on their expertise: the built environment (focusing on community issues), the natural environment (including environmental regulatory issues), and engineering requirements (focusing on co-location with existing linear infrastructure as well as engineering constraints).

Map layers are also divided into each of the perspectives: built environment, natural environment, and engineering concerns. The stakeholders’ values are applied to the layers, which uses these numbers to generate suitability maps for each perspective. Layering the assigned weights and values within the computer’s spatial framework creates these maps. This framework consists of pixels with the assigned stakeholder values, which are layered and added with the stakeholder determine weights. Each pixel of the suitability map is the weighted sum of the each layers’ values.

Three suitability maps are created by placing an emphasis on the data layers of one of the three perspectives. A fourth suitability map is generated by considering each perspective equally. In turn, an alternate corridor is generated from each suitability map. The corridors are produced by applying an algorithm that assigns a preference value to all areas in the study area while also considering connectivity between the two project end points. This allows diverse alternatives to be generated that consider all features utilized in the siting model.

The top 3% of possible preferred areas are used to define the corridors, which are the areas of least impact to communities and to the natural environment, areas that provide potential co-locations with existing linear infrastructure, and the areas best suited for the construction of a transmission line. The corridors identified are used as a guide to develop suitable segments, the segment components then form the alternate routes.



**Figure 5 – Study Area**

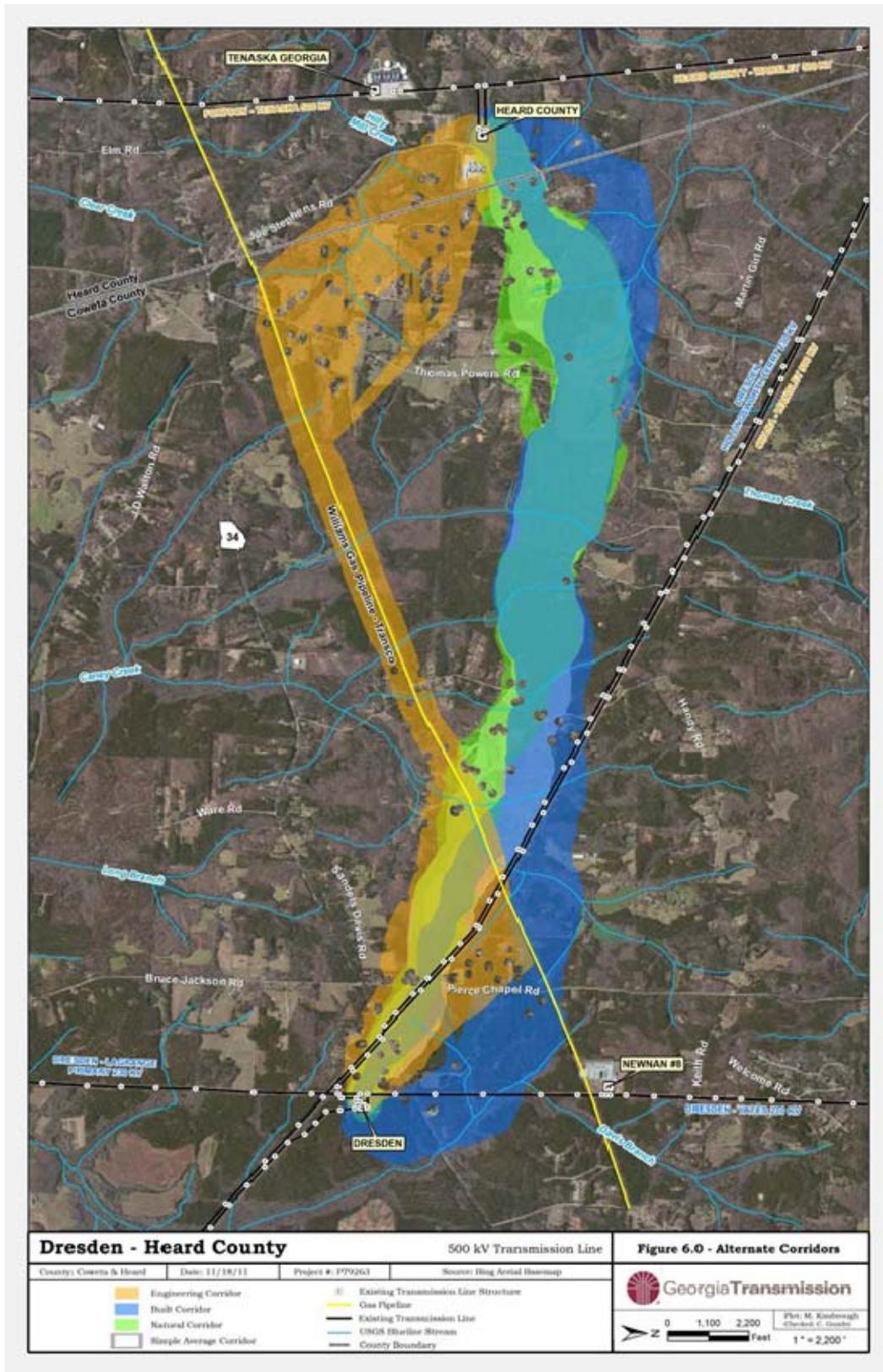


Figure 6 - Alternate Corridors

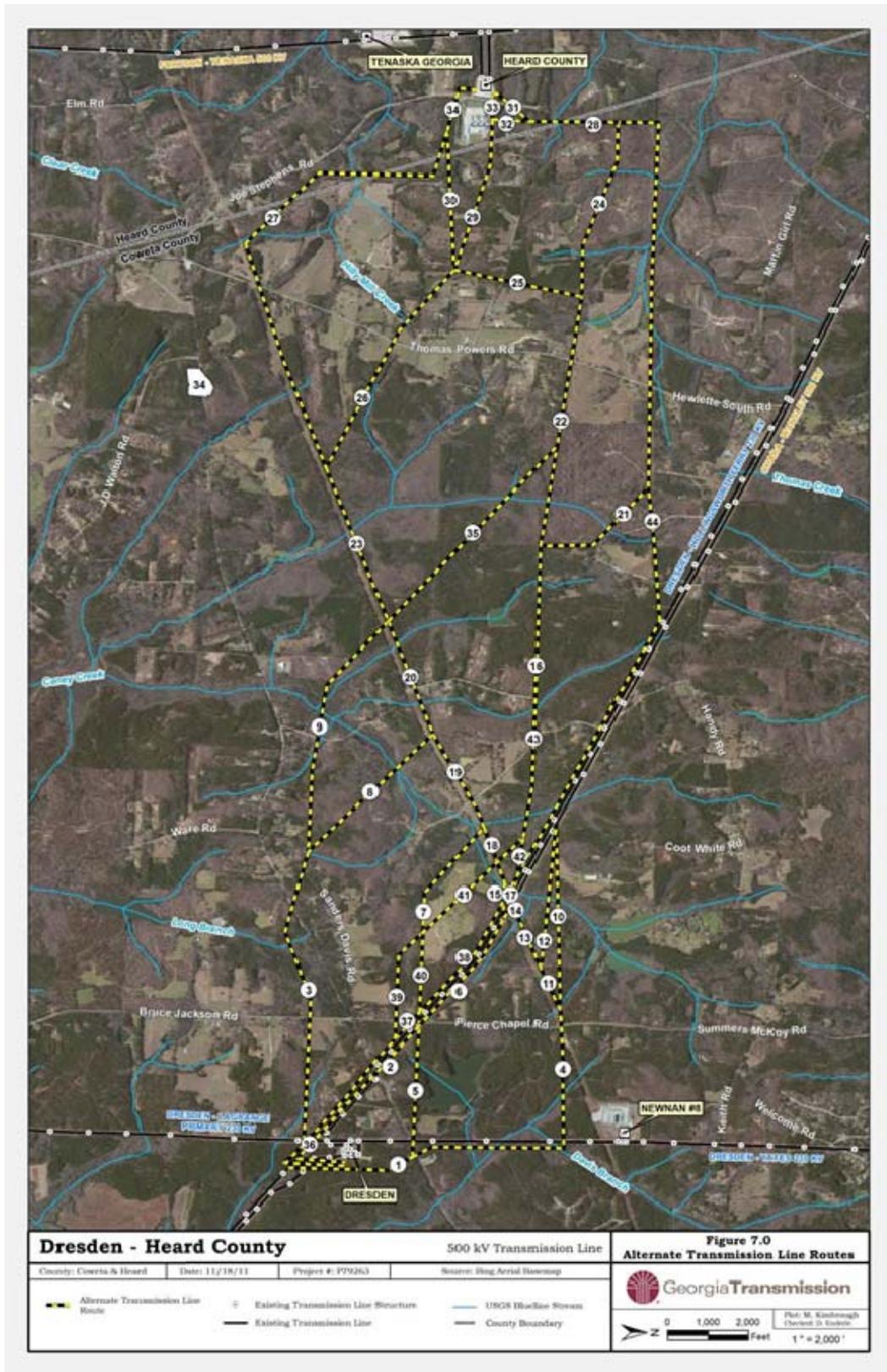


Figure 7 - Alternate Routes



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**Figure 8 – Top Routes**Alternative Corridors**Built Environment Corridor**

The Built Environment Corridor was generated by placing an emphasis on built environment features such as buildings, residential land use, and historic resources as being lower preference areas. This corridor avoids the most densely developed areas or carefully navigates the gaps. The corridor also utilizes the large open and undeveloped lands in the middle of the study area to cross from the east to the west before approaching Heard County substation from the more undeveloped area on the north side.

**Engineering Concerns Corridor**

The Engineering Concerns Corridor was generated placing an emphasis of existing linear infrastructure as a preferable area and places a lower preference on engineering issue such as high slope. This corridor follows the existing transmission corridor to the gas pipeline and then the gas pipeline as far as it can before finishing the journey cross country to Heard County substation. As such, it makes the most use of existing corridors, including the existing transmission corridor.

**Natural Environment Corridor**

The Natural Environment Corridor was generated by placing an emphasis on natural environment features such as streams, wetlands, floodplains, and naturally occurring forests as being a lower preference area. This corridor, in general, follows the southern-sub corridors and main combined corridor of the Built corridor, which tend to be the areas that are undeveloped as well as containing fewer natural features.

**Simple Corridor**

The Simple Corridor was generated by considering all routing features without placing emphasis on one group of features. This corridor follows the existing Transmission corridor in the open and undeveloped lands adjacent to it and traverses the distance to the Heard County substation in the open and undeveloped lands in the northern part of the study area. As such, it avoids densely developed areas west of the Dresden substation and southeast of the Heard County substation.

Alternate Routes

The GTC routing team used the corridors (**Figure 6**) generated by stakeholder values as a tool to identify the most preferable areas for transmission line construction within the study area, while also identifying contiguous areas from the project end points. After initial team review, 17 alternative routes (made up of 44

segments) were identified for statistical analysis: A3a, A3b, A7a, A7b, A8a, A8b, B1, B2, B3, C1, C2, C3, C4, D1, D2, D3, and D4. **Figure 7** shows these alternative routes, with their component segments labeled.

The routing team evaluating a network of alternative routes, six top routes were selected and analyzed to select a preferred route

The six top routes considered are shown in **Figure 8** and summarized in the chart below.

**Table 2: Dresden – Heard County 500 kV Transmission Line Comparison of Alternative Route**

Route	Streams crossed	Wetlands crossed (acres)	Parcels crossed	Proximity to residences <sup>1</sup>	NRHP structures <sup>2</sup>	Potential Relocations <sup>3</sup>	Total Length (miles)
A3	14	4.55	69	15	5	0	8.66
B3	10	1.55	63	17	9	1	7.72
C3	11	1.41	55	16	7	0	6.35
C4	8	1.15	51	24	1	2	6.65
D3	8	.26	45	13	4	2	6.29
D4	7	.02	54	19	3	5	6.54

<sup>1</sup>Proximity of residences 300’ from edge of T/L ROW easement

<sup>2</sup>National Register of Historic Places (NRHP) listed/eligible structures and districts (1500’ from edge of ROW)

<sup>3</sup>Proximity of residences 75’ from centerline

**Route A3**

Route A3 consists of two segments coming out of the Dresden substation. This was a means of preventing the actual crossing of the existing Wansley – O’hara 500 kV line with the proposed Dresden – Heard County 500 kV line.

The first segment heads north from the Dresden Substation along the eastern side of an existing Hollingsworth – Yellow Dirt 230 kV line. This segment parallels the 230 kV line for a mile before turning west cross country to the gas pipeline. It crosses the gas pipeline to the northern side and then parallels it until it terminates at the Wansley –O’Hara 500 kV. This segment would connect with the existing 500 kV line so as to re-route the existing line to the east side of the Dresden substation and allow for the proposed 500 kV line to travel from the Dresden Substation to the Heard County Substation without crossing the existing Wansley – O’Hara 500 kV T/L.

The second segment (A3 rebuild) coming out of the Dresden substation is a rebuild of the existing 500 kV line from the Dresden substation northwest to the intersection of the 500 kV line with the pipeline. This segment would then turn

west-northwest cross country through the undeveloped and open lands in the northern part of the study area before turning south to cross the county line and approach the Heard County substation from the north.

### **Route B3**

Route B3 is similar to Route A3 in that it also creates an additional segment to reroute the existing 500 kV line to the other side of the Dresden substation so that the proposed 500 kV line can travel to the Heard County substation without crossing the existing 500 kV line. The difference is that the additional segment, instead of traveling north from the Dresden substation for a mile, turns west at GA Hwy 34 to cross the highway and 230 kV line to the existing 500 kV transmission corridor. The result is a smaller ‘bypass’ loop for the existing 500 kV line around the Dresden Substation. The proposed segment would then rebuild the existing 500 kV line between the Dresden substation and where the additional segment meets the 500 kV line before turning west for 0.6 miles cross country. The segment then turns northwest for 0.4 miles to cross over to the north side of the gas pipeline. It then parallels the gas pipeline for a mile before it turns northwest to cross the undeveloped forested areas in the middle of the study area to join up with Route A3 on its northern approach to the Heard County substation.

### **Route C3**

Route C3 heads south out of the Dresden substation and crosses the existing 500 kV line. The existing 500 kV line will either be rerouted a much shorter distance around the back of the substation, or through a more sophisticated substation modification ‘bus work’ will be used for the crossing instead of wire over wire. Whereas Routes A3 and B3 would require 2 miles and 1 mile respectively of additional 500 kV line to reroute the existing 500 kV line, C3 would require much less. Route C3 travels west from the Dresden substation to the south side of GA Hwy 34 before turning west-southwest, it roughly follows into a gap in the residential development on the north side of the highway. The route then travels west cross country on the north side of the residences along GA Hwy 34 before crossing Wynn Road through a gap in the subdivision and turning northwest toward the gas pipeline. Route C3 then crosses the gas pipeline and continues northwest cross country until it joins with Routes A3 and B3 in their northern approach to the Heard County substation.

### **Route C4**

Route C4 is similar to Route C3 except that instead of continuing northwest when it crosses the gas pipeline, it turns southwest to parallel the pipeline for 1.9 miles before turning northwest and then north 1 mile to the county line. The route then turns west to cross Joe Stephens Road before its final turn north to approach the Heard County substation from the south.

**Route D3**

Route D3 uses a similar method as C3 and C4 to cross the existing 500 kV line on the southwest side of the Dresden substation. Instead of heading west cross country like C3 and C4, Route D3 parallels the existing transmission corridor on the west side to the northwest for 1.6 miles where it joins Route A3 to travel across the less developed and open lands in the northern part of the study area to approach the Heard County substation from the north.

**Route D4**

Route D4 is similar to Route D3 except that it continues to parallel the transmission corridor for an additional 1.5 miles before turning due west cross country and traveling for 2.3 miles. Route D4 then turns south to join Routes A3, B3, C3, and D3 in their approach to the Heard County substation from the north.

**5.3 Preferred Transmission Line Route**Top Alternate Routes

After a series of five meetings over five months with an internal Route Review board at GTC and the team's expert judgment meetings the two most suitable routes that surfaced were Route C3 and D3.

**Route C3**

Route C3 roughly follows gaps in the residential development on the north side of the highway, close to an eligible NRHP site; the route is on the north side of the residences along GA Hwy 34 before crossing Wynn Road through a gap in the subdivision and turning northwest toward the gas pipeline. Route C3 then crosses the gas pipeline and has a northern approach to the Heard County substation. The crossing of Highway 34 and the close proximity of residences on this line makes it more susceptible to visual and community issues. The routes close proximity to roads would provide potentially easy accessibility. In addition, the separation of the C3 route with the existing 500 kV line may provide a more reliable line. Route C3 has the following characteristics:

- No home relocations
- 16 homes within 300-Feet (91-Meters)
- 7 eligible/potentially eligible resources for the National Register of Historic Places (NRHP) within 1500-Feet (457-Meters)
- Approximately 58.3-acres of forest clearing
- 11 (USGS blue line) stream crossings
- A total of 55 properties crossed
- 0% co-location with existing Transmission Line
- No paralleling of roads
- Total length is 6.35 miles

### **Route D3**

Route D3 parallels the existing transmission corridor on its west side to the northwest for 1.6 miles. It then travels across the less developed and open lands in the northern part of the study area to approach the Heard County substation from the north. This proposed route crosses fewer streams and properties than C3. Route D3 has the following characteristics:

- 2 home relocations
- 13 homes within 300-Feet (91-Meters)
- 4 eligible/potentially eligible resources for the National Register of Historic Places (NRHP) within 1500-Feet (457-Meters)
- Approximately 56.15-acres of forest clearing
- 8 (USGS blue line) stream crossings
- A total of 45 properties crossed
- 32.17% co-location with existing Transmission Line (approx. 1.7 miles)
- No paralleling of roads
- Total length is 6.29 miles

### Preferred Route

Route D3 was found to be the most suitable proposed route; it parallels the existing O'hara – Wansley 500 kV transmission line, thereby lowering costs and minimizing the visual impact. D3 does not cross Highway 34 and will impact fewer residences than C3. D3 also crosses fewer stream and wetland areas, and requires less forest clearing.

In addition, due to possible reliability issues with parallel 500 kV transmission lines, GTC Bulk Planning re-analyzed this project based on forthcoming NERC Standards on Extreme Events due to the possible reliability issues associated with paralleling 500 kV Transmission Lines. Based on this study the team determined that paralleling Dresden – Heard County T/L with O'hara – Wansley T/L was permissible for 1.7-miles because it meets the requirements of these new standards. This finding further supported Route D3 as the team's preferred route choice.



**Figure 9 – Preferred Route**

## 6. AFFECTED ENVIRONMENT

This section discusses the existing resources located within the study area and the Project area. The study area is based on the First Phase of Corridors (also known as Macro Corridors); with connectivity between the projects termination points (**Figure 5**). The Project area is defined as the proposed Dresden – Heard County 500 kV transmission line right-of-way (a 150-180 foot wide corridor), footprints of the substations that will be modified, and off right-of-way access roads. Environmental information was compiled by literature review, aerial photographic interpretation, contacting resource agencies, and performing field surveys and inventories.

Generally speaking, the study area is situated on the Newnan SW, Georgia United States Geological Survey (USGS) 7.5-minute topographic map; this area lies between the towns of Newnan, GA to the east, and Tenaska, GA, to the west. The study area is located within the Greenville Slope District, which is characterized by rolling topography that decreases gradually in elevation from 1000 feet in the northeast to 600 feet in the southwest. All streams in this district eventually drain to the Gulf of Mexico; those flowing to the southwest occupy shallow, open valleys with broad, rounded divides, and those flowing to the southeast occupy narrower, deeper valleys with narrow, rounded divides. Relief varies from 150-200 feet in the east to 100-150 feet in the west. The southern boundary follows the base of the northern side of Pine Mountain, which rises abruptly 250-400 feet above the adjacent surface.

### 6.1 Land Use

#### General Land Use

The existing land use and land cover in the study area is predominantly forested, consisting primarily of natural forest (46% of total study area) and planted pine (16% of total study area). Residential land use (12% of total study area) is mostly concentrated along transportation corridors in the eastern and western portion of the study area. **Figure 10** shows the general landuse pattern across the study area.

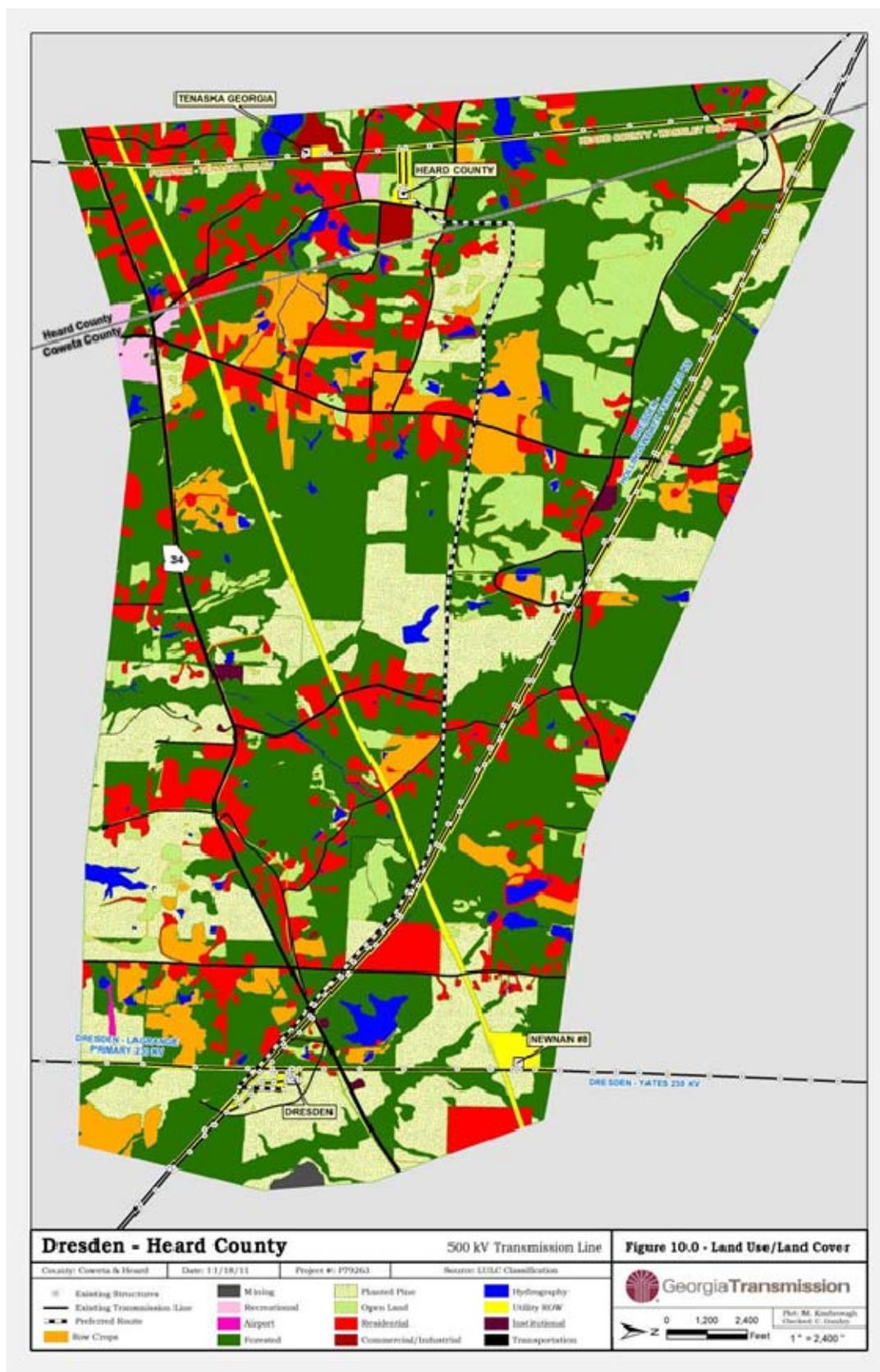
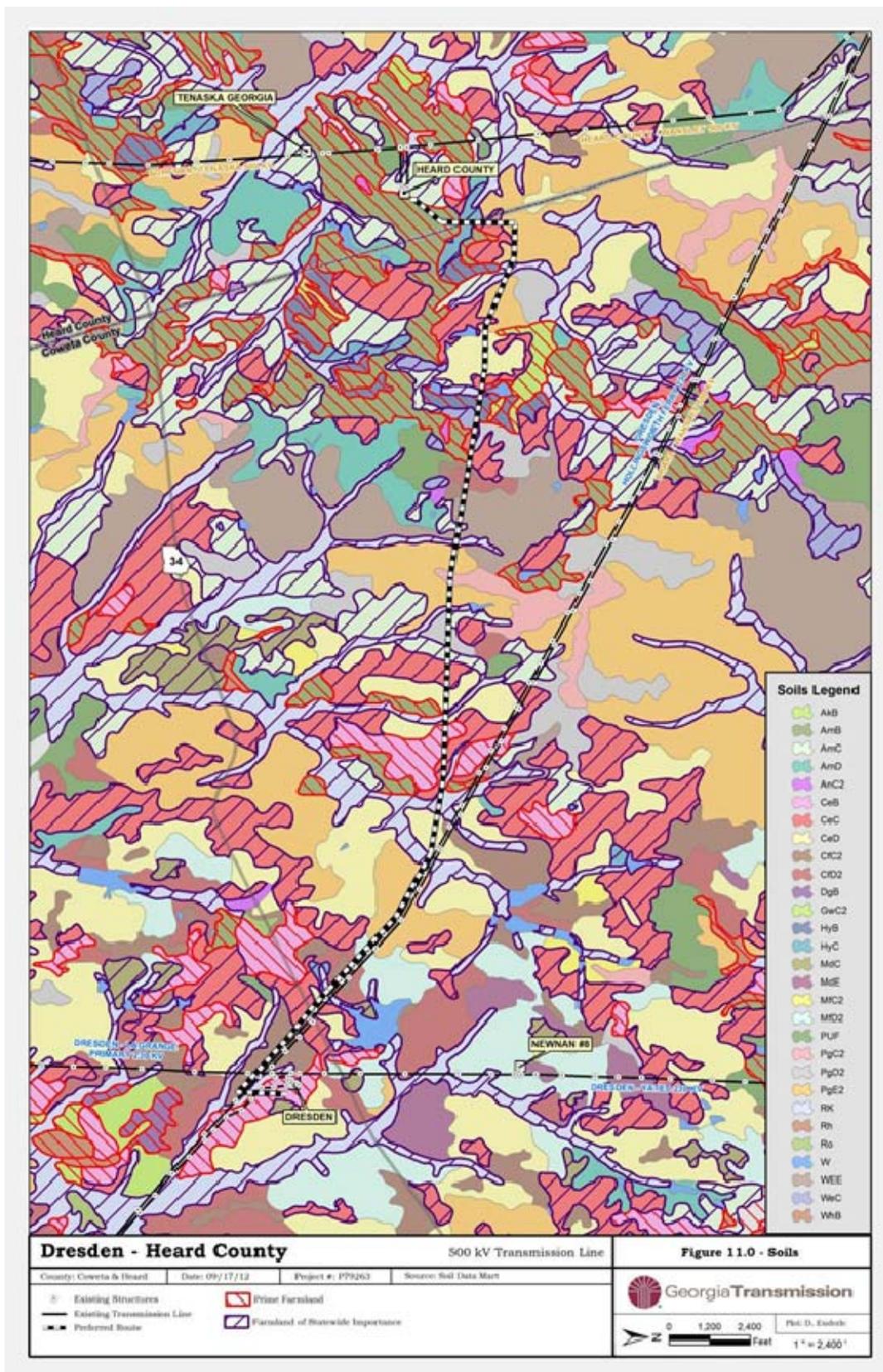


Figure 10 – Land Use / Land Cover derived from 2008 30m LandSat imagery

Prime Farmland Soils

Through the passage of the Farmland Protection Policy Act of 1981 and the Final Rule for its implementation, 7 CFR 658, the U.S. Department of Agriculture (USDA) mandated that any federal agency contemplating a land-disturbing activity should review its actions with respect to prime, unique, statewide, or locally important farmland soils. USDA also has internal policies requiring its agencies, including RUS, to consider the impact of its own agency's actions on prime farmland soils.

The study area has approximately 1,779.2-acres of prime farmland soils and approximately 4,233.4-acres of farmland of statewide importance. The Project area (transmission line right-of-way, substation property, and access roads) has approximately 59.3-acres of prime farmland soil and approximately 45.96-acres of farmland of statewide importance (**Figure 11**).



**Figure 11 – Soils**

### Formally Classified Lands

#### *Wild and Scenic Rivers*

In Georgia, the only river designated as wild and scenic is the Chattooga River, which is located in the northeastern part of the state (16 USC 1276). There are no Wild and Scenic Rivers located within the Project area.

#### *National Forests*

The state of Georgia has two (2) National Forests; The Chattahoochee National Forest, which is located in the mountains of North Georgia, and the Oconee National Forest, which is located in the Piedmont region north of Macon, Georgia. There are no National Forests located within the Project area.

#### *State and Federal Parks*

The Parks, Recreation, and Historic Sites Division of the Georgia Department of Natural Resources (GA DNR) operate 45 State Parks, three (3) State Historic Parks, and 15 historic sites. The National Park Service (NPS) of the U.S. Department of the Interior (DOI) operates ten (10) National Battlefield Parks, National Recreation Areas, National Historic Sites, and National Monuments. There are no State or Federal Parks within the Project area.

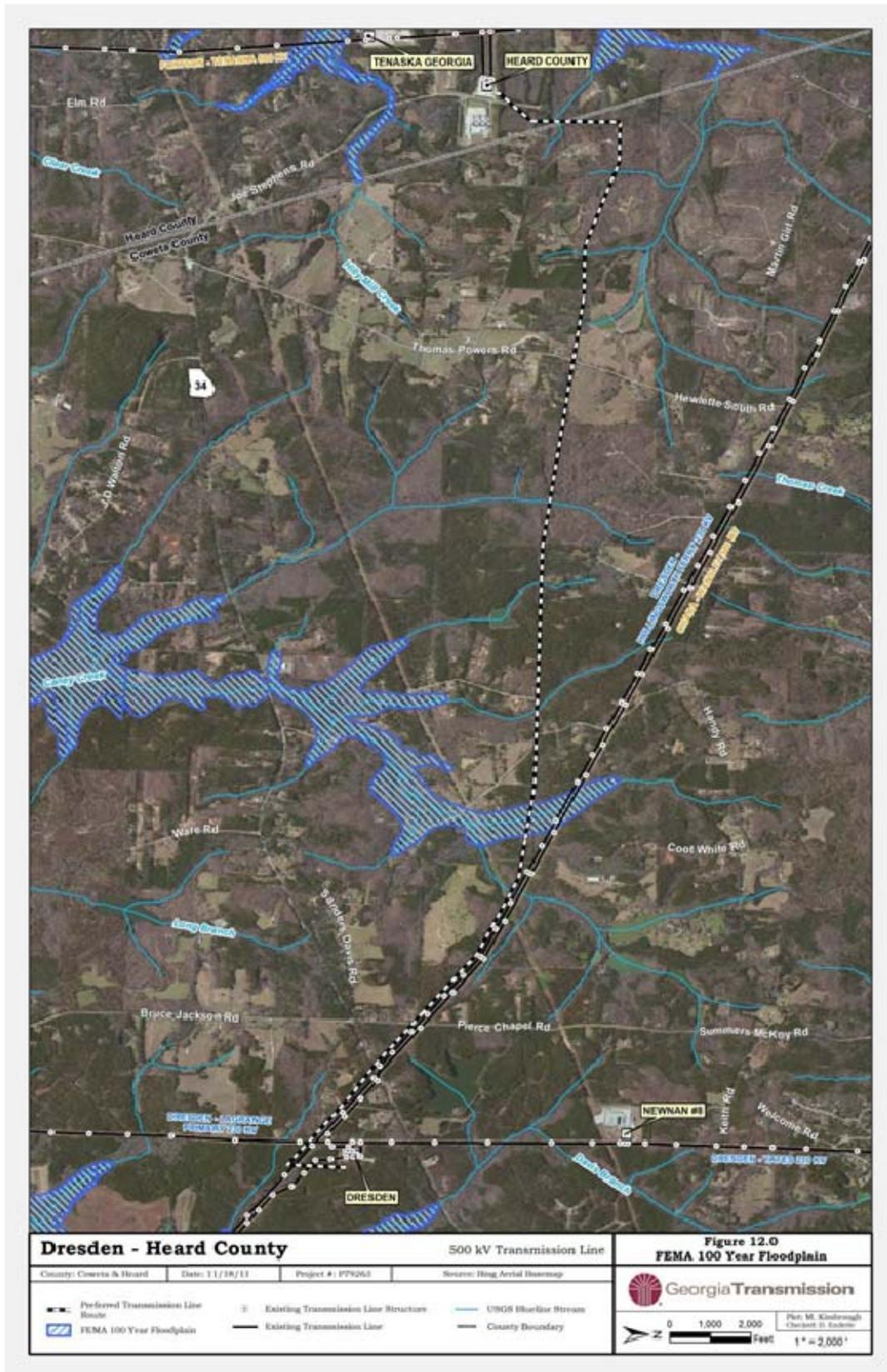
#### *Other Recreational Areas*

There is a private Boy Scout camp located off of Boy Scout road within the study area. The entire Boy Scout property tract is within 0.2-miles of the project area and 9.4-acres of the project area (T/L right-of-way) is on the Boy Scout property. Stallings crossing festival site is located 1.67-miles from the closest part of the project area, off of Highway 54.

## **6.2 Floodplains**

Executive Order 11988 directs federal agencies to avoid to the greatest extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. The location of floodplains and other flood hazard areas are normally identified using maps produced by the U.S. Department of Housing and Urban Development (HUD) or the Federal Emergency Management Agency (FEMA).

Coweta and Heard County are listed as a participating community in the National Flood Insurance Program. **Figure 12** indicates the distribution of FEMA 100-year floodplains in the project study area as shown on the Flood Insurance Rate Map for Coweta and Heard County, Georgia. There are 4.04-acres of floodplains within the Project area.



**Figure 12 – FEMA Floodplain**

**6.3 Wetlands**

Wetlands are defined by 33 CFR Part 328 and protected by Section 404 of the Clean Water Act, which charges the U.S. Army Corps of Engineers (USACE) with the regulation of discharges of “dredged or fill” material into waters of the United States, including wetlands and other special aquatic sites. GTC contracted with a consultant, JJG, in October 2011, to conduct a wetland delineation of the Project area (transmission line right-of-way, substation property, and access roads) (**Appendix C**).

**Figure 13, Sheets A-J** show the mapped Jurisdictional Waters and Wetlands in relation to the proposed transmission line, substation(s), and off right-of-way access roads. Nine (9) jurisdictional wetlands, seventeen (17) jurisdictional streams, and one (1) jurisdictional open water were found within the surveyed corridor. The jurisdictional wetlands were classified as palustrine emergent or palustrine forested systems. The jurisdictional streams were classified as perennial or intermittent systems. Jurisdictional open water was classified as palustrine open waters.

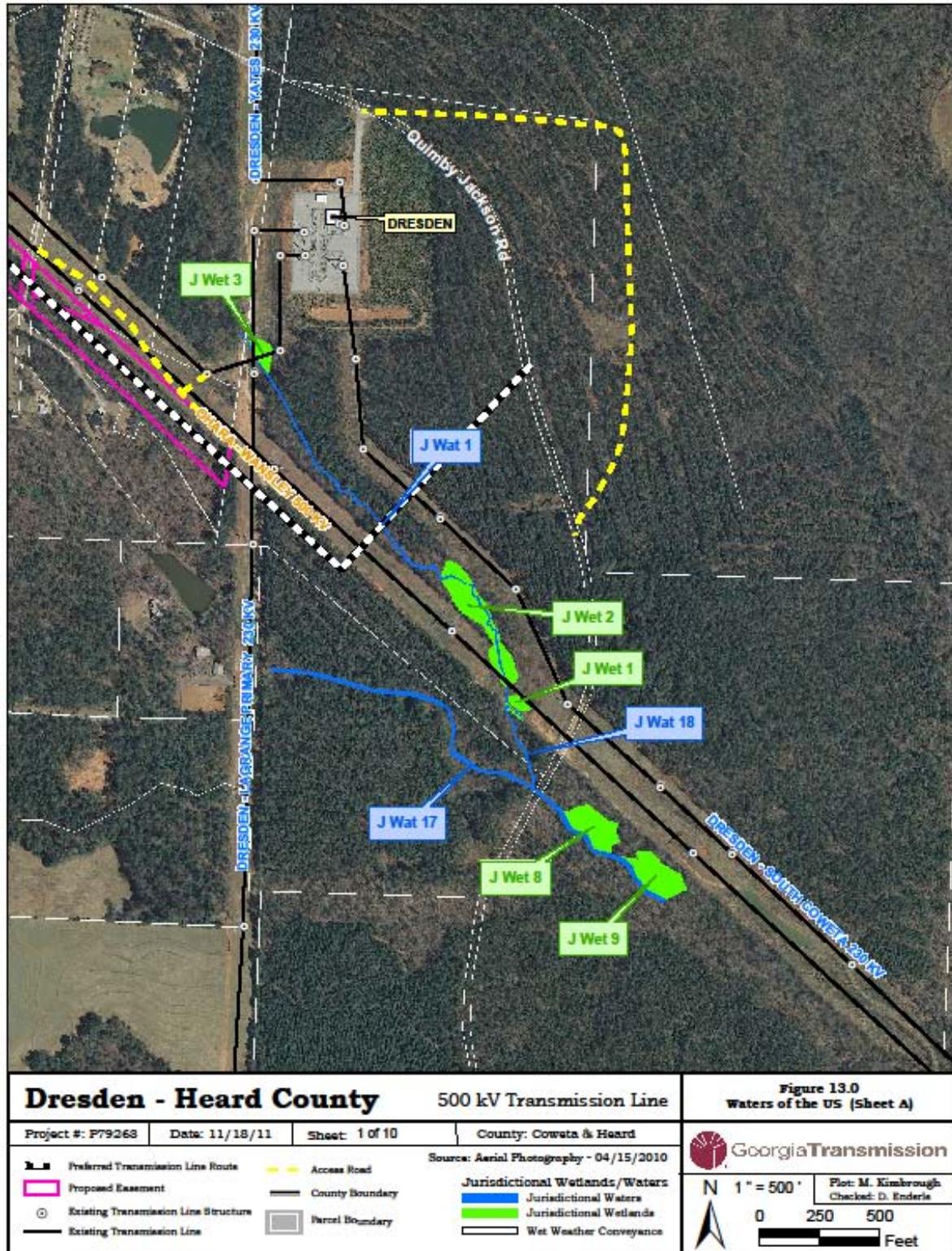


Figure 13 – Waters of the US (Sheet A)



Figure 13 – Waters of the US (Sheet B)



Figure 13 – Waters of the US (Sheet C)

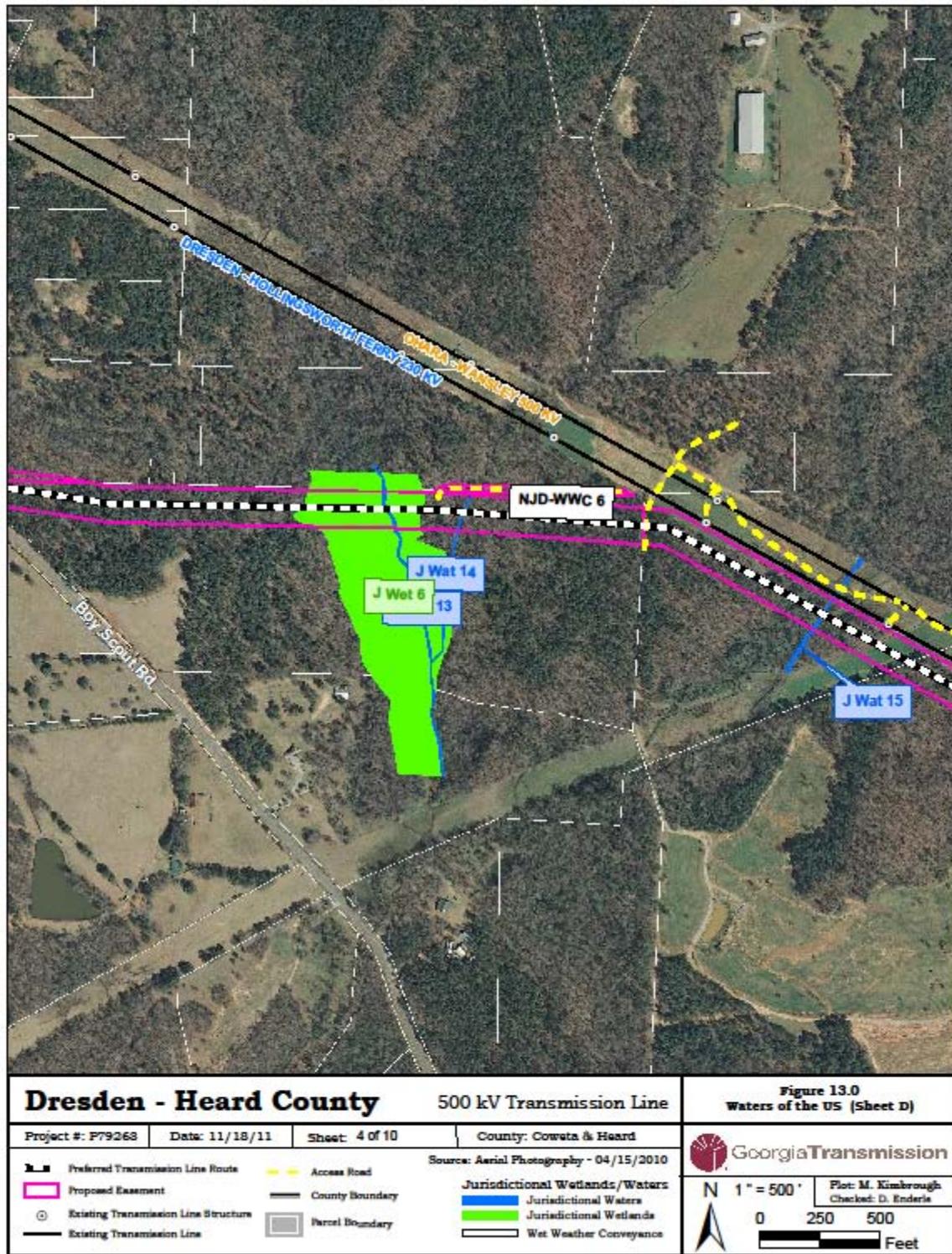
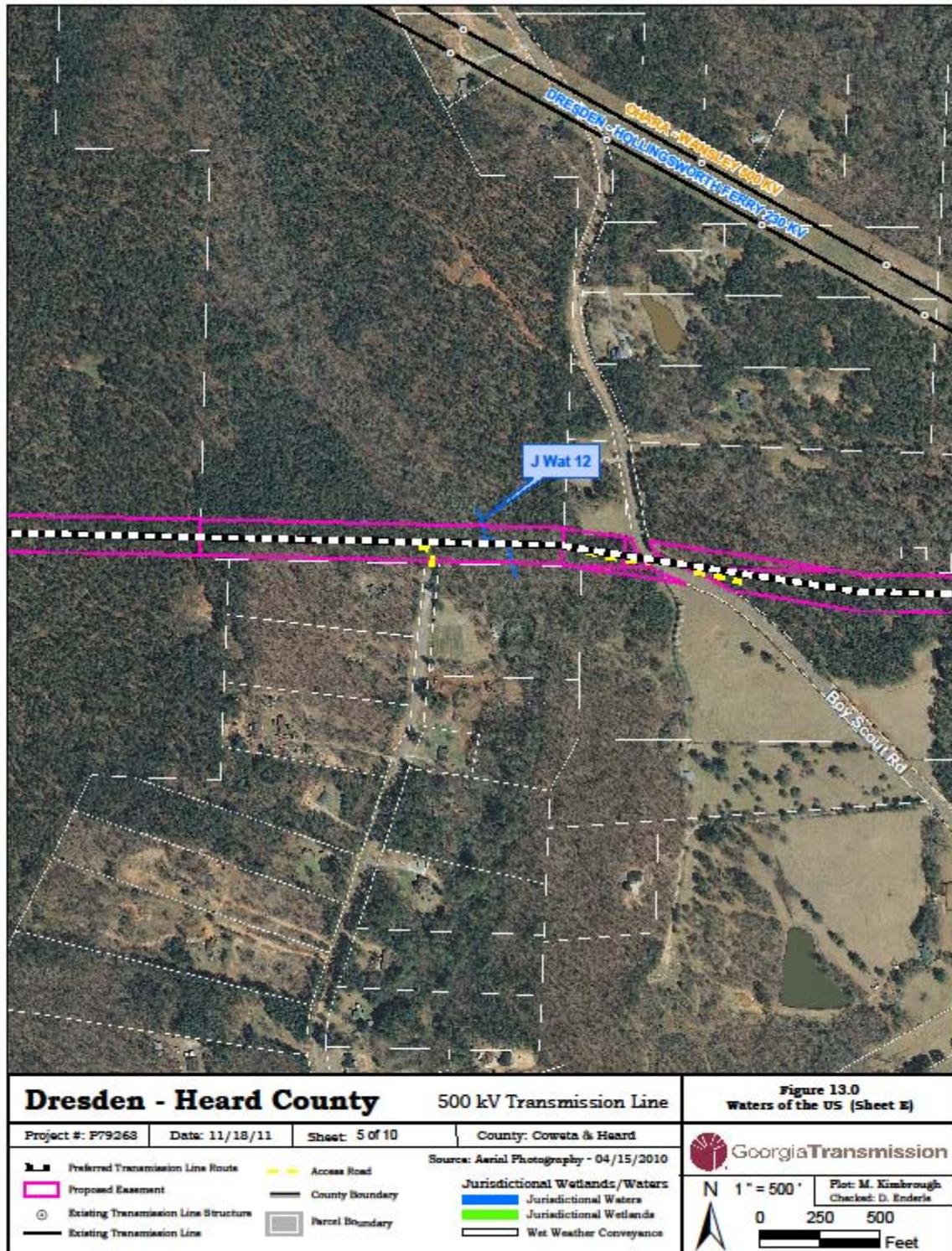


Figure 13.0  
Waters of the US (Sheet D)

Figure 13 – Waters of the US (Sheet D)



**Figure 13 – Waters of the US (Sheet E)**

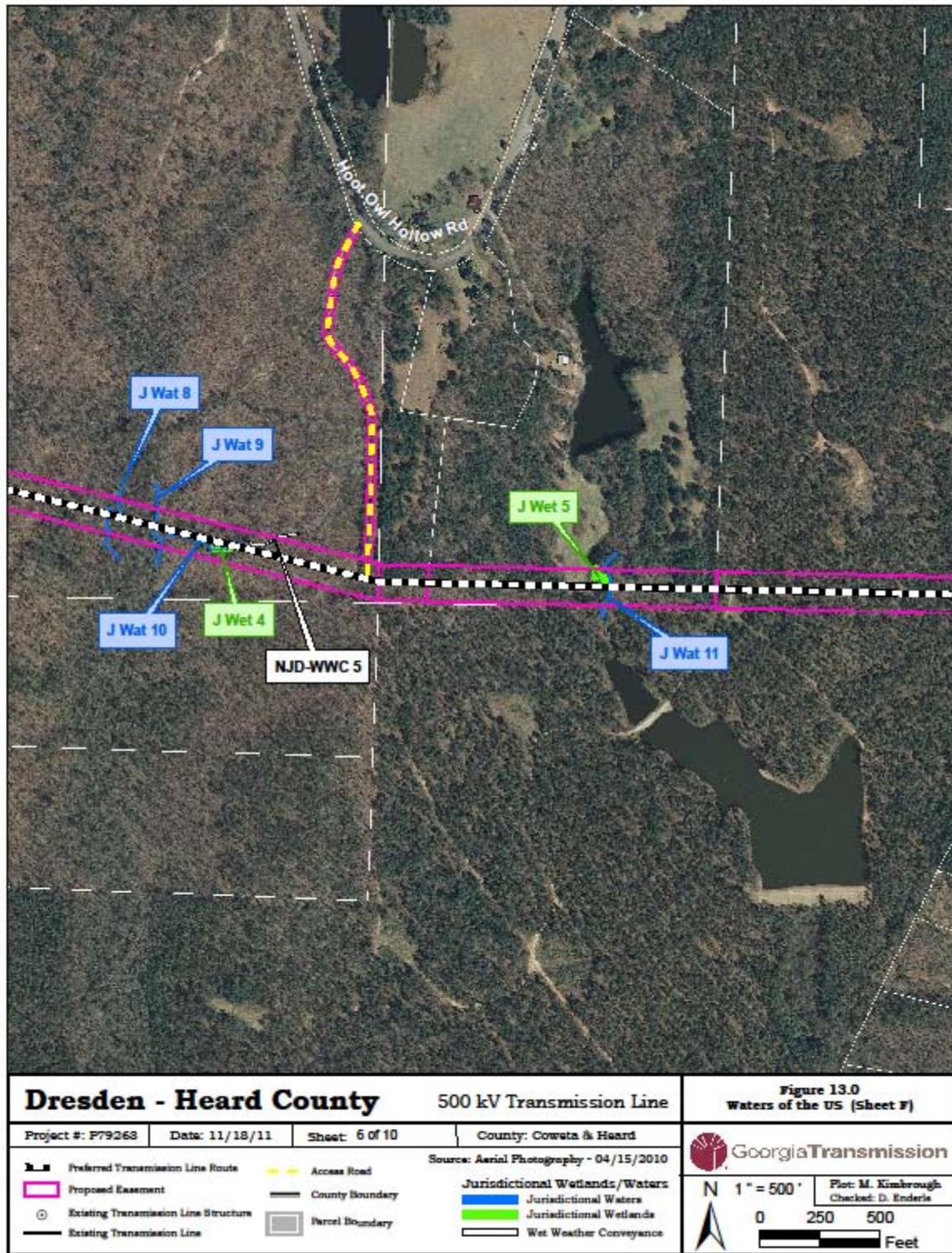


Figure 13 – Waters of the US (Sheet F)

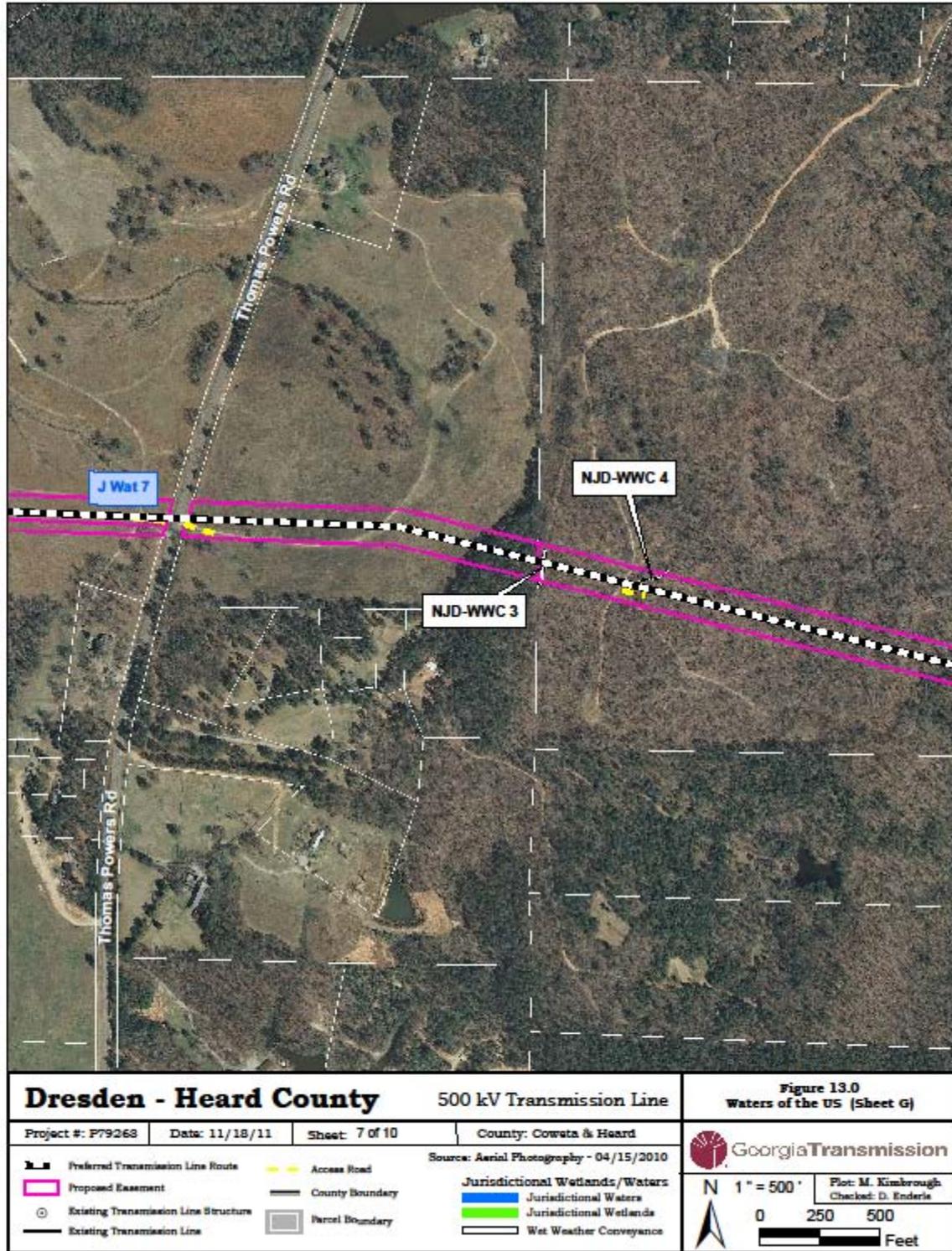


Figure 13 – Waters of the US (Sheet G)



Figure 13 – Waters of the US (Sheet H)

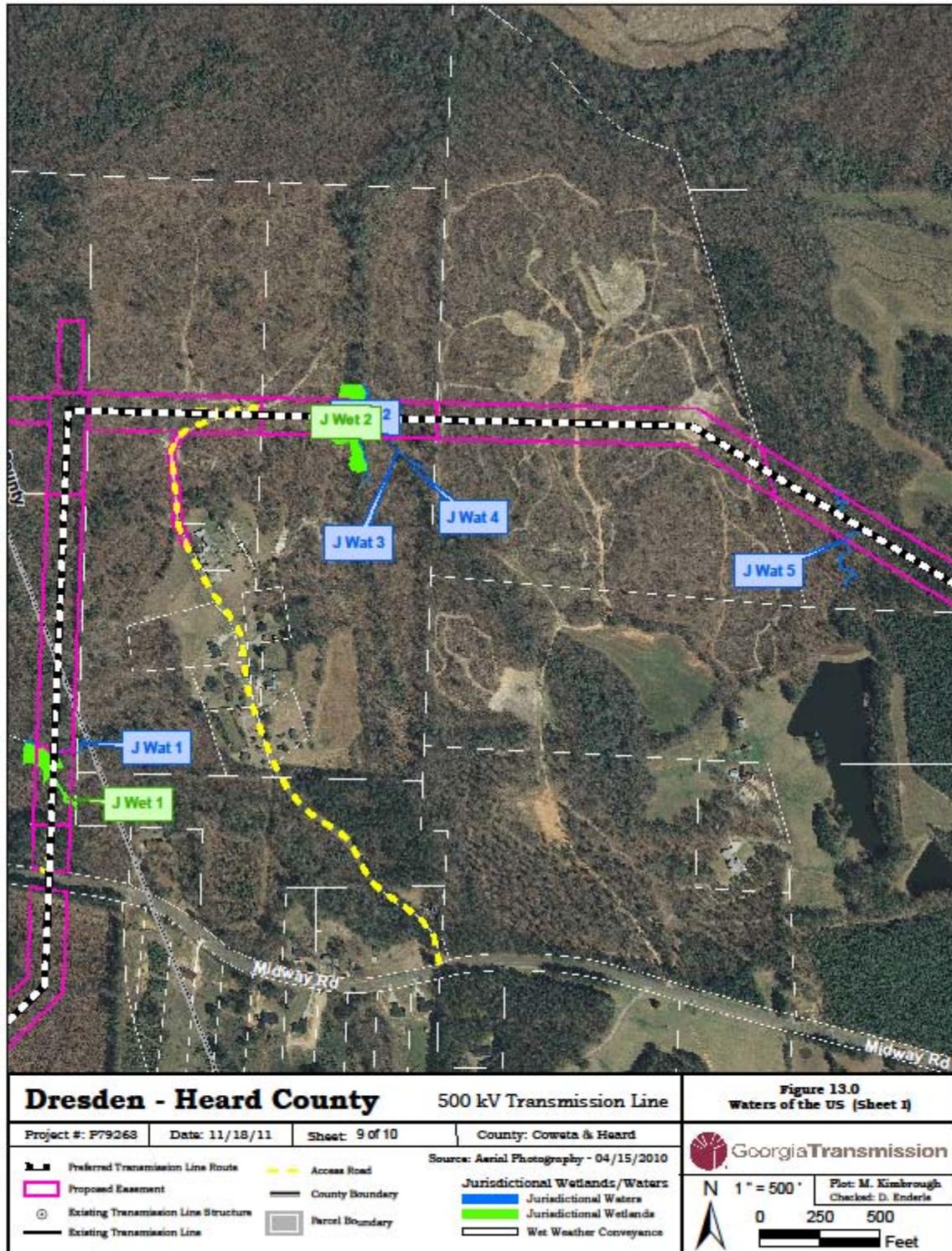
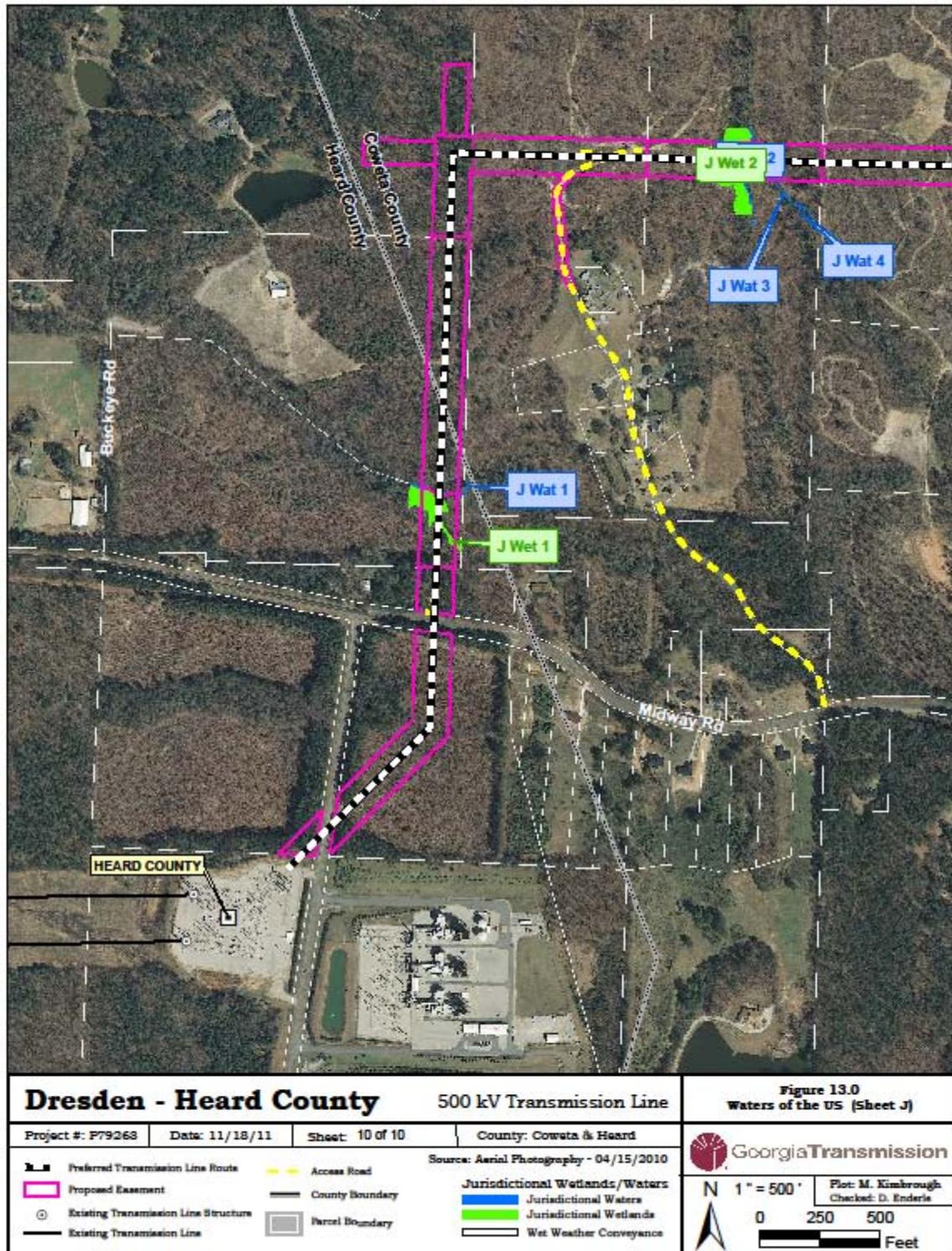


Figure 13 – Waters of the US (Sheet I)



**Figure 13 – Waters of the US (Sheet J)**

## 6.4 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to take into account the potential effects of their undertakings on historic properties. Historic properties, in accordance with 36 CFR § 800.16(1), are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).

GTC is a third-party participant in a Programmatic Agreement (PA) with the RUS, Georgia State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) (**Appendix D**). This PA facilitates compliance under Section 106 and 110 of the National Historic Preservation Act [16 U.S.C. §470(f)], as authorized by the Advisory Council's regulations in 36 CFR §800.14 for construction, modification, and relocation of transmission facilities by GTC. Under the terms of the PA, if a proposed project is determined to have an adverse effect on a National Historic Landmark, a National Register of Historic Places (NRHP) -listed historic property, a traditional cultural property, archaeological site, or an eligible historic district, GTC initiates consultation with the SHPO as appropriate. GTC and the SHPO then agree on a plan of resolution.

### Archaeological Resources

To determine whether there are archeological sites listed on or eligible for listing on the NRHP, GTC contracted with Southeastern Archeological Services, Inc. (SAS) to conduct an archeological survey of the Project's Area of Potential Effects (APE)(**Appendix E**). For the purposes of the archeological survey, the APE was defined as the transmission line easement, the substation site, and the off right-of-way access roads. The survey included both archival research and a field investigation, consisting of walkover observation and shovel testing at a 30-meter interval and on high probability land forms (a total of 242 tests).

Archival research showed that no archaeological sites are located within the APE, though one (1) previously recorded site (9CW176) is located near the eastern terminus of the proposed corridor. Eleven (11) archeological sites and two (2) isolated artifact occurrences were encountered during the field survey. SAS recommended that because of lack of integrity, a lack of research potential and no known associations with persons or events important in local history, the identified resources were not eligible for inclusion in the NRHP.

### Historic Structures

To determine the presence of historic structures listed on or eligible for listing on the NRHP, GTC contracted New South Associates, Inc. (New South) to conduct a Phase I historic resource survey of the study area that consisted of historical research and a field survey (**Appendix F**). The entire

study area was surveyed as part of the transmission line routing process, as detailed in Section 5.2. The Phase I report and addendum identified forty-nine (49) resources in the study area, including two (2) previously NRHP-listed properties (neither located within the project's APE), two (2) unlisted and NRHP-eligible properties, eighteen (18) unlisted and potentially NRHP-eligible properties, and twenty seven (27) NRHP-ineligible properties.

Once the route for the Project was selected, New South conducted a Phase II survey of the Project area and the associated APE as defined above (**Appendix G**). New South documented two (2) resources within the Project area, which were recommended eligible or potentially eligible for the NRHP.

#### Emory Chapel Cemetery

The Emory Chapel Cemetery (Resource ID 4) is located on the northwest side of SR 34, near its intersection with Pierce Chapel Road. It is a cemetery with burials dating from the nineteenth century to the present. The cemetery is recommended eligible, but the church building itself is not eligible.

#### Sarah Cash House and Landscape

The Sara Cash House and Landscape (Resource ID 16161) is located south of the proposed transmission line route, where it crosses Thomas Powers Road. This property includes a Central Hallway house that dates to circa 1900 and its surrounding agricultural fields, which are currently used for grazing horses. The proposed route is located approximately 1,000 feet north of the end of the property's associated pastureland and 1,500 feet north from the main house, which faces west towards Thomas Powers Road. The proposed line will be located on the other side of an approximately 700-foot wide stand of trees just beyond the horse pasture.

### **6.5 Threatened and Endangered Species**

Section 7 of the Endangered Species Act requires Federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that any action it authorizes is not likely to jeopardize the continued existence of any "listed species" (threatened or endangered plants or animals) or result in the destruction or adverse modification of designated critical habitat. The Fish and Wildlife Service Interagency Cooperation regulations (50 CFR Part 402) require that either the agency (RUS) or the applicant (GTC) request the list of threatened and endangered species that may occur within the study area of the project. The normal practice is for a GTC consulting biologist, on behalf of GTC, to request the list from USFWS as well as other appropriate resource agencies and databases. The consultant then

conducts a protected species survey of the proposed project area to determine if any listed species may be affected.

For the purposes of better understanding the distribution of flora and fauna of the State, the Georgia legislature passed the *Wildflower Preservation Act of 1973* and the *Endangered Wildlife Act of 1973*. The Natural Heritage Program of the Georgia Department of Natural Resources administers these two Acts, which seek to inventory the diverse flora and fauna of the State and protect "State listed" species of plants and wildlife. Plants listed by the State are protected on public lands such as State property, Federal property, and on any other land that is not held by a "person" which means a private individual, firm, corporation, partnership, proprietorship, or other legal entity. Animals listed by the State are protected from capture, killing, or sale of species wherever they may occur. Their habitats are protected on public land.

Review of existing literature and available databases, including the Georgia Department of Natural Resources, Nongame Conservation Service (GDNR-NCS) database, identified eight (8) federal and five (5) state listed species are known from Coweta and Heard Counties, Georgia (**Table 3**). No designated Critical Habitat is present on or in the vicinity of the site. The GDNR-NCS database lists federal and state protected species and additional species which are tracked by GDNR-NCS and are known to occur in the area, and did not identify any records of any high priority species or habitats within a three-mile radius of the project corridor.

To determine the possible impacts of this Project on protected species, GTC contracted with JJG to conduct a protected species field survey of the project area (**Appendix H**). No potential habitat for federally-listed species or critical habitat was identified; therefore, GTC did not engage in formal or informal consultation with the USFWS. JJG did identify potentially suitable habitat for a state -listed threatened bay star-vine (*Schisandra glabra*), though no specimens were identified.

**Table 3: Protected Species in Coweta and Heard Counties, Georgia**

Common Name	Scientific Name	Federal Status	State Status	Habitat Present (Yes/No)	Preferred Habitat
<b>Faunal species</b>					
<b>Birds</b>					
bald eagle	<i>Haliaeetus leucocephalus</i>	D	T	No	nests in large trees near lakes, rivers, and other large bodies of water
<b>Fish</b>					
bluestripe shiner	<i>Cyprinella callitaenia</i>	NA	T	No	large, alluvial rivers with open, sand or rock bottomed channels with flowing water and little to no aquatic vegetation
highscale shiner	<i>Notropis hypsilepis</i>	NA	T	No	flowing areas of small to large streams over sand or bedrock substrates
<b>Invertebrates</b>					
Gulf moccasinshell mussel	<i>Medionidus penicillatus</i>	E	E	No	medium streams to large rivers with slight to moderate current over sand and gravel substrates
oval pigtoe mussel	<i>Pleurobema pyriforme</i>	E	E	No	sandy, medium-sized rivers and creeks
purple bankclimber mussel	<i>Elliptoideus sloatianus</i>	T	T	No	small to large rivers with moderate current and substrate of sand, fine gravel, or muddy sand
shiny-rayed pocketbook mussel	<i>Hamiota subangulata</i>	E	E	No	sandy/ rocky medium-sized rivers and creeks
<b>Floral species</b>					
<b>Plants</b>					
bay star-vine	<i>Schisandra glabra</i>	NA	T	Yes	rich bottomland or alluvial floodplain woods on stream terraces and lower slopes
black-spored quillwort	<i>Isoetes melanospora</i>	E	E	No	shallow pools on granite outcrops, where water collects after rains; pools are less than 1-foot deep and are rock rimmed
Harper dodder	<i>Cuscuta harperi</i>	NA	T	No	parasite usually found on rayless-goldenrod; rarely parasitic on other herbs found on granite or sandstone outcrops
Piedmont barren strawberry	<i>Waldsteinia lobata</i>	NA	R	No	rocky, acidic woods along stream terraces with mountain laurel ( <i>Kalmia latifolia</i> ); rarely in dry, upland oak/hickory forests
pool sprite, snorklewort	<i>Amphianthus pusillus</i>	T	T	No	shallow pools on granite outcrops, where water collects after rains; pools are less than 1-foot deep and are rock rimmed
white fringeless orchid	<i>Platanthera integrilabia</i>	C	T	No	red maple-gum swamps; peaty seeps and streambanks with <i>Parnassia asarifolia</i> and <i>Oxypolis rigidior</i>

E=ENDANGERED, T=THREATENED, C=CANDIDATE, R=RARE, D=DE-LISTED SPECIES, NA=NOT APPLICABLE

## **6.6 Fish and Wildlife Resources**

The majority of the proposed study area is predominantly forested as described in Section 6.1. It is assumed that many game and non-game wildlife that are common in this area of Georgia are present in the study area.

Trout streams are protected in the State of Georgia under the Rule and Regulations for Water Quality Control Chapter 391-3-6-.03 (13). Streams within the project area are not designated as trout streams.

## **6.7 Vegetation**

The vegetative communities occurring within the study area are:

Agricultural –These communities are characterized as open areas used for cultivating crops and/or livestock grazing.

Bottomland mixed hardwoods- These communities are comprised of hardwood deciduous species and are situated in low lying landscapes typically along medium to large streams.

Early successional- These communities are human manipulated areas that currently are not maintained undergo early successional stage regrowth.

Planted Pine- These communities are silvicultural areas dominated by planted pines for timber production.

Ruderal- These communities are characterized by anthropogenic habitats including residential and commercial areas, campgrounds, roads and/or utility ROW's.

Secondary Successional Mixed hardwoods- These communities are comprised of hardwood deciduous species.

Wetland vegetative communities of Emergent (dominated by herbaceous species), and Forested (dominated by woody species).

## **6.8 Coastal Areas**

The National Oceanic and Atmospheric Administration (NOAA) approved the Georgia Coastal Management Program (GCMP) on January 26, 1998, pursuant to the provisions of Section 306 of the Federal Coastal Zone Management Act of 1972, as amended, 16 USC 1455 (CZMA). The GCMP is prescribed in the Georgia Coastal Management Program and Final Environmental Impact Statement (P/FEIS) published on December 5, 1997. Notice of the approval of the GCMP was published in the Federal Register on February 6, 1998.

Section III of the GCMP Program Document identifies those “Federal Assistance Programs Applicable to the Consistency Process,” with coded references to the Catalog of Federal Domestic Assistance Programs. Under the U.S. Department of Agriculture heading, Code 10.850, Rural Electrification Loans and Loan Guarantees are not included in Section III as a “listed activity” requiring federal consistency.

The proposed projects will not be located within areas protected by the Coastal Barrier Resources Act of 1972 (16 USC part 3501 *et seq.*) or defined as coastal zone by the Coastal Zone Management Act (16 USC part 1451 *et seq.*).

## 7. ENVIRONMENTAL IMPACTS

This section of the EA describes the potential environmental impacts of the project on land use, floodplains, wetlands, cultural resources, threatened and endangered species, fish and wildlife resources, vegetation, coastal areas, air quality, water quality, aesthetics, transportation, noise radio and television interference, human health and safety, socioeconomic and community resources, environmental justice and cumulative effects. Both short-term and long-term impacts have been considered; all direct, indirect, and cumulative impacts associated with the proposed Project have been considered. Cumulative impacts are identified and summarized in Section 7.17 and in the cumulative effects report.

### 7.1 Land Use

#### General Land Use

The proposed project will result in the conversion of approximately 137-acres into utility easement for the transmission line. In addition, the proposed project will result in the conversion of land to utility use for approximately 24.5-acres related to the expanded substation site. The project will parallel existing property lines as much as possible, and will not result in conversion of land use of adjacent parcels outside the proposed project. Therefore, this project will not significantly impact the existing land use in the area.

#### Prime Farmland Soils

As stated in Section 6.1, there are approximately 59.3-acres of prime farmland and 45.96-acres of farmland of statewide importance in the Project area. Though the construction and operation of the Project will take this land out of production, this will not cause a significant impact given the Project's scale and the viability of agricultural activities on the surrounding acreage. Agricultural activities could theoretically be performed on lands surrounding the proposed corridor. Also, much of the study area is characterized by rural residential development, and thus has already been removed from agrarian land use.

#### Formally Classified Lands

##### *Wild and Scenic Rivers*

No Wild and Scenic Rivers, including the Chattooga River, are located within the project area.

##### *National Forests*

The proposed project is not located in or near the Chattahoochee or Oconee National Forests; therefore, construction of the proposed project will not impact any National Forest lands.

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*State and Federal Parks*

The proposed project is not located within or adjacent to any of the resource units operated by the GA DNR or any of the National Park units operated by the National Park Service of the DOI.

## **7.2 Floodplains**

As described in Section 6.2 and shown on Figure 12, while the substations for which there are proposed modifications are not located within floodplains, the transmission line corridor does cross areas of mapped FEMA floodplains. No structures will be placed in the floodplain; the floodplains will be spanned by the proposed transmission line, and trees and other tall vegetation will be hand cleared to minimize impact. Therefore, the Project will not have an adverse effect on floodplains.

## **7.3 Wetlands**

As discussed in Section 6.3 and Figures 13 A-J, there are nine (9) jurisdictional wetlands, seventeen (17) jurisdictional streams, and one (1) jurisdictional open water (**Appendix C**). No wetlands are located within the footprint of the substations for which there are proposed modifications. No transmission line structures will be located within wetlands or regulatory stream buffers of USACE jurisdiction. Most of the jurisdictional waters will be aerially crossed, though a few will require the installation of vehicular crossings. For all jurisdictional features, trees and other tall vegetation will be cleared within the wetlands and stream buffer areas using hand-clearing techniques. Permits will most likely fall under Nationwide Permit 12 (NWP 12) and Nationwide Permit 3 (NWP 3). Prior to the start of construction activities GTC will have required all necessary permits. (See Section 9 Permitting and Construction)

To minimize impacts to jurisdictional areas, existing roads will be utilized or created within the proposed transmission line right-of-way during time of construction in upland areas. In addition, approximately 2,320 feet of off right-of-way access will be acquired in order to minimize impacts to jurisdictional waters and wetlands and to avoid steep terrain. Therefore, the Project will not have significant impacts to streams and wetlands.

## **7.4 Cultural Resources**

### Archeological Resources

As described in Section 6.4 of this report, no archaeological sites potentially eligible for the NRHP were encountered within the project area (**Appendix E**). Because of previous land disturbance associated with construction of the existing high-side and low-side, the adjacent county road, and the various electric transmission and distribution lines, it is considered unlikely

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that significant and intact archaeological resources are located within the planned fence expansion area. Therefore, there will be no archeological resource historic properties affected by the undertaking, in accordance with 36 CFR § 800.4(d)(1).

#### Historic Properties

New South documented two (2) resources within the Project's APE recommended eligible for the NRHP, the Emory Chapel Cemetery and the Sarah Cash House and Landscape (**Appendix G**). Due to the presence of existing transmission line structures and a significant wooded buffer within the view shed, New South recommended that there would be no adverse effect to the potentially eligible Emory Chapel Cemetery, in accordance with 36 CFR § 800.5(b). New South also determined that the transmission line would not be visible from the Sarah Cash House and Landscape. The proposed corridor is located approx. 1000-feet north of the end of the property's associated pastureland and 1500 feet north of the main house, which faces west towards Thomas Powers road. There is also a thick stand of trees between the pasture and the proposed line, and the slightly sloping topography just north of the property. Therefore, New South recommended a finding of no adverse effect to the potentially eligible Sarah Cash House and Landscape, in accordance with 36 CFR § 800.5(b).

### **7.5 Threatened and Endangered Species**

As discussed in Section 6.5, there were no federally-listed protected species identified within the proposed transmission line study corridor; however, suitable habitat for one state-listed species (*Schisandra glabra* - bay star-vine) was observed.

Due to the linear nature of the proposed project, impacts to suitable habitat for the bay star-vine will be limited to clearing up to a 170-foot wide corridor. Existing habitat adjacent to the proposed corridor will be left undisturbed. As a precaution, all areas identified as potential habitat for the bay star-vine in the JJG report have been identified on GTC access maps and those areas will be hand cleared to minimize impacts. Therefore, it is not anticipated that the proposed project would have an adverse effect on this species or its overall preferred habitat.

### **7.6 Fish and Wildlife Resources**

Although the project area will be converted to utility use, many animals can utilize the utility right-of-way as habitat. Therefore, no significant impacts are anticipated to the area fish and wildlife populations.

### **7.7 Vegetation**

After the initial clearing of the easement area, maintenance clearing typically takes places every three years. No significant impacts are anticipated to the areas overall vegetation communities.

## **7.8 Coastal Areas**

The proposed projects will not be located within areas protected by the Coastal Barrier Resources Act of 1972 (16 USC part 3501 *et seq.*) or defined as coastal zone by the Coastal Zone Management Act (16 USC part 1451 *et seq.*); therefore, the Project will not impact any protected coastal areas.

## **7.9 Air Quality**

The dust and vehicular emissions from construction related activity would be temporary and minimal. All pertinent local, state, and federal regulations will be complied with during construction and operation. GTC will ensure that the project complies with State of Georgia Rules for Air Quality Control (Chapter 391-3-1) for construction activities. The construction of the Project should have no significant impact on air quality.

## **7.10 Water Quality**

Construction of the transmission line and the modifications at the substations present the potential for erosion and runoff contributions to nearby streams. GTC will use prudent design, construction, and erosion control measures including best management practices to avoid potential minor, short-term impacts. Trees and other tall vegetation will be cleared within the stream buffer areas using hand-clearing techniques. No transmission line structures will be located within areas of Corps jurisdiction. Off right-of-way access roads will be improved or created at the time of construction in upland areas to minimize impacts to water quality.

Vegetated riparian areas will be left intact as much as possible (i.e., selective clearing) to serve as natural buffers for erosion control and screening. All practicable erosion control measures (e.g., silt fences and straw bales) and other best management practices will be used to avoid potential short-term water quality and wetland impacts. No fuels, lubricants, and chemicals will be stored within 100-Feet (30.4-meters) of any wetland or stream areas. All attempts will be made to refuel equipment at least 100-Feet (30.4-meters) from any of these aquatic areas.

GTC will comply with applicable storm water management and sediment reduction regulations related to water quality protection, and will comply with the recommendations of the agencies including the Georgia Erosion and Sedimentation Act of 1975, as amended. The erosion control measures employed will be sufficient to prevent any sediment movement beyond construction limits during a 25-year storm event; therefore no adverse impacts to water resources are expected as a result of these projects.

## **7.11 Aesthetics**

Visual considerations are significant factors when developing alternate routes and sites and when making comparisons among them. The visual quality of the study

area is characterized by suburban residential, developing suburban residential, pastures, forested uses, and existing utility and transportation infrastructure. Residential development in the area occurs primarily along roads with many homes within subdivisions. The visual implications of transmission lines are influenced by several factors. These include the distance to the viewer, the number of structures viewed, whether visible structures are seen against backdrops (vegetation, terrain, man-made elements) or silhouetted against the skyline, the amount of vegetative modification that contrasts with surrounding landscapes, and the overall scenic condition (landscape content or context) of the area in which the facility is seen.

In open areas such as pasture, the line will be visible to the public or residences. Where practicable, its visual effects will be mitigated by locating the line where the view either is screened or has a backdrop of vegetation. Single pole construction provides a smaller silhouette than other structure types. Where the proposed transmission line parallels existing infrastructure (road, gas line, etc.), the immediate area will have the additional influence of the line where the visual quality is already affected by the existing infrastructure.

The proposed substation site has significant tree buffers between the site and adjacent structures. The property for the site is located in a curve of Harmony Church Grove Road. These characteristics, along with set-back from the road and lower terrain than the surrounding area, ensure the substation will only be visible when it is directly passed.

GTC will use design and construction methods to minimize the visual impact of the proposed projects; therefore, no significant adverse effect to the area's aesthetic quality is expected from these projects.

### **7.12 Transportation**

The proposed facilities will not impact highway safety or navigable waterways and will not be located in close proximity to existing airports, nor will any portion of the facilities be in excess of 155-Feet (47.2-Meters) above ground level. No airport glide paths will be affected by construction of the proposed projects. The closest airport is Cartersville Airport, approximately 2.5-Miles (4-Kilometers) to the north. Given the distance and location, this project does not meet the criteria requiring notification of the Federal Aviation Administration (FAA), as outlined in FAA Regulations, 14 CFR Part 77, Objects Affecting Navigable Airspace. No impacts to transportation are anticipated.

### **7.13 Noise, Radio, and Television Interference**

The proposed projects could, under severe weather conditions, operate with a low level of sound; however, this sound is normally not audible beyond the right-of-way limits. There will be some noise during the clearing and construction phases of the project, but it will be localized and temporary. Thus, noise generated by the

line will cause no long-term adverse effects. As the transmission line will be properly constructed and grounded, it is not expected to generate significant radio or television interference.

#### **7.14 Human Health and Safety**

GTC is committed to providing electricity in a reliable and safe manner that protects the health and safety of energy consumers, GTC employees, and the general public. To provide for public protection, the proposed transmission line and substation modification will be designed to comply with the National Electrical Safety Code in effect at the time construction begins. The Cooperative's experience in designing, building, and operating this type of facility indicates that the facilities are durable, structurally sound, and pose no threat to public health and safety under normal operating conditions and anticipated emergency conditions. Therefore, the transmission line and substation are not anticipated to effect human health and safety.

Electric and magnetic fields (EMF) are a natural byproduct of the use of electricity and are encountered by people every day from a variety of sources. Lights, motors, television sets, power lines, coffee makers, hair dryers, and all other devices that use electricity produce these fields. Over the past 25 years, numerous studies and more than 20 scientific review panels have concluded that no cause-and-effect relationship has been established between EMFs and any harmful health effects. GTC has joined with other power producers and manufacturers to fund research. The corporation encourages additional public and private research efforts and endorses national research programs.

#### **7.15 Socioeconomic and Community Resources**

It is anticipated that there will be both direct and indirect economic benefits to Heard and Coweta Counties from the construction and operation of the proposed transmission line including the generation of property taxes. However, since this transmission line is in the process of being designed, information about tax revenue for this project is not available. In addition to these direct economic benefits, the area will experience indirect economic benefits as a result of the demand for products and services resulting from workers engaged in clearing and constructing the proposed transmission line.

#### **7.16 Environmental Justice**

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires federal agencies to address potential environmental justice considerations for all federal actions by determining if a project would produce disproportionately high and/or adverse environmental and/or human health effects on minority or low-income populations. If disproportionate impacts on these populations are identified, efforts must be made by the federal agency to avoid or mitigate these effects of its project. This

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executive mandate requires two related assessments: the determination of whether a minority or low-income population is present within a study area, and if so, whether that population suffers disproportionately high and adverse effects from the project.

GTC contracted with JGG to conduct an Environmental Justice (EJ) Survey for the proposed Dresden – Heard County 500 kV Transmission Line study area in Coweta and Heard Counties, Georgia (**Appendix H**). The survey was conducted in accordance with GTC's *Environmental Justice Guidelines and Methodology for Analyzing Potential Environmental Justice Areas of Concern*. The GTC EJ documents, based upon methodology developed by EPA Region IV, explain the fundamental details of this analysis. The EPA methodology is based on Census 1990. At that time, Georgia's minority population was approximately 30.0%, and the low-income population was approximately 14.7%. The minority and low-income population percentages in Georgia have changed during the decades leading up to Census 2010. The 2010 Census (SF 1) shows that Georgia's minority population has now increased to 44.1%, and the low-income population has increased to 15%. For the 2010 Census, low-income data will be released through the American Community Survey (ACS), which updates every year and is now current through the end of 2009 at the Census tract level.<sup>1</sup> EPA Region IV did not develop new thresholds for the 2000 Census numbers and has not yet done so for 2010. At this time, GTC is continuing to use the 1990 EPA thresholds for environmental justice evaluations. Both the minority and low-income analyses will be more inclusive than would be required if the EPA thresholds were adjusted to account for the changes in population.

Some study area blocks and tracts are identified by the most current Census data as potential areas of EJ impact for minority and low-income populations. It is possible that additional smaller areas of minority and low-income populations are present in the study area but masked by the larger Census geography. This may particularly apply to low-income populations, because the tracts are large in terms of population, cover large land areas, and extend well beyond the proposed transmission line area. For example, several homes are located along the proposed line in Coweta County, and some of them could belong to low-income families even though the Census tract data does not indicate so. Since the proposed transmission line construction will not displace or disproportionately impact low income or minority populations, the proposed project will not have an adverse effect on low-income or minority populations.

### 7.17 Cumulative Effects

Throughout the various tasks associated with the Project: Studies of electrical alternatives, Alternatives evaluation, and field reconnaissance studies, GTC has sought to minimize impacts to the local communities in Coweta and Heard Counties as well as the natural environment in these areas. GTC contracted with consultants JJ&G to produce a cumulative impact analysis report(**Appendix I**).

The cumulative impact analysis report addresses the potential cumulative effects associated with the construction and operation of the Project. The report analyzes the cumulative effects of the combined construction and operation of the project in regards to other local and regional development and infrastructure projects as compared to baseline conditions.

To determine the potential for cumulative impacts, literature reviews of relevant planning documents have been examined. Additionally telephone interviews were conducted with the planning department staff in Coweta county and Heard County. Other data for analysis included historic aerial photographs, county future land use planning maps, historic resources, and environmental justice population maps.

From the above resources analyzed for cumulative impacts, over half were not anticipated to result in reasonably foreseeable cumulative impacts from the construction or operation of the project. Six resources were anticipated to sustain minor impacts from the construction or operation of the Dresden-Heard County 500 kV Transmission Line Project: land use, water quality, wetlands, hazardous materials, cultural resources, Environmental Justice and aesthetics. Finally, the project is anticipated to have a beneficial cumulative impact to socioeconomic resources in the reasonably foreseeable future.

**Table 4: Environmental Statues/Requirements and Compliance**

<b>Environmental Statues and Requirements</b>	<b>Compliance</b>
Archeological Resources Protection Act, 16 U.S.C. 470, et seq.	Full Compliance
Clean Water Act (Fed. Water Pollution Control Act), 33 U.S.C. 1251, et seq.	Full Compliance
Coastal Zone Management Act, 16 U.S.C. 1451, et seq.	Not Applicable
Endangered Species Act, 16 U.S.C. 1531, et seq.	Full Compliance
Estuary Protection Act, 16 U.S.C. 1221, et seq.	Not Applicable
Fish and Wildlife Coordination Act, 16 U.S.C. 661, et seq.	Full Compliance
Land and Water Conservation Fund Act 16 U.S.C. 4601-4, et seq.	Not Applicable
Marine Protection Res. and Sanctuary Act, 33 U.S.C. 1401, et seq	Not Applicable
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	Full Compliance
Nat. Historic Preserv. Act of 1966, as amended, 16 U.S.C. 470	Full Compliance
Rivers and Harbors Act, 33 U.S.C. 403, et seq.	Not Applicable
Wild and Scenic River Act, 16 U.S.C. 1271, et seq.	Not Applicable
Farmland Protection Policy Act, 7 U.S.C. 4201, et. seq.	Full Compliance
Protection & Enhancement of Cult. Environ. (Exec. Order 11593)	Full Compliance
Floodplain Management (Executive Order 11988)	Full Compliance
Protection of the Wetlands (executive Order 11990)	Full Compliance
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	Full Compliance
Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970	Not Applicable

## 8. TITLE 22 COMPLIANCE

“Chapter 3 of Title 22 of the Official Code of Georgia Annotated, relating to exercise of the power of eminent domain for special purposes, is amended by adding at the end of said chapter a new Article 8 to read as follows:”

Article 8  
23-3-160

(a) “Before exercising the right of eminent domain for purposes of construction or expanding an electric transmission line with a design operating voltage of 115 kilovolts or greater and a length of one mile or more, a person, corporation, or other entity that generates, transmits, distributes, supplies, or sells electricity for public or private use in this state or generates electricity in this state for transmission or distribution outside the state (hereinafter in this article referred to a utility) shall schedule and hold one or more public meetings with an opportunity for comment by members of the public.”

(b) “Prior to the public meeting or meetings required by this Code section, the utility shall provide adequate public notice of the public meeting or meetings related to the electric transmission line as follows:”

(1) “By publishing adequate public notice of said public meeting or meetings in a newspaper of general circulation in each county in which any portion of the electric transmission line is to be constructed or expanded.”

(2) “By providing written notice of the public meeting or meetings, by means of certified mail, to each owner of property, as indicated in the tax records of the county in which such property is located.....” (c) “At least one public meeting shall be held in each county in which the electric transmission line would be located. In any county in which the electric transmission line would require acquisition of property rights from more than 50 property owners, two or more public meetings shall be held. The public meetings shall be held in an accessible location and shall be open to members of the public. At least one of the public meetings shall commence between 6:00 PM and 7:00 PM, inclusive, on a business weekday.”

The purpose of the meetings is to inform the public about the project and the siting process. Notices of the meeting, including a map of the proposed transmission line route, are sent to residents living within and near the proposed route (**Appendix J**).

At the meetings, GTC provides displays on technical information related to the electrical need for the project, the transmission line corridor selection process, real estate acquisition, and health, safety and environmental information. Project specialists answer questions from attendees and listen to and note the attendees’ comments on the corridor. A Court Reporter is available to record transcripts.

GTC conducted three public (open house) meetings concerning this project. The first two meetings took place on May 24, 2011 in Coweta County at The Church of God of the Union Assembly, 3821 Highway 34 West, Newnan, GA 30263. The meetings were

conducted from 2:00 – 4:00 p.m. and 6:00 to 8:00pm. The third meeting took place on May 17, 2011 in Heard County at Three Rivers Regional Commission, 13273 GA Hwy East, Franklin, Georgia 30217. The meeting was conducted from 6:00-8:00 pm.

The comments from these meetings can be found in **Appendix J** of this report.

GTC also held briefings for local and state officials to inform them about the project and the siting process as well as the advantages and limitations of the transmission line corridor alternatives within their constituents' areas.

## 9. PERMITTING AND CONSTRUCTION

The design and construction of the Dresden – Heard County 500 kV Transmission Line Project will follow guidelines defined in the Environmental Criteria for Electrical Transmission Systems published jointly by the USDA and DOI. During construction of these projects, GTC will comply with the standards required by the Georgia Erosion and Sedimentation Control Act of 1975, as amended, which mandates that appropriate erosion and control measures such as seeding, straw bales, silt screens, and vegetative buffers will be utilized where appropriate to prevent degradation of surface water quality during construction and operation. Currently in Georgia, a NPDES Construction Activity General Permit (GAR No. 100002) is in effect. This permit is designed to control the erosion and sedimentation resulting from construction projects with land disturbance of 1.0 acre or more, and requires preparation and implementation of Erosion, Sedimentation, and Pollution Control Plan (ESCP) and a Comprehensive Monitoring Program.

GTC will acquire any necessary permits and will comply with all pertinent local, state, and federal regulations during the construction, operations and maintenance of facilities in the proposed project. GTC anticipates that the only federal environmental permit required for this project will be from the USACE. This permit is required to install a pipe in a perennial stream to improve access on the T/L for construction and maintenance activities.

GTC anticipates submitting an NPDES plan to GA Environmental Protection Division for erosion and sedimentation control in the project area. During clearing, grading, and other construction activities, formal and documented erosion and sediment control inspections would take place weekly as well as within 24 hours of a half-inch or greater rainfall event for this project. Inspections would consist of visiting all sites where soil is exposed to erosive forces, observing Best Management Practices (BMPs) for appropriate application, installation and maintenance, and examining discharge areas to determine if BMPs are effective. Any deficiencies in erosion and sediment control measures would be noted during these inspections and corrective action would take place within seven days after the inspection. Informal inspections would take place as described above in areas where NPDES permit activities are not covered.

Water quality monitoring would be conducted on all phases of the project subject to NPDES permitting. Monitoring would consist of sampling a representative group of either outfalls or receiving waters or a combination of both associated with the project. Sampling would be conducted in accordance with NPDES permit guidelines until final stabilization is achieved at the site.

## 10. LIST OF PREPARERS

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## **11. APPENDIX**

### **Appendix A: Wansley CC7 Transmission Improvement Alternatives**

Executive Summary

Table 1: Comparison of Alternative Solutions for Wansley 7 Transmission Service Request

Revised System Impact study

Southern Scheduling Member Group

575 MW Network Service Request

Wansley CC 7 500 kV Generation Facility



## **Appendix B: Siting Model**



**Appendix C: Ecology Report**

Jordan, Jones and Goulding  
Ecology Report  
Dresden – Heard County 500 kV Transmission Line  
Coweta and Heard Counties, Georgia  
October 2011

Jordan, Jones and Goulding  
Ecology Report  
Dresden 500 kV Substation Expansion Ecology Survey  
Coweta County, Georgia  
March 2011



**Appendix D: Programmatic Agreement**

Among The Rural Utilities Service, The Georgia State Historic Preservation Officer, and The Advisory Council on Historic Preservation Concerning the Construction and Modification of Transmission Facilities by Georgia Transmission Corporation.



**Appendix E: Archeological Survey**

Southeastern Archeological Services, Inc.  
Archeological Survey of the proposed  
Dresden – Heard County 500 kV Transmission Line  
Coweta and Heard Counties, Georgia  
October 2011



**Appendix F: Phase I Historic Structures Survey**

New South Associates  
Phase I Historic Structures Survey  
Dresden – Heard County 500 kV Transmission Line  
Coweta and Heard Counties, Georgia  
April 2010



**Appendix G: Phase II Historic Structures Study**

New South Associates

Phase II Study

Proposed Dresden – Heard County 500 kV Transmission Line

Coweta and Heard Counties, Georgia

December 2011



**Appendix H: Results of the Preliminary Environmental Justice Survey**



**Appendix I: Cumulative Effects Report**

Jordan, Jones and Goulding  
Cumulative Effects Report  
Dresden – Heard County 500 kV Transmission Line  
Coweta and Heard Counties, Georgia  
February 2012



**Appendix J: Title 22 Documentation**

1. Certified letter to property owners with Notice of Intent for Coweta and Heard County
2. Record of Coweta County public meeting – May 24, 2011 –2:00 – 4:00 p.m. and 6:00 to 8:00 p.m. at The Church of God of the Union Assembly, 3821 Highway 34 West, Newnan, GA 30263.
3. Record of Heard County public meeting – May 17, 2011 - 6:00 to 8:00 p.m. at Three Rivers Regional Commission, 13273 GA Hwy East, Franklin, Georgia 30217.

## **Appendix K: Project Releases**

### GTC Projects

P79263 Dresden – Heard County (ITS) 500 kV Transmission Line

P85727 Dresden (ITS) 500 kV/230 kV Substation

P86008 Dresden (ITS) 230 kV Substation

P86009 Dresden – South Coweta (ITS) 230 kV Transmission Line

P85728 Heard County Power (ITS) 500 kV Substation

P85938 Union City (ITS) 500 kV /230 kV Substation