

ATLANTA REGIONAL TRANSIT CORRIDOR

by

MARIO CHRISTOPHER CAMBARDELLA

(Under the Direction of Jack Crowley)

ABSTRACT

Inhabitants of cities depend upon utilities for an expected level of comfort and quality of life. To provide, utility companies aim to deliver service to customers as effectively and efficiently as possible. Atlanta Regional Transit Corridor (ARTC) explores the bridging of single-use utility corridors to create a joint utility corridor to further effectiveness and efficiency in the delivery of utilities. The ARTC investigates a possible route to circumnavigate Atlanta, Georgia, presents contextual indicators surrounding one section of a possible route, and explores other potential urban corridor uses. The ARTC illustrates possible designs of a joint utility corridor and future transit-oriented development possibilities as a result of implementation. Also included is a brief legal summary outlining the legal parameters surrounding the possible implementation of the proposed ARTC. The results of the study are intended to provide a professional planned document for effected municipalities to further explore the possibilities, feasibility, benefits, and costs of joint utility corridors.

INDEX WORDS: utilidor, easement, multi-use trail, transmission line, ecological corridor

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DEDICATION

To my family.

ACKNOWLEDGEMENTS

Thanks to Jack Crowley.

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CHAPTER 1

INTRODUCTION

The turn of the twentieth century saw Atlanta's streetcar network blossoming. In 1904, the newly constructed Morgan Falls hydroelectric power plant was built to provide electricity for the growing demand for streetcars.¹ The location was twenty miles north of downtown Atlanta along the picturesque Chattahoochee River. At the time, the area was largely undeveloped and miles from the closest suburban streetcar developments of Virginia Highlands and Inman Park.

Today, a decade after the turn of the twenty-first century, the Morgan Falls power plant is still in use and the Chattahoochee is just as picturesque. The suburban streetcars, which elevated residential developments into Atlanta's most beloved neighborhoods, however, are not in use. The rural, bucolic landscape once surrounding the area is also gone.

This proposal asks the Morgan Falls power plant to perform its original task once again, not for downtown street cars, but for a regional transit system to empower new and existing suburban developments of metro Atlanta.

The Morgan Falls power plant transmission line easements stretch west to Marietta and east beyond the growing cities of Sandy Springs and Dunwoody, and on to downtown Norcross. The Atlanta Regional Transit Corridor (ARTC) will utilize this passage easement. To support the design of the ARTC system, the master plan document will entail a study of the contextual elements, a conceptual design of the transit system, and legal findings necessitating enabling

¹ Morgan Falls history Company. "Morgan Falls Project." *Georgia Power*. 2011. Web. 02 Apr. 2011. <<http://www.georgiapower.com/lakes/hydro/mfp.asp>>.

legislation. The ARTC system is a series of connecting transmission line easements circumnavigating the city of Atlanta. To test the feasibility of the proposal, this report will highlight only the North Rim to perform a preliminary technical analysis.

As a city that has no natural boundaries to restrain development, a propensity for low-density development, and one of the longest average daily work commutes in the nation, Atlanta is prime for ideas about how it can accommodate the forecasted population growth more efficiently. Atlanta Regional Commission (ARC), an award winning metropolitan planning organization, has provided reasons why Atlanta should earnestly develop strategies for infrastructure investments for decades. ARC's mission, as listed on their website (February, 2011) is to "serve as a catalyst for regional progress by focusing leadership, attention and planning resources on key issues."²

This proposal is meant to support ARC's mission for the Atlanta metropolitan area. Information from ARC spurred the creation of this planning proposal and was relied upon heavily for statistical analysis. The ARTC proposal illustrates the possibility of a joint utility corridor to accelerate the growth of Atlanta's edge cities through transit-oriented developments and to promote the conservation of ecological resources. The ARTC proposal exhibits how people, places, goods, and the natural environment that surround them all, can be benefitted through the use of the joint utility corridor.

² Atlanta Regional Commission. "Plan 2040." *Atlanta Regional Commission*. 2011. Web. 02 Apr. 2011. <<http://www.atlantaregional.com/>>.



Figure 1 - Morgan Falls transmission line easement.
Photo by author, MCC.



Figure 2 - Morgan Falls transmission line easement photo montage.
Created by author.

CHAPTER 2

CONTEXT

2.1 Atlanta: Regional Importance

The Atlanta region is one of the strongest and fastest growing markets in the nation.³ The city, as defined by the metropolitan statistical area (MSA), plays a major economic role regionally, nationally, and internationally. Identifying and programming improvement to the efficiency and effectiveness of the system to accommodate increasing transportation demands, goods, and services is critical to the city's economic vitality and quality of life for all residents.

ARC's newly-released population and employment forecasts show continued strong growth for the 20-county Atlanta region. ARC expects that 8.3 million people will call the region home by the year 2040, an increase of roughly three million people from 2009. ARC forecasts the region to have 4.5 million jobs by 2040, an addition of about 1.6 million jobs from 2009.⁴

³ Atlanta Regional Commission. "Atlanta Freight Mobility Plan." *Atlanta Regional Commission*. 2011. Web. 02 Apr. 2011.
<http://www.atlantaregional.com/File%20Library/Transportation/Roads%20and%20Highways/tp_ARFMP_exec_summary_5-30-08.pdf>.

⁴ Atlanta Regional Commission. "Plan 2040." *Atlanta Regional Commission*. 2011. Web. 02 Apr. 2011.
<<http://www.atlantaregional.com/>>.



Figure 3 - Metro Atlanta development 1990.
Data Source: Atlanta Regional Commission (ARC). Created by author.

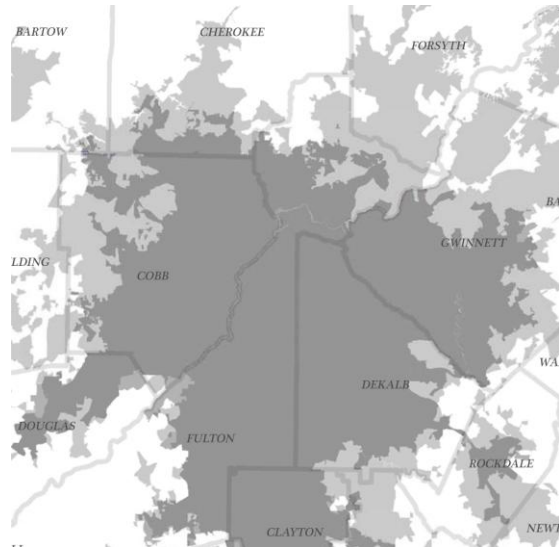


Figure 4 - Metro Atlanta development 2000.
Data Source: ARC. Created by author.

2.2 Existing Utility Easements

Georgia Power co-owns and operates a network of more than 16,000 miles of transmission lines in the state of Georgia.⁵ In a single, continuous line, this network would stretch about two-thirds of the globe; say from Athens, Georgia to Athens, Greece via China. The Integrated Transmission System (ITS), is vital to carrying electricity across the country from source to consumer, or in other words, from power plant to homes and businesses.⁶

Along easements, parcels are obtained either by purchasing the property outright (fee property) or by purchasing the rights to a certain portions of property in order to construct, operate and maintain one or more electrical lines.⁷ Encumbrances, such as high voltage transmission lines (HVTL), have design standards aimed toward protecting the function of the system and for people in the surrounding landscape. For major transmission voltage lines (230-

⁵ Southern Company. "Transmission." *Georgia Power*. 2011. Web. 02 Apr. 2011.
<http://www.georgiapower.com/>.

⁶ Southern Company. "Integrated Transmission System (ITS)." *Georgia Power*. 2011. Web. 02 Apr. 2011.
http://www.georgiapower.com/residential_home.asp.

⁷ Southern Company. "Transmission." *Georgia Power*. 2011. Web. 02 Apr. 2011.
<http://www.georgiapower.com/>.

500kV), the line must be centered on a 50 foot easement that the power utility company must obtain and maintain. When lines run parallel to each other, an additional 100 foot easement is needed. Thus, the minimum total width of a two HVTL easement is 200 feet. Once constructed, each tower requires a minimum undisturbed radius of 25 feet around each leg of each structure.⁸

2.3 ARTC & the “North Rim” Study Area

Lengthwise, the North Rim of the ARTC extends 28 miles, connecting Marietta and I-75 passing Sandy Springs, Dunwoody and GA-400, to Norcross and I-85. Routine maintenance on the line on is ongoing. The North Rim largely consists of a combination of 230kV and 115kV lines. Approximately 6.16 miles of the 28 mile North Rim power easement is slated for reconstruction within the next four years.

Along the North Rim, overhead transmission lines are installed on towers 80 to 140 feet in height and require a cleared right-of-way that approximates the height of the towers. Georgia Power allows the use by parties other than the property owner and reserves the right to permit.⁹

- Sewer, water and gas lines
- Electrical distribution lines
- Telecommunication and cable TV
- Railroad spur tracks

⁸ Southern Company. "Vegetation Management." *Georgia Power*. 2011. Web. 02 Apr. 2011. <http://www.georgiapower.com/residential_home.asp>.

⁹ Southern Company. "Transmission." *Georgia Power*. 2011. Web. 02 Apr. 2011. <<http://www.georgiapower.com/>>.

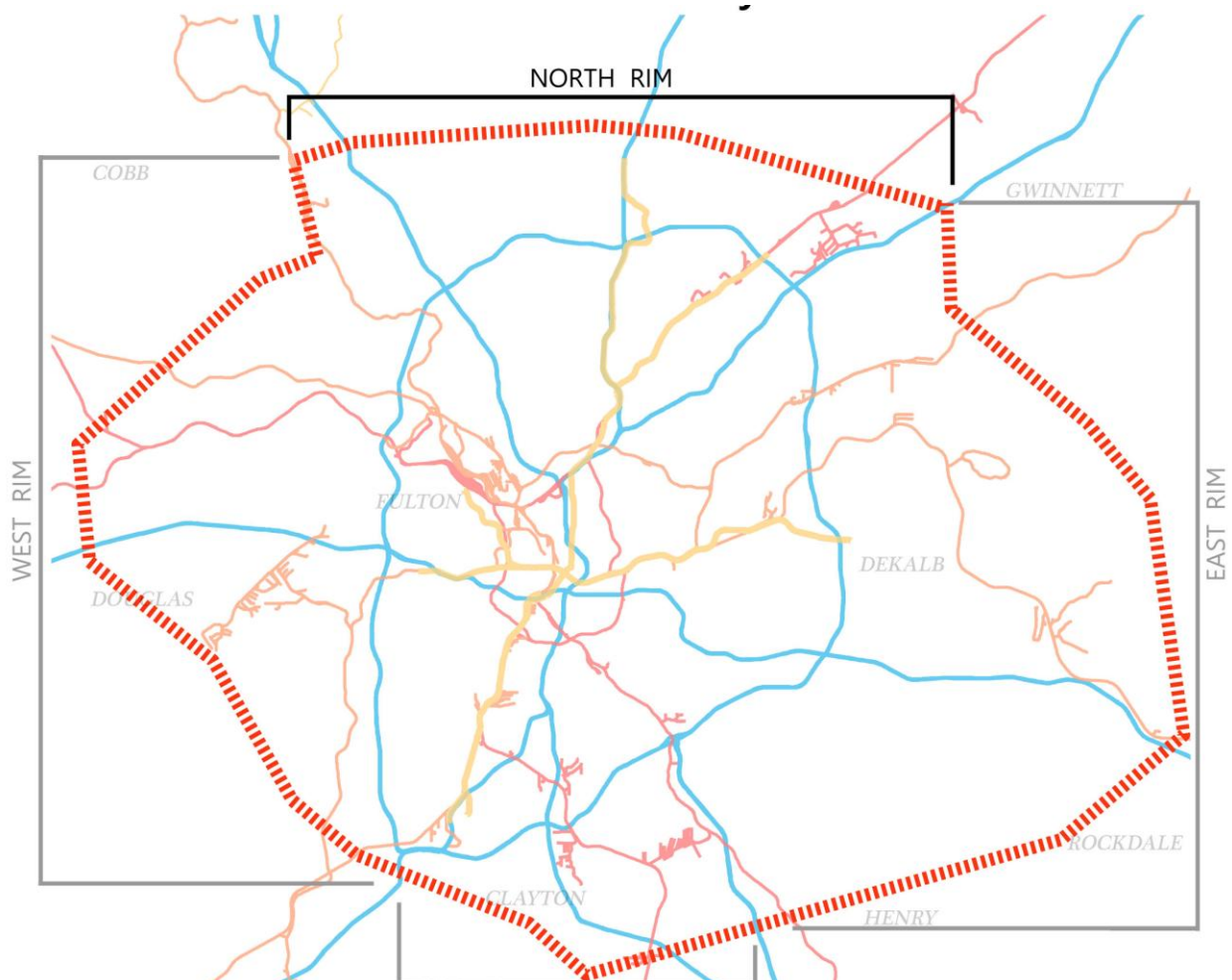


Figure 5 - Map of ARTC. Data Source: Atlanta Regional Commission (ARC). Created by author.

2.4 Designated Areas for Development

Along the ARTC – North Rim, the ARC has identified regional activity centers for concentrated development efforts. Regional activity centers consist of high-density retail/commercial and office land uses that attract residents both inside and outside the area. Regional activity centers within a 3-mile proximity of the ARTC corridor include Marietta, Delk Road TOD, Sandy Springs, Roswell Road, Dunwoody Village, Perimeter, Norcross, Norcross

Activity Center, and Jimmy Carter Boulevard. These areas are served by major arterial roads, I-85, I-75, GA-400, and MARTA.

Once designated by the ARC, regional activity centers are eligible, for planning grants from the ARC through the Livable Centers Initiative (LCI). LCI awards planning grants on a competitive basis to local governments and non-profit organizations to prepare plans for the enhancement of existing centers and corridors consistent with regional development policies.¹⁰

¹⁰ Atlanta Regional Commission. "Livable Centers Initiative." *Atlanta Regional Commission*. 2011. Web. 02 Apr. 2011. <h The ARTC - North Rim will pass through the four counties; Cobb, Fulton, Dekalb, and Gwinnett which.ttp://www.atlantaregional.com/>.



Figure 6 - Regional Activity Center. Data Source: ARC. Created by author.

2.5 Connections to MARTA

Due to its close proximity to the Dunwoody and Doraville rail lines, the ARTC has the distinct possibility to connect to the Metropolitan Atlanta Rapid Transit Authority (MARTA). The extension of MARTA's Dunwoody rail line to the ARTC – North Rim spans approximately 1-mile along the right-of-way of GA-400. With connections to MARTA, GA-400, and the ARTC, the site becomes prime opportunity for transit-oriented developments.

MARTA's Doraville rail extension to Norcross has been recommended by the "MARTA's Northeast I-85/Gwinnett Co. Transit Corridor Discussion Paper" (October 2007). The approximately 3.15-mile extension and the creation of a transit station in this location will provide MARTA access to the City of Norcross and Gwinnett County's rapidly growing

population. With a light rail passenger train along the ARTC, possible connections to MARTA's rail network will increase mass-transit ridership over the entire transportation system.

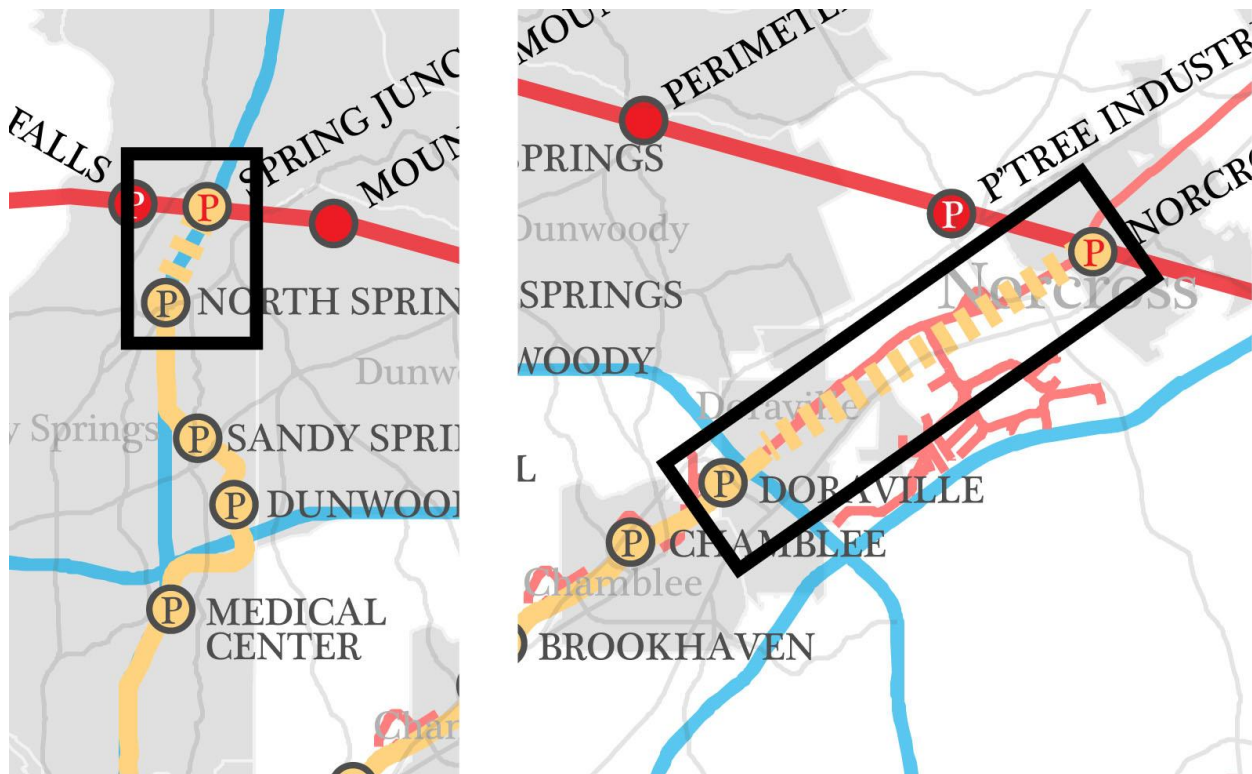


Figure 7 - MARTA Rail network connections. Data Source: ARC. Created by author.

CHAPTER 3

DESIGN

The ARTC provides necessary transit to five major components to the city of Atlanta: 1) ARTC establishes a joint-utility corridor to provide a co-benefit in the transit of electricity, water, gas, and information. 2) ARTC provides mass transit to help support communities in urban and suburban neighborhoods. 3) ARTC creates the longest linear park in the state. For park goers, design considerations provide protection and safety from potentially dangerous utility and transit lines. 4) ARTC establishes a continuous ecological corridor with grade-separated crossings to best protect wildlife and human interaction with motor vehicles. 5) Potentially eliminating the Marietta – Atlanta downtown rail corridor with ARTC connections to GA400 & Doraville alignments.



Figure 8 - ARTC with Aerial .Data Source: ARC. Created by author.

fig 21

3.1 Utilidors

The ARTC calls for the assemblage of public utilities to establish one organized and efficient utility structure called a utilidor. A utilidor is a utility corridor, built underground or above ground, to carry utility lines such as electricity, water, fiber optics, and sewer.

Utilidors have been widely used across the country for a variety of uses. The purposes for building and implementing a utilidor is based on the varying factors from aesthetics, feasibility due to climatic conditions, and the utilization of existing tunnels or vaults. An example of a utilidor can be seen at Walt Disney World in Orlando. Uses for the utilidor include waste removal, electrical operations, deliveries, food service, and human transport across the expansive theme park. In Northern Canadian and Alaskan communities, utilidors are commonly seen where permafrost does not allow the normal practice of burying water and sewer pipes underground.¹¹In another example, the Williams Telecommunication Company pioneered the idea of using decommissioned pipeline corridors as a conduit for fiber-optic cables.¹²

The proposed utilidor for the ARTC carries vaults hosting a variety of utilities including the existing transmission lines. Because a single transmission line circuit requires three wires, each must be installed in an individual conduit. The three conduits are encapsulated in thermal concrete and surrounded by special thermal backfill materials.¹³ Compartmentalizing vaults disallows cross contamination of the utilities. Ways to pair liabilities of utilities lines for a mutual benefit should be explored. For example, the heat generated from power lines may prevent the freezing of an adjacent water line. In either condition, underground or above ground, the uniquely designed utilidor allows for easy access to service and maintain all utility lines.

¹¹ "Utilidor" *Wikipedia* 2011. Web. 02 Apr. 2011. < <http://en.wikipedia.org/wiki/Utilidor>>

¹² H.R. Doc. No. 87 at 224 (2006). Print. Evaluation of Underground Electric Transmission Lines in Virginia. Report of the Joint Legislative Audit and Review Commission To the Governor and The General Assembly of Virginia

¹³ H.R. Doc. No. 87 at 224 (2006).

Transmission lines are common in urban areas and their effect on the built environment have been widely researched. Previous studies have indicated that transmission lines have either a small or no discernable impact on property values, and that where an effect is found, it tends to diminish rapidly with distance from the line and to dissipate over time.¹⁴

In the development of transmission lines, the largest cost component in underground lines is materials, such as cables and insulating fluid. The thickness of underground cables, needed to provide appropriate insulation, adds to the expense of placing lines underground. Also, the labor cost associated with installing underground or vaulted structures and burying cable are higher than the cost of installing overhead towers and running wires between them. Cost estimates indicate that underground lines typically cost between \$4 million and \$10 million per mile, depending on factors such as voltage levels and capacity requirements.¹⁵ Georgia Power currently maintains and manages less than 20 miles of underground transmission lines.¹⁶

Innovative conveyance system for transmission lines are being explored by municipalities across the county. For example, the Chaplain Hudson Power Express project will carry 1,000 megawatts on two 5” High Voltage direct current cables under Lake Champlain and buried along a CSX railway. The power line might present opportunities for new bike and pedestrian trails, using railroad right-of-ways. Work is scheduled to start in 2011 and the line would go into service by 2015.¹⁷

¹⁴ H.R. Doc. No. 87 at 224 (2006).

¹⁵ Chalmers, James A., and Frank A. Voorvaart. "High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects." *The Appraisal Journal* (2009): 227-45. Print.

¹⁶ Southern Company. "Transmission." *Georgia Power*. 2011. Web. 02 Apr. 2011.
<<http://www.georgiapower.com/>>.

¹⁷ "About the Project" *Transmission Developers, Inc.* 2011. Web. 02 Apr. 2011.
<<http://www.chpexpress.com/about.php>>

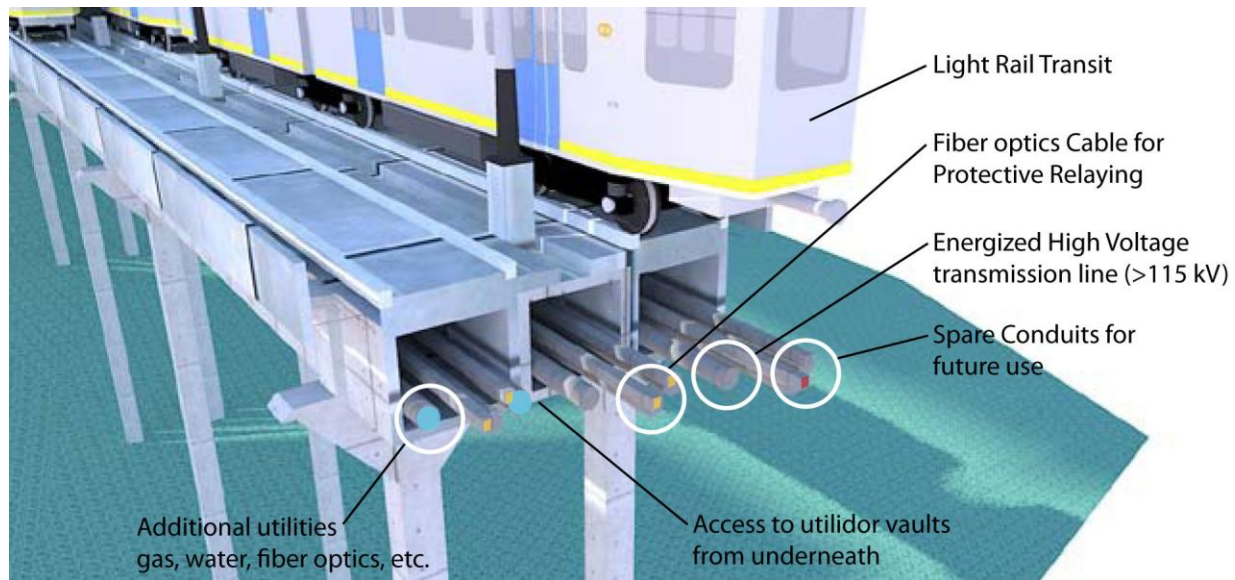


Figure 9 – Section/perspective of utilidor. Created by author.

3.2 ARTC – Light Rail Network

The purpose of the mass transit component of the ARTC - light rail network would provide residents access to regional employment, entertainment, cultural, and retail destinations. Additionally, residents of metro Atlanta would have alternative options to automobile travel, where population and employment are anticipated to increase significantly by 2030.¹⁸ Access to the existing MARTA rail network would not only boost MARTA ridership but also improve effectiveness of the existing vehicular network in metro Atlanta by taking cars off the roadways.

Figure 10 illustrates the proposed light rail network. Stations along the corridor are classified into four unique types: Regional Connectors, Urban Centers, Retail Streets, and Neighborhoods. Each classification type is illustrated through perspectives and graphic vignettes

¹⁸ Atlanta Regional Commission. "Plan 2040." *Atlanta Regional Commission*. 2011. Web. 02 Apr. 2011. <<http://www.atlantaregional.com/>>.

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Places	Regional Connector	Urban Center	Retail Street	Neighborhood
Activity	Intermodal facility and transit hub. office, retail, industrial, residential, civic services	residential, retail, office, civic uses, entertainment districts	residential, retail	residential
Housing Types	multi-family	multi-family, loft condominiums, townhomes	townhomes, duplexes, loft condominiums	duplex, single family residential
Employment	Regional workplace. >200,000 sf of office, >200,000 sf of manufacturing, >50,000 sf of retail	Sub-Regional workplace. >250,000 sf of office, >50,000 sf of retail	Local-Serving Retail. No more than 50,000 sf	Sole Proprietorship Services.
Proposed Scale	varies	3 stories and above	1-4 stories	1-2 stories
Connectivity	Major regional destination. Links to lt. rail, interstates, major arterials, bus, bike/pedestrian trails	Sub-Regional destination. Links to lt. rail, major arterial, bus, bike/pedestrian trails	Local destination. Links to lt. rail, bus, arterial road, minimal parking, bike/pedestrian trails	Feeder population, not a destination. Links to bus, local roads, bike/pedestrian trails
Local Examples	Cobb Junction, Spring Junction, Gwinnett Junction	Marietta, Norcross, Morgan Falls	Cobb Pkwy, Marietta Pkwy, Peachtree Boulevard	Old Canton, Mount Bethel, Mount Vernon, Perimeter College
Color Code				
Examples				

Table 1 - Station Classifications. Created by author.

At Regional Connector Stations, intermodal facilities and transit hubs like the one proposed for the Cobb Junction provide easy access for commuters to the interstate system.

Initial development for the area would largely be park-n-ride facilities. The facilities would take advantage of interstate right-of-ways for the siting of structures, like the park-n-ride deck pictured in figure 29. Additionally, Regional Connector Stations would provide links to light rail stations, the MARTA rail network, interstates, major arterial roads, bus lines, bike trails, and walking paths.

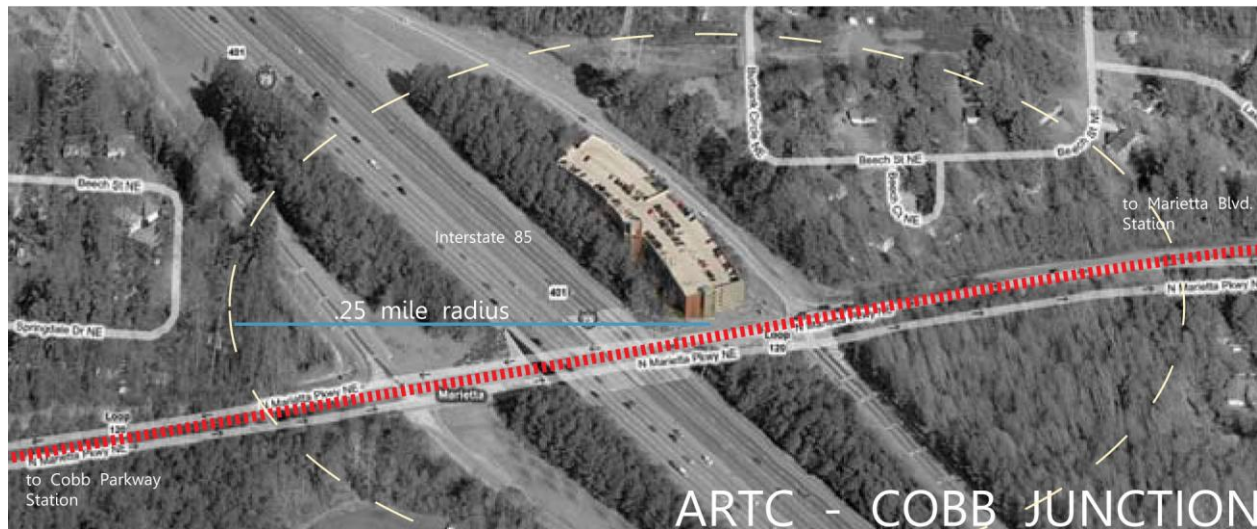


Figure 11 - Proposed build-out of the ARTC - light rail network at Cobb Junction. Map Source: Bing Maps. Created by author.

Urban Center Stations provide access to municipal civic facilities and entertainment districts. Light rail stations in urban centers like the one proposed in downtown Marietta, provide links to popular destinations where residents can have access to movie theaters, restaurants, shopping centers, and businesses. This type of station eases the dependency on parking and provides more available space for infill development. With the need for vehicular parking in lesser demand, urban centers like Marietta can use city owned surface parking lots for the site of light rail stations.

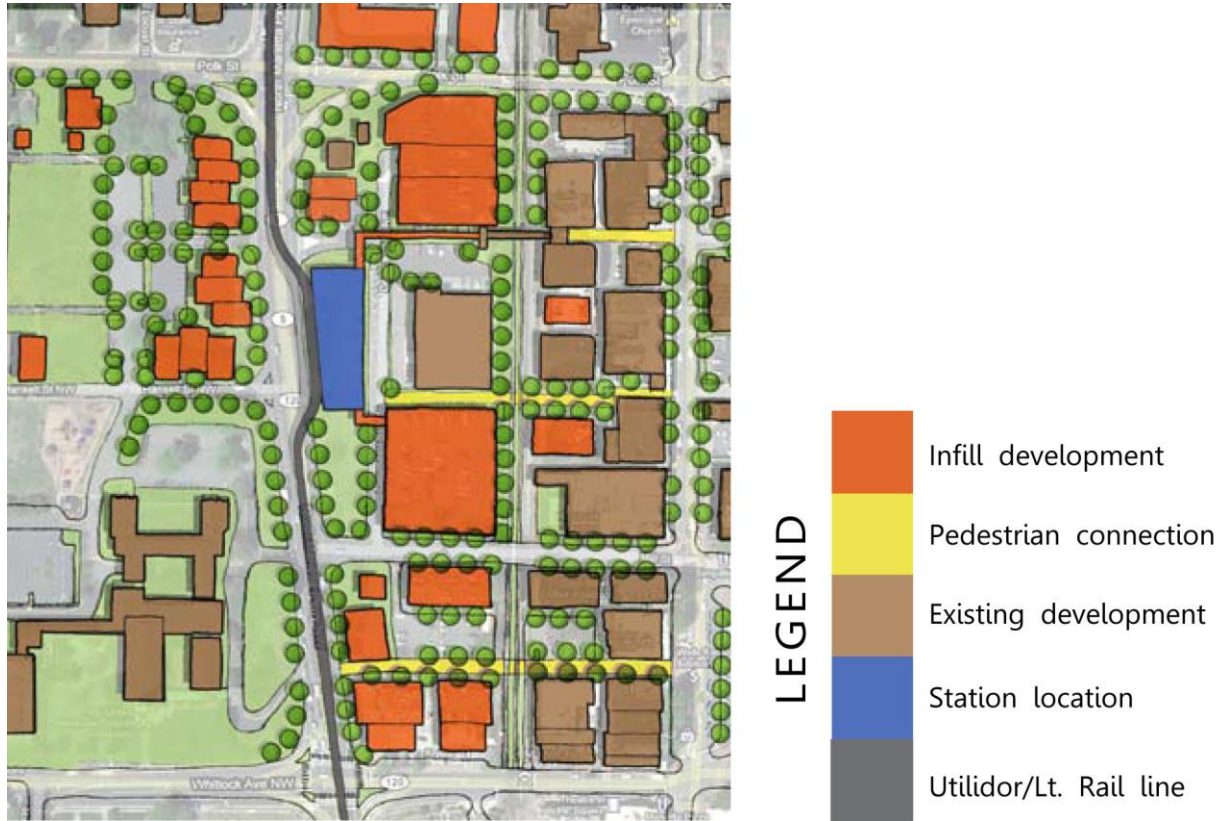


Figure 12 - Proposed infill of ARTC - light rail network at Marietta Station. Data Source: ARC. Created by author.

Retail Street Stations on the ARTC Rail network are aimed at supporting mixed-use developments for living, work, and play. For example, with the implementation of a transit station, the area around Peachtree Boulevard Station becomes ripe for transit-oriented development (TOD). The design goal of a TOD is to improve the convenience of transit for residents. TODs support multiple development projects, a mix of uses, and a walkable and bikeable network of streets.



Figure 13 - Transmission line easement on Jones Mill Rd. and Peachtree Boulevard. Photo by author.



Figure 14 - Transit-oriented development at ARTC - Peachtree Boulevard Station. Created by author.

Neighborhood Stations would exhibit low-impact development practices in the siting and design of feeder light rail stations. Stations in existing bedroom communities would be designed to blend into the surrounding landscape. Restrictions on private property along the ROW of the corridor would be lessened to allow for more usability on behalf of the land owner. No parking would be available in neighborhood stations.



Figure 15 - Aerial of residential neighborhood in Dunwoody, Georgia. Data Source: Bing Maps.



Figure 16 - Typical low-impact ARTC - Neighborhood light rail stop. Data Source: Bing Maps. Created by author.





System	Lynx - Blue Line	Metro Transit - Hiawatha line	Valley METRO line	I-85 LRT
City, State	Charlotte, NC	Minneapolis, MN	Phoenix, AZ	Gwinnett Co., GA
Year Built	2007	2004	2008	proposed
Length	9.6 miles	12 miles	20 miles	13.8 miles
Cost per Mile	~ \$45 million	~ \$60 million	~ \$73 million	~ \$70 million
Projected Ridership	~ 9,000 (opening year)	~ 25,000 (year 2020) ~19,000 (opening year)	~ 26,000 (opening year)	~ 11,000 (year 2030)
Existing Ridership	20,000 (2010)	~ 31,000 (2010)	34,000 (2010)	N/A
				

Table 2 - Precendents - Light Rail Systems. Created by author.

3.3 Multi-use Trail

A multi-use trail within the right-of-way of the utilidor can accomodate walkers, runners, cyclists, hikers, and other non-motorized users.¹⁹ Trail systems like the one shown on the right offers numerous aesthetic and recreational opportunities, as well as commuter options for traveling to and from destinations. A multi-use trail system within the ARTC can become a vital component of the transportation network of metro Atlanta. This same configuration is proposed along Atlanta's Beltline project.

The 2010 North Fulton County Comprehensive Transportation Plan (CTP) includes the Morgan Falls/Power Easement multi-use trail (Project # BP103) as Tier 1 project for implementation. Tier 1 projects are generally the highest priority of projects specific to North Fulton and conceivably could be funded using traditional funding sources. The project purports to, "construct a multi-use trail within power line easement from existing trail system in Cobb County, crossing Chattahoochee River with new bicycle and pedestrian bridge, through Morgan Falls Park, east to Colquitt Road, north to Pitts Road - Project to link to other on road bike facilities, including City of Dunwoody." The North Fulton CTP is a study of the regional transportation system of the six cities of North Fulton: Sandy Springs, Roswell, Johns Creek, Alpharetta, Milton, and Mountain Park. The study has been funded through a joint effort of the cities and the Atlanta Regional Commission (ARC) for the purpose of identifying cross-jurisdictional transportation priorities in a time of limited financial resources. The results from the study are detailed in ARC's Transportation Resource Implementation Plan (available at www.atlantaregional.com/nfctp).

¹⁹ CSRA Regional Development Center. *Multi-use Trails Plan*. Rep. Washington, GA, 2008. Print.

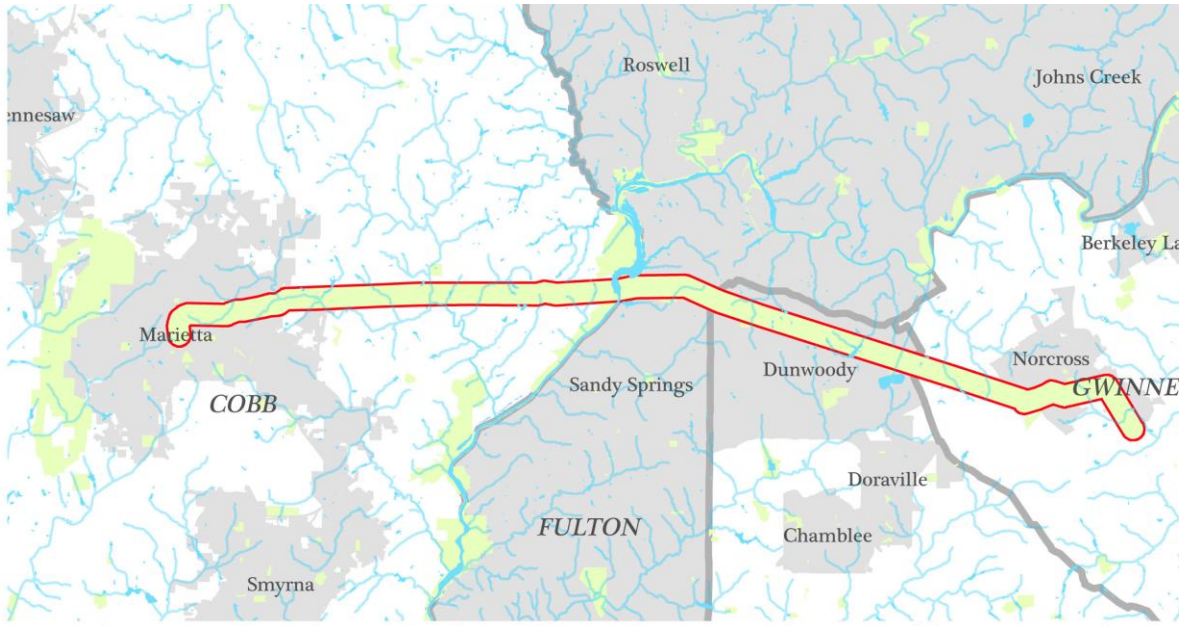


Figure 17 - Ecological corridor. Data source: ARC. Created by author.

3.4 Ecological Corridor

Currently the Morgan Falls power easement carries certain restrictions to how a land owner can use the property. With the creation of the ARTC, some restrictions on the right-of-way of the former transmission line easement would be altered. A property owner would then be able to use their land for uses previously impermissible or have the option of establishing a conservation easement on the property.

The land treatment within the right-of-way of the utilidor will be planted and maintained to perpetuate the local flora and fauna with the goal of creating a biodiverse corridor. The continuous habitat corridor counteracts habitat loss and fragmentation, the leading cause of imperilment for 85 percent of the endangered and threatened species under the U.S. Endangered Species Act.²⁰ Wildlife access to the various ecosystems along easement will help to sustain populations of native and rare species.



Figure 18 - Grade separated crossing in residential neighborhood

²⁰ Farr, Douglas, Rebecca L. Kihlslinger, Jessica Wilkerson, and James McElfish. "Biodiversity Corridors." *Sustainable Urbanism: Urban Design with Nature*. Hoboken, NJ: Wiley, 2008. Print.

3.5 Topographic Advantage

The topography along the ARTC – North rim ranges from Dunwoody at 1,130 feet above sea level to 866 feet at the Chattahoochee River. The corridor traverses a diverse terrain of rolling hills, grassy meadows, steep embankments, ephemeral streams, and sensitive wetlands. Urban developments of Norcross, Sandy Springs, and Marietta, occur at the highest elevation points on the Morgan Falls power easement while subdivisions and residential neighborhood largely make up the developments in the low elevation areas. Gradients for a light rail systems should not exceed 4%, resulting in a relatively constant elevation for the utilidor. As a benefit to local vehicular traffic as well as pedestrian and wildlife movement, the utilidor makes grade-separated crossings when intersecting vehicular roadways and ecologically sensitive lowlands. In urban developed areas like Roswell Road in Sandy Springs, the utilidor would pass underneath the arterial road. By passing either below or above vehicular roads and passing over sensitive wetlands and streams, the path of the utilidor enables a safer and more environmentally friendly conveyance system.

The space between the disturbance limits of each transmission tower allows for the construction of the utilidor structure without a disruption of service to residents. Both a multi-use trail and utilidor equipped with light rail, transmission, gas, and communication lines can be accommodated in a minimum right-of-way width of 50 feet. This allows for the construction of a new utility conveyance system without the disruption of utility services to their customers.

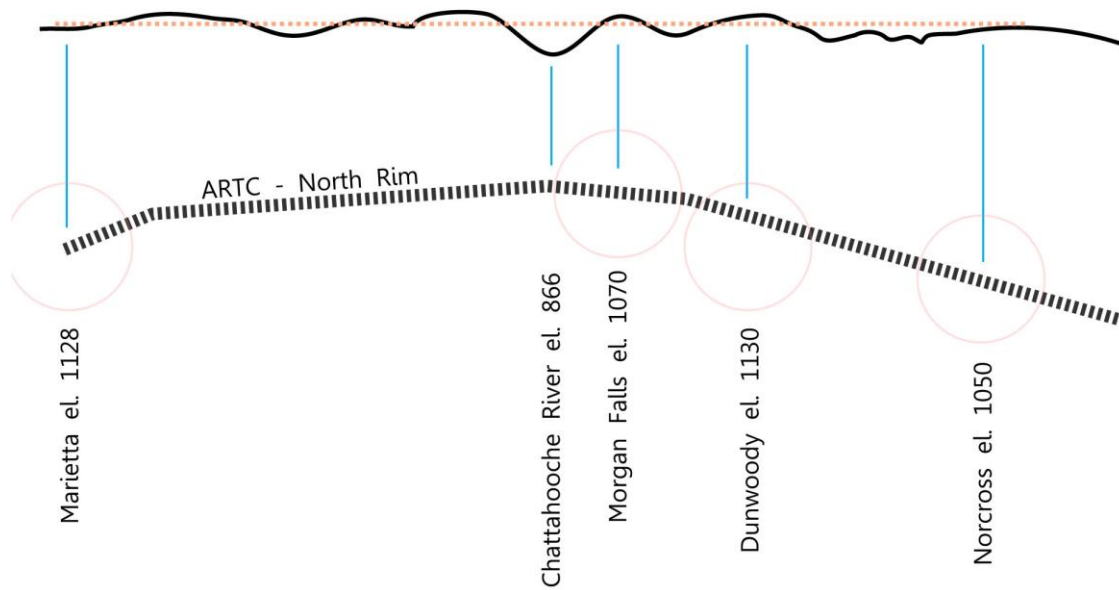


Figure 19 - Elevation profile along ARTC - North Rim. Created by author.

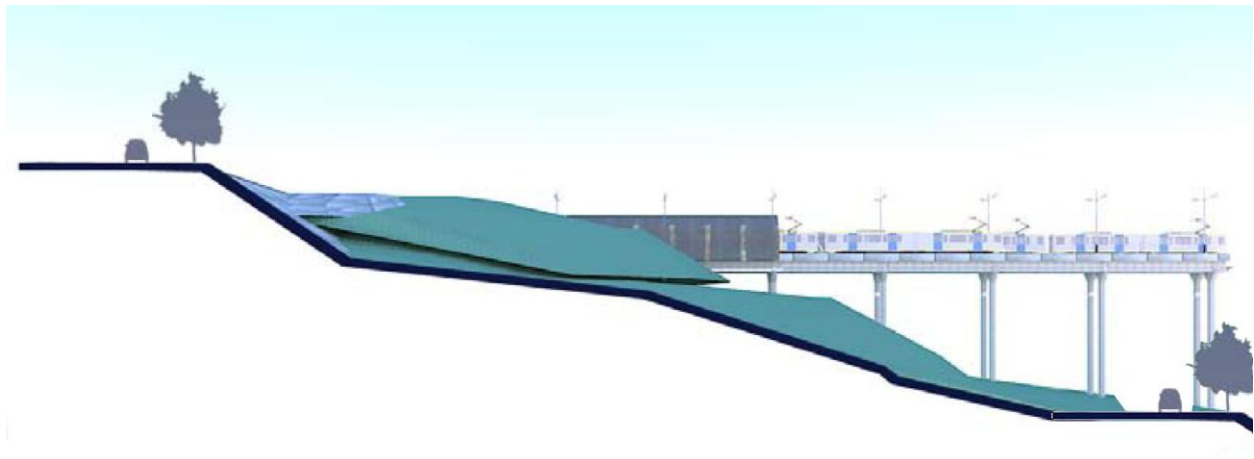


Figure 20 – Grade separated crossing. Created by author.

CHAPTER 4

LEGAL SUMMARY

“Think of transmission lines as the highways of electricity.”²¹

This section of the proposal is meant to provide a legal summary of easements and the dedication of their purpose. The report offers some decisions from courts around the country in an attempt to exhibit the legal feasibility of the proposal. It is not an exhaustive analysis on the subject. This legal summary will briefly explain what a legal easement is, how they are governed, how they are acquired, how they are dedicated, and when their dedication changes.

4.1 Easements

Easement - A right, such as a right of way, afforded a person to make limited use of another's real property.²²

For the purposes of this project, an easement provides access for construction and maintenance and limits development to ensure the reliability of the transmission line and public safety. Where a route that is approved by the Georgia Public Service Commission (GPSC) crosses private land, land rights must be acquired from landowners. Utility companies offer fair

²¹ Southern Company. "Transmission." *Georgia Power*. 2011. Web. 02 Apr. 2011. <<http://www.georgiapower.com/>>.

²² <http://www.answers.com/topic/easement#ixzz1J9P1j0cb>

market value to acquire an easement on the land while the landowner retains full ownership of the property.²³ Through legislation, the State may primarily exercise the right for any public purpose, but there is no limitation which prevents the State from delegating to others the authority to exercise its right of eminent domain for any public use or purpose.²⁴ When purchasing an easement, the acquisition of any private land must provide fair and reasonable compensation to landowners who may have transmission facilities on their property.²⁵

4.2 Governing Easements

In order to safeguard the public's interest, the lawmakers of the General Assembly exercised its sovereign right to eminent domain and granted its exercise to a private corporation, the GPSC.²⁶ The mission of the GPSC is to exercise its authority and influence to ensure that consumers receive safe, reliable, and reasonably priced telecommunications, transportation, electric, and natural gas services from financially viable and technically competent companies.²⁷

4.3 Acquiring Easements

Through the State's police power, the GPSC is granted the following powers, but not limited to:

²³ <http://www.dynamicdrive.com/style/>, Dynamic Drive: "Frequently Asked Questions." *Heartland Transmission Project*. Web. 02 Apr. 2011. <<http://heartlandtransmission.ca/new/faq.asp?ID=6>>.

²⁴ OFFICIAL CODE OF GEORGIA ANNOTATED O.C.G.A. § 22-2-102.1 (2010) *Official Code of Georgia Annotated*. Charlottesville, VA: LexisNexis, 1982. Print.

²⁵ <http://www.dynamicdrive.com/style/>, Dynamic Drive: "Frequently Asked Questions." *Heartland Transmission Project*. Web. 02 Apr. 2011. <<http://heartlandtransmission.ca/new/faq.asp?ID=6>>.

²⁶ *Nolan v. Central Georgia Power Co.*, 134 Ga. 201, 210 (Ga. 1910)

²⁷ <http://www.psc.state.ga.us/>

To purchase; take; receive by gift, will, or otherwise; lease; or otherwise acquire, own, hold, improve, use, and otherwise deal in and with real or personal property or any interest therein, wherever situated;²⁸

To sell, convey, lease, exchange, transfer, and otherwise dispose of all or any part of its property and assets or any interest therein, wherever situated;²⁹

The GPSC may also condemn property for any public use where they find necessary to fulfill a public need. The Commission is charged with providing “quick and effective adjudication of the just and adequate compensation to be paid the owner or owners of such property.”^{30 31}

4.4 Dedicating Easements

Dedication - “An appropriation to some public use, made by the owner, and accepted for such use by or on behalf of the public.”³²

The courts leave it up to the General Assembly (which pass along the responsibility to the Georgia Public Service Commission) to come up with the reason why the public would benefit from a taking. Where the dedication, expressed or implied, is made for a specific purpose, the public authorities have no power to use the property for any other purpose than the one

²⁸ O.C.G.A. § 46-3-201

²⁹ O.C.G.A. § 46-3-201

³⁰³⁰ O.C.G.A. § 22-1-10

³¹ Roles and responsibility of the Commission furthered by § 22-2-102.1 (2010) of the OFFICIAL CODE OF GEORGIA ANNOTATED O.C.G.A.

³² Black’s Law Dictionary, 500

designated in the dedication.³³ Georgia courts have expressed that easement agreements between homeowners and utility companies must clearly and unambiguously express intent.³⁴

The case of *Pierce v. Drew*, decided by the Supreme Court of Massachusetts expands the definition of “a business of public character” and explains that a highway can mean more than just a conveyance system for cars. “If the use of property already appropriated to certain public uses is to be deemed of itself an exercise of the right of eminent domain, the determination of the legislature that the purpose for which it now directs it to be taken is a public use, is not necessarily conclusive; but, if the use be public, it is conclusive that the necessity exists which requires it to be taken. The transmission of intelligence by electricity is a business of public character, to be exercised under public control, in the same manner as transportation of goods or passengers by railroads.”³⁵

4.5 When an Easement’s Dedication Changes

Although authorities cannot change the purpose of an easement dedication, allowing different users to utilize public easements is permissible as long as they do not illegitimately disrupt the initial purpose.

The Ohio Supreme Court held that the grant for an additional public use and purpose along a previously dedicated right-of-way is not violated by adding another utility. The court found that “public use and purpose is not violated by the employment of the right of way for telephone lines, which is also a public purpose.”³⁶ The Ohio Court went on to include, “street

³³ *Donalson v. Georgia Power & Light Co.*, 175 Ga. 462 (Ga. 1932)

³⁴ *Mun. Elec. Auth. v. Gold-Arrow Farms*, 276 Ga. App. 862 (Ga. Ct. App. 2005)

³⁵ *Pierce v. Drew* [NO NUMBER IN ORIGINAL], SUPREME COURT OF MASSACHUSETTS, 136 Mass. 75; 1883 Mass. LEXIS 169, October 20, 1883, Decided

³⁶ *Citizens' Telephone Co. v. Cincinnati, N. O. & T. P. Railway Co.*, 192 Ky. 399

railroads, interurban lines and telegraph lines are embraced in this exception.”³⁷ Generally, “the manner, frequency, and intensity of use of the servient estate may change to take advantage of developments in technology...” as long as the change does not “cause unreasonable damage to the servient estate or unreasonably interfere with its enjoyment.”³⁸ The rule recognizes that uses reasonably necessary for enjoyment of an easement may change over time with technology. Because this kind of change in the use of an easement amounts to change in the degree of use rather than in the kind of use, it remains within the scope of and does not violate the existing easement.³⁹

The Official Code of Georgia (OCGA) § 46-5-1 states the guidelines for the exercise of power of eminent domain by telephone and telegraph companies. OCGA § 46-5-1 gives any telephone or telegraph company “the right to construct, maintain, and operate its lines and facilities upon, under, along, and over the public roads and highways and rights of way of this state with the approval of the county or municipal authorities in charge of such roads, highways, and rights of way.”⁴⁰

4.6 Conclusion

Assuming that OCGA § 46-5-1 applies to the ARTC proposal, and assuming the “rights-of-way” provision could include the GPSC easement rights-of-way, OCGA unambiguously does not include condemnation of structures such as power company towers, poles, and lines.

The legal framework surrounding public easements is based on the idea that our public right of ways, dedications, easements, and public land is for a public purpose to fulfill a public

³⁷ *Citizens' Telephone Co. v. Cincinnati*

³⁸ *Restatement of the Law, Third, Property (Servitudes)*, § 4.10

³⁹ *Faulkner v. Ga. Power Co.*, 243 Ga. 649, 650 (256 SE2d 339) (1979);

⁴⁰ O.C.G.A. § 46-5-1 1(a)

need. With technological advancements and growing public needs, the degree of easement use will evolve to meet the public's changing needs.

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Constitution, art. 4, sec. 2, par. 2 (Civil Code, § 5798).

Nolan v. Central Georgia Power Co., 134 Ga. 201, 210 (Ga. 1910)

Donalson v. Georgia Power & Light Co., 175 Ga. 462 (Ga. 1932)

Pierce v. Drew [NO NUMBER IN ORIGINAL], SUPREME COURT OF MASSACHUSETTS, 136 Mass. 75; 1883 Mass. LEXIS 169, October 20, 1883, Decided

Citizens' Telephone Co. v. Cincinnati, N. O. & T. P. Railway Co., 192 Ky. 399

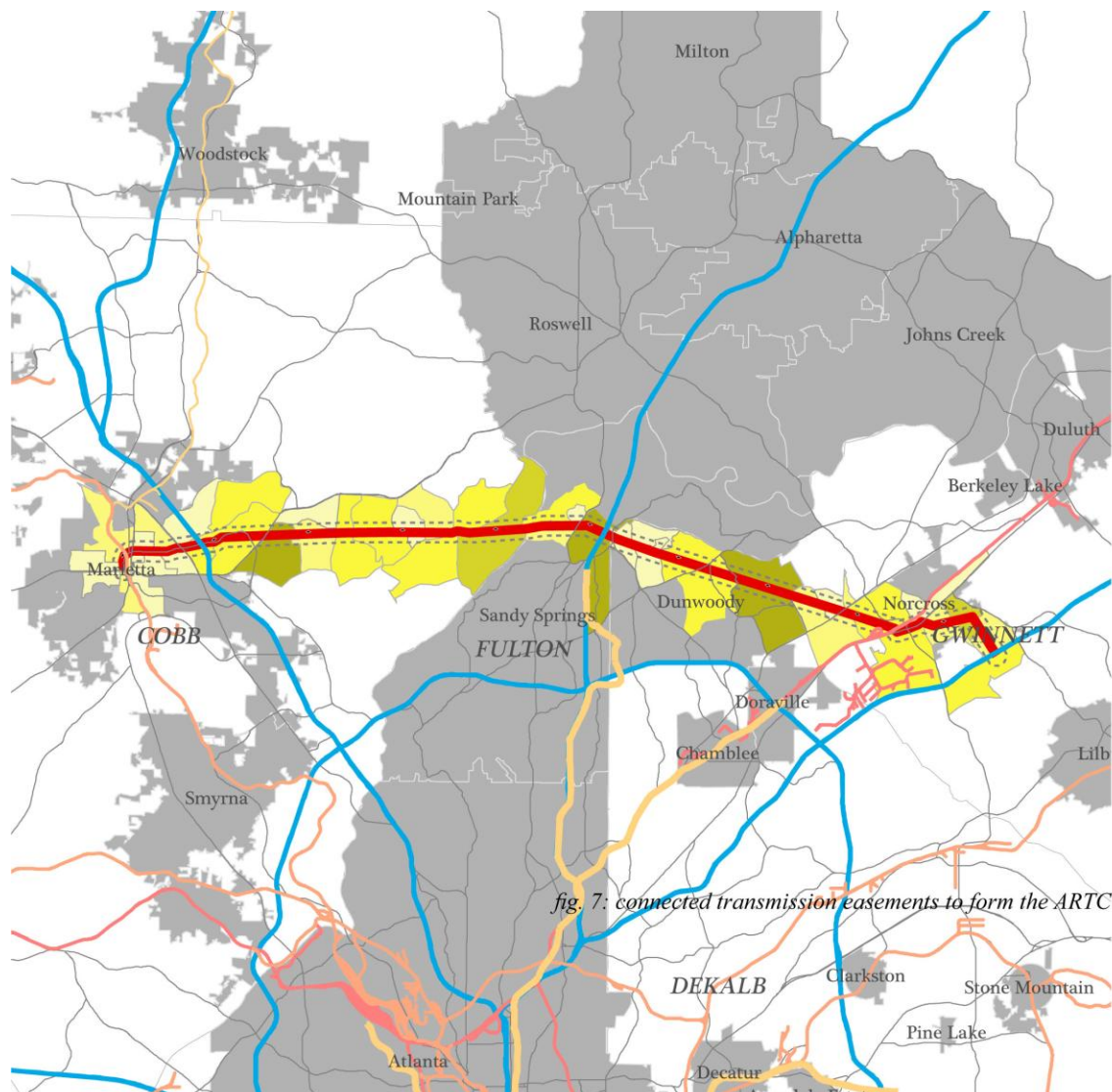
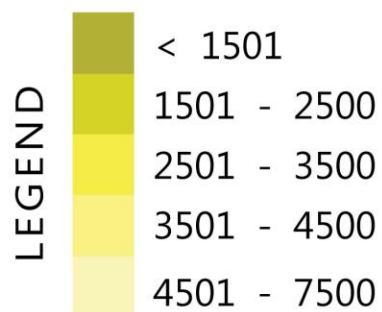
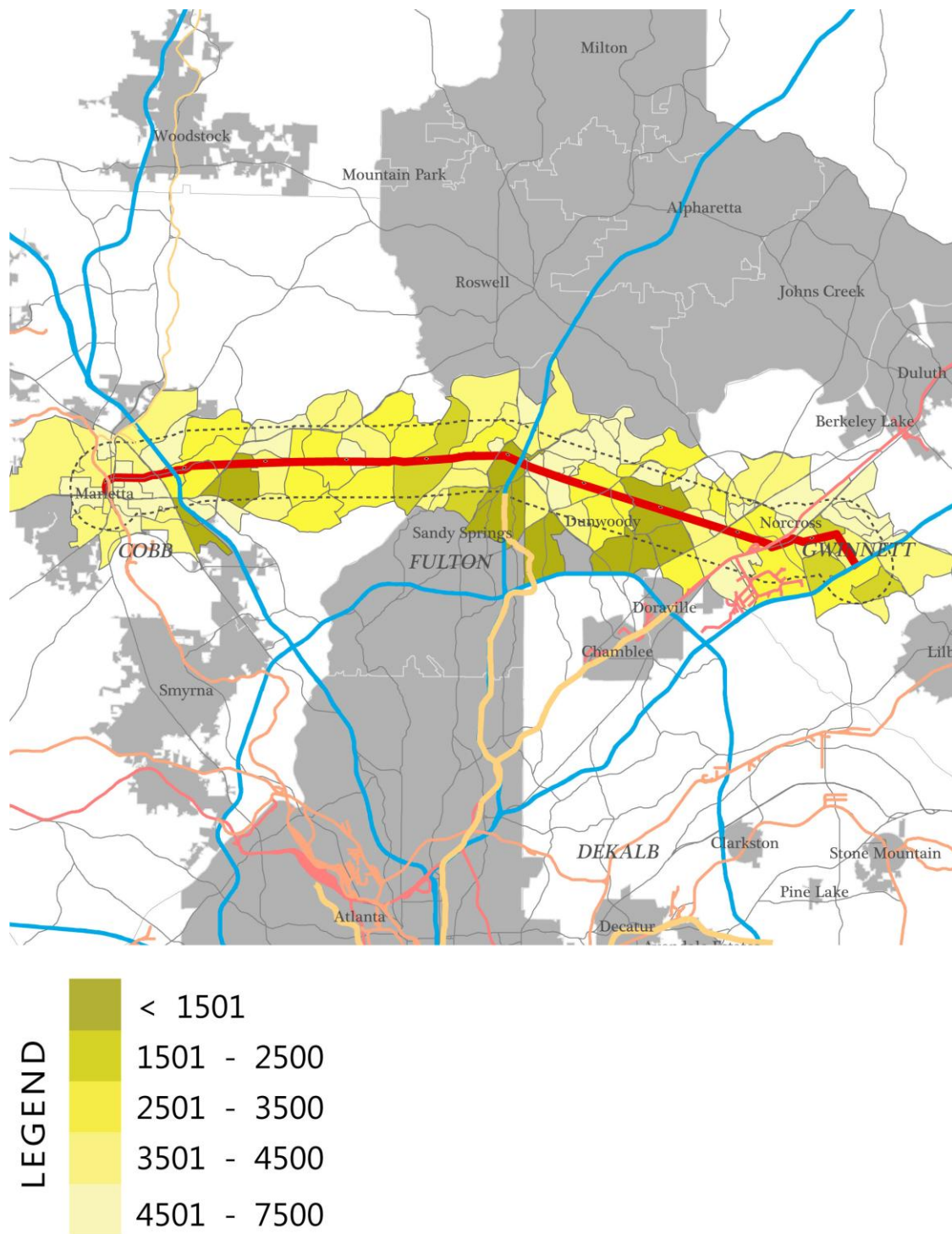


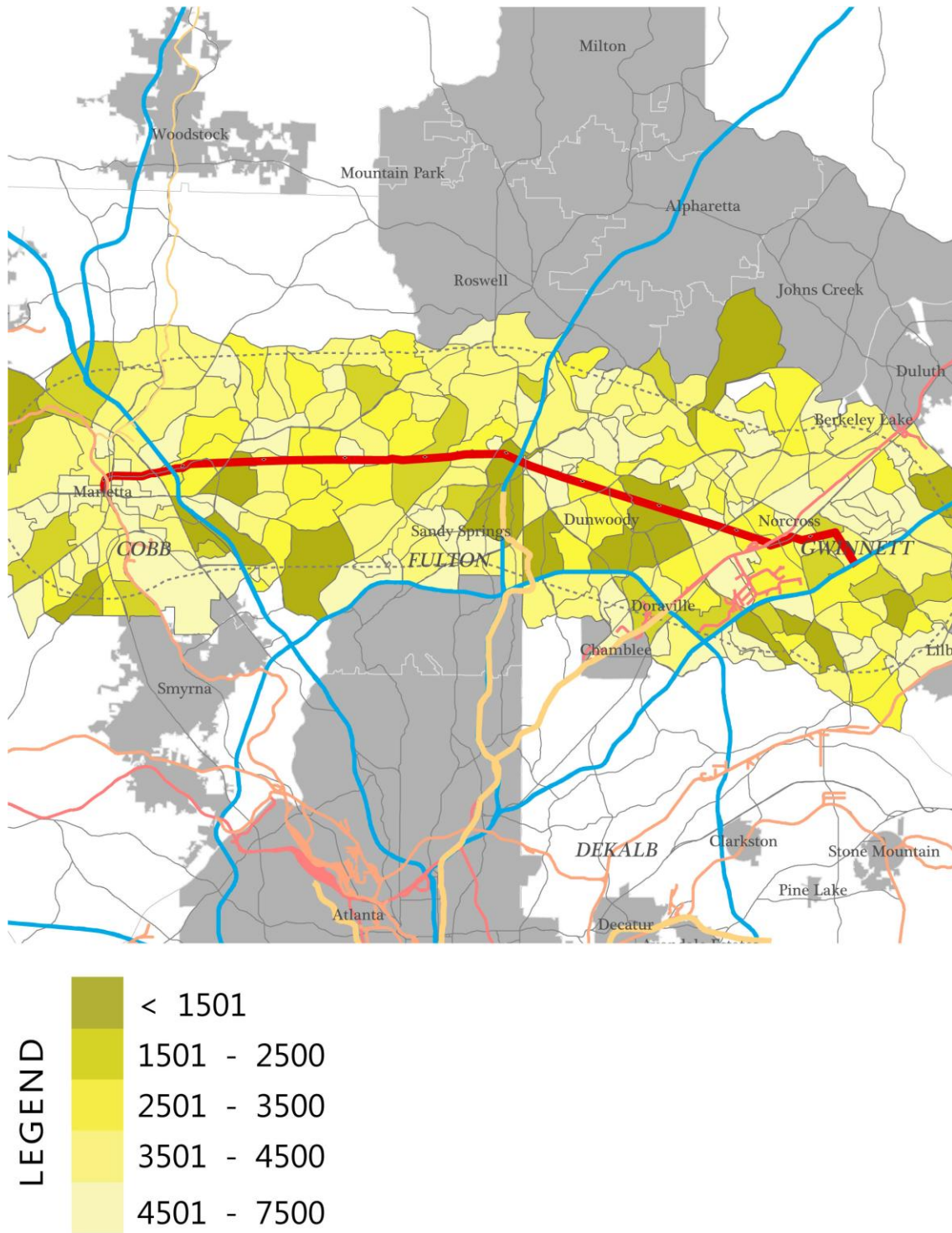
fig. 7: connected transmission easements to form the ARTC



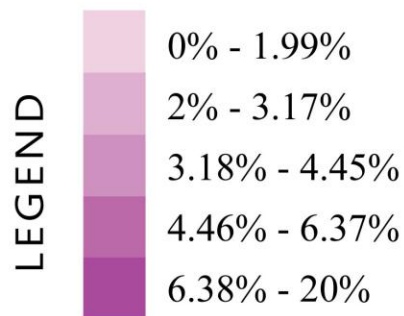
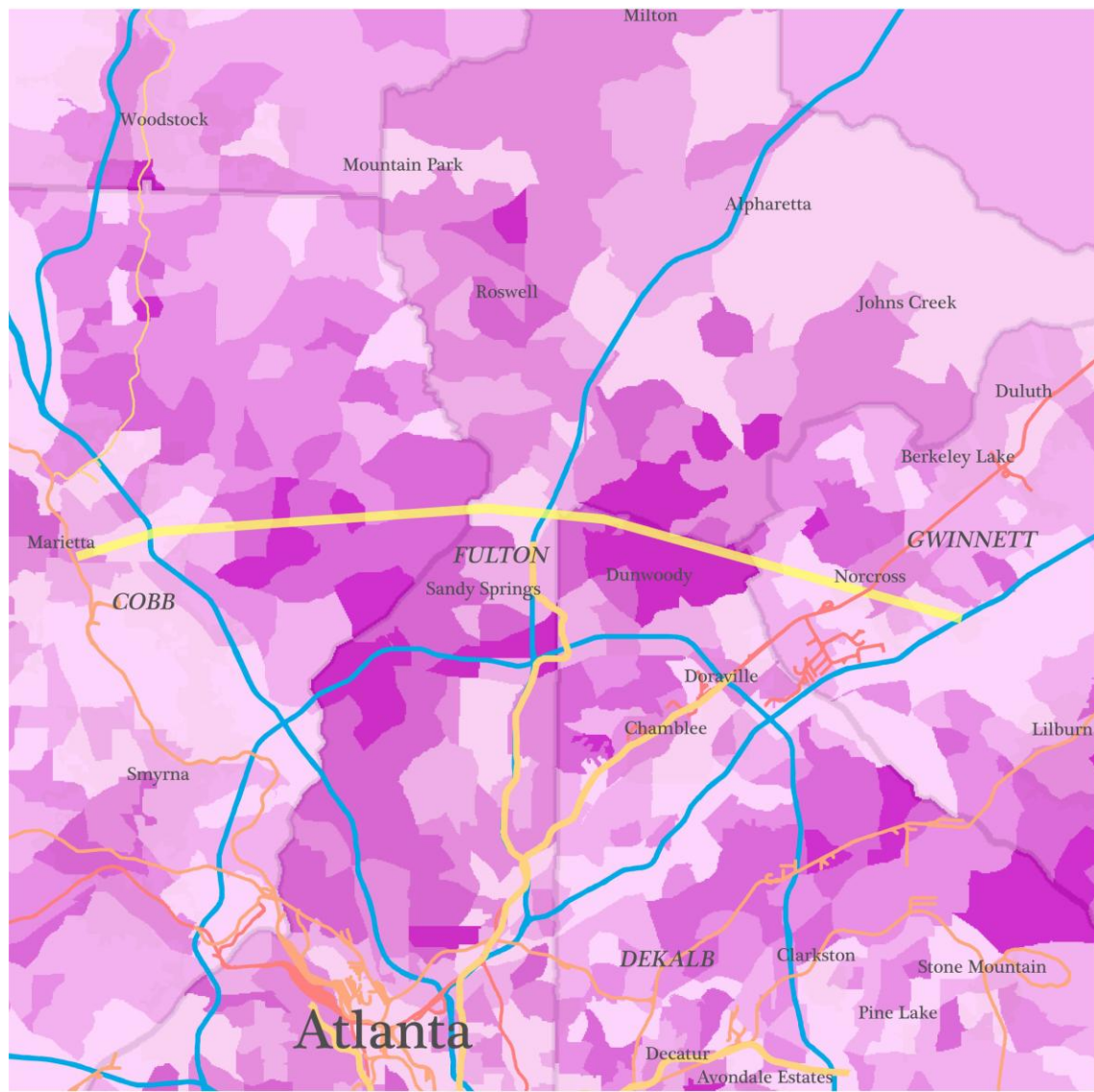
A - Population count of block groups within a .5-mile radius of the ARTC - North Rim study area: 104,564.
Data Source: ARC. Map created by author.



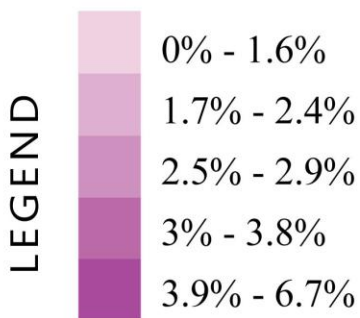
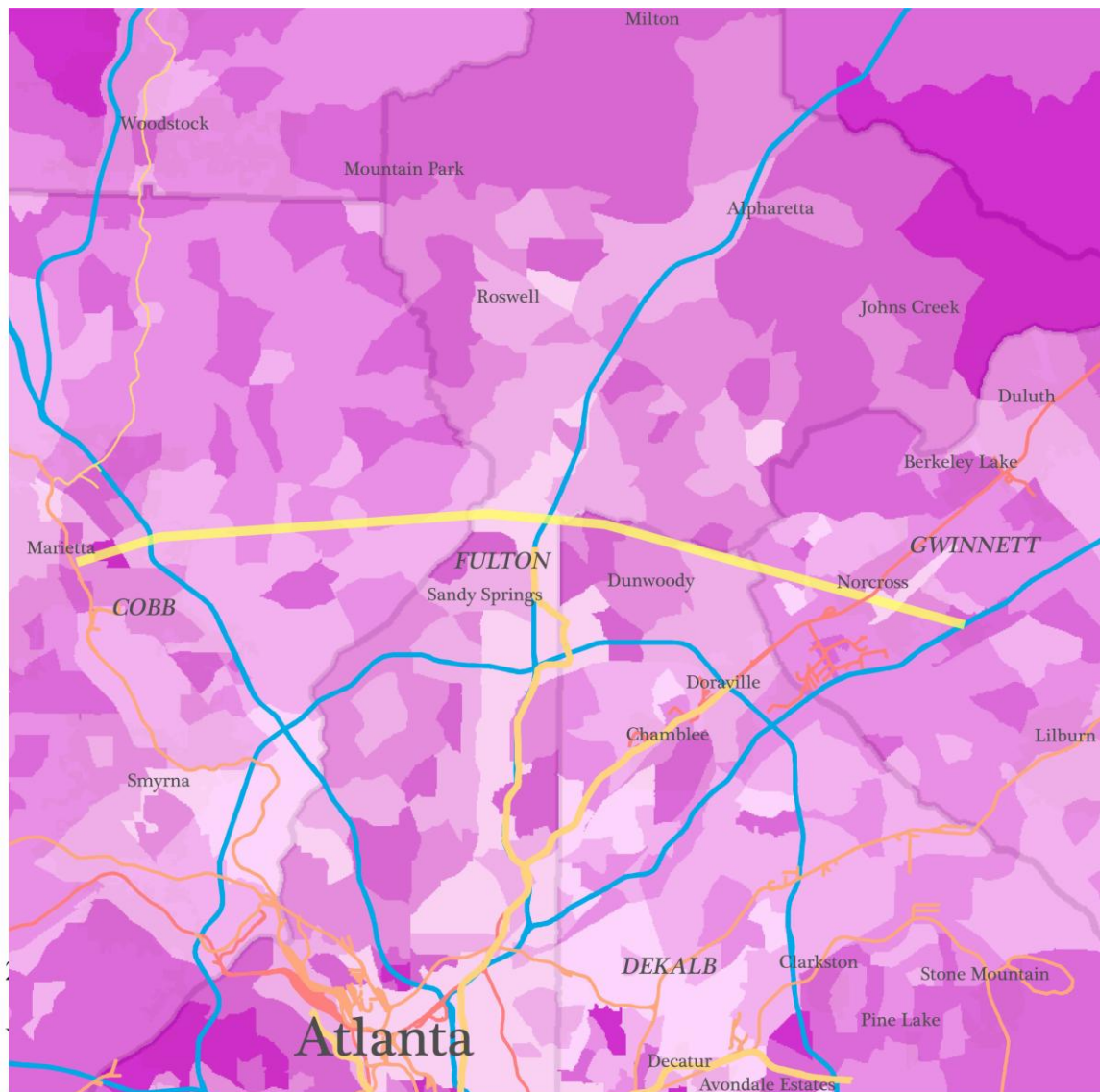
B - Population count of block groups within 1-mile radius of the ARTC - North Rim study area: 215,100.
 Data Source: ARC. Map created by author.



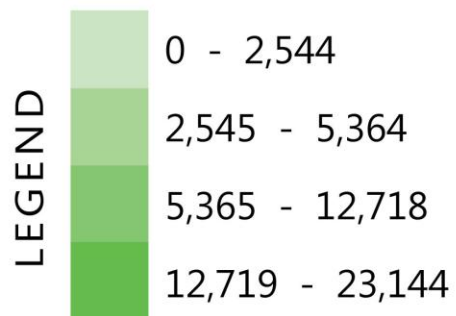
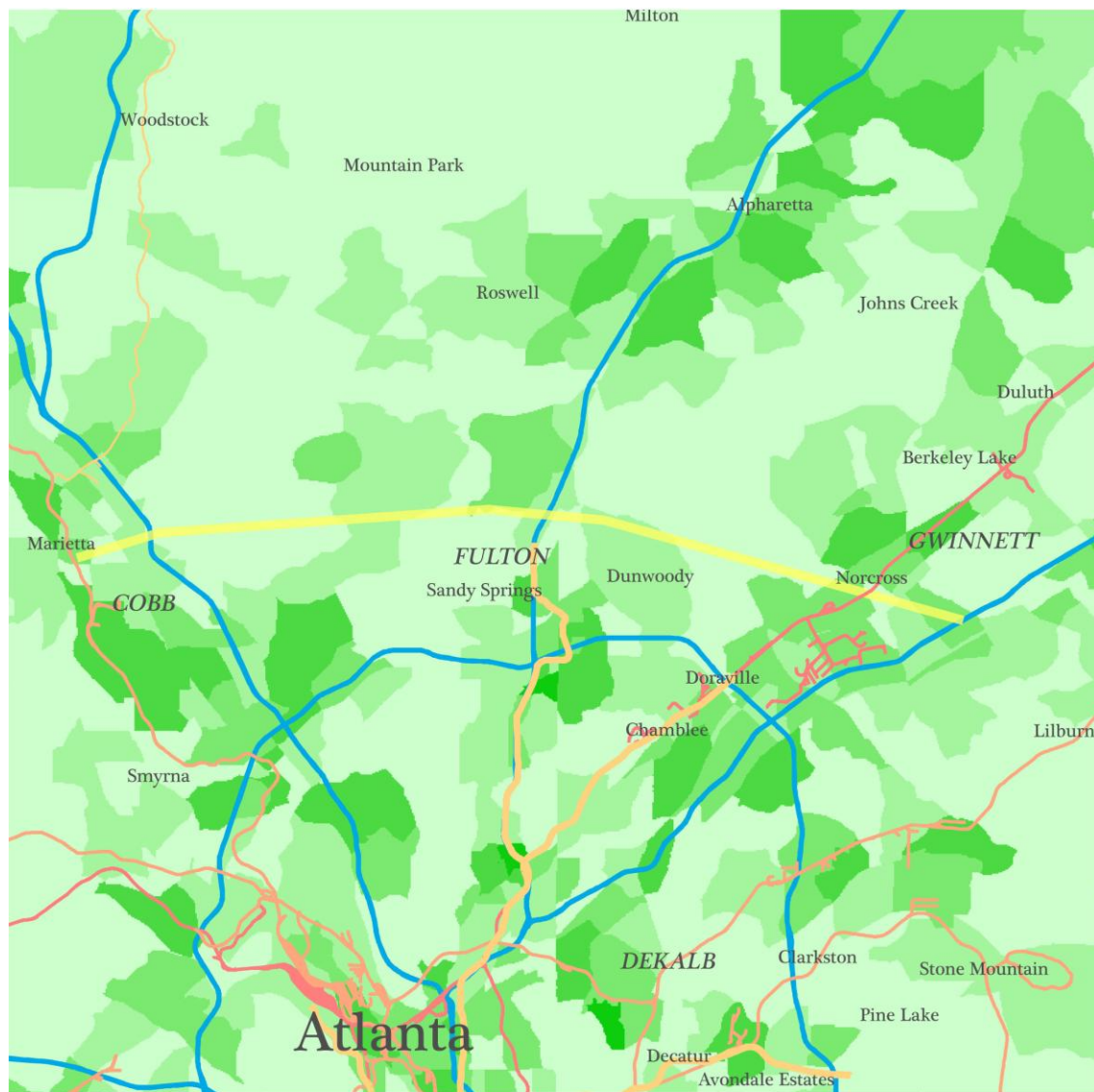
C - Population count of block groups within 3-mile radius of the ARTC - North Rim study area: 215,100.
Data Source: ARC. Map created by author.



D – Demographic Data - % 65+ Years of Age: The yellow line indicates the ARTC - North Rim. Data Source: ARC. Map created by author.



E - Demographic Data - % Under 20 Years of Age: The yellow line indicates the ARTC - North Rim. Data Source: ARC. Map created by author.



F - Employment Data: The yellow line indicates the ARTC - North Rim. Data Source: ARC. Map created by author.