milton on the move

City of Milton Transportation Plan

D R A F T

Comprehensive Transportation Plan

Needs Assessment Report





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City of Milton, GA

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1.0 NEEDS ASSESSMENT REPORT INTRODUCTION

1.1 Purpose

The Needs Assessment Report is a summary of identified transportation needs that are either currently existing or will exist in the future given present trends. This is the second report as part of the overall effort to develop the Milton Comprehensive Transportation Plan (CTP). This report builds on information compiled in the *Inventory of Existing Conditions Report* issued in April 2009, as well as additional analysis that has been completed since that time. The report also incorporates results from the travel demand model analysis that has been performed for this project. Additional transportation needs have also been identified through significant public involvement in the form of public meetings, the Transportation Stakeholder Advisory Committee (TSAC), the Comprehensive Plan Advisory Committee (CPAC), and other public comments collected during the development of the Milton Comprehensive Plan.

1.2 Evaluation Framework

The Needs Assessment phase seeks to identify the many specific needs for a very diverse set of transportation network users. In order to gauge a Comprehensive Transportation Plan's effectiveness at addressing those needs, an evaluation framework should be established. This framework should be rooted in the vision and goals defined at the start of development of the Comprehensive Transportation Plan.

The vision for the transportation plan, as adopted from the City of Milton Comprehensive Plan, provides an overall sense of direction that guides the evaluation framework as a whole:

"Milton is a distinctive community embracing small town life and heritage while preserving our rural character."

While the goals themselves are very general, more specific objectives can be drawn from each goal to provide direction for the transportation plan. These objectives, which make up the evaluation framework for the transportation plan, ensure that the plan needs and recommendations maintain relevance to the critical needs identified at the beginning of the planning process. The defined goals, and their related objectives, can be seen below.

1-1: Evaluation Framework Goals & Objectives

Goal	Objectives
Improve transportation network system level performance (level of service) with particular emphasis on the impacts of commuter/"cut through" traffic and safety.	• Provide specific paths for cut-through commuters • Improve system for local trips • Improve and preserve existing levels of service • Identify high-accident locations and recommend improvements to achieve better safety • Improve safety for pedestrians and cyclists by upgrading facilities for alternative modes of transportation
Maintain and improve mobility and system performance through roadway improvements and alternative transportation improvements with specific consideration of transit investments appropriate to the community vision and multi-use paths serving cyclists, pedestrians, equestrian users and those with disabilities including wheelchair access.	• Identify bridges in need of maintenance or replacement • Provide maintenance recommendations for the existing roadway network • Identify intersections in need of operational and geometric enhancements to improve system performance • Identify multi-modal enhancements to increase alternative transportation options • Integrate the CTP with the Milton Trail Plan
Protect and improve the environment recognizing its contribution to community economic vitality and quality of life.	• Promote conservation and minimize harmful impacts on the environment • Emphasize preservation of historic places
Coordinate transportation investments with the comprehensive plan and land use policies ensuring creation of a "sense of place" (Crabapple Crossroads, Birmingham Crossroads and the Highway 9 area) as well as barrier free connectivity to community assets such as schools, parks and recreation areas.	• Coordinate with CPAC to achieve an integrated land use vision and plan • Preserve right-of-way for future facility improvements • Preserve historic places • Achieve a barrier-free transportation network
Leverage regional cooperation and regional solutions to transportation issues, including coordination with surrounding jurisdictions, while maintaining the singularly unique character of the City of Milton.	• Coordinate with nearby jurisdictions including Alpharetta, Roswell, Mountain Park, Cherokee County, and Forsyth County to create a continuous and well-thought out network • Coordinate with GDOT, MARTA, GRTA, and ARC

1.3 Evaluation Approach & Tools

The Needs Assessment for the City of Milton CTP leverages the coordination of many different teaming partners, tools, and data resources to comprehensively evaluate the transportation needs specific to Milton. The approach to the Needs Assessment involves completing a market analysis in order to fully understand the changing needs and many different users of the transportation network. The project has involved teaming with land use experts and CPAC, since transportation and land use are inherently intertwined. The process has also included substantial public involvement through public City Council meetings, TSAC, and meetings with the Milton Disabilities Committee.

The transportation network infrastructure was evaluated in many different ways ranging from computer simulated modeling to on-site surveys conducted by the project team. One of the primary tools for evaluating the roadway network is through a travel demand model. This computer generated traffic modeling software uses a modified version of the regional model designed by the Atlanta Regional

Commission (ARC). Additionally, spatial analysis and mapping were performed using ESRI Geographic Information System (GIS) software as well as Autodesk Computer Aided Design (AutoCAD) software.

Data used as the basis of the needs assessment was collected from a variety of sources including the Georgia Department of Transportation (GDOT), GDOT Office of Traffic Safety and Design, GDOT Bridge Maintenance, ARC, the City of Milton, Natural Archaeological and Historic Resources GIS (NAHRGIS), Bleakly Advisory Group, aerials, and field surveys. Most of this information can be found in the Inventory of Existing Conditions Report (April 2009).

1.4 Travel Demand Model

One important tool used in transportation planning is a travel demand model, which is a computer generated simulation of traffic patterns in a given area. The model takes into account the existing and planned roadway network, travel behavior, land use patterns, and socioeconomic data to recreate travel patterns of the people traveling through that area. There are many different software programs available to create a travel demand model. The model being developed for the City of Milton is a modified version of the Atlanta Regional Commission's model which is created in TP+/Cube software.

Travel demand models are built starting with a physical roadway network. Model roadway networks typically include collector streets and above (local streets do not generally affect the model analysis). Then, each roadway within the model is assigned unique characteristics such as length, number of lanes, and facility type. Once the basic roadway network is assembled, traffic analysis zones (TAZ's) can then be created. TAZ's are the land areas adjacent to the roadways, where trips will either begin or end. Each TAZ is assigned unique characteristics based on demographic and socioeconomic data such as population size, average income, household size, types of employment, age range, etc. The computer model then interprets this data into traffic patterns using a four step process:

1. Trip generation
2. Trip distribution
3. Mode choice
4. Traffic assignment

In the trip generation step, the model estimates how many trips would be generated within a given area. Trips are produced in one TAZ and terminate at another destination TAZ. For the purposes of modeling, both the beginning and the ending point are considered "trips". The number of trips generated is based on the levels of production and attraction in each TAZ. For instance, during the morning peak period, a TAZ with a large amount of residential housing will generate many trips for people leaving for work, and a TAZ that is mainly offices and commercial buildings will generate a high volume of trips because it will attract a large number of AM work trips.

The next step, trip distribution, involves linking the trips produced with the trip destinations. Not every trip from the same TAZ goes to the same location. Instead, trips originating in one TAZ are distributed among many various destinations which are weighted by factors such as travel time and demographic characteristics. In general, closer destinations are given preference over more distant ones. In this sense, destinations have a "gravitational" attraction, in that TAZ's that are farther away are much less attractive than those that are nearby.

Once the trip distribution is established, mode choices can then be assigned. This involves assigning a mode of transportation to the trips that are generated. For Milton, most trips will occur in a single occupied automobile, but other modes should be considered, especially when evaluating future scenarios. Other possible modes of transportation could include mass transit, carpooling, or non-motorized transportation such as walking or biking. Mode assignments are largely based on the availability of

infrastructure such as bike lanes, carpool lanes, bus routes, sidewalks, locations of stops, costs of various modes, and travel times associated with those modes.

The final step of modeling is the trip assignment. In this step, the best possible route for each trip will be chosen. The factors that influence trip assignment are congestion, number of lanes, distance, time of day, etc. (i.e. all the factors a person thinks about when choosing a route for a trip). The computer then processes this information and assigns traffic volumes for each roadway. These volumes can be used to determine which facilities appear to be over capacity within the model.

A travel demand model is first built to replicate the existing conditions. When calibrated based on existing traffic counts, the model should resemble the general travel patterns that exist within the region and can provide insight into current deficiencies in the system. The model then can be used to test possible future scenarios to determine which transportation and land use combinations produce the best overall mobility options. The travel demand model is a predictive tool available to planners to assist in developing transportation plans for cities such as Milton as well as for counties and entire regions.

2.0 PUBLIC INVOLVEMENT

A number of tools and techniques have been used to date to gather input from the public on the City of Milton CTP including a project kickoff meeting, a series of technical advisory committee meetings, stakeholder interviews with City Council members, small group meetings with the Milton Disability Advisory Committee and the Equestrian community, and the development of a Transportation Study Webpage. Feedback received has been helpful in identifying needs, and the information gathered is being incorporated into the overall CTP.

2.1 Project Kick Off

The project kick off meeting was attended by more than 50 citizens interested in the development of the Transportation Plan. The meeting included a presentation on the planning concept of "Rural by Design" by Randall Arendt, a discussion of the Vision and Goals for the Transportation Plan, and an opportunity to provide comments. Citizens at this meeting noted a desire to maintain Milton's rural character, while also noting that growth plans for the surrounding jurisdictions will impact the City of Milton. One citizen commented that the City can choose to make capacity improvements, choose to calm traffic or choose to make it so difficult to travel that outsiders choose another route.

2.2 Stakeholder Interviews

City Council members were interviewed to gather input on Milton's unique attributes, the overall vision for Milton and its transportation infrastructure, and the transportation needs within the City of Milton. While opinions and input varied, several themes were evident, including a willingness to look at restricting/deterring pass-through traffic on Milton's rural roads and opposition to overdevelopment of the City. City council members expressed a desire to leverage the CTP to control growth in a way that will enhance the rural and scenic nature of Milton.

2.3 Transportation Stakeholder Advisory Committee (TSAC)

The project team has held several TSAC meetings to date. From these meetings, several needs have been identified. A common concern among all members is commuter traffic from nearby areas that finds its way through Milton. Also, there is concern over the general level of congestion throughout the rural network during the peak hours. Some members would like to see these concerns addressed by having greater east-west and north-south connectivity that will help move traffic through the city. All the committee members share a strong desire to preserve the rural character of Milton. Members have also expressed interest in preserving gravel roads, creating public green space, integrating the Trail Plan with the CTP, considering roundabouts as potential improvements, and identifying a town center.

2.4 Milton Disability Awareness Committee (MDAC)

Project team staff participated in a regularly scheduled MDAC meeting to gather input on general issues relating to mobility for the disabled community, as well as to identify specific locations where access and/or mobility needs are not being met. Committee members described an overall need to improve sidewalk connectivity as well as redesign curb cuts at intersections. Many wheelchair ramps are designed and installed improperly, such as when the ramp points into the middle of the intersection rather than into the painted crosswalk. Also, committee members commented on the lack of access to transit within the City of Milton. There is a need for demand response transit to help citizens who are unable to

operate a motor vehicle. Currently, the only city-wide demand response transportation service is through commercial taxis, which are generally too expensive for consistent daily use.

Some other specific needs identified by committee members are:

- *Crabapple Road & Broadwell Road and Crabapple Road & Mid-Broadwell Road*
  Sidewalks are needed; crosswalks & ADA curb cuts are not aligned
- *Deerfield Parkway & Windward Parkway*
  No curb cut
- *Cogburn Road (south of Alpharetta Senior Center to Sandy Creek)*
  Sidewalk missing
- *Webb Road between Cogburn Road and Alpharetta Hwy*
  Sidewalk missing
- *Trail Plan*
  The Trail Plan utilizes gravel roads in key places to make connections. These unpaved surfaces can be inaccessible in a wheelchair, and therefore create barriers for ADA users.

2.5 Equestrian Focus Group Meeting

Project team staff met with members of Milton's equestrian community on July 30, 2009 in order to assess specific needs relating to horses and their riders. The group provided information regarding the types of equestrian activities and the strong economic impact the equestrian community has on the City. The group also stressed the importance of preserving and enhancing the rural character of the City and its unique equestrian culture.

The meeting yielded a comprehensive list of detailed needs and desires of the equestrian community. Comments from the group included specific needs and made recommendations for specific areas which may be targeted for infrastructure improvements. Much of the conversation centered around leveraging the Milton Trails Ordinance to create a network of trails, specifically in the northwest quadrant of the City, where most of the City's farms exist. Specifics on safety and appropriate design were also thoroughly discussed.

Specific items discussed during the meeting include:

- Investment should be considered in the northwest portions of the City, near the existing farms and centered around the Birmingham Park area. Equestrian activity is not expected or desired within areas more populated in southern and eastern portions of the City.
- Make enhancements to Birmingham Park to include equestrian facilities and equipment and provide speed control and adequate crossings for safe accessibility to park from nearby farms. Additional parking should also be considered.
- Design of trails
  - Appropriate materials are important for safety and operation. Economical, not slick when wet, and not dusty when dry materials are optimal. An example of a good material is river sand.
  - Mixing horses with pedestrians and bicyclists is acceptable, given enough separation is provided (greater than 10 ft). The preferred alternative is to separate uses.
  - Adequate separation from general traffic and separation with a fence is critical to the safety of horses and their riders.

- Safe crossings are important, especially along high traffic volume/speed roadways. Signage at crossings needs to be provided and signalized crossings should be investigated.

- A list of model equestrian communities were listed by the group. These include Aiken, South Carolina; Wellington, Florida; Germantown, Tennessee; and Middleburg, Virginia.

The important input from this group during this meeting and ensuing discussions will be considered and developed further as the City develops revisions to the existing Milton Trails Ordinance, expected to take place in late 2009/early 2010.

2.6 Webpage

A page of the City of Milton website is dedicated to presenting information on the Transportation Plan. This page, located at: http://www.cityofmiltonga.us/transportation/index.html, provides general information about the plan, presents the documents developed through the plan development process, and provides a mechanism for the public to comment on the plan.

2.7 Upcoming Events

There will be many additional opportunities for public involvement throughout the remainder of the CTP process. Some remaining key dates and activities are listed below:

- *August 17th, 6:00 p.m.*
  TSAC meeting #4 - Joint CPAC/TSAC meeting and Crabapple design charrette
- *September 24th, 6:00 p.m.*
  TSAC meeting #5 - TSAC to include Concept Review team meeting (urban design concepts and relationship of Crabapple Crossroads specific improvements to overall CTP preliminary recommendations development)
- *October*
  Public opinion survey - Scientifically valid public opinion survey administered by phone to vet draft recommendations
- *October 8th*
  Crabapple Stakeholder meeting - To be held at Crabapple Crossroads location
- *October 12th*
  City Council Work Session - Discussion of preliminary recommendations
- *October 17th*
  Public meeting #2 - Milton Roundup will include an opportunity, jointly held with a community event, for the public to comment on needs and draft recommendations; Crabapple Town Hall Meeting held in conjunction with Milton Roundup
- *Nov. 5th*
  TSAC meeting #6 and Public meeting #3 - Meetings to be either combined or sequential in one evening; present recommendations
- *Nov. 9th*
  City Council Work Session
  Discussion of final recommendations
- *Dec. 14th*
  City Council Work Session

Presentation of Final Report

- *Dec. 21st*
  Council Adoption of CTP

3.0 MARKET OPPORTUNITIES

3.1 Future Development Demand in Milton, Georgia

This section presents an assessment of development potential in the City of Milton over the next twenty years based on information presented in the Existing Conditions Report. This data included has been obtained from ARC, the City of Milton, Claritas, SmartNumbers, and also additional analysis performed by Bleakly Advisory Group (BAG). The purpose of this section is to provide Milton policymakers with a picture of the types of development that could occur in the City based on an assessment of market forces.

Milton lies within the rapidly expanding North Fulton Super District which has been the fastest growing office and employment location in the region during the past decade. While the current recession has lessened the level of growth in the Atlanta region (particularly in North Fulton County), one may expect that over the next twenty years the North Fulton Super District will continue to be the top employment growth area in the region. The Atlanta region as a whole is projected to add more than 2 million residents and 1.5 million jobs over the next twenty years. Given the context of the surrounding area, there will be strong demand for residential and commercial growth in Milton.

In the midst of this expanding region, Milton has carved out and preserved a unique community that maintains a small town focus and rural atmosphere. This environment is very attractive to a large segment of households and this level of attraction will likely continue throughout the next twenty years. Furthermore, Milton is increasingly appealing to affluent households who appreciate Milton's rural character. As long as the City maintains this character, it will continue to appeal to this rapidly growing segment of Atlanta households. In the coming years, there will be only a handful of communities and neighborhoods in the region that can offer as much as Milton for this affluent market segment.

3.2 Residential Demand 2008-2030

As shown in the table below, there are two key perspectives regarding the growth in new Milton households in the next twenty years. The first is Milton's Comprehensive Plan and the second is the Atlanta Regional Commission. The Milton Comprehensive Plan forecasts modest growth over the 2008 to 2028 period, with a net addition of 2,251 households or approximately 113 new households per year. Assuming that current tenure preferences are maintained, this level of growth would translate into demand for 1,980 new owner occupied units over the next twenty years or 99 units per year on average. In terms of rental demand, it would indicate demand for 270 new rental units or 14 units per year.

3-1: Residential Demand from Household Growth in Milton 2008-2030

	Milton Comp. Plan			ARC Estimates		
	2008	**2028**	**Change**	**2010**	**2030**	**Change**
Population	25,422	31,500	6,078	31,425	44,906	13,481
Households (units)	9,415	11,666	2,251	11,699	17,462	5,763
Annual Growth in Households			**113**			**288**
Tenure Preference (units/yr)						
Owner 88%			99			254
Renter 12%			14			35

Source: ARC/Milton Comp Plan/BAG

The second forecast, by the Atlanta Regional Commission, estimates household growth over the 2010-2030 period at a considerably stronger pace than the Milton Comprehensive Plan. The ARC forecast calls for 5,763 new households over the twenty year period or an average of 288 net new households annually. Based on the current tenure preference in Milton, this would represent demand for 254 owner occupied units and 35 rental apartments per year.

By way of comparison during the period from 2005 to 2008, Milton averaged 257 new for-sale units sold each year. Of that total, an average of 149 new single family homes and 108 new townhomes were sold each year. The average sales price of a for-sale unit in 2007 was $753,700, indicating the affluence of the Milton residential market for new homes. In terms of price points, the key single family price ranges were: $300,000 to $600,000; $700,000 to $900,000; and, $1,000,000 to $1,500,000. For townhomes the key price range was $300,000 to $400,000, which is a much tighter grouping than the single family homes. Typically, prices tend to cluster within $100,000 of the median value. Milton's single-family housing market is unusual in that the sales prices are spread so broadly. Another unusual characteristic is the high percentage of homes selling for $1 to $1.5 million.

The ARC household growth estimates may be closer to the actual level of residential market demand that Milton will experience over the next twenty years, considering that a portion of new residential demand will be satisfied from the inventory of existing homes for sale. Also, some of the new sales will be trade-ups from existing Milton residents. The bulk of future residential demand will be for owner-occupied housing. Based on recent sales and development trends, one can roughly estimate a split of 80% single family homes and 20% townhomes. Key price points will range from $300,000 to $500,000 for townhomes and from $400,000 upward for single family, with the median price in the $800,000 to $1,000,000 range. Milton is clearly one of the strongest affluent residential markets in the Atlanta region. This demand may be accommodated through continued large lot development and subdivisions, but also through more compact town center "New Urbanism" style developments which create key activity centers. Some mix of these residential development types is likely to be well received in the marketplace.

3.3 Commercial Demand 2008-2030

As noted earlier in the Existing Conditions Report, ARC is forecasting very robust job growth for Milton over the years 2010 to 2030. Effectively, Milton will see a doubling of its current employment base from 16,965 in 2010 to 33,702 by 2030.

This job growth will result in high demand for commercial space. Shown below is an estimate of the demand for commercial space in Milton that will be needed to accommodate the projected employment growth in the City. Based on ARC's forecast of the number and types of jobs that will be coming to

Milton, there will be market demand to dramatically expand the existing inventory of office and retail space in the City over the next twenty years. Indeed, there appears to be demand for an additional 1.6 million SF of office space, 2.7 million SF of industrial or flex space and 1 million SF of retail space. A summary of this growth can be seen in the table below:

3-2: Total Demand for Commercial Space in Milton from Employment Growth 2010 -2030

Projected Employment Growth

	Construction	Manufact.	TCU	Wholesale	Retail	F.I.R.E.	Services	Govern.	Total
2010 (Jobs)	574	1,514	7,816	150	2,364	676	3,031	840	16,965
2030 (Jobs)	657	4,026	14,324	151	4,830	1,358	6,469	1,887	33,702
Change (Jobs)	83	2,512	6,508	1	2,466	682	3,438	1,047	16,737

Space Demand Allocation

	Construction	Manufact.	TCU	Wholesale	Retail	F.I.R.E.	Services	Govern.
Office	20%	33%	50%	10%	0%	80%	40%	25%
Industrial	20%	67%	50%	90%	0%	0%	30%	0%
Retail	0%	0%	0%	0%	100%	20%	30%	0%

Employees Per Land Use

	Construction	Manufact.	TCU	Wholesale	Retail	F.I.R.E.	Services	Govern.
Office	17	829	3,254	-	-	546	1,375	262
Industrial/Flex Space	17	1,683	3,254	0	-	-	1,031	-
Retail	-	-	-	-	2,466	136	1,031	-

Square Footage of Demand Per Land Use

	Construction	Manufact.	TCU	Wholesale	Retail	F.I.R.E.	Services	Govern.	Total
Office @ 250 SF/Employee	4,150	207,240	813,500	-	-	136,400	343,800	65,438	1,570,528
Industrial/Flex @ 450 SF/ Employee	7,470	757,368	1,464,300	5	-	-	464,130	-	2,693,273
Retail @ 300 SF/ Employee	-	-	-	-	739,800	40,920	309,420	-	1,090,140

Total Demand

Total Demand for Commercial Space (SF)	**5,353,940**
Annual Demand for Commercial Space (SF)	**267,697**

Source: ARC/BAG

Currently, there is approximately 1.7 million SF of office space and 1.7 million SF of retail space in the City. There is significant vacancy in the existing retail inventory of approximately 90,000 SF so a portion of the initial demand could be absorbed by existing vacant space. Also, there is 349,000 SF of vacant office space which could absorb a significant portion of the initial future office demand. Currently, there is little existing industrial space in the city, most likely due to high land costs. A portion of the demand for this industrial space could be accommodated in one story office and flex space which is already a component of several of the office developments in the City.

Thus, it appears that Milton will experience significant demand for additional office and commercial development as a result of the projected employment and residential growth in the City. Although some existing developments can be absorbed, a portion of that projected growth but additional commercial

development of a scale greater than all of the existing commercial development would be required to satisfy all of the potential future demand.

4.0 TRAVEL DEMAND MODEL SCENARIO CONCEPTS

The ARC travel demand model was an integral tool in determining the transportation needs in and around Milton and in testing various scenarios that combine different transportation and land use options. Two base scenarios were developed to determine the primary transportation needs within the City of Milton: 2010 and 2030 Existing + Committed (E+C). The transportation network known as "Existing + Committed" includes all transportation infrastructure that is currently built and open to the public as of today (Existing) as well as all transportation projects that have been included in the ARC's Transportation Improvement Program (TIP) and have funding identified (Committed). The 2010 E+C model includes ARC's population and employment projections for 2010 overlaid on the E+C transportation network. Similarly, the 2030 E+C includes ARC's population and employment projections for 2030 overlaid on the E+C transportation network. Because significant growth is anticipated throughout the region, and modest growth is anticipated within Milton, the transportation needs in 2030 are projected to be greater than in 2010.

The 2030 E+C model indicates that a substantial number of people travel southbound and eastbound during the AM peak period (in the direction of GA-400 southbound), while even more people travel northbound and westbound during the PM peak period (away from GA-400). The results align with the fact that Milton is primarily residential in land use, which creates commute trips away from Milton in the morning and toward Milton in the afternoon. Travel through Milton from neighboring counties, including Cherokee County and Forsyth County, also is prevalent as can be noted by the low level of service (LOS) entering and exiting Milton's boundaries. The roadways with LOS F in both the AM and PM peak period include the following: Highway 372, Arnold Mill Road, Hopewell Road, Cogburn Road, SR 9, and Batesville Road. Other roadways have LOS E or F in both the AM and PM peak periods including the following: Freemanville Road, Birmingham Road, and portions of Providence Road and Birmingham Highway.

Seven different transportation / land use scenarios were tested using the ARC model. One of four land use scenarios was paired with one of six transportation scenarios to create seven unique combinations. Bleakly Advisory Group prepared population, household and employment estimates for the year 2030 by TAZ for the City of Milton for the following four scenarios:

- **Scenario A – Atlanta Regional Commission Growth Estimates**
- **Scenario B – Directed Growth**
- **Scenario C – No Growth**
- **Scenario D – Slow Growth**

The four land use scenarios were presented to CPAC for their review and comment. CPAC determined that Scenario B – Directed Growth is most similar to the current direction of the Comprehensive Plan. These land use scenarios and the methodology for the forecasts are discussed below.

4.1 Land Use Scenarios

Scenario A – Atlanta Regional Commission Growth Estimates

This scenario assumes that growth continues throughout the City of Milton at rates similar to the 1980s to 2000s and presents ARC growth estimates for population, households and employment for the year 2030.

Scenario B – Directed Growth

This scenario assumes that the City of Milton will enact land use policies designed to focus future growth in the southern portion of the City. It assumes 75% of the ARC growth estimates are focused on the southern region of the City of Milton while the northern portion of Milton only receives 25% of this growth. In order to prepare these forecasts, the total ARC growth estimates for the area were calculated with 75% of this growth distributed among the southern TAZs in proportion with the original ARC growth estimates. The remaining 25% of growth for the 20 year period was then distributed among the northern TAZs in proportion with the original ARC growth estimates. All of the growth in population, households and employment are still contained within the Milton TAZs.

Scenario C – No Growth

This scenario assumes that there is no population, household or employment growth in the City of Milton and that the population, households and employment in the City of Milton will remain unchanged from 2010 to 2030. The ARC projected growth was redistributed to the TAZs surrounding Milton.

Scenario D – Slow Growth

This scenario assumes that the City of Milton maintains land use policies designed to slow growth significantly. Forecasted population, households and employment are calculated by applying a 1.1% annual growth rate to the ARC's 2010 estimates. The 1.1% growth rate is based on the City of Milton's Comprehensive Plan. The remainder of the ARC projected growth for the Milton TAZs was redistributed to the areas surrounding Milton.

4.2 Travel Demand Model Scenarios

Five scenarios were initially tested using a combination of land use and transportation scenarios. The scenarios and results were then discussed and further refined with the assistance of the members of the TSAC, resulting in two additional model scenarios. The seven model scenarios are explained in further detail below.

Scenario 1

Inputs

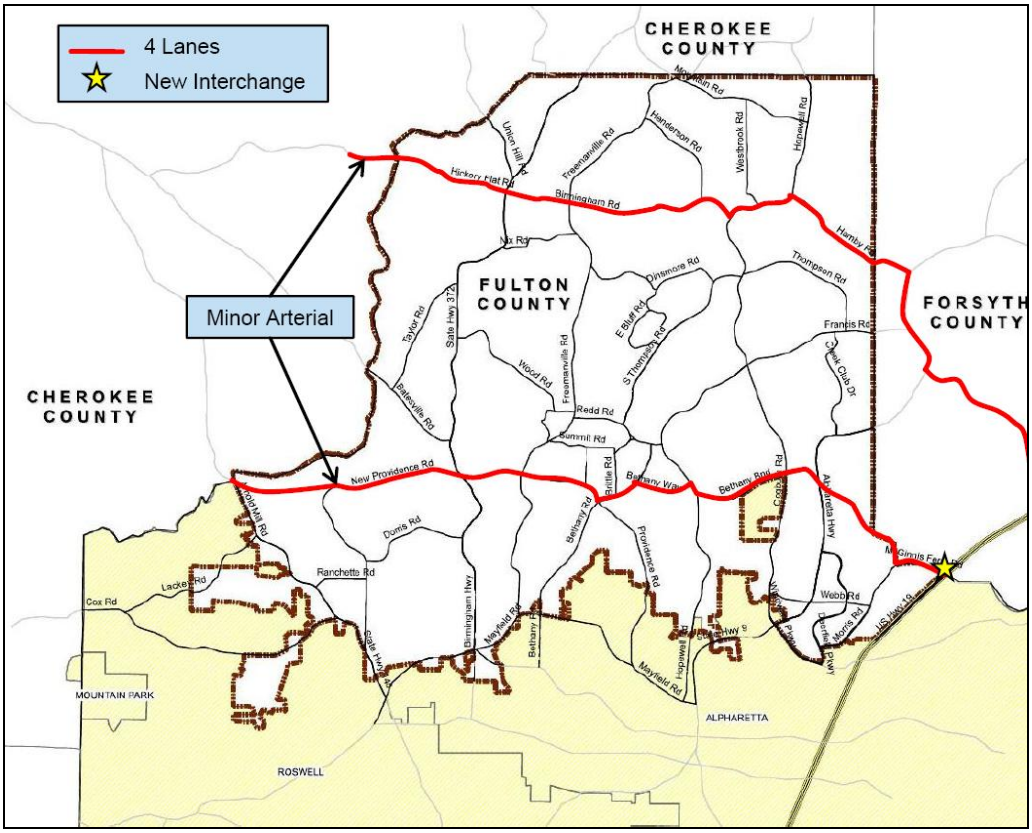
The first scenario assumes that growth will continue as projected in the ARC land use scenario. The transportation improvements modeled in this scenario are coordinated with the land use assumptions and address some of the east-west connectivity needs throughout the City:

- Widen from 2 lanes to 4 lanes and upgrade from a collector road to a minor arterial
  - Birmingham Road → Hamby Road → SR 9 → McFarland Road
  - New Providence Road → Providence Road → Bethany Road → Bethany Bend → McGinnis Ferry Road
- Add a new connection from New Providence Road to Arnold Mill Road (4 lanes)
- Add a new interchange at McGinnis Ferry Road

Results

The widening of Birmingham Road to Hamby Road improves the LOS along the east-west connector, and portions of Providence Road and Bethany Bend improve in LOS as well. As a result of the widening on the aforementioned roads, portions of Highway 372/Birmingham Highway, SR 9, Arnold

Mill Road, and Thompson Road improve in LOS as a result of the removal of traffic from those roadways.



4-1: Travel Demand Model Scenario 1

Scenario 2

Inputs

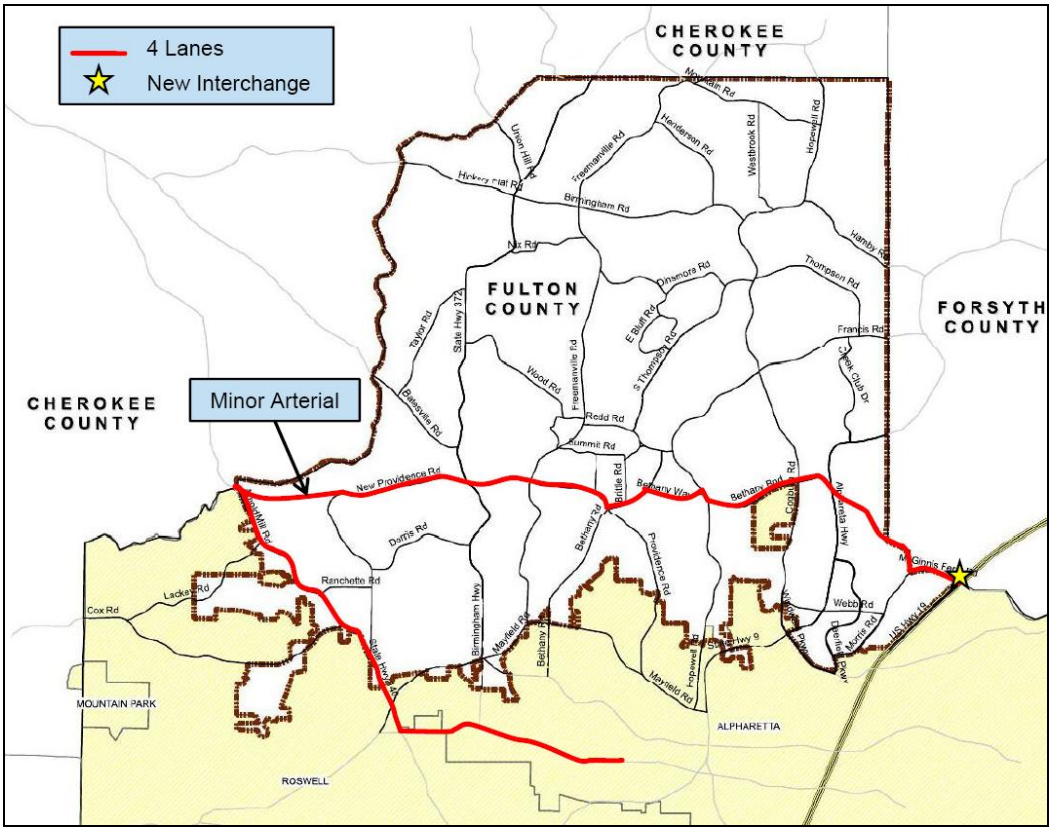
The second scenario includes the directed growth land use scenario in which 75% of the projected growth would be located south of Providence Road and Bethany Bend. The transportation improvements are once again coordinated with the land use changes to facilitate the movement of people particularly on the south side of Milton.

- Widen from 2 lanes to 4 lanes
  - Arnold Mill → Rucker Road → Old Milton Parkway
- Widen from 2 lanes to 4 lanes and upgrade from a collector road to a minor arterial
  - New Providence Road → Providence Road → Bethany Road → Bethany Bend → McGinnis Ferry Road
- Add a new connection from New Providence Road to Arnold Mill Road (4 lanes)
- Add a new interchange at McGinnis Ferry Road

Results

Improvements in the LOS are less significant in Scenario 2 as compared with Scenario 1. Arnold Mill Road and Birmingham Highway show signs of improvement with additional secondary improvements along roadways such as Hopewell Road, Birmingham Road, and Thompson Road. Portions of New

Providence Road and Dorris Road increase in LOS as a result of the new connection between New Providence Road and Arnold Mill Road.



4-2: Travel Demand Model Scenario 2

Scenario 3

Inputs

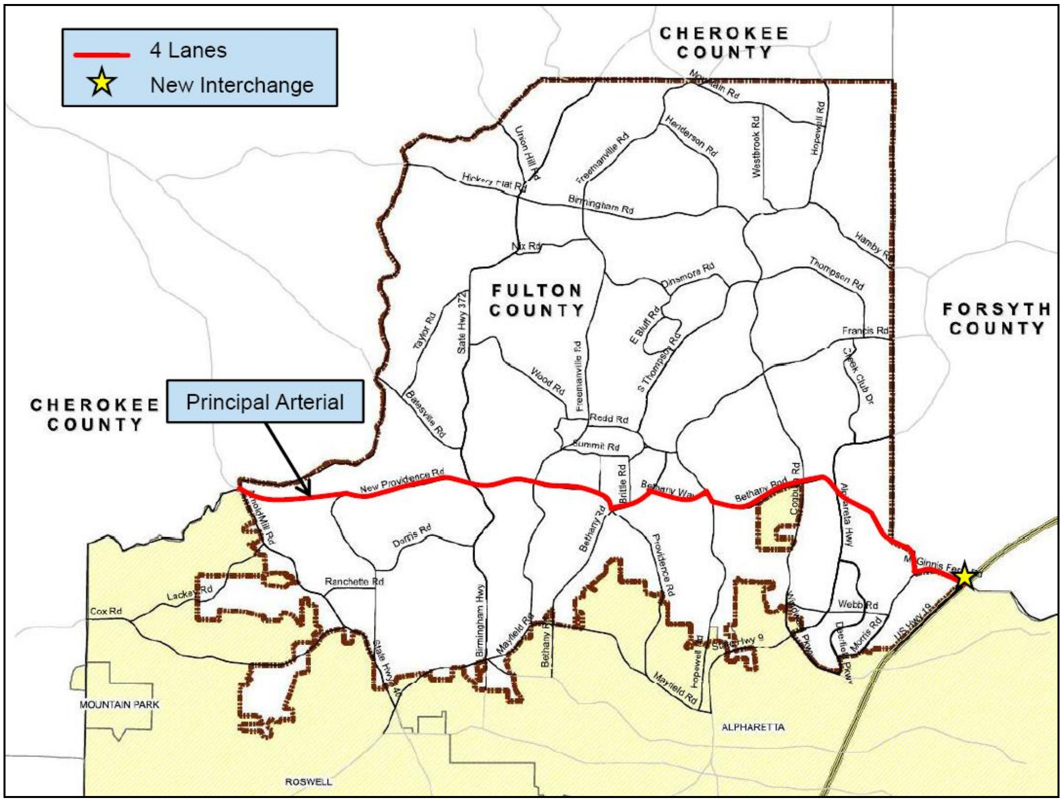
Scenario 3 assumes the same land use projection as in Scenario 2 – 75% of the projected new growth would occur on the south side of Milton. Instead of generally coordinated transportation enhancements; however, one primary east-west facility is developed to attract and channel commuter traffic and other Milton traffic directly to GA-400 while providing relief to other roads throughout Milton.

- Widen from 2 lanes to 4 lanes and upgrade from a collector road to a principal arterial
  - New Providence Road → Providence Road → Bethany Road → Bethany Bend → McGinnis Ferry Road
- Add a new connection from New Providence Road to Arnold Mill Road (4 lanes)
- Add a new interchange at McGinnis Ferry Road

Results

Scenario 3 results in improved LOS along Birmingham Road and Hopewell Road / Cogburn Road specifically in the AM peak period. Small sections of Francis Road, Thompson Road, SR 9, Mayfield Road, and Batesville Road improve in LOS during the PM peak period. Arnold Mill Road improves during both time periods. Because of the new connection, interchange, and widening of the defined

east-west roadway, portions of New Providence Road, Providence Road, and Bethany Bend have lower LOS in Scenario 3 than in 2030 E+C.



4-3: Travel Demand Model Scenario 3

Scenario 4

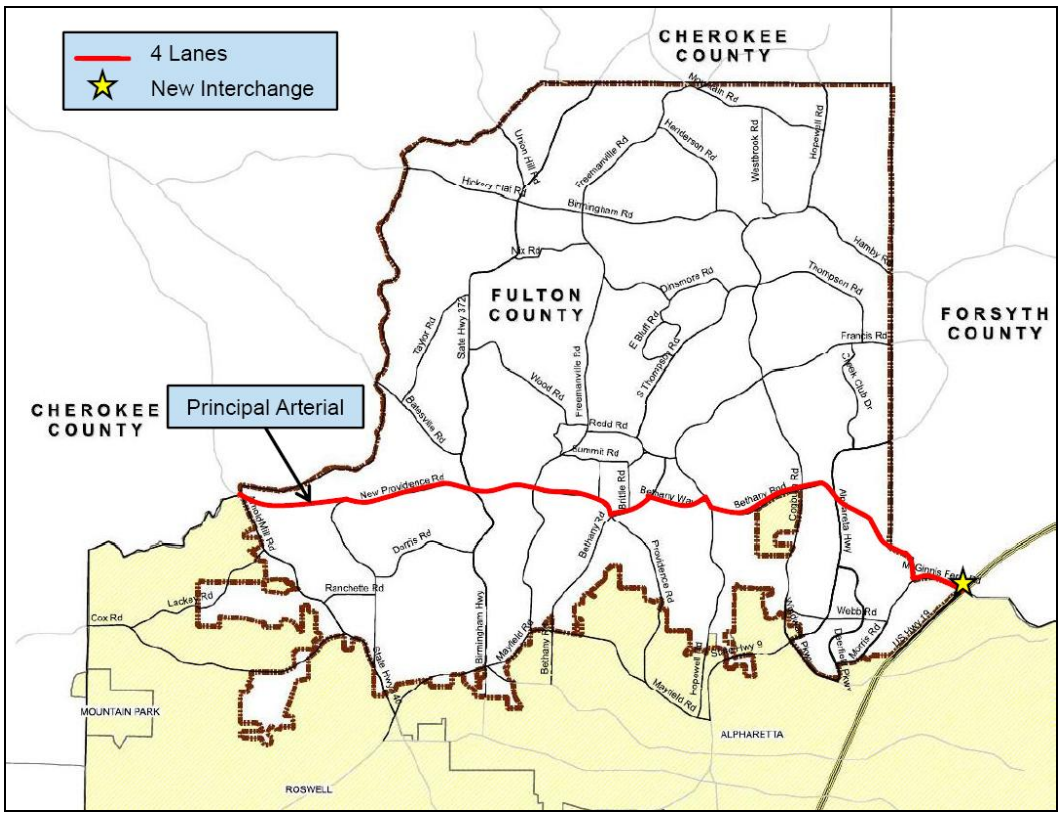
Inputs

Scenario 4 is similar to Scenario 1 in that it includes the projected ARC land use assumptions. Instead of generally coordinated transportation improvements, it overlays the primary east-west facility included in Scenario 3 to better understand the effects of the enhanced roadway on a more disbursed growth pattern.

- Widen from 2 lanes to 4 lanes and upgrade from a collector road to a principal arterial
  - New Providence Road → Providence Road → Bethany Road → Bethany Bend → McGinnis Ferry Road
- Add a new connection from New Providence Road to Arnold Mill Road (4 lanes)
- Add a new interchange at McGinnis Ferry Road

Results

Scenario 4 shows improvements in LOS to segments of Birmingham Road, Hopewell Road, Cogburn Road, and Arnold Mill Road during both the AM and PM peak periods. The AM peak period, in particular, shows degradation in LOS along other roadways within the City of Milton, including along Bethany Bend and New Providence Road, Freemanville Road, and Cogburn Road.



4-4: Travel Demand Model Scenario 4

Scenario 5

Inputs

The fifth scenario is the most conservative scenario of the five. It assumes the no-growth land use scenario in which all development initially projected for the City of Milton would be reallocated to surrounding areas including Alpharetta, Roswell, and Cherokee and Forsyth Counties. The transportation enhancements are similar to other scenarios, albeit less aggressive.

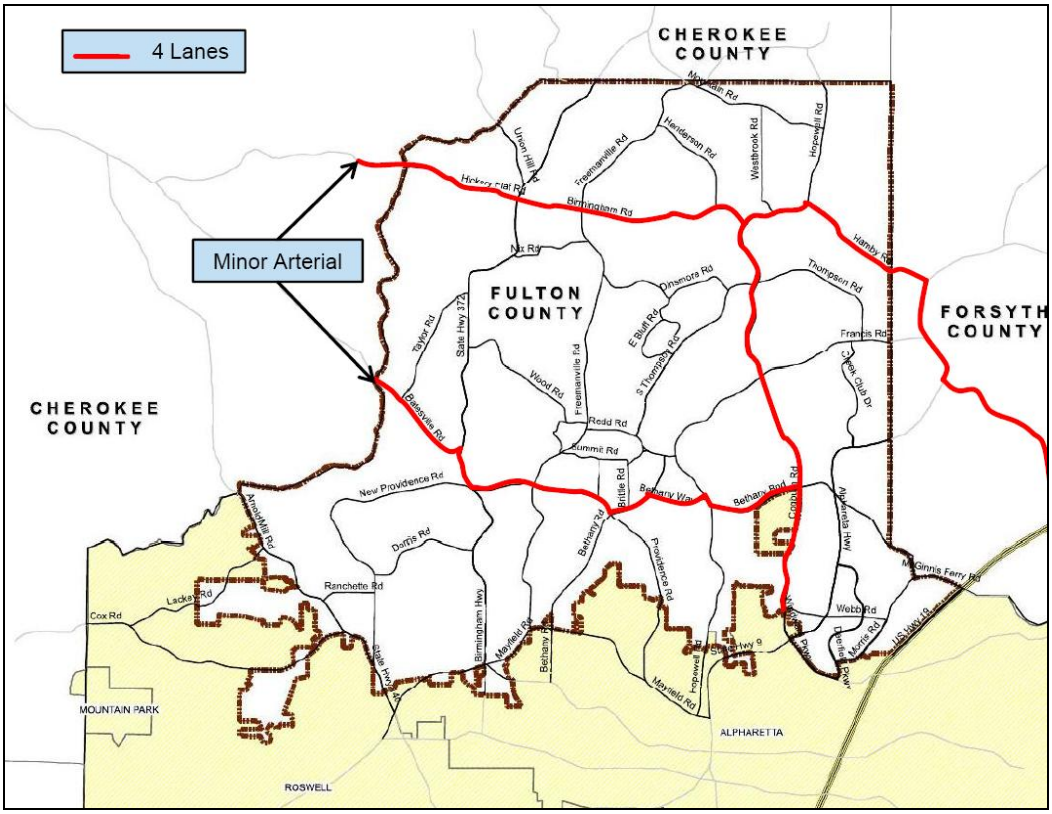
- Widen from 2 lanes to 4 lanes and upgrade from a collector road to a minor arterial
  - Birmingham Road → Hamby Road → SR 9 → McFarland Road
  - Batesville Road → Highway 372 → Providence Road → Bethany Road → Bethany Bend
  - Hopewell Road → Cogburn Road

Scenario 5 does not include a new connection between New Providence Road and Arnold Mill Road, nor does it include a new interchange at McGinnis Ferry Road.

Results

Because Scenario 5 removes any projected growth from Milton and distributes it to neighboring communities, the improvements in LOS within Milton are more noticeable in this scenario than in the others. Roadways that showed improved LOS during both time periods include the following: New Providence Road, Providence Road, Bethany Bend, Thompson Road, Freemanville Road, Hopewell Road, Cogburn Road, Francis Road, Batesville Road, Hamby Road, and Birmingham Road. Birmingham

Highway also improves, specifically during the AM peak period. SR 372 (north of Birmingham Road) and other small segments of Hopewell Road do show a reduction in LOS during both periods.



4-5: Travel Demand Model Scenario 5

Members of the TSAC reviewed the initial five scenarios and made recommendations regarding both land use and transportation concepts. The CPAC also reviewed the land use scenarios and provided their feedback. Both CPAC and TSAC believed the directed growth scenario (with 75% of the growth in southern Milton) was the appropriate direction in which to proceed; therefore, both Scenario 6 and 7 include the directed growth scenario as their land use scenario. TSAC representatives also indicated that enhancing roads along the outskirts of Milton would be preferable for directing commuter traffic around the outside of the City (instead of through it). The following two scenarios reflect their comments.

Scenario 6

Inputs

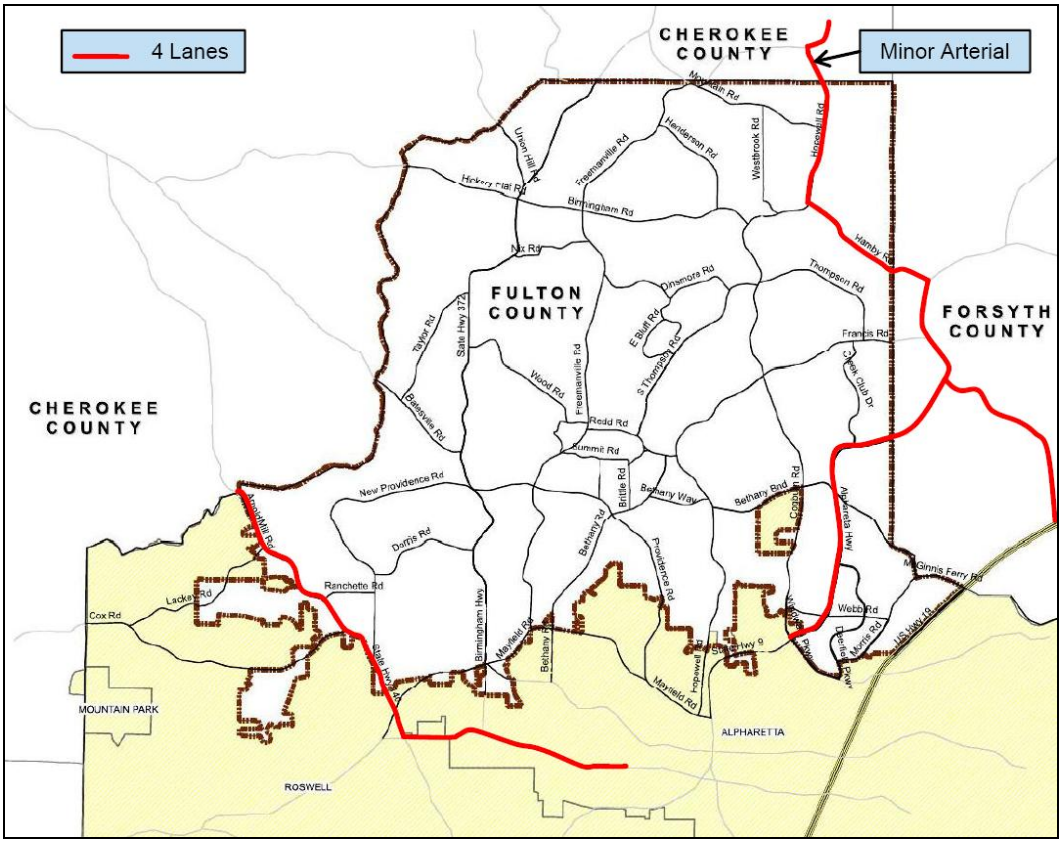
Scenario 6 includes the directed growth land use scenario as mentioned above. The transportation enhancements included in this model are low impact compared with other scenarios and include the following:

- Widen from 2 lanes to 4 lanes and upgrade from a collector road/minor arterial mix to a minor arterial
  - Holbrook Campground Road → Hopewell Road → Hamby Road → SR 9 → McFarland Road
- Widen from 2 lanes to 4 lanes

- Arnold Mill → Rucker Road → Old Milton Parkway
- SR 9 (from McFarland Road to Windward Parkway)

Results

A number of roadways/segments of roadways in Scenario 6 improve in LOS including the following: Birmingham Road, Hopewell Road, Cogburn Road, Arnold Mill Road, and Thompson Road during the AM peak period and Hopewell Road, Cogburn Road, Thompson Road, SR 9, Arnold Mill Road, Rucker Road, and Batesville Road during the PM peak period.



4-6: Travel Demand Model Scenario 6

Scenario 7

Inputs

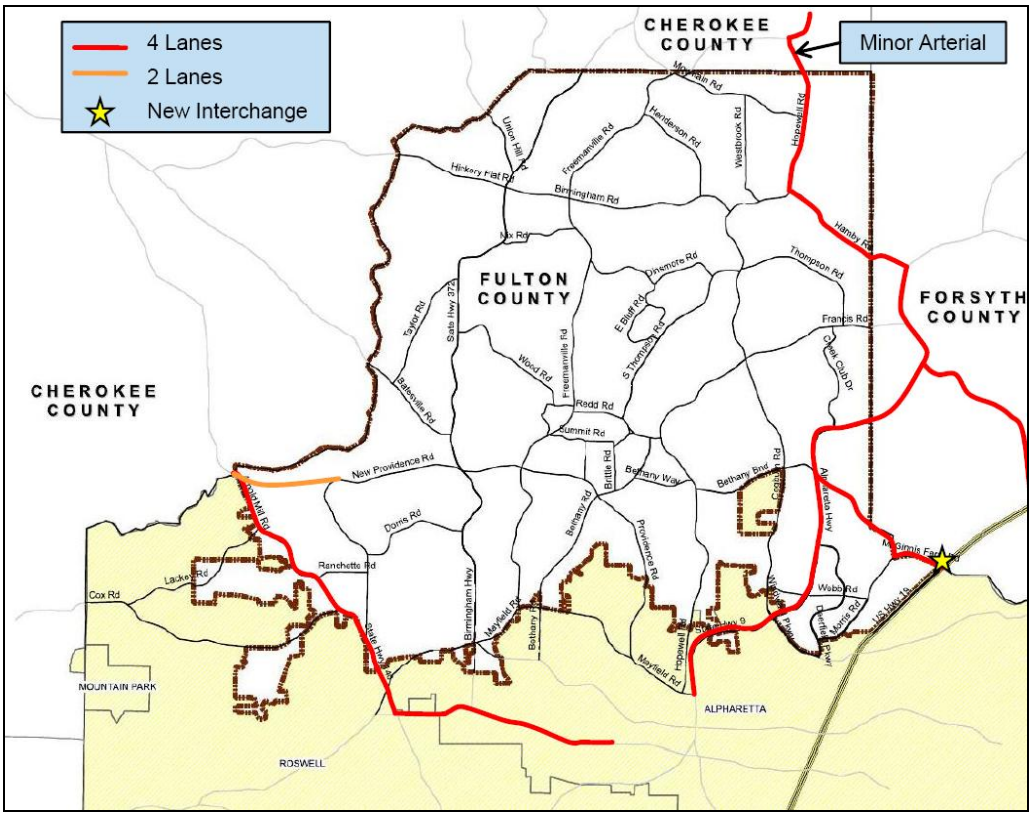
Scenario 7 also includes the directed growth land use scenario overlaid with slightly more aggressive transportation improvements than modeled in Scenario 6.

- Widen from 2 lanes to 4 lanes and upgrade from a collector road/minor arterial mix to a minor arterial
  - Holbrook Campground Road → Hopewell Road → Hamby Road → SR 9 → McFarland Road
- Widen from 2 lanes to 4 lanes
  - Arnold Mill → Rucker Road → Old Milton Parkway
  - SR 9 (from McFarland Road to Mayfield Road)

- Widen from 2 lanes to 4 lanes and upgrade from a collector road to a minor arterial
  - Bethany Bend → McGinnis Ferry Road
- Add a new connection from New Providence Road to Arnold Mill Road (2 lanes)
- Add a new interchange at McGinnis Ferry Road

Results

Scenario 7 has some similar improvements in roadway LOS as in Scenario 6. The following roadways show improved LOS: portions of Highway 372/Birmingham Highway, Thompson Road, Hopewell Road, Cogburn Road, Arnold Mill Road, Rucker Road, and SR 9. Other roadways do experience a reduction in Level of Service including New Providence Road, Providence Road, Strickland Road, and Hamby Road (specifically during the AM peak period).



4-7: Travel Demand Model Scenario 7

While Scenario 5 has the most significant improvements in LOS on the Milton roadways, members of the CPAC and TSAC understand that prohibiting all growth within the City may not be achievable given development pressures, zoning conditions, and the eventual need to grow the tax base within the City. Additionally, assuming some amount of growth within the City is a more conservative approach for this planning effort than assuming no growth at all. Given that understanding, they agree that directed growth in the more developed area of Milton (the southern portion) is likely the most reasonable and responsible land use assumption. Scenarios 6 and 7 are the primary scenarios for consideration at juncture.

5.0 SAFETY

Within Milton there are many two-lane roadways with rural characteristics. These roadways have rolling hills, frequent turns, and narrow cross-sections. These characteristics can often negatively impact safety by creating reduced sight distances and sharp turns, but they can be very costly to adjust. Also, roadways with these characteristics can sometimes be considered more desirable than wide thoroughfares because they do much to enhance the aesthetics of a rural roadway. Because of this, there are inherent tradeoffs and no exact solutions when evaluating roadway safety. For instance, instead of investing in the realignment of a roadway, municipalities might choose to increase law enforcement along that corridor. The City of Milton must determine which safety needs warrant further analysis, and then agree upon an approach to address those needs.

Roadway safety issues in Milton have been identified based on input from Milton staff, law enforcement officials, the general public, and crash data provided by the GDOT Office of Traffic Safety and Design.

The Milton Police and City staff have offered that the following corridors are perceived to have higher occurrences of speeding and incidents:

- **North end of Hopewell Road from Thompson Road to The Manor**
  Birmingham Road & Hopewell Road is a T-intersection with Birmingham Road being stop controlled and Hopewell Road as free flow. There is limited sight distance as well as grade issues on Hopewell Road, which makes entering Hopewell Road from Birmingham Road difficult and unsafe. High volume on Hopewell Road causes long queues on Birmingham Road during peak hours.

- **SR 9 from Webb Road to Bethany Road**
  The intersections of SR 9 & Deerfield Parkway and SR 9 & Bethany Bend are both listed as having numerous incidents. SR 9 is a very high volume roadway and these intersections handle many turning movements. *Plans for installing a signal at the intersection of SR 9 and Deerfield Parkway are currently underway.*

- **Morris Road from Deerfield Parkway to Webb Road**
  This is also a very high volume 4 lane road with a median divider. This roadway provides access for many offices. The pavement surface is in poor condition.

- **Birmingham Highway from Landrum Road to Taylor Road**
  City of Milton staff recently looked at sight distances in this area and found many areas lacking. The speeds are high and the intersection of Birmingham Highway & Providence Road is very dangerous. *Concept plans for improving the intersection of Birmingham Highway & Providence Road are currently being developed.*

- **Arnold Mill Rd from south city limits to Ranchette Road**
  This is a very high volume roadway with many horizontal curves. The intersection at New Providence Road is of particular concern. *Concept plans for improving this intersection are being developed.*

- **Cogburn Road from Bethany Road to Webb Road**
  This corridor has many schools, a high volume of cars, narrow lanes, and a narrow bridge with several incidents recorded at this bridge. Residents have stated they don't feel safe walking along this roadway.

Additionally, the City of Milton participated in a roadway safety meeting in January of 2009, and some key locations of concern were identified by the public:

- Cogburn Road near The Hermitage subdivision
- Freemanville Road near White Columns
- Freemanville Road curve by the bridge (specific bridge not identified)
- North end of Hopewell Road
- Bethany Road south of intersection with Providence Road
- Cogburn Road near the school zones

Incident data has also been reviewed to identify some potential intersections that appear to have a high number of incidents. Although incident data cannot by itself be used to give a specific diagnosis of a safety problem, this data can be used to identify possible trends. Through analysis of incident data for the years 2005 to 2007, the following intersections warrant further study (also see **Map 5-1** at the end of this section):

Birmingham Highway/SR 372 and Providence Road/New Providence Road
There have been a high number of rear-end collisions traveling westbound through this intersection. The angle of intersection for these two roadways is at a drastic skew which creates severe sight distance issues. Other factors contributing to poor sight distance are a significant uphill grade on the northbound approach, a sharp curve on the north side of the intersection, and visual obstructions along the road shoulder, such as trees and bushes. Also, the speeds on Birmingham Highway are very high. In heavy traffic, the westbound through and left-turn movements are especially difficult and unsafe. It is likely that west-bound rear end collisions occur when drivers make false starts into the intersection.

Crabapple Crossroads (Intersection of Crabapple Road/Mayfield Road/Birmingham Highway/Mid-Broadwell Road)
There are a high number of incidents of all types. This could possibly be due to the complexity of this intersection and the fact that a high number of vehicles are turning left. The lack of turning lanes and the long delay at this intersection could cause drivers to make riskier maneuvers and cause more crashes.

Hopewell Road and Hamby Road
There have been many single-vehicle incidents at this intersection. Hopewell Road curves sharply at this location, there are many roadside hazards, including a very low shoulder. One common factor between these crashes is that they typically occurred after dark, so poor lighting could be a contributing factor at this location (there is one street light at the intersection and few along the road).

Bethany Bend and Alpharetta Highway/SR 9
There have been a high number of rear-end collisions, but with an even distribution between directions through this intersection. This could be due to skew of the intersection as well as the long distance through the intersection.

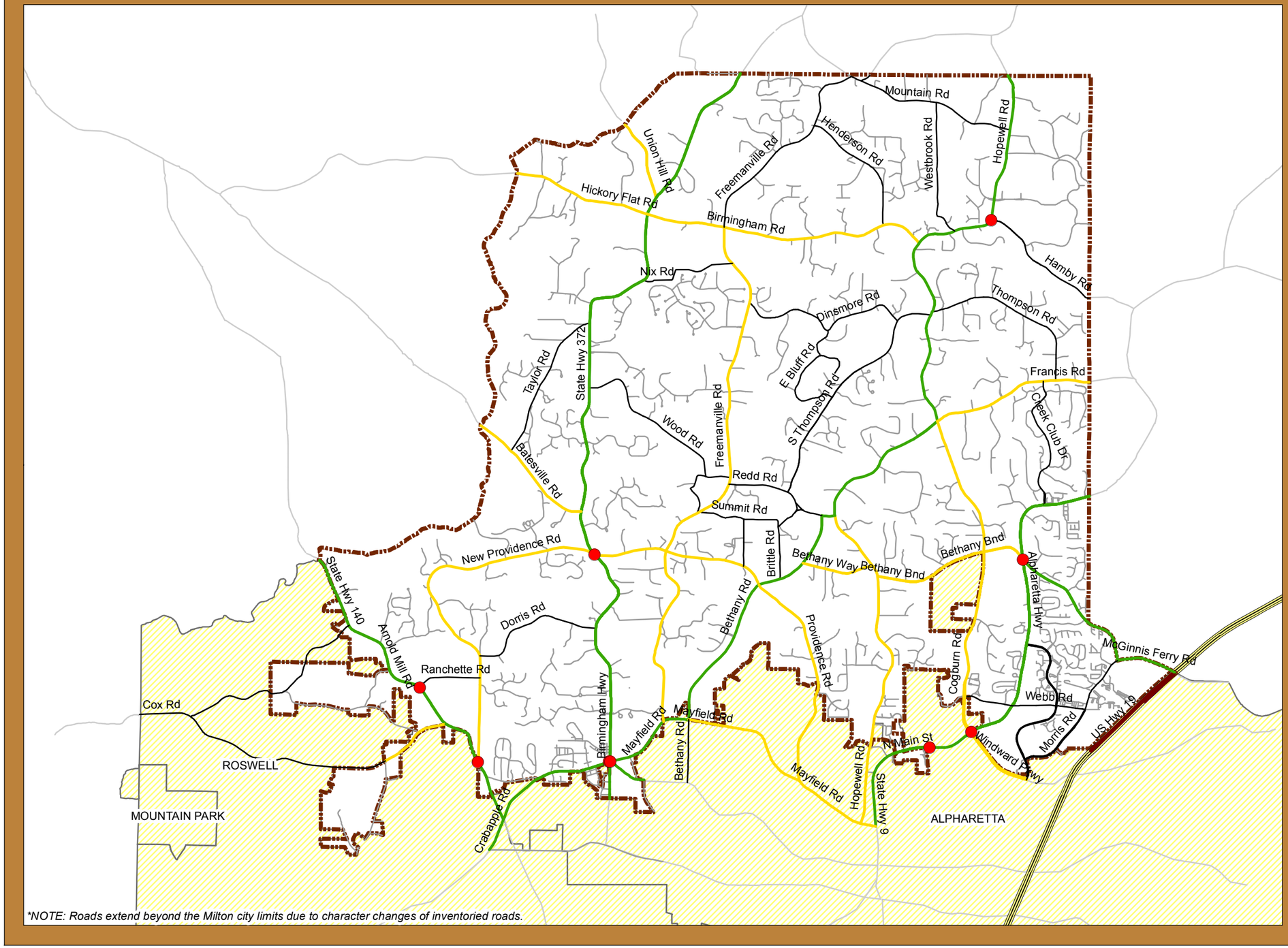
Arnold Mill Road/SR 140 and Ranchette Road
There have been a high number of rear-end collisions, but with an even distribution between directions at this intersection. There is a downhill grade in the northbound direction before and after the intersection, and there is a sharp curve on the north side of the intersection. Speeds and volumes on Arnold Mill Road are very high, and it is likely that north- and southbound rear end collisions occur when drivers brake to turn right or left onto Ranchette Road. Turning onto

Arnold Mill is difficult due to poor sight distance and high volumes, and westbound rear-end collisions may occur when drivers make false starts into the intersection.

Arnold Mill Road/SR 140 and New Providence Road
There have been a high number of angle collisions, but with an even distribution between directions at this intersection. This is likely due to the extremely skewed of the intersection and high speeds and volumes on Arnold Mill Road.

These intersections warrant further study to determine if there is, in fact, a common causal factor. If a common factor is found, these problems are typically addressed through improved operations such as signals, roundabouts, turning lanes, or improved signage.

City of Milton Transportation Plan



*NOTE: Roads extend beyond the Milton city limits due to character changes of inventoried roads.

Map 5-1
Local Intersections
High Incident Locations

Legend

- High Incident Rate

Roadway Functional Classification

- UrbanFreeway
- Minor Arterial
- Collector
- Local Road
- Expressways
- Other Streets
- City of Milton
- Other Fulton County Cities

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0 0.25 0.5 1 1.5 Miles

Prepared by: Kimley-Horn and Associates, Inc.

Date: July 23, 2009

Source: City of Milton, GDOT

6.0 OPERATIONS

6.1 Signal Operations

The City of Milton currently maintains traffic signals at 15 intersection and flashing signals at 9 intersections. In recent traffic studies performed for the City of Milton as part of sites requiring rezoning, the following intersections were identified as warranting traffic signals in the 2009 no-build scenarios (also see **Map 6-1**):

- Bethany Bend & Morris Road/McGinnis Ferry Road
- Morris Road & Deerfield Parkway
- Morris Road & Webb Road
- Strickland Road & Bethany Bend
- McGinnis Ferry Road & Tidwell Road
- McGinnis Ferry Road & Union Hill Road
- Tidwell Road & Union Hill Road
- Birmingham Road & Freemanville Road
- SR 372 & Birmingham Road
- Hopewell Road & Bethany Bend
- SR 9 & Webb Road (recently installed)
- SR 9 & Windward Village Parkway (recently installed)
- Deerfield Parkway & SR 9 (application in process with GDOT)

Based on observations in the field, some of the above intersections are potential candidates for a roundabout rather than a traffic signal. Birmingham Road and Freemanville Road, SR 372 and Birmingham Road, and several other 4-way stop intersections appear to have low enough volume to qualify for a roundabout, although some have greater right-of-way constraints than others.

6.2 Turning Lane Operations

In the same recent traffic studies, the following intersections were identified for capacity improvements including additional turning lanes in the 2009 no-build scenarios:

- Bethany Bend & Morris Rd/McGinnis Ferry Road
  - East bound left-turn lane on Morris Rd
  - South bound left-turn lane on Bethany Bend
- Bethany Bend & SR 9
  - Add northbound and south bound through lanes
  - Add eastbound and westbound through lanes
  - Add westbound, northbound, and southbound right-turn lanes
- Strickland Road & SR 9
  - Add northbound right-turn lane
  - Add westbound left-turn lane
- Birmingham Highway & Birmingham Road
  - Add westbound and eastbound left-turn lanes
  - Add southbound left-turn lane

- Mayfield Road & Canton Street
  Add left-turn lanes at each approach

- Hopewell Road & Bethany Bend
  Add westbound and southbound left-turn lanes

- Hopewell Road & Redd Road
  Add eastbound right-turn lane
  Add northbound left-turn lane

6.3 Operational Issues Identified by the Public

Throughout the process of developing the CTP, interested citizens have contacted the project team directly and expressed ideas for needed improvements. Some specific troubled intersections that have been identified in this manner are:

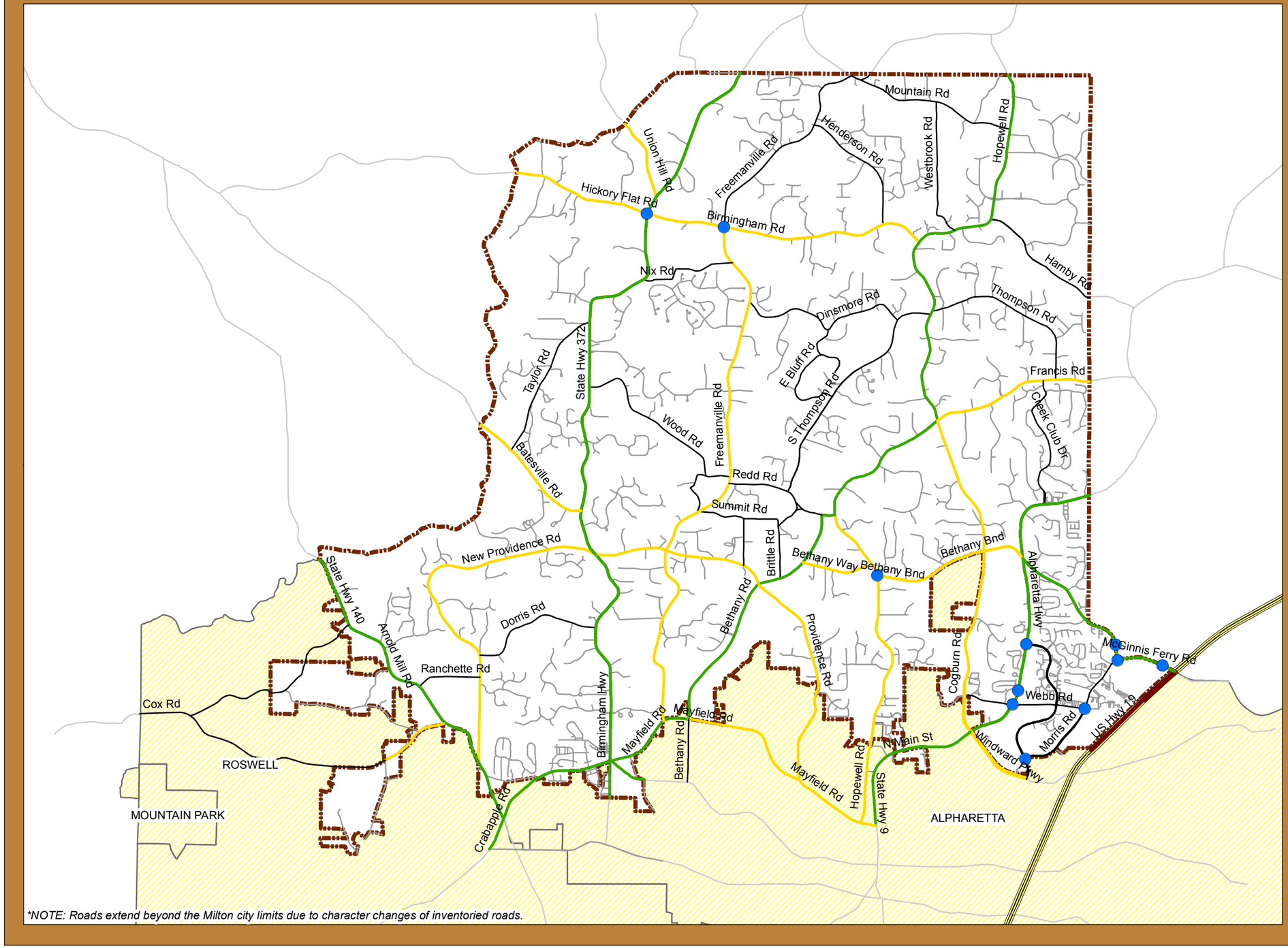
AM Peak Hour

- Eastbound on Birmingham Rd at stop sign of Birmingham Rd & Freemanville Rd - creates long delays
- Eastbound on Birmingham Rd at stop sign of Birmingham Rd & Hopewell Rd – long delays and dangerous maneuver turning left onto Hopewell Rd
- Southbound on Hopewell Rd at intersection of Hopewell Rd, Francis Rd, & Cogburn Rd – long delays
- Southbound on Hopewell Rd at intersection of Hopewell Rd & Bethany Way – long delays
- Westbound on Bethany Bend at intersection of Bethany Bend & Hopewell Rd – dangerous maneuver turning left out of the subdivision just north of Bethany Bend onto Hopewell Rd
- Intersection of Crabapple Rd/Mayfield Rd & Birmingham Hwy/Broadwell Rd – long delays with many vehicles making many conflicting left turns
- Intersection of Freemanville Rd and Providence Rd (all directions) – long delays during school peak hours

PM Peak Hour:

- Northbound on Cogburn Rd at intersection of Hopewell Rd/Francis Rd – long delays
- Eastbound on Birmingham Rd at stop sign of Birmingham Rd and Hopewell Rd – long delays and dangerous maneuver turning left onto Hopewell Rd due to poor sight distance and speeding along Hopewell Rd

City of Milton Transportation Plan



*NOTE: Roads extend beyond the Milton city limits due to character changes of inventoried roads.

Map 6-1

Local Intersections

Signals Required

As noted in previous traffic studies

Legend

- Intersections Requiring Signals

Roadway Functional Classification

- UrbanFreeway
- Minor Arterial
- Collector
- Local Road
- Expressways
- City of Milton
- Other Streets
- Other Fulton County Cities

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0 0.25 0.5 1 1.5 Miles

Prepared by: Kimley-Horn and Associates, Inc.

Date: July 23, 2009

Source: City of Milton, GDOT

7.0 SYSTEM PRESERVATION

7.1 Pavement Resurfacing

As part of the Milton Comprehensive Transportation Plan, a pavement management analysis is being performed concurrently to the overall CTP efforts, and will be included in this report upon completion. The analysis will begin with an existing analysis and then formulate a list of prioritized projects based on need and budget.

7.2 Bridges

The bridge sufficiency ratings for the bridges in the City of Milton are identified in the Inventory of Existing Conditions Report. Generally, if a bridge sufficiency rating scores below 50, the bridge is considered to be structurally deficient. This distinction by itself does not mean that a bridge is close to failing, but rather, it is an indicator that the bridge should be replaced/repaired soon if it is to continue to meet its original design weight. In some cases, bridges with low sufficiency ratings may not warrant immediate repair because of the low volume of vehicular traffic or lack of heavy vehicles along that route. In these cases the bridges are posted with weight limits to prevent overloading the structure.

Based on information provided in the inventory of Existing Conditions report, the City of Milton has five bridges with sufficiency ratings below 50:

7-1: Bridges with Low Sufficiency Ratings in Milton

Bridge ID	Feature Type	Road Name	Feature	Sufficiency Rating
121-0281-0	Over Stream	Bethany Rd	Cooper Sandy Creek	27.70
121-5003-0	Over Stream	Birmingham Rd	Chicken Creek Tributary	36.95
121-5015-0	Over Stream	New Providence Rd	Cooper Sandy Creek	17.71*
121-5151-0	Over Stream	Hickory Flat Rd	Little River	40.83
057-0029-0	Over Stream	Arnold Mill Rd	Little River	39.45
MLT-01	Over Stream	Cogburn Rd	Cooper Sandy Creek	N/A

GDOT periodically compiles a list of bridge maintenance recommendations in the form of a letter addressed to Fulton County. The most recent letter to Fulton County dated May 18th 2009 can be found in Appendix C with the recommendations for all identified bridges in North Fulton County. The recommendations for the above listed bridges can be seen below:

Bridge ID 121-0281-0
Bethany Road over Cooper Sandy Creek
This bridge structure is in poor condition with corrosion of the steel substructure components. The steel piles in the stream channel should be cleaned and painted. Furthermore, these piles should be protected with reinforced concrete encasements extending from points 2 feet below the mud line to a point 2 feet above normal water. Spalls on the bottom of the beams have exposed portions of the reinforcement steel. This reinforcement should be covered to protect it from corrosion.

**In a meeting in July 2009 with a GDOT bridge inspector, it was discussed that this bridge sufficiency rating is outdated and recent repair work has brought the bridge into good condition. The City of Milton will be addressing this in an upcoming citywide inventory.*

Bridge ID 121-5003-0
CR 4, Birmingham Road over Chicken Creek Tributary
At the present time, post this structure for:

10 Tons H-Truck
10 Tons Type 3 Truck
13 Tons Timber Truck
13 Tons HS-Truck and
16 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating.
This bridge structure is in satisfactory condition with corrosion of the steel substructure units. The steel piles throughout the structure should be cleaned and painted. Furthermore, these piles should be protected with reinforced concrete encasements extending from points 2 feet below the mud line to a point 2 feet above normal water. The pre-cast concrete superstructure panels have areas of spalls with exposed reinforcement steel on the underside of the deck. This reinforcement steel should be cleaned and sealed to protect it from corrosion. If the deck slabs are properly bolted together, then this structure could be significantly upgraded.

Bridge ID 121-5151-0
CR 4, Birmingham Road over Little River
At the present time, post this structure for:

10 Tons H-Truck
12 Tons Type 3 Truck
15 Tons Timber Truck
18 Tons Type 3S2 Truck

This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating.
This bridge structure is in satisfactory condition with the exception of the substructure units. The concrete encasement at pile #2 has undermined. This encasement should be extended to a point 2 feet below the existing mud line. If these units were properly bolted and grouted together, this bridge could be upgraded to a point where posting would no longer be required.

Bridge ID 057-0029-0
SR 140, Arnold Mill Road over Cooper Sandy Creek
No comments provided in letter to Fulton County regarding this bridge structure.

Bridge MLT-01
Cogburn Road over Cooper Sandy Creek
This bridge does not have a sufficiency rating since it is not inventoried by GDOT. The City of Milton has identified this bridge as deficient and is programming the ridge for replacement in the FY 2010 budget.

Since the publication of the *Inventory of Existing Conditions Report*, the City of Milton has undertaken an aggressive program to further evaluate and prioritize bridge projects within the City of Milton. As part of this program, the City of Milton staff will:

- Review the latest bridge inspection and inventory data for the structures currently inspected and inventoried by GDOT and additional structures identified by Milton

- Conduct site visits along with GDOT bridge inspectors and review conditions in the field of the 28 GDOT bridges
- Perform detailed visual inspections of the additional 5 structures identified by the city
- Discuss ownership/maintenance responsibility of bridges and verify reporting requirements
- Provide a summary report including repair recommendations and estimated costs for repairs
- Provide a 5-yr repair/replacement priority list

The evaluation and assessment portion of this bridge program is scheduled to be completed in the fall of 2009.

8.0 PUBLIC TRANSIT NEEDS ASSESSMENT

8.1 City-Wide Assessment

Existing transit services within the City of Milton are limited to MARTA bus routes along the southeastern edge of the City. For residents wishing to access areas south of Milton, there is an existing Park & Ride facility at the Windward Parkway exit that allows users to switch from personal vehicles into the MARTA bus system. These buses travel southward and connect to the North Springs MARTA station.

The well-maintained and extensive roadway network in the City of Milton makes personal automobiles the most viable transportation option. Demographic data included in the Inventory of Existing Conditions Report also indicate that most Milton residents can afford this personalized form of transportation. When combined with the low property densities in the City of Milton, this mix of land use and demographics does not indicate a need for a regular city-wide local transit service. If density increases in some areas, such as Crabapple Crossroads, the need for expanding an existing MARTA bus line into these developments could exist, but certain trends still indicate otherwise. Because residents living in a new dense development would probably be able to afford personal transportation, and because a transit service would not be easier or faster to use than a personal automobile, any regular transit connecting to these dense nodes would still be unlikely to receive high levels of ridership. Although regularly scheduled local services may not be needed for Milton, there are some very specific applications of transit that could still be valuable to the community.

8.2 Paratransit Service

Paratransit Service

Many suburban and rural communities around the country have implemented paratransit services to meet the more specific transportation needs of their citizens. Paratransit services are special public transportation options for senior citizens and persons with disabilities. Sometimes these services are offered to the general public as well. Services are usually provided via a small fleet of mini-buses or vans that make specific local trips. Paratransit vehicles do not typically follow set routes or schedules, but rather, are used on an on-call basis within certain operating hours. Paratransit services can be operated by public transit agencies, not-for-profit corporations, and for-profit private companies. By providing more specific demand and response coverage, paratransit can be much more cost effective than regular bus services at supporting the needs of people in rural areas.

This service will be most important to the elderly and disabled populations. According to ARC, between 2000 and 2015 the older adult population will double, and by 2030, one out of every five residents will be over the age of 60. Also, the Milton Disability Awareness Committee has specifically described local paratransit service as an important unmet need in Milton. This group has also stressed the need for sidewalk facilities throughout the City and the need to bring several areas to ADA standards. Providing a linkage between key sidewalk and ramp locations will enhance accessibility of a paratransit service.

While this service could be particularly valuable for the elderly and disabled community, paratransit could also provide a transportation option for anyone unable to operate a personal automobile such as teenagers and others who may be unable to afford a car. Currently, the only city-wide on-call transportation service is provided by commercial taxis which can become cost prohibitive if used regularly.

It should be noted that MARTA currently operates a paratransit service named MARTA Mobility. These mini-buses provide a curb-to-curb service on an on-call basis that is restricted to users with disabilities. These buses will operate within ¾ mile of an existing MARTA fixed route bus service. However, since MARTA fixed route services only reach the southeastern fringe of the City, MARTA Mobility services are inaccessible to most Milton residents.

8.3 Commuter Transit

Many City of Milton residents make daily commutes into the Perimeter and Downtown Atlanta, and the primary corridor for making this commute is Georgia 400 (GA 400). Currently, if a commuter wishes to use public transit to access these urban areas, one has to travel to the Park & Ride facility at the Windward Parkway exit, then transfer to a MARTA bus and travel south to the North Springs MARTA station, and then transfer to either MARTA rail or another MARTA bus. Because there are at least two mode transfers required for this trip, and there are no dedicated bus lanes along GA 400, transit takes significantly longer than using a personal automobile. However, the high level of congestion experienced over such a long distance does indicate the need for a faster alternative.

There are several possible improvements that could make commuting by public transit a viable option. One improvement would be to install dedicated bus lanes or high-occupancy vehicle (HOV) lanes from the Windward Parkway exit southward along GA 400. Dedicated bus lanes would give a significant time advantage to buses travelling during congested periods. Also, the addition of an Xpress Bus route that makes a connection from the Windward Parkway exit directly into the Perimeter or Downtown areas would save time for riders. The interchange at McGinnis Ferry onto GA 400 is currently being considered for construction. If this facility becomes available, this location would present a great opportunity for a multimodal station. Milton residents will have the ability to influence these improvements through participation in the upcoming development of North Fulton Comprehensive Transportation Plan.

9.0 PEDESTRIAN & BICYCLE NEEDS ASSESSMENT

In communities such as Milton that are trying to preserve their rural landscapes, walking and bicycling are becoming increasingly important transportation modes. As specific portions of the City experience an amount of dense growth, particularly in Crabapple and southern areas of the City, walking and bicycling will become much more attractive options for short-length trips. If infrastructure that supports walking and bicycling are provided, the City has the potential to experience improved overall performance of the transportation system by reducing motorized vehicle travel. Walking and bicycling can also contribute to improving the overall quality of life in Milton by improving air quality, promoting safer mobility, and encouraging healthy lifestyles.

9.1 Pedestrian/Bicycle Connectivity and Proximity Findings

The field survey as discussed in the existing conditions section of this report concluded that the City of Milton currently has limited pedestrian and bicycle facilities. The limited supply of sidewalks are primarily located along portions of roadway near the developing areas of Crabapple and along the southern portions of SR 9, Deerfield Parkway, Webb Road, and Morris Road where more recent development has occurred. While the *Milton Trail Plan* presents an ambitious network for multi-use bicycle and trail facilities throughout the City, the majority of the trail is unsuited for roadway cyclists and very few bicycle lanes currently exist within the city limits. If scenic corridors through Milton are designated as part of the Comprehensive Plan, these roadways will need to be prioritized for receiving bicycle lanes.

The existing inventory of pedestrian and bicycle facilities is a reflection of the area's auto-oriented growth pattern. The limited presence of sidewalks that does exist is generally in place where commercial development has recently occurred. Few pedestrian and bicycle facilities currently exist for those wishing to access these newer areas from existing residential areas within the City. In recent public meetings, residents have expressed strong support for improving walkability throughout the City. Methods of connecting a mix of commercial and residential uses will become increasingly important as the area develops. Also, as the city develops its growing network of parks and green spaces, the City will want to link these destinations with a multi-modal mix of trails, sidewalks, bike lanes, and roadways.

9.2 Milton Trail Plan

The *Milton Trail Plan* (adopted July 2007) and associated *Milton Trail Development Standards* ordinance (adopted August 2008), were aggressive steps taken by the citizens of Milton to create a network of multi-use connections throughout the City of Milton. These trails are intended to provide safe and efficient travel for pedestrians, bicyclists, and other recreational methods of transportation along many corridors throughout the City. Cyclists with all-terrain bicycles can use the trail throughout, but roadway cyclists will be limited to using the trail only in the hard surface areas or "bikeable" paved shoulders on rural sections as identified on the Trail Development Standards cross-sections. Most of these paths will be designed with a buffer from roadways, providing a more attractive and safer walking and cycling environment.

Sidewalk and bicycle networks are relatively easy to implement in commercial areas experiencing growth (although continuity of facilities may be a challenge). This is generally done through ordinances that require facilities be constructed along with construction of new development. Implementation is generally more challenging in residential areas with little to no growth.

Milton's decision to adopt the *Milton Trail Development Standards* ordinance created a method of requiring property owners to construct the portion of the trail plan within their property when applying for a development or building permit. While the ordinance takes a first step at construction of the trails, relying on the ordinance alone will result in a prolonged schedule of completion. The City of Milton should continue to focus on the specific projects listed in the Plan and keep independent implementation of these projects a priority.

9.3 Future Growth and Trends

While many portions of the City of Milton will remain low density residential, it is expected that the GA 400 corridor will continue to be a driver for more dense development in southern portions of the City and within adjacent jurisdictions. This growth, as well as GA 400's potential to include transit improvements in the future, may provide a much greater incentive for residents and workers of Milton to access these transit facilities. Connecting to these facilities with adequate pedestrian and bicycle facilities will encourage individuals to choose to complete their trip without the use of an automobile.

9.4 Pedestrian & Bicyclist Needs

Creating a list of pedestrian and bicycle improvement projects should include an understanding of how these facilities will be used and an understanding of cost-benefit to the community. Focus should be placed on the following principles:

- Pedestrian Facilities – Sidewalks meeting ADA standards should be provided in all commercial areas at a minimum. While construction of new sidewalks is required at all new development (per Milton ordinance), this implementation strategy creates a disconnected sidewalk network. A consistent system that meets ADA requirements should be made a top priority in developed areas. The Milton Disabilities Awareness Committee has expressed a need for better sidewalk and crosswalk facilities. Consideration should be given to a city-wide inventory of facilities and plan to address desired service areas and needed improvements.
- Incorporating and pursuing previous plans – Pedestrian and bicycle plans have been developed by an extensive list of interested parties. The *Milton Trail Plan* should continue to be referenced, as it incorporates projects and recommendations from these previous studies.
- Adapting to new development patterns – Development patterns shift over time. A willingness to be flexible and adjust previous expectations in response to outside factors is critical in designing a successful pedestrian and bicycle system.
- City-Wide Design Standards
    - Roadway design standards – Three specific components that contribute to the overall walking and bicycling condition of a roadway segment are: the roadside walking/bicycling condition, the crossing condition at signalized intersections, and the crossing condition at uncontrolled locations (i.e. unsignalized intersections and mid-block locations). Actual or perceived safety and comfort have a major affect on the use of pedestrian and bicycle facilities. The *Milton Trail Plan* provides limited cross-section standards for the proposed multi-use paths. The City should further develop its design requirements for pedestrian and bicycle facilities, especially at their interface with vehicular traffic.
    - End user facilities – In addition to safe travel facilities, pedestrians and bicyclists must also have amenities that encourage walking and biking at their destinations. Facilities

that encourage walking and bicycling include bike lockers, bike racks, shower facilities, etc. This can be accomplished by working with developers through education and outreach as well as through the use of requirements in zoning ordinances.

- Site Planning and Urban Design – Pedestrians typically don't walk more than ¼ mile to reach a destination. Designing new developments in such a way to mix uses and functions to allow individuals to access different destinations within a ¼ mile radius will help allow walking to be a reasonable transportation mode. A downtown location for Milton is currently being contemplated. Efforts should be made during initial stages of development to incorporate elements that will encourage walking and bicycling.

10.0 SUMMARY

10.1 Summary of Identified Needs

By far, the most common transportation need expressed in Milton is the need to manage commuter traffic from surrounding areas which finds its way through Milton. This idea has been echoed by many in Milton ranging from local residents to members of City Council. Also present in Milton is the widely expressed need for transportation improvements resulting from the CTP to support the preservation of Milton's rural character. Milton residents would like to see a decrease in the level of congestion on their rural roadways through carefully developed projects that will not encourage unmanaged widespread growth. These needs, along with many others, have been evaluated through review of land use policies, public input, demographics, market opportunities, and the existing transportation network.

Below is a table summarizing the general transportation needs identified in this report:

10-1: Major Transportation Needs

Roadway	- Manage commuter traffic from surrounding areas - Leverage roadway improvements to preserve character - Reduce congestion on local roads
Safety	- Improve intersection geometry and operations - Improve roadway topography and characteristics - Further investigate identified areas of concern - Increased targeted enforcement
Operations	- Improve intersection operations by way of two-way stops, four-way stops, roundabouts, signals, and turning lane improvements
System Preservation	- Pavement management - Bridge maintenance
Transit	- Provide access to local paratransit service - Provide services for an aging population - Provide managed lanes along GA-400 - Provide multi-modal facility at McGinnis Ferry interchange
Pedestrian Facilities	- Close gaps in sidewalks - Implement the Milton Trail Plan - Improve ADA accessibility at ramps and crosswalks
Bicycle Facilities	- Bicycle lanes - Implement Milton Trail Plan - End user facilities

10.2 Next Steps

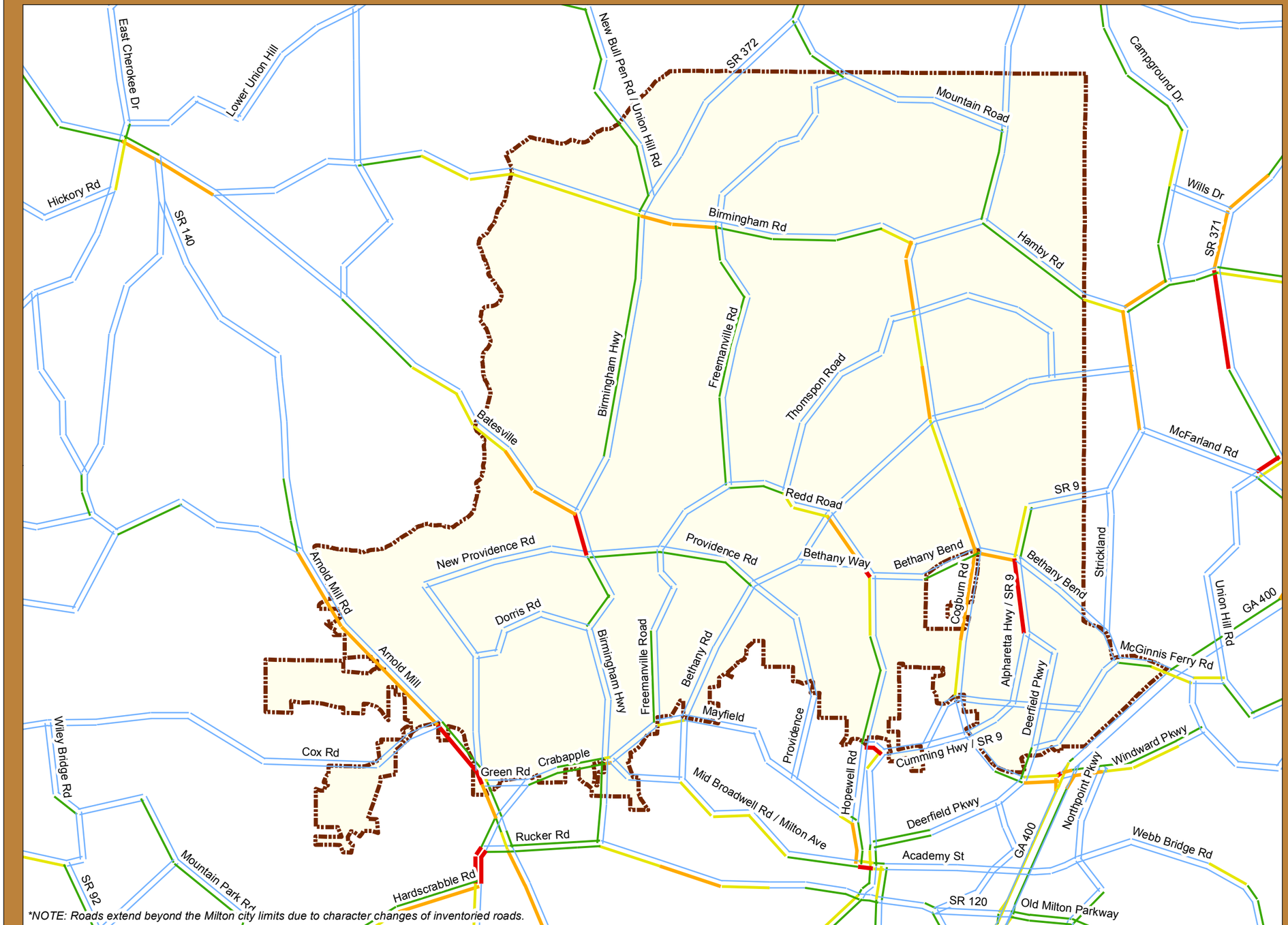
The needs identified in this report will form the basis for developing recommendations in the next and final phase of the Comprehensive Transportation Plan (CTP). Recommendations will be formulated with input from TSAC and Milton Staff in addition significant public involvement through public

meetings and workshops, participation in a public community event (Milton Roundup), and a scientifically valid public opinion survey.

APPENDIX A

Travel Demand Model Scenario Maps

City of Milton Transportation Plan



*NOTE: Roads extend beyond the Milton city limits due to character changes of inventoried roads.

2010 E + C

Travel Demand Model
Link Level-of-Service

Legend

AM LOS

- A/B (V/C < 0.5)
- C (V/C = 0.5 - 0.7)
- D (V/C = 0.7 - 0.84)
- E (V/C = 0.84 - 1.00)
- F (V/C > 1.0)

Road Names

- City of Milton

N
W E
S

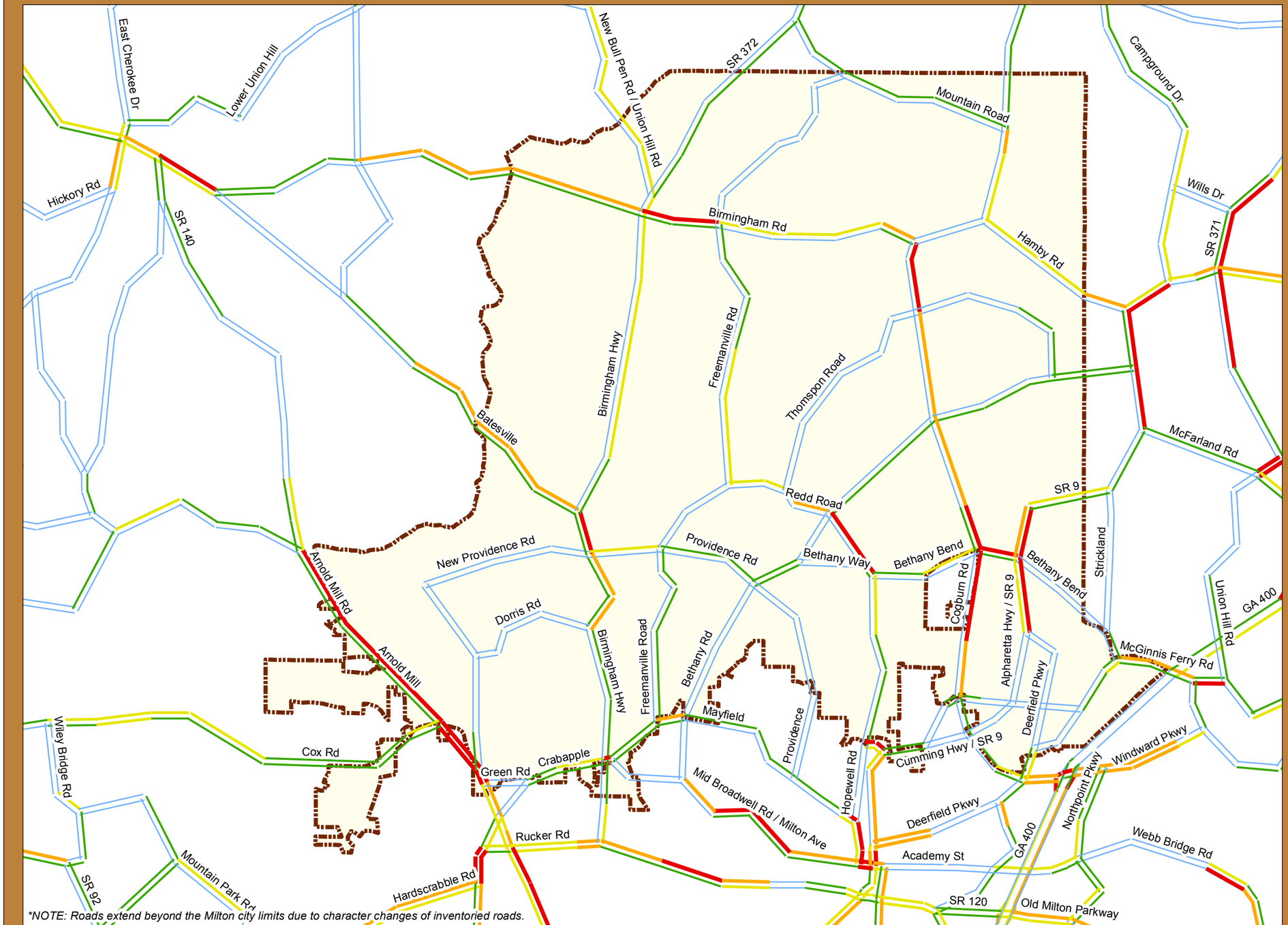
0 0.25 0.5 1 1.5 Miles

Prepared by: Kimley-Horn and Associates, Inc.

Date: July 6, 2009

Source: ARC, Kimley-Horn

City of Milton Transportation Plan



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2010 E + C

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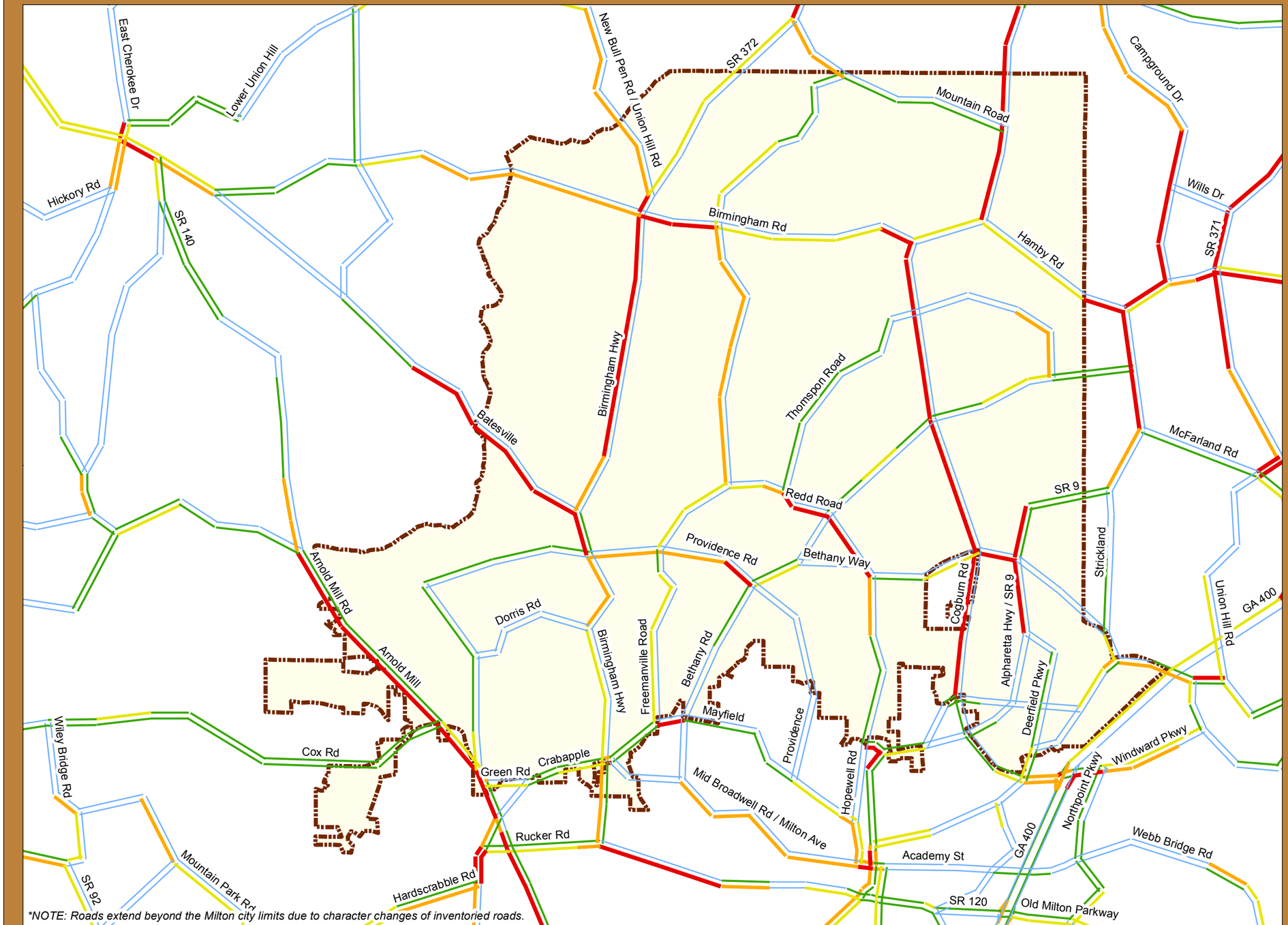

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2030 E + C

Travel Demand Model
Link Level-of-Service

Legend

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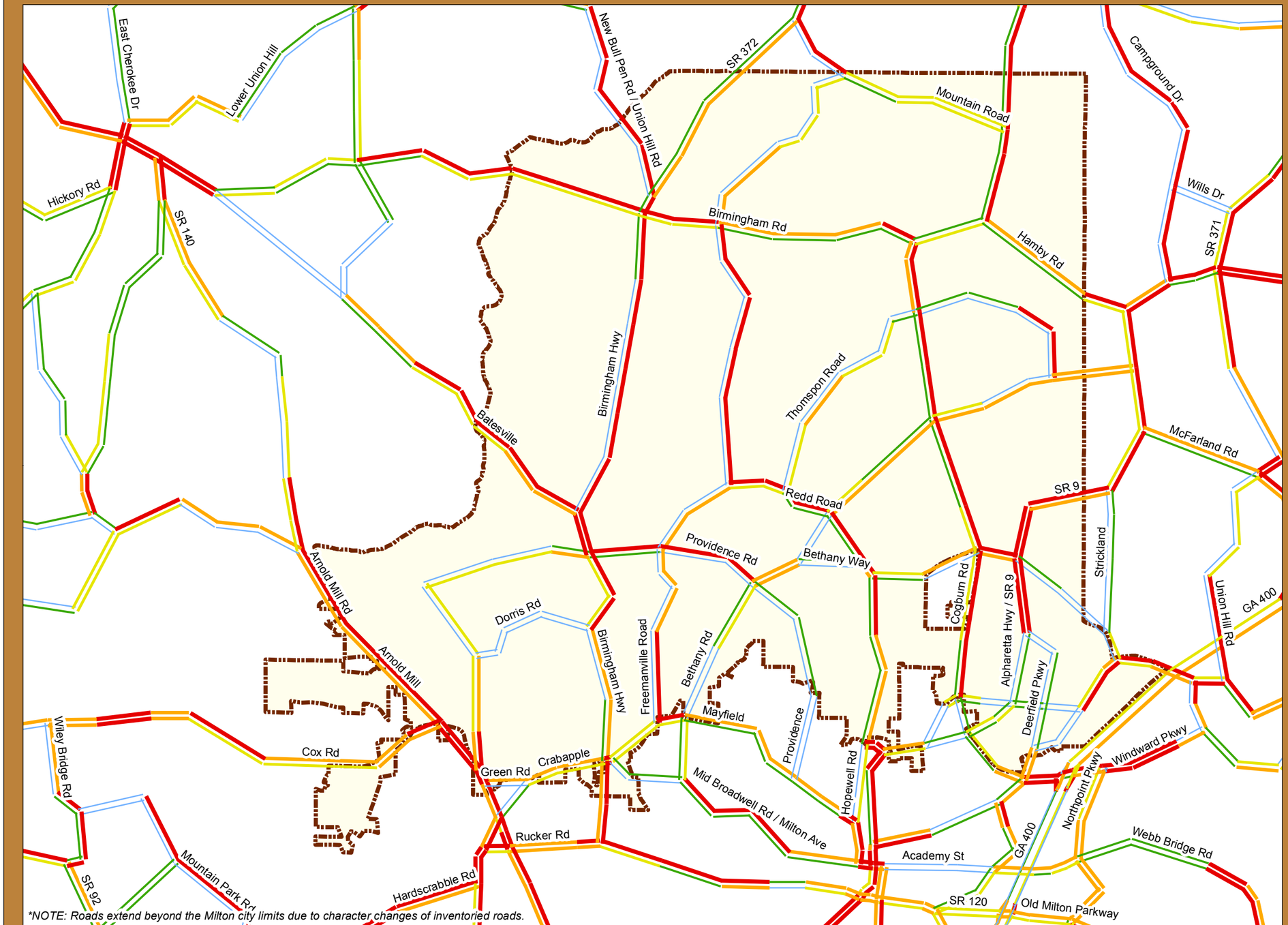

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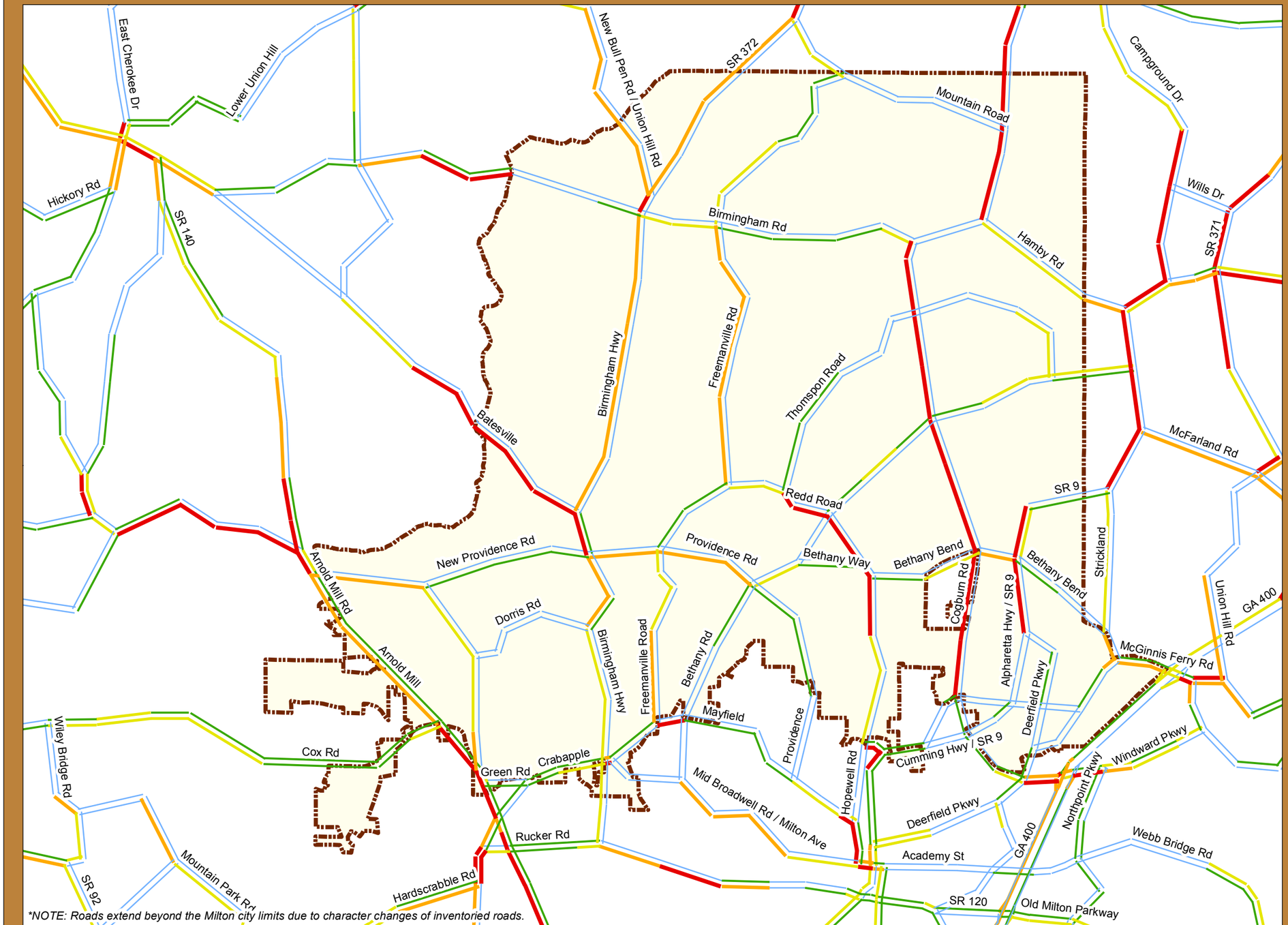

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Scenario 1

Travel Demand Model
Link Level-of-Service

Legend

AM LOS

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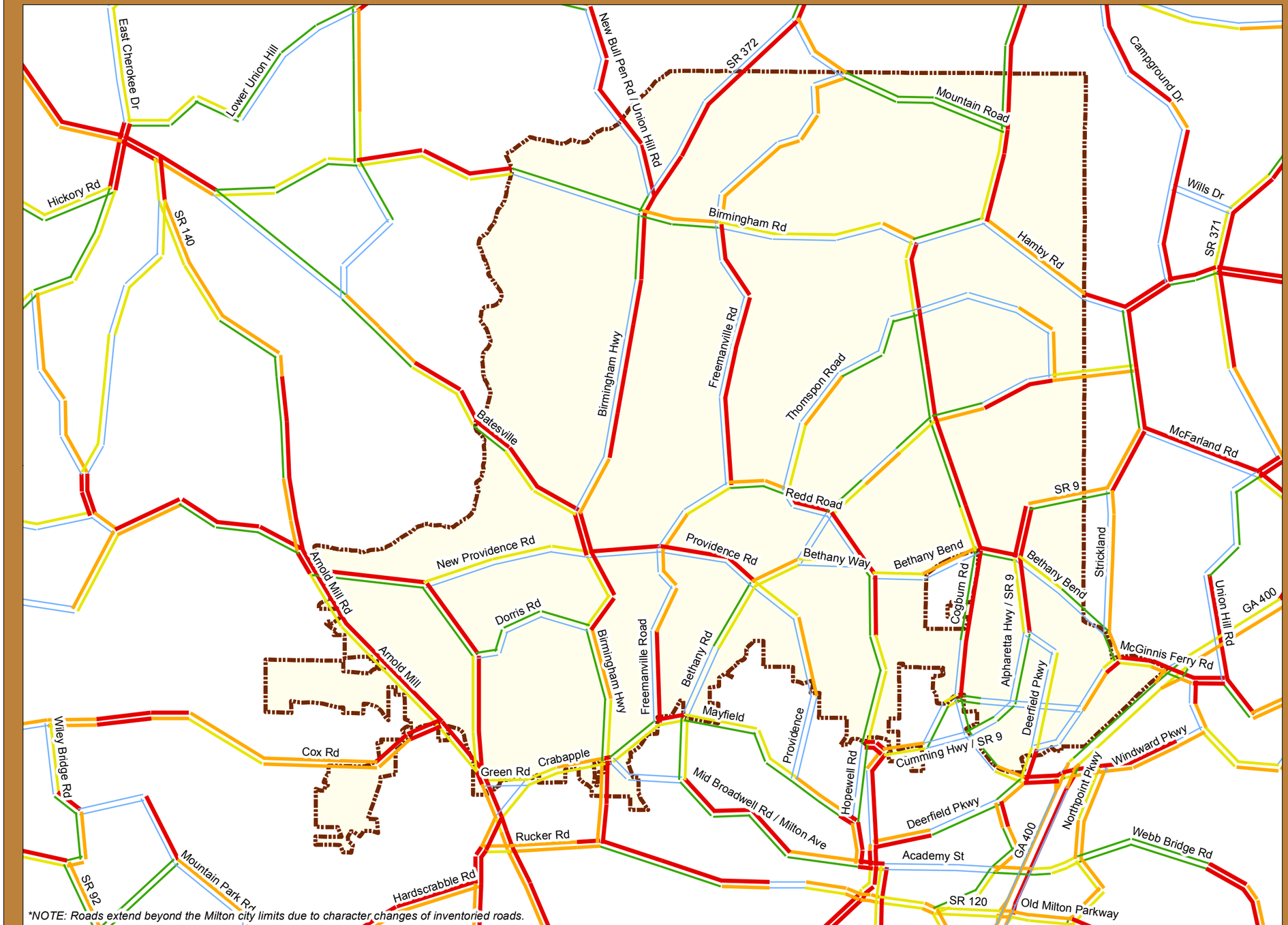

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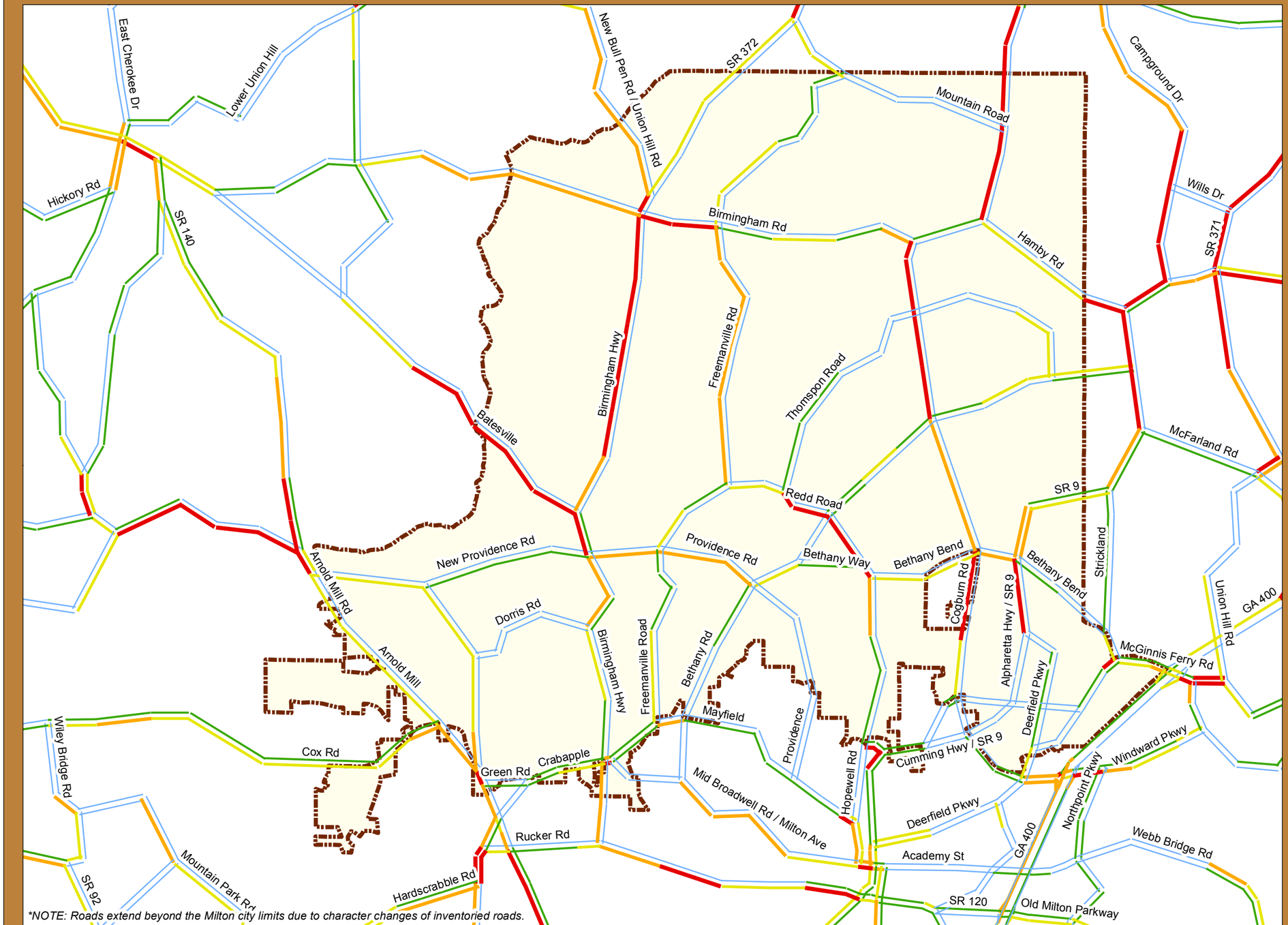

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Scenario 2

Travel Demand Model
Link Level-of-Service

Legend

AM LOS

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Road Names

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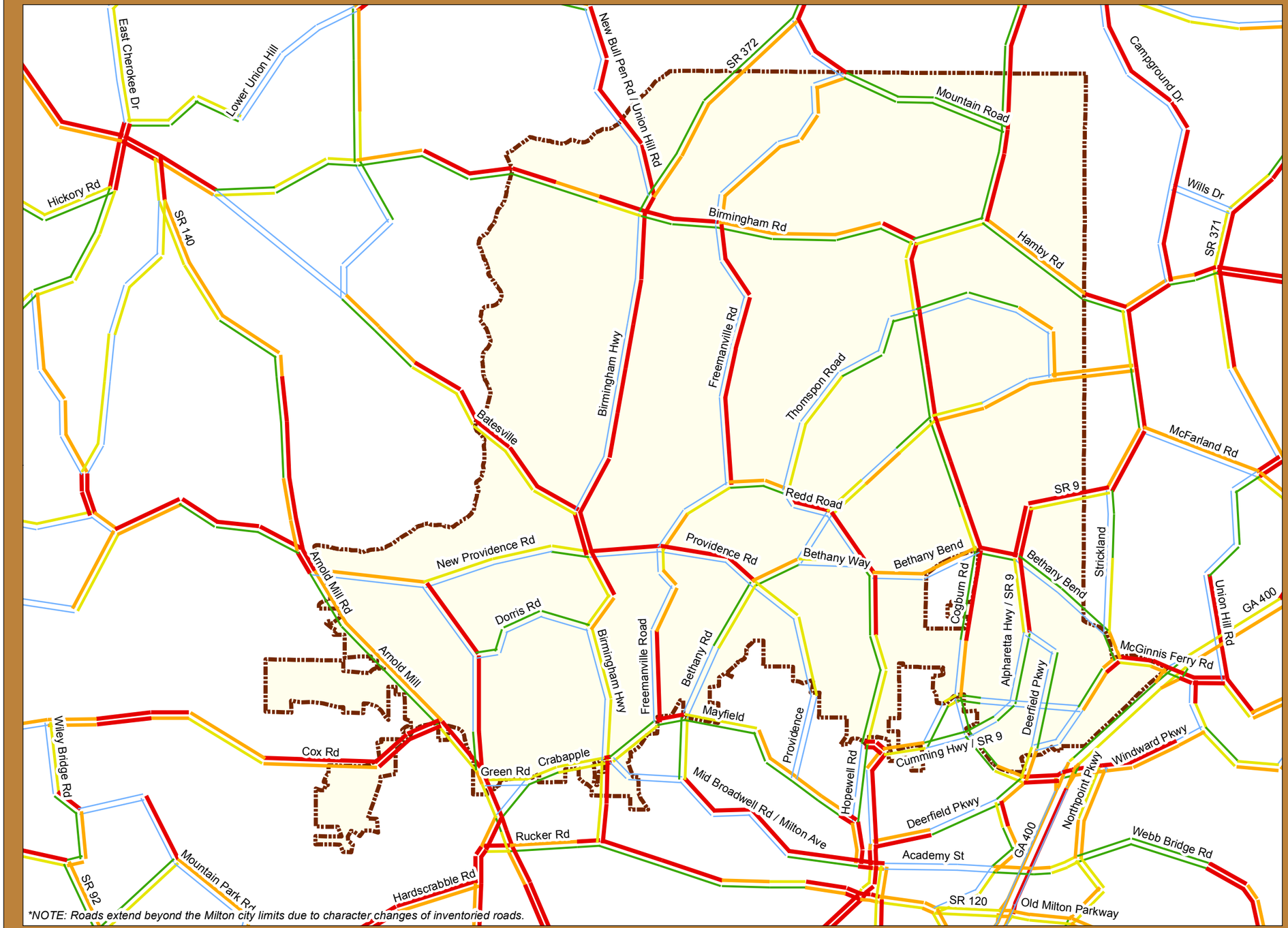
City of Milton Transportation Plan



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Link Level-of-Service

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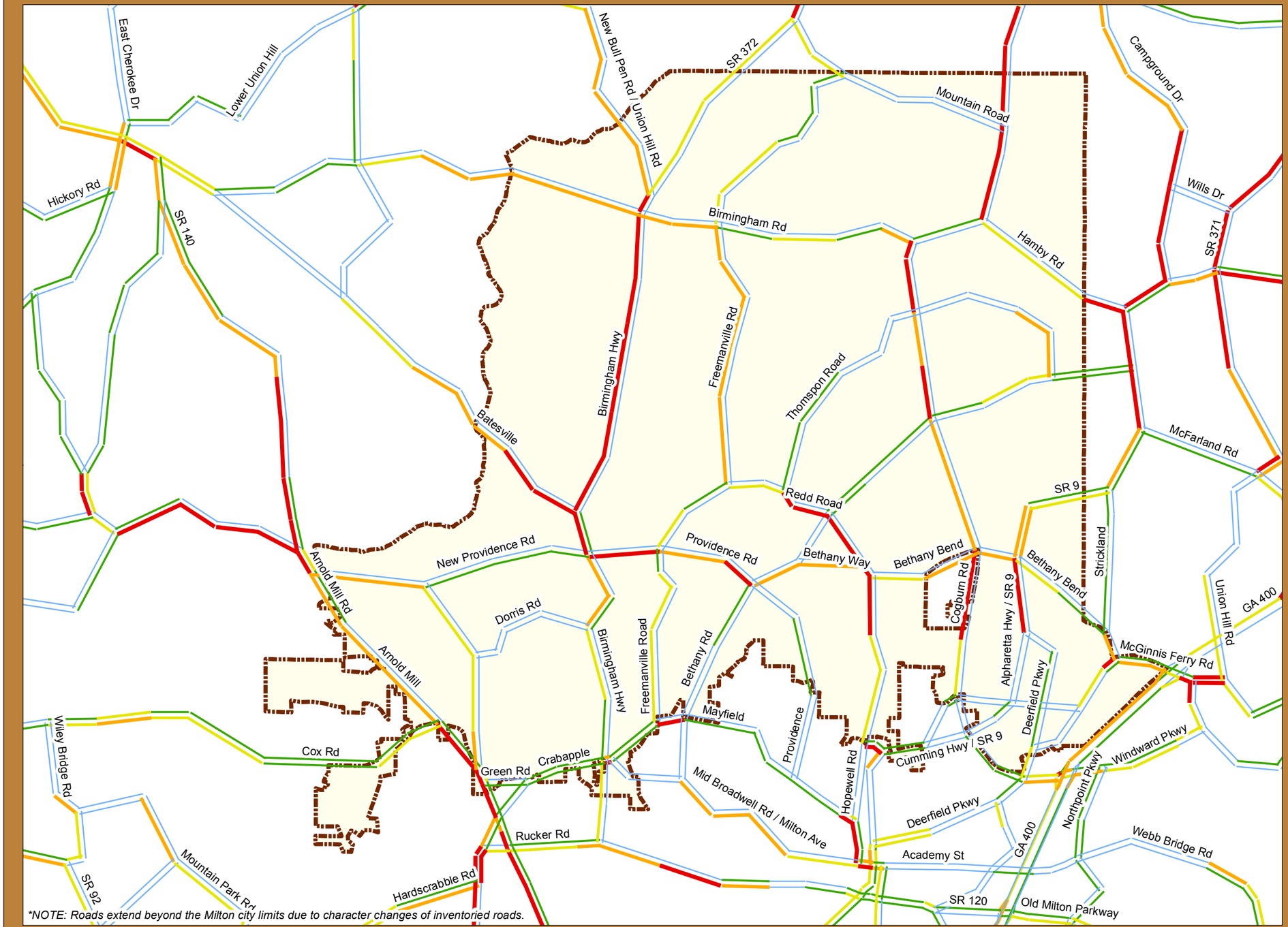

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Scenario 3

Travel Demand Model
Link Level-of-Service

Legend

AM LOS

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Road Names

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Date: July 6, 2009

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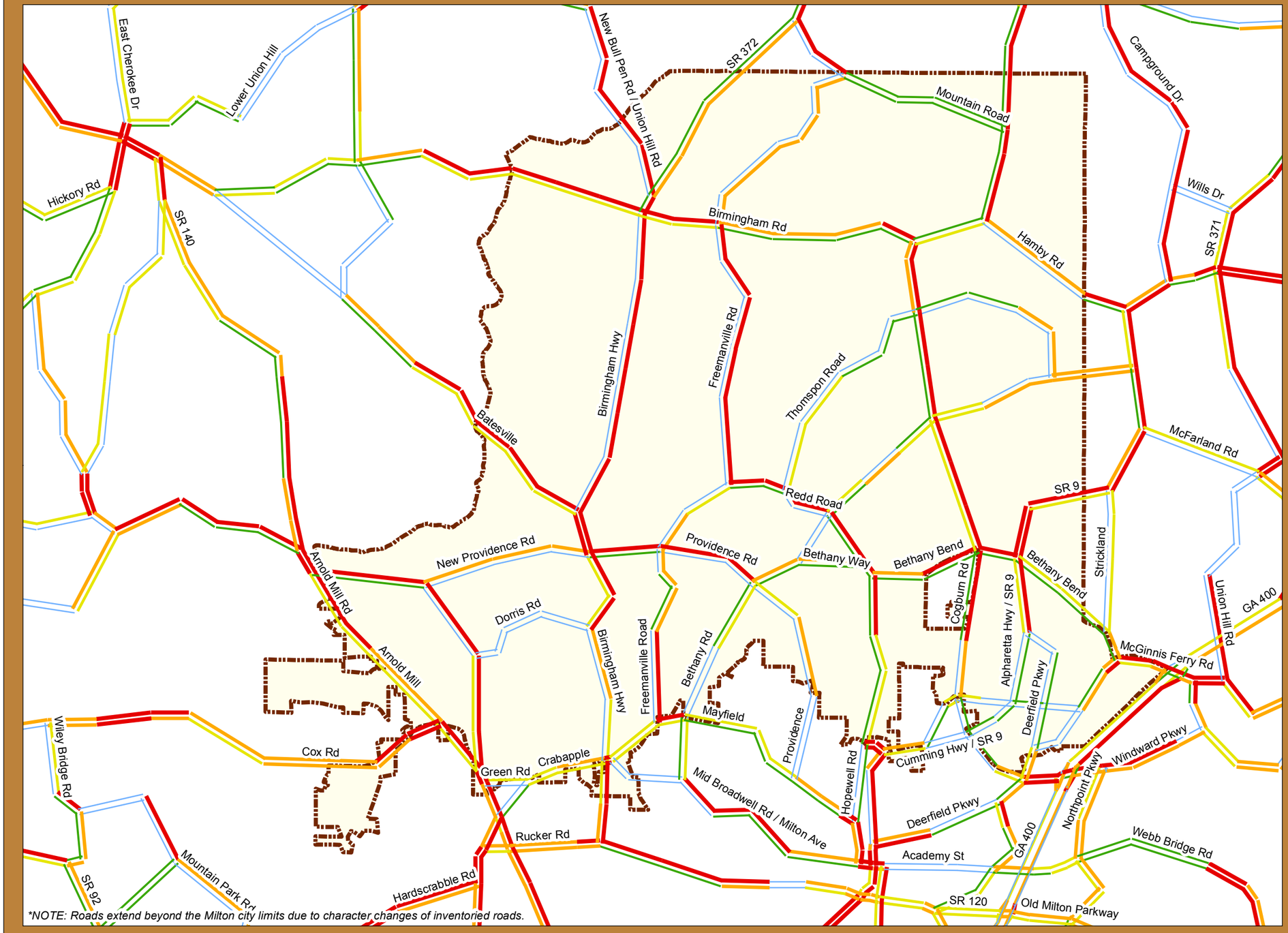

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Link Level-of-Service

Legend

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Road Names

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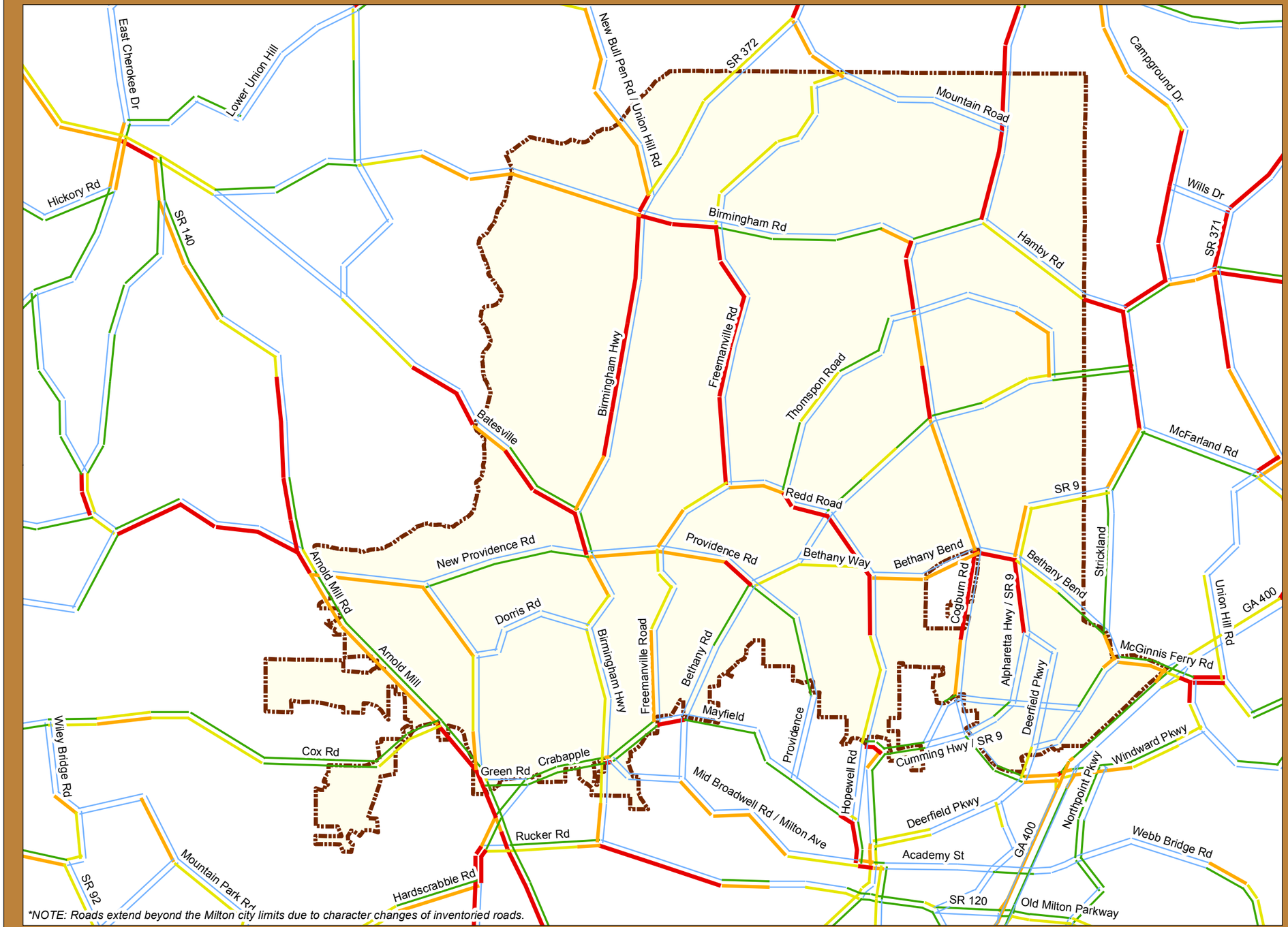

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Scenario 4

Travel Demand Model
Link Level-of-Service

Legend

AM LOS

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Road Names

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Date: July 6, 2009

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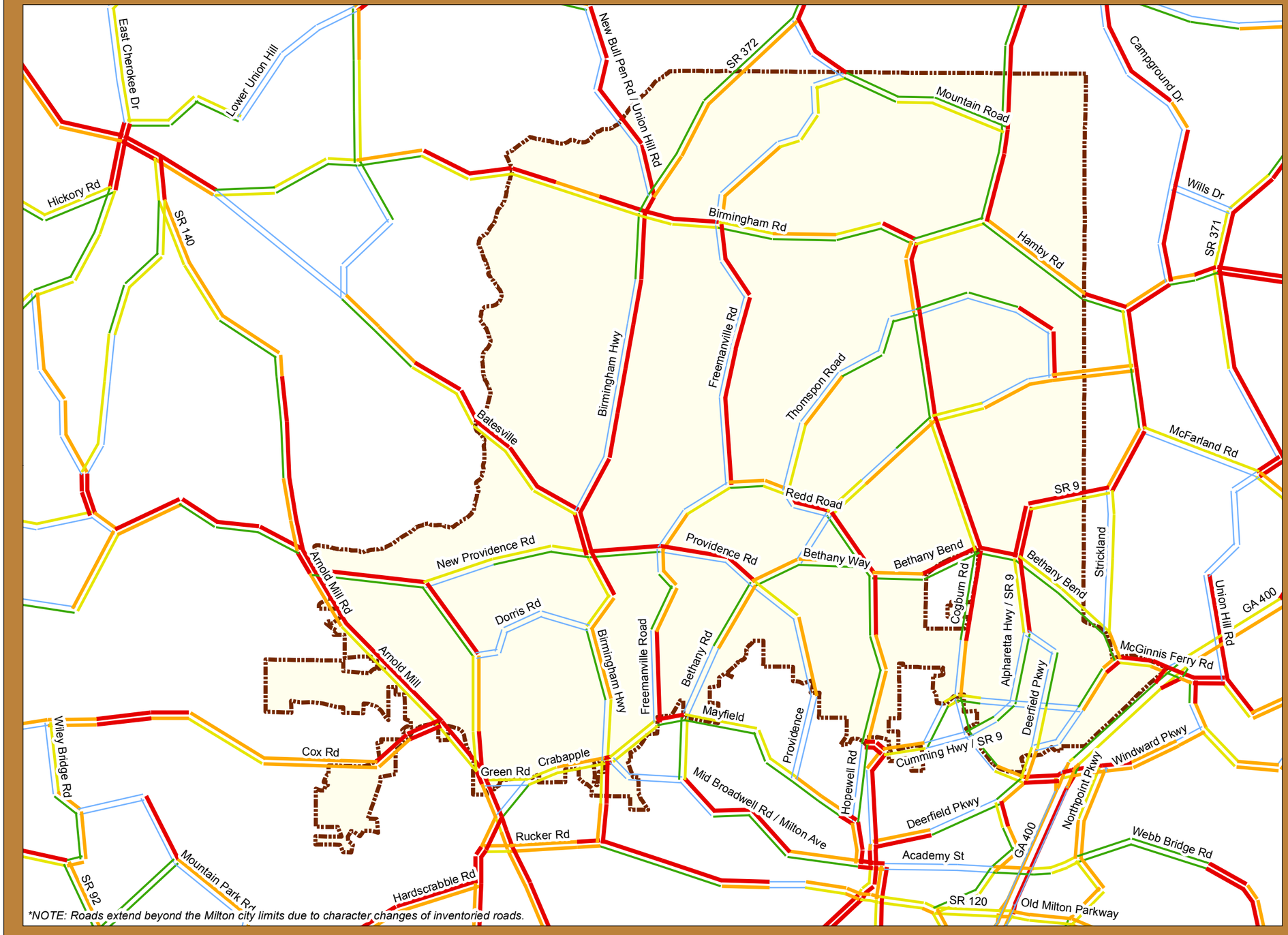
City of Milton Transportation Plan



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Scenario 4

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Link Level-of-Service

Legend

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Road Names

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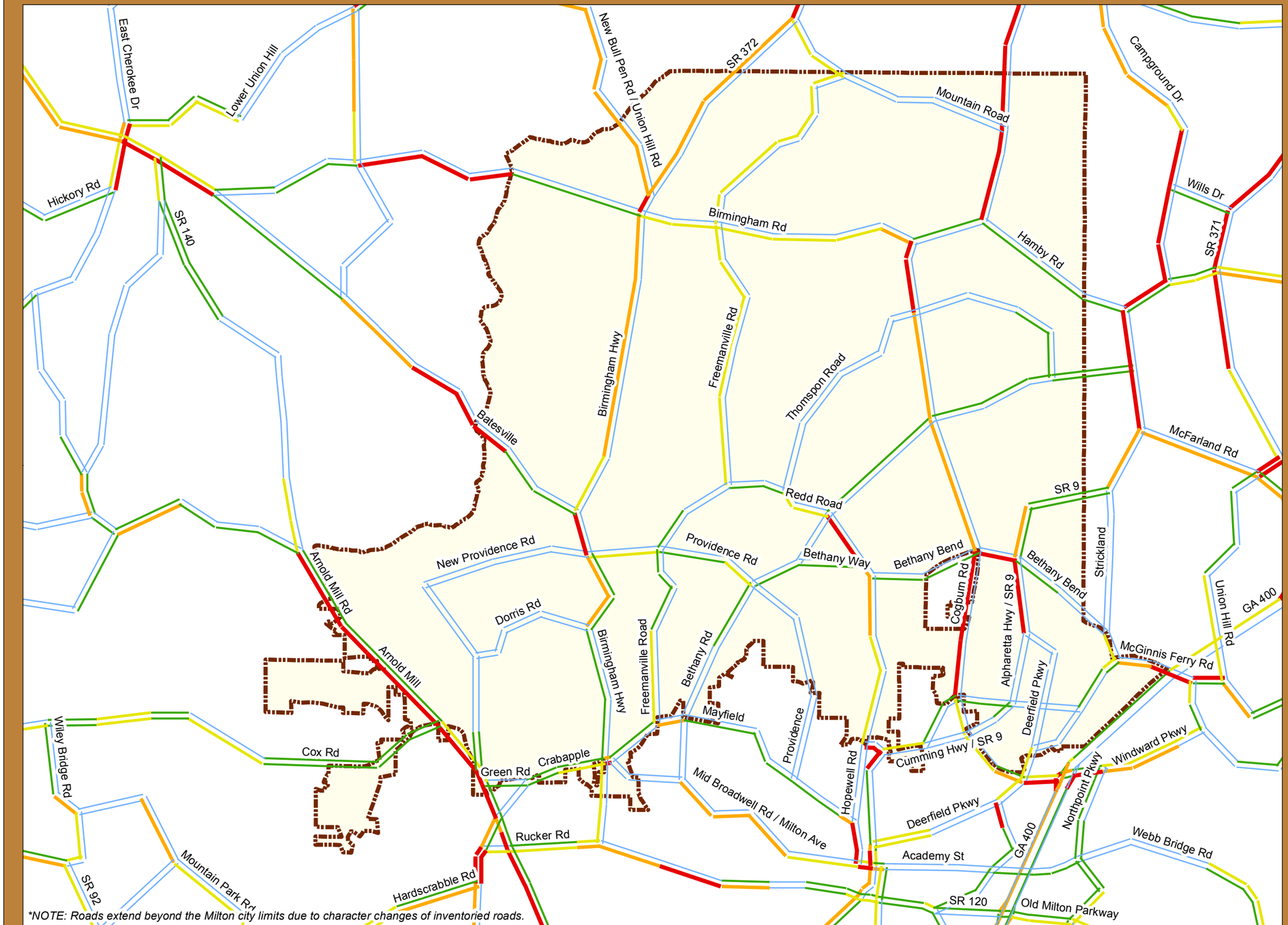

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Scenario 5

Travel Demand Model
Link Level-of-Service

Legend

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Road Names

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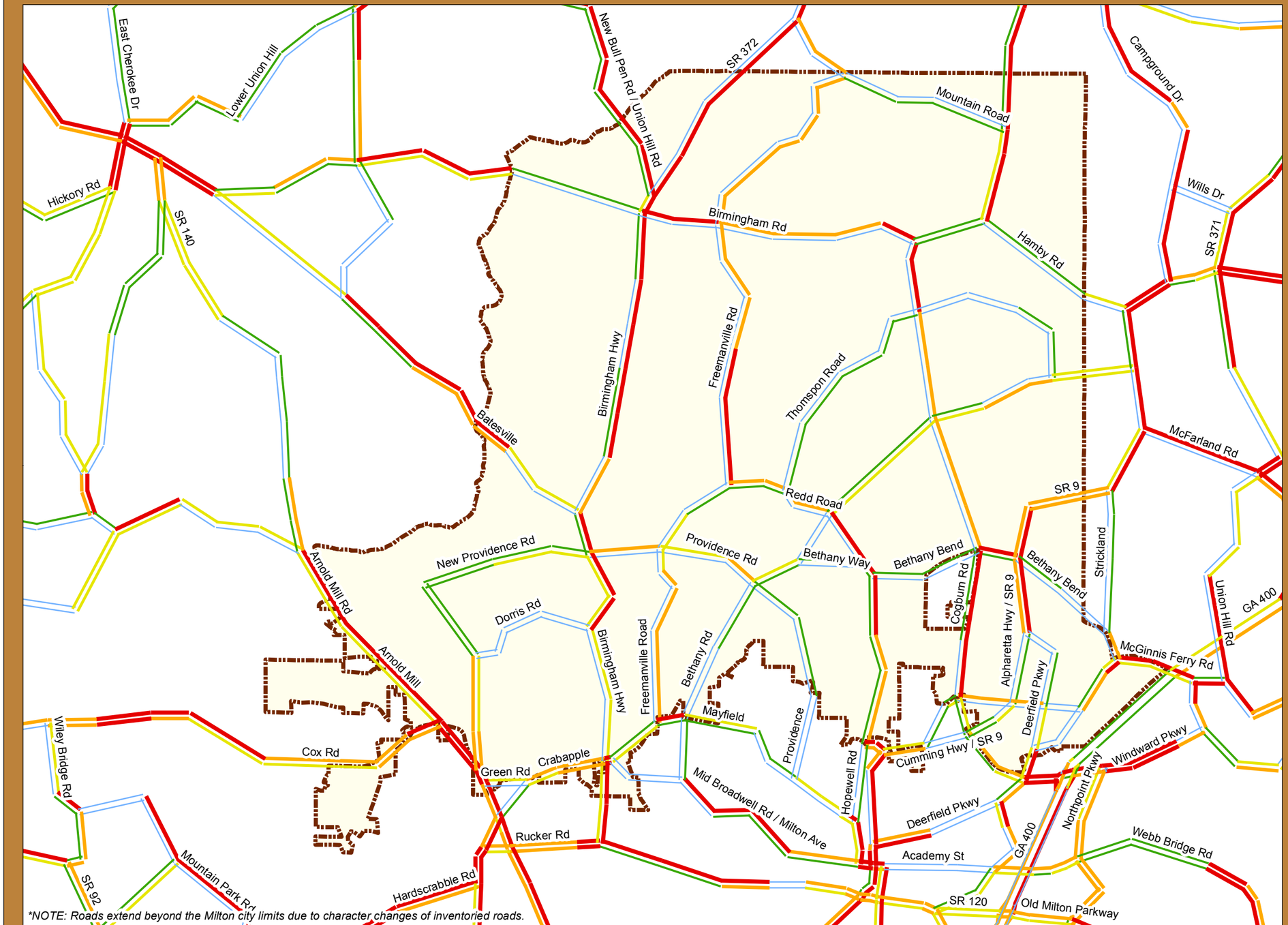
City of Milton Transportation Plan



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Scenario 5

Travel Demand Model
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Legend

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Road Names

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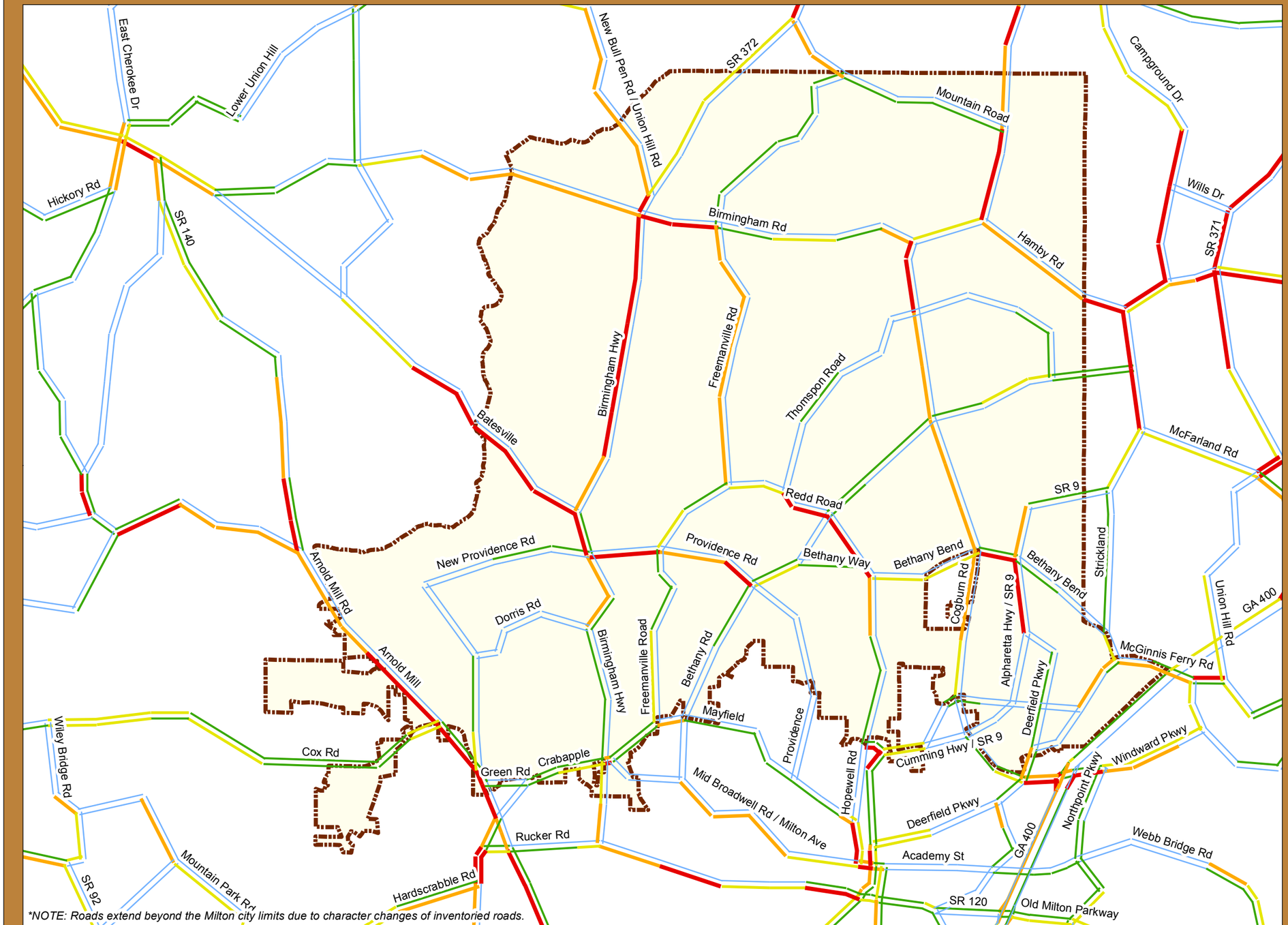

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Scenario 6

Travel Demand Model
Link Level-of-Service

Legend

AM LOS

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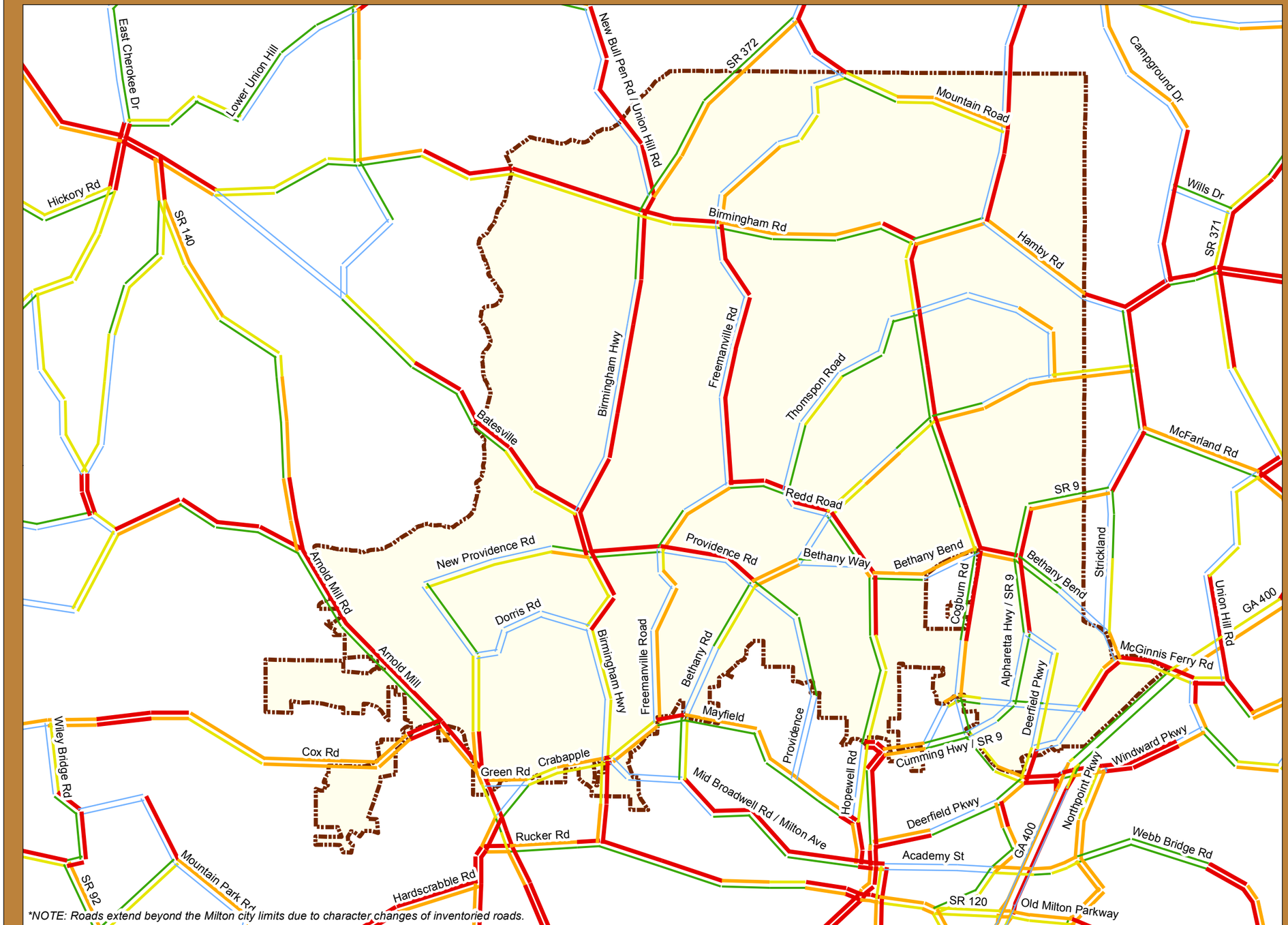

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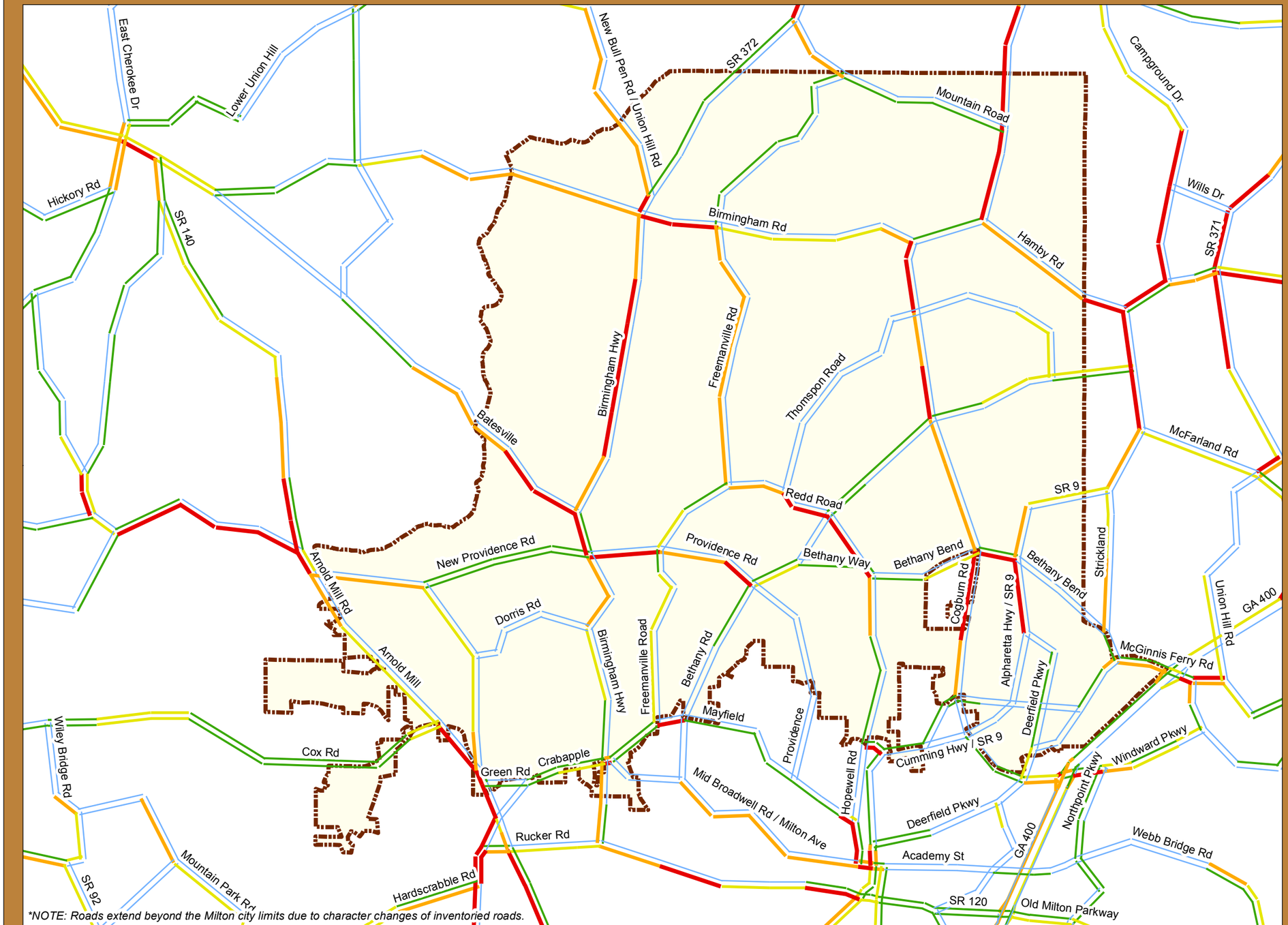

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Scenario 7

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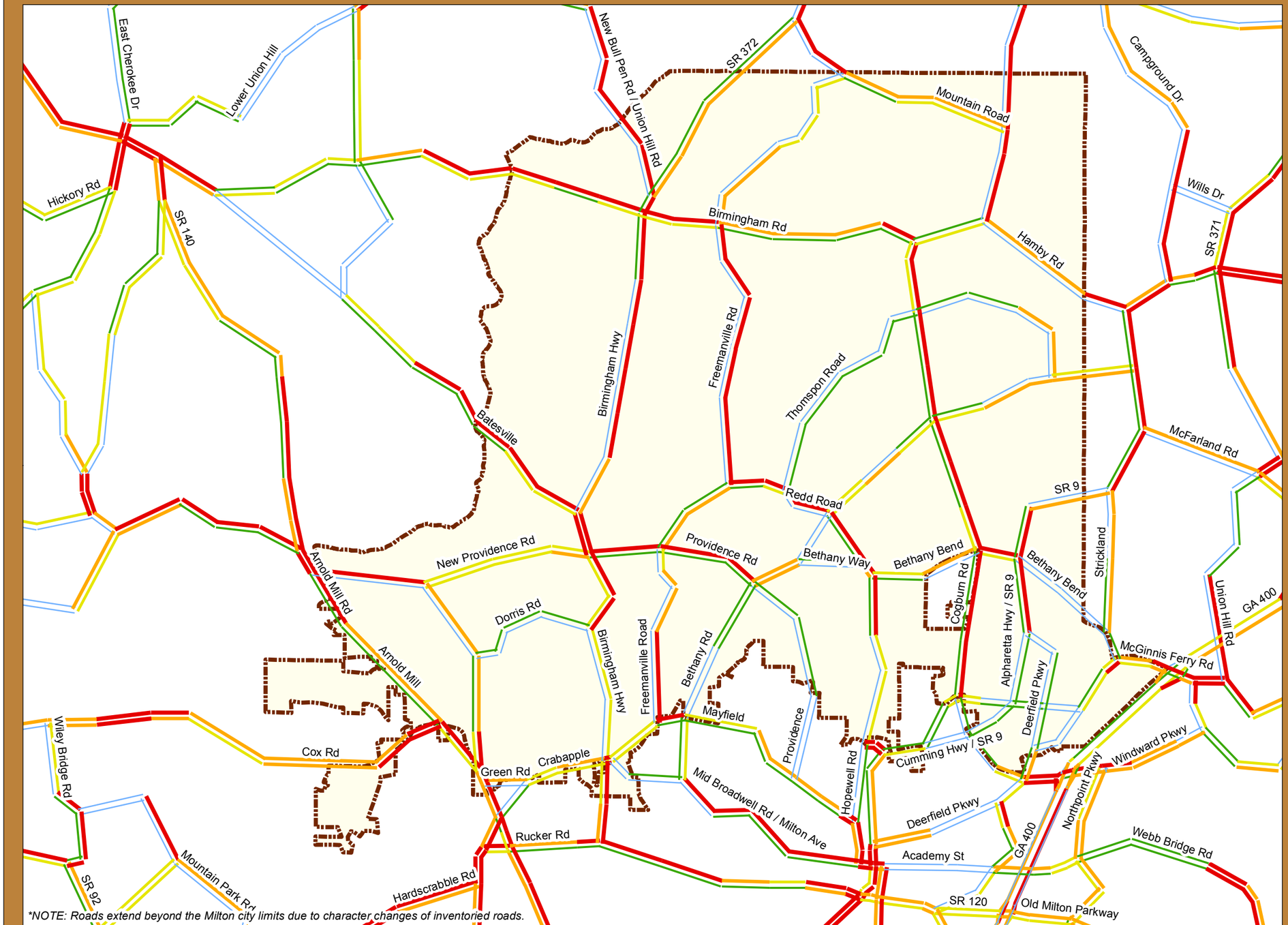

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Scenario 7

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Date: July 6, 2009

Source: ARC, Kimley-Horn

APPENDIX B

Pavement Management

PAVEMENT MANAGEMENT EVALUATION AND RECOMMENDATIONS

Prepared for: City of Milton, GA

July 2009

Kimley-Horn
and Associates, Inc.

1.0 INTRODUCTION

In 2007 the City of Milton, Georgia undertook an extensive pavement management study of approximately 190 miles of city-owned paved roadways. This study was conducted by Infrastructure Management Services (IMS). The overall objective of the development of the pavement management system for the City of Milton was to assess the current pavement condition in order to provide the necessary data to assist the City in developing long term maintenance and rehabilitation programs and anticipate budget needs. The IMS study also provided some introductory information on the principles of pavement management and the condition rating system, the Pavement Condition Index (PCI).

Subsequently, the City of Milton engaged Kimley-Horn and Associates (KHA) to review the results of the pavement management system in an effort to update the customization information to develop more realistic budget needs. The first step included a superficial evaluation of the IMS data including the reported PCI values and maintenance recommendations. Additionally, the City asked KHA to provide specific guidance regarding maintenance and rehabilitation recommendations and associated costs. Further, KHA was to evaluate whether or not, at current funding levels, the City is falling behind their pavement maintenance and condition goals, thus creating a high level of backlog. An investigation into the maintenance cost and techniques for paved roads was required, including an application of IMS's recommendations to meet Milton's specific needs and situation. Lastly, the City looked to KHA to provide input on maintenance techniques, cost and schedule of the multiple unpaved roads in Milton, which were not investigated in the IMS report but are an important component of Milton's network and environment. In order to achieve the objectives of this study as requested by the City of Milton, KHA identified seven tasks in the scope of work as summarized below:

- Task 1: Review of Existing Pavement Management System
- Task 2: Field Verification of Distress Data and Pavement Condition Indices
- Task 3: Review and Update of Internal Customization Data
- Task 4: Development of Specific Maintenance and Rehabilitation Recommendations
- Task 5: Review of Anticipated Backlog at Current Funding Levels
- Task 6: Gravel Road Maintenance Investigation
- Task 7: Recommended Project Lists and Summary Report

2.0 REVIEW OF EXISTING PAVEMENT MANAGEMENT SYSTEM

During the initial implementation of the City's pavement management system with IMS, the pavement management software module of the GBA Master Series application was chosen as their preferred software. The GBA software comprises many functional applications from an asset management perspective including sewer master, water master, street master, and right-of-way master, to name a few. Of importance to this particular application is the *GBA Pavement Manager* application that IMS utilized. Capabilities of the Pavement Manager include but are not limited to dynamic segmentation, field inspection data and pavement condition index, forecasting and modeling, and system integration.

For this analysis, KHA examined the pavement management system that IMS developed for the City including a cursory review of the reported pavement condition values, maintenance techniques and recommendations, unit costs, and budget scenarios. The KHA team focused on evaluating the *outcomes* of the GBA software and applying our professional opinion and experience to develop specific recommendations for maintenance dollars. The scope of this investigation did not include an update of the GBA software. However, should the City of Milton feel it is necessary to run additional analysis scenarios or update internal information within the software for future budget planning, the City has that option and flexibility. Recommendations on the frequency of updating the pavement condition data as well as other parts of the pavement management system are explored later in the report.

In that light, KHA conducted a thorough review of the analysis results external to the software. This review was completed using documentation provided by the City including previous reports and analysis spreadsheets. Through this information, KHA was able to attain the necessary information to complete the overall objective of developing a prioritized list of rehabilitation projects that will allow the City staff to program the highest priority projects based on available funding on an annual basis as they work through the budget process. KHA evaluated general backlog expectations and network condition based on the updated unit costs, which will be discussed later.

Although updating unit costs and project prioritization can be done external to the GBA software, KHA would like to note that there are some further updates that could be made within the software if the City chose to. For example, the City (whether in-house or with a consultant) could update the pavement condition of the roadways that have been rehabilitated since the 2007 survey to calculate the impact to the overall condition of the network. Also, the unit costs and maintenance techniques could be updated within the software based on KHA's findings and the budget scenarios re-run to determine how the program would reprioritize the projects. This would give specific and updated backlog information based on PCI goal and annual budget. For example, the program could report the anticipated area-weighted PCI at year 5, necessary budget to achieve an area-weighted PCI of 70 in 5 years, anticipated dollars of backlog, and how backlog percentage are impacted with updated unit costs at various budget levels ($1.25M, $2.00M, $2.25M, $2.50M, $3.00M, and $3.25M) as summarized in the IMS pavement management report for 2007.

If the City desires to have this data readily available, KHA suggests that the City engage IMS (or utilize the software in-house) to update the unit costs for maintenance and rehabilitation activities based on the findings of this study. Further, it would be beneficial to have IMS update the funded and completed projects within the database and rerun the budget scenarios. At this time, it is fairly simple to extrapolate

and manipulate the data provided by the IMS study to produce pavement management recommendations, but as time progresses, the data will become more out-of-date and less useable. For example, roadway segments may deteriorate more quickly than predicted. Additionally, the condition of the rehabilitated roadway segments will not be reflected in the study. KHA recommends that the City update their pavement management condition and study every three to five years as general guideline.

After reviewing the data and results, it appears that the Pavement Manager module in the GBA software was applied correctly and that the analysis routines were run appropriately, outputing valid results. However, like any software, the accuracy of the program inputs has a direct effect on the program outputs. In this particular case, previous potentially outdated unit costs for maintenance and rehabilitation activities have yielded unattainable budget needs and rehabilitation backlog expectations. Additionally, the maintenance techniques IMS suggested (with corresponding unit costs) are not the state of practice in Milton or Georgia; therefore, the recommendations and costs are not directly applicable. It is KHA's opinion that the City will see best results from techniques that the Public Works department is familiar with and that local contractors perform often in order to get predictable results. Updating the unit costs for common maintenance and rehabilitation activities to reflect local and economic conditions will ultimately result in more realistic pavement condition and budget expectations for the City of Milton. It will also provide a better planning tool, thus achieving the overall goal of reducing the level of backlog while maintaining the roadway pavement condition at a high level. Given the recent volatility in construction costs it is recommended that the anticipated project costs provided in Appendix A be reviewed on an annual basis to assure accurate given budget estimations are being developed given conditions at that time.

3.0 FIELD VERIFICATION OF DISTRESS DATA AND PAVEMENT CONDITION INDICES

The visual distress data activities were conducted by IMS via automated technology using a Road Surface Tester to obtain continuous surface condition, rutting, and roughness data. According to the IMS report, the digital images and data collected from the Road Surface Tester were then interpreted and used to develop a pavement condition index (PCI) using various weighting factors as outlined in the Georgia Department of Transportation (GDOT) procedure.

In order for KHA to adequately analyze the overall results of the pavement management system as desired by the City, it was imperative that KHA was confident with the single most important input into the pavement management system, the PCI. After becoming familiar with the GDOT pavement condition scoring system used by the City of Milton and the initial PCI results provided, KHA conducted field verification activities of the existing data to assure that the PCI values being assessed were accurate. During the week of March 9, 2009 KHA conducted a window verification survey of condition data provided to the City by IMS.

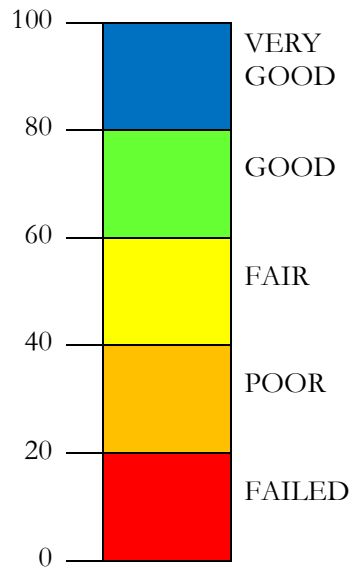
The pavement condition data presented in the IMS report is summarized based on various distress indexes that when coupled with selected weighting factors ultimately determine the PCI value of each individual segment. The individual distress types, quantities, and severity levels identified in ASTM D6433-99 *Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys*, were interpolated from the video distress imaging and used to determine various indexes including the roughness index, rut index, longitudinal crack index, alligator crack index, distortion index, raveling index, patching index, block index, and edge cracking. The method used to determine the specific index values for each individual distress type is proprietary to the prior consultant; however, all necessary data was made available in order to conduct an accurate windshield verification of the data provided. KHA is aware, however, of how the index values coupled with the selected deduct weightings were used to determine the PCI value. In fact, having the multiple distress factors (i.e. rating of roughness, rutting, cracking) allowed KHA to conduct a more detailed window verification by summarizing not only the PCI value but also the various distress mechanisms driving the overall pavement condition. More so, these distress indexes provide valuable insight to the cause of deterioration and can be considered further when developing specific maintenance and rehabilitation recommendations.

The final calculated PCI value is a number from 0 to 100, with 100 representing a pavement in excellent condition and 0 representing a failed pavement. Because only the surface layer of a multi-layered pavement is examined, PCI survey results are only an indirect indicator of the overall condition of the pavement. However, analyzing the types of distress on a section of pavement and where its PCI rating falls on a qualitative scale can give additional insight about the pavement's condition.

In general terms, roadway pavements with a PCI of 70 to 100 that are not exhibiting significant load-related distress will benefit from preventive maintenance actions, such as crack sealing and surface treatments. Pavements with a PCI of 40 to 70 may require major rehabilitation, such as an overlay. Often, when a pavement has a PCI less than 40, reconstruction is the only viable alternative due to the substantial damage to the pavement's structural integrity. It should be noted that the rehabilitation type based on PCI range can be customized based on the general practices of the City, and the above ranges

only provide general guidelines or standards of practice. Figure 3-1 shows a generalized PCI range and its associated descriptive rating.

Figure 3-1. PCI Rating Scale



Although PCI ratings can be used as a general guideline for identifying the repair type, examining the individual distresses measured during the survey is often more useful in assessing the cause of deterioration. The PCI procedure divides distresses into three categories based on the expected cause of the distress. Knowing the cause(s) of the pavement deterioration allows for the identification of the appropriate repair and rehabilitation alternatives.

Assuming some level of subjectivity introduced by a windshield survey at roadways speeds, KHA is in agreement with and validated the PCI values reported in the IMS report. The attached map in Appendix B depicts the pavement condition of the entire network. Only a very few segments were identified to have fallen into lower PCI ranges than what was previously reported in 2007. These particular segments likely reached the end of their design life and have deteriorated significantly since the time the video inspections occurred, and the discrepancy should not necessarily be attributed to an error in the data reported. Additionally, the roadway segments that were rehabilitated in 2008 are now at a much higher quality (assumedly PCI=100 for new construction) than reflected in *rev 3* of the IMS report. It would be beneficial to update these condition values and determine a new area-weighted PCI and backlog value.

4.0 REVIEW OF INTERNAL CUSTOMIZATION DATA

Valid customization data, including unit costs for maintenance and rehabilitation activities and prioritization guidelines, is necessary to develop appropriate costs and timing for a maintenance and rehabilitation program. KHA conducted a detailed review of the specific maintenance and rehabilitation units costs used in developing annual rehabilitation program for the City of Milton.

Given the recent volatility in market conditions and construction costs it is imperative that actual costs for the City of Milton be applied in the development of budget requirements. KHA reviewed local costs by talking with industry leaders and conducting a thorough review of recent bid tabulations for similar construction activities. From this investigation, KHA developed costs (per unit) for the recommended activities. The City provided KHA with three recent resurfacing projects that were reviewed and used in the development of updated unit costs. The City indicated their concerns that the unit costs used to develop project costs during the initial implementation of the pavement management study were high as compared to actual construction costs, thus adversely impacting the perception of anticipated annual budget needs.

Additionally, KHA reviewed the prioritization guidelines developed by IMS and the City during the initial development of the pavement management system. IMS presented the recommended maintenance projects based on six different annual budget scenarios ranging from $1.5 to $3.25 million. Given the analysis scenarios, i.e. constrained budget scenarios, run in order to determine budget needs it is important to have valid prioritization guidelines in place which ultimately provide guidance on what pavement sections to rehabilitate and at what time given varying funding levels.

From a review of the initial pavement management report, there is little data presented on how the unit costs for maintenance and rehabilitation activities were derived. The report does not suggest that the unit costs are based on local conditions but does summarize a few assumptions in the development of the unit costs including:

- Allowances for localized patching, grinding, and manhole/valve lifting where required
- No allowances for curb and gutter replacement, drainage improvements, or sidewalk improvements
- 20% allowance for traffic control, engineering, inspections, and contingency

Although these assumptions are necessary in developing appropriate unit costs for rehabilitation activities, if material and labor costs are not developed based on local conditions, the projected costs will be inconsistent with actual unit costs. The result of such inconsistency is that the estimated project costs will be higher or lower than the actual cost ultimately impacting things such as anticipated annual budget needs, backlog values, and recommended capital improvement projects.

KHA conducted a thorough review of bid results from the FY08 City Wide Resurfacing Project provided by the City of Milton in order to develop more realistic unit costs. This particular project included the rehabilitation, patching, surface milling, and paving for approximately four miles of City-owned roadways. In addition, KHA had discussions with local contractors in an effort to gather additional unit cost information.

Ultimately it was determined that the unit costs developed during the initial implementation result in project costs that are inflated by approximately 15-30 percent depending on the PCI range of each individual segment considered. For example, a segment classified as a minor arterial with a PCI value between 0-35 had a unit cost between $15.50 and $38.50/yd^2 applied to it depending on its PCI and other distress factors; whereas, the unit costs determined by KHA based on the actual treatments being applied by the City for segments in this condition range were determined to be between $15.60 and $22.50/yd^2. As evident by these numbers, the unit costs applied previously to segments at the low end of the PCI range were higher than the actual costs for the rehabilitation type being applied but as the PCI value increases the unit costs tend to correlate more closely with those determined by KHA.

Although the majority of the variation in maintenance and rehabilitation unit costs can likely be attributed to the fact that local conditions were not considered previously, some variation could also be due to the difference in the recommended rehab type (and how that unit cost is determined) as compared to what rehabilitation type is actually being applied. For example, in the initial study roadways classified as minor arterials with PCIs ranging from 0-15 have a recommended rehabilitation strategy of complete reconstruction with a unit cost between $26.50 and $38.50/yd^2 being applied when in reality the City is applying a treatment consisting of isolated areas of full-depth replacement, 30% patching, and a mill and replace that has a significantly lower cost per area.

It is our opinion that the unit costs calculated and reported here by KHA are appropriate budget numbers for planning and do not reflect the highest or lowest end of the construction pricing spectrum. With each fiscal year and each funded project, the City should revisit specific cost data and construction bids. For example, the current market conditions generally report low construction pricing due to lowered demand and a slow economy. This competitive pricing is beneficial to the City now, but should not be used for long-term planning numbers. Likewise, the highest end is not an appropriate way to store City budget that may need to be used to fund other projects. KHA recommends using a unit cost that represents a stable market with a slight adjustment to the high end. KHA took all of these factors into consideration when developing updated project costs and rehabilitation recommendations lists.

5.0 DEVELOPMENT OF SPECIFIC MAINTENANCE AND REHABILITATION RECOMMENDATIONS

In addition to assessing the current condition of the roadway network, the primary objective of a pavement management system is to develop maintenance and rehabilitation recommendations based on available funding and priorities. Initially, KHA was asked to provide rehabilitation recommendations for FY2010 (2009 paving) based on an available budget of $2 million dollars and FY2011 (2010 paving) based on a budget of $900k. Subsequently, the City asked KHA not to consider anticipated annual budgets in developing rehabilitation recommendations but instead to only develop a list of roadways in need of rehabilitation and the anticipated costs. Using the recommended prioritized project list for collector and arterial roadways provided by KHA, it would then ultimately be the City's responsibility to program the highest priority projects based on available funding as the budget is developed on an annual basis. In an effort to develop realistic recommendations and anticipated project costs, KHA discussed the City's priorities with the Public Works Departments, reviewed the existing pavement condition data, and updated project costs developed in 2008 as discussed previously. Additionally, KHA was asked to provide more specific guidance on the rehabilitation recommendations. For example, the City asked for specific guidance on allocating funding to reconstruct significantly deteriorated roadways vs. maintaining the roadways that are at a higher condition level. The City indicated that a number of roads would benefit from reconstruction but understand that the cost for reconstruction is significantly higher than preventative maintenance activities. They would like to analyze the possibility of maximizing the benefit of available funding by concentrating on the roadways that would benefit from preventative maintenance all-the-while delaying needed reconstruction on significantly deteriorated pavement sections.

During the initial implementation of the pavement management system, various analysis scenarios, including a zero funding scenario, unlimited funding scenario, and six constrained funding scenarios, were analyzed to determine the City's budget needs. Ultimately, IMS determined that an annual budget of $2.25 million was needed in order to increase the area-weighted PCI value of the City to 70 and decrease the rehabilitation backlog to an acceptable level. For the constrained budget scenarios prioritization guidelines were considered in order to determine funded and unfunded projects based on pavement condition and roadway classification. KHA was enlisted to develop a prioritized project list that the City can use to program the highest priority projects based on available funding for future years while best addressing their capital needs.

As part of the field verification task, KHA met with Public Works staff in an effort to identify their perceived rehabilitation priorities. As part of this meeting KHA and Public Works staff together visually assessed the segments identified as high priority to confirm their condition. These priorities, in association with the data provided in the IMS report for the unlimited annual budget scenario, were used as a baseline to develop the list of recommended projects. Additionally, KHA applied engineering judgment and experience to develop a plan from the IMS study that was practical for construction phasing and efficient in effort keeping in mind the total Milton roadway network.

The priorities identified by the City were placed into three categories for arterial/collector roadways and two categories for residential roadways for consideration in developing the list of recommended projects:

Arterial and Collector Roadway Classification

- Roadways submitted for State Aid – Morris Road from Webb Rd. to Bethany Bend
- Roadways submitted by the City for Phase 2 of the Local Stimulus Transportation Project
- Priority roads for rehabilitation based on existing condition

Residential Roadway Classification

- Residential roadways submitted for LARP funding
- Priority roads for rehabilitation based on existing condition

From a pavement management perspective there are various management strategies including worst-first and preventative maintenance strategies that can be considered for maintaining the pavement infrastructure. The worst-first strategy applies available funding to the highest priority segments that are significantly deteriorated while the preventative maintenance strategy focuses on funding maintenance activities on pavement segments that are in good condition and maintaining them at a high level before addressing the deteriorated segments. If the pavement system being considered is at a high condition level, i.e. area-weighted PCI of 70 or higher, implementing a preventative maintenance strategy is preferred. Even with the preventative maintenance strategy, jurisdictions cannot completely neglect the significantly deteriorated pavement segments as there is a perceived level of service that needs to be maintained for the traveling public. Given the area-weighted PCI of approximately 57, KHA recommends a worst-first strategy to prioritize paving projects for the City of Milton. This strategy will have the greatest impact on the overall condition of the network over the next few years and will make the best use of the City's available funds. Although at a higher cost, allocating funding to the larger, significantly deteriorated pavement segments will increase the overall pavement condition of the City while reducing the level of backlog to a more acceptable level. It is also important to keep in mind that while implementing a worst-first strategy, preventative maintenance activities such as crack sealing, patching, and surface treatments should not be neglected. Once the area-weighted condition of the network increases and the backlog is reduced to an acceptable level, it is recommended that the City move towards a preventative maintenance strategy.

From the 2008 Citywide resurfacing projects provided by the City, it appears that a worst-first strategy, whether purposely or not, is the approach the City has previously implemented as the IMS report reflected very low PCI values for the recently rehabilitated segments.

Using these strategies, KHA developed the recommended project lists, one for arterial/collector roadways and a second for residential roadways. These recommendations are presented in Appendix A as well as maps in Appendix B. These lists and maps are for the City to use in programming Capital Improvement Projects in future years. The recommended projects address priorities identified by the City and confirmed by KHA through field observations and review of the pavement management report as well as other roadways that are exhibiting a high level of deterioration as summarized in the IMS study.

In March of 2009, the City submitted a list of ten projects, including seven roadway resurfacing projects, to GDOT for Phase 2 of the Local Stimulus Transportation Projects. Because it is unknown if the City will receive the necessary funding to address these identified needs, these projects are replicated in the prioritized project list developed by KHA. If funding is granted, the City should simply remove these from the prioritized list and program the next highest priority in future.

Specific rehabilitation recommendations and estimated project costs are also summarized in the attached tables located in Appendix A. For the arterial/collector roads, two columns of cost data are presented. The first represents a mill and overlay with 30 percent patching and partial full-depth reconstruction, and the second represents an estimate for full reconstruction. As noted in section 3.0, roadways with an average PCI value below 40 are technically candidates for reconstruction. KHA recognizes that full-depth reconstruction is not always a viable option due to budget constraints as well as other important considerations such as user delay, detoured traffic, and impact to adjacent properties. Further, depending on the actual distresses and condition of the roadway at the time of repair, the City can make a decision regarding which construction activity is most appropriate. For example, if the distresses are age or environmental related, an overlay is appropriate. If the distresses are showing signs of structural failure through major cracking and depressions, then reconstruction is really the best option. The two budgets are intended to give the City flexibility in budget allocation and programming. KHA recommends that the City program long-term with the higher budget dollar and then reconsider each roadway as they are programmed for that fiscal year. If more money remains, the City should consider allocating that to other capital projects or push it to preventative maintenance.

The road segments identified for LARP funding by the City in 2009 are summarized in the recommended project list for residential roadways in Appendix A in addition to other residential roadways in need of rehabilitation. It is anticipated that the available LARP funding will not be adequate to address all of the residential roadway segments identified, and City funds may need to be allocated to priority residential roadways. The table presented in Appendix A should be used as a guide by the City to prioritize and budget for the residential roads.

If pre-overlay repairs are determined to be necessary prior to LARP paving, it is the responsibility of the City and will impact the overall annual budget. Assuming on average that patching is necessary on 20 percent of the roadway, approximately $30,000 per mile of pre-overlay repairs on LARP roadways should be anticipated annually. It is recommended that the projects on the list be addressed in the future years through the use of capital budget or LARP funding. In fact, given the poor condition of the residential roadways, it is recommended that a portion of the annual capital budget be set aside to address residential roadways needs. Although somewhat subjective and dependant on yearly funding and competing projects, KHA recommends allocating 15-30 percent of the capital budget to residential roadways in addition to LARP. This funding will allow the City to address the deteriorating residential roadway network while still maintaining the arterial/collector network. In years with limited funding availability, it is likely that the City will not allocate any funding to residential roadways and only address the higher priority arterial/collector roadways.

6.0 REVIEW OF ANTICIPATED BACKLOG AT CURRENT FUNDING LEVELS

When the initial scope of work was developed, KHA anticipated that the City would provide the expected annual budget for capital roadway improvement projects and that KHA would be able to provide a review of anticipated backlog based on those funding levels. Given changes to the project scope and lack of available long-term budget information, it is difficult to review the anticipated backlog in detail. The budget and programmed improvements are critical to understanding the resulting condition of the pavement infrastructure and thus the remaining backlog. However, this section will speak in general terms to the anticipated backlog given general budget expectations.

IMS determined that an annual budget of $2.25 million was needed, including all roadway classifications, in order to increase the area-weighted PCI value of the City to 70 and decrease the rehabilitation backlog to an acceptable level in a 10-year period. During the review of the internal customization information in Task 4, KHA determined that the unit costs used by IMS to determine these budget needs were somewhat inflated as compared to the actual construction costs experienced in the City of Milton. Therefore it is likely that the annual budget needs in order to increase the area-weighted PCI of the City to an acceptable and decrease the backlog level is more to the magnitude of $1.75-2.0 million per year.

In recent years the capital budget for the City of Milton has ranged from approximately $1 to $2 million although some years have fallen below those levels. For example, FY09 the City of Milton had a capital budget of approximately $1.4 million. Given these levels of funding, the City will not meet the objectives outlined in IMS's study of an area-weighted PCI value of 70 with a backlog goal of less than 20 percent. However, the City needs to identify what area-weighted PCI value and backlog level is acceptable to not only achieve the level of service expected by the residents but also balance the City's budget expectations. It is likely that an overall area-weighted PCI value for the City of 60 or 65 may in fact be acceptable thus reducing the overall annual budget needs to achieve the City's goals.

Ultimately, if the annual budget necessary to reach the City's goals is not available, the City can expect the overall condition of the network to increase only slightly or remain the same while the overall backlog level will continue to increase.

7.0 GRAVEL ROAD MAINTENANCE INVESTIGATION

7.1 Introduction

An important piece of Milton's roadway network includes the unbound or gravel roads located within the City limits and maintained by the City of Milton. These thirteen miles of gravel roads distributed throughout the City are well-liked by the majority of Milton citizens and an important piece of Milton's character. The Atlanta Journal-Constitution reported an article about Milton's gravel roads and citizens used the following words to describe the gravel roads: "scenic, pastoral, peaceful, country, and complexion of the community".[1] It is clear that gravel roads are an important characteristic of Milton, but it is the second point that the article makes - the maintenance costs of gravel roads – which is the focus of this report.

KHA was asked by the City of Milton to provide general input and perspective on gravel road maintenance and costs in order to help the City better plan and accommodate the needed attention of the gravel roads. The main factors which were explored were a basic literature review to gain an understanding of the experience of other jurisdictions and place in perspective the Milton condition, an investigation into the expected schedule and costs of gravel road maintenance, an exploration of the City of Milton's current strategy and user expectation, and determining future strategy in light of economic reasonableness as well as the gathered data.

7.2 Literature Review

On investigating available literature, two main bodies of research in gravel road maintenance cost, strategy, and upgrade comparison (i.e. cost-benefit analysis of upgrading an unbound road to a paved road) were considered. These research teams were trying to answer the questions: how much does it cost to maintain a gravel road? How does that compare to an asphalt (bound) road? What about user costs? When is it cost effective to invest in paving a gravel road? What affect does traffic have on that decision and the cost of maintenance? How does one weigh non-economic factors? These questions are not unique to these research teams and jurisdictions and are similar to those that Milton is asking. Although the research presented may be from different parts of the country with different situations, one can learn from their findings and apply them with care to the situation at hand.

The first comes from the Minnesota Department of Transportation (MnDOT) Local Road Research Board (LRRB)[2], where the researchers looked at historical and estimated construction cost data from multiple counties in Minnesota to determine life cycle costs alternatives between gravel and asphalt roads at varying traffic levels. The researchers also attempted to include non-monetary factors in the decision process of whether to pave a gravel road.

The LRRB acknowledged what KHA found to be true, that there is little useful data on maintenance costs of gravel roads either at the county level or in the literature. In fact, they found the data in the Minnesota counties to be so widely variable and inconsistent, that they decided to use a cost estimating procedure in their study for gravel road maintenance in order to create a baseline of comparison. Most research and published experience on roadway maintenance focuses on paved roadways and often higher

[1] "Gravel Roads a Drag on City Budget," Atlanta Journal-Constitution, January 24, 2009.

[2] Jahren, Charles T. et. al. "Economics of Upgrading an Aggregate Road," Minnesota Department of Transportation, St. Paul, Mn, January 2005.

traffic volume roads like arterials and interstates. Although these roads represent a higher infrastructure value per area, the network of local or low volume roads, as a whole, represents a significant value that should be considered in a pavement management analysis. A low volume road is typically defined as a roadway with average daily traffic (ADT) volumes of 400 vehicles or less and a design speed of 50 mph or less.[3]

Cash flow diagrams and present worth calculations were used to compare what they found to be typical gravel and asphalt maintenance schedules. Over a 30 year life cycle at an interest rate of 4%, they estimated that the gravel road net present worth was $68,000 while the asphalt was $92,000. In other words, they found considering the maintenance schedule and historic and estimated cost data, that gravel road maintenance for low volume roads would require $24,000 less dollars over a 30 year cycle.

To determine the cash flow comparisons, interviews were conducted with county staff and investigation of historical records. From this, the LRRB team defined the state of practice for maintenance of gravel roads in Minnesota. Although it is expected that technique and frequency of maintenance will be different in Minnesota than Georgia, it is still useful to report their maintenance strategy as a way of comparison or check of reasonableness. Because there is rather limited published information on gravel road maintenance, information from other states and areas of the country is even more valuable.

The team considered a 24' wide roadway with 2' shoulders as their general cross-section to develop their costs on a per mile basis. They found that the typical maintenance schedule consisted of routine grading and re-graveling with two inches of new gravel every five years. They found that a typical road needed to be graded 21 times a year or three times a month from April – October, and the upper bound for re-graveling was five years for any road over 100 ADT; lower volume roads could possibly go longer. The calculated construction costs including materials, labor, and hauling totaled $1,400 per year or $67 per visit for the grading or blading activity and $13,800 for the re-gravel activity every five years. The re-gravel included an estimate gravel cost of $7.00 per cubic yard and a 2.5" thick lift of gravel (to be compacted down to 2"). Therefore, they developed an average estimated an annual maintenance cost for gravel roads at $4,160 per mile.

A research team with the South Dakota Department of Transportation (SDDOT) also worked on defining their typical maintenance strategy for gravel roads as well as created a tool to compare alternative solutions with a life-cycle cost approach.[4] From this research, they developed an interactive macro in Microsoft Excel that allows users to input data on the particular roadway in question including dimensions and traffic, agency unit costs, maintenance frequencies, and user costs to evaluate competing pavement surface types. This program was used for evaluation of Milton's maintenance options and will be discussed in detail later.

The default maintenance program for gravel roads from SDDOT's report includes blading 50 times per year, re-graveling once every six years, and spot graveling once per year. The unit cost for blading was very similar to MnDOT at $65 per mile, re-gravel at $7,036 per mile and spot graveling or pothole repair at $2,420 per mile, totaling to an average annual maintenance cost of $6,843 per mile. Due to the frequency of the blading activity and the addition of the spot gravel maintenance, the SDDOT number is higher than MnDOT reported even though the re-gravel activity is reported at about half of the price in Minnesota.

[3] Keller, Gordon and James Sherar. "Low-Volume Roads Engineering," US Agency for International Development, July 2003.

[4] Zimmerman, K.A. and A.S. Wolters. "Local Road Surfacing Criteria," South Dakota Department of Transportation, Pierre, SD, June 2004.

It is important to note that both SDDOT and MnDOT did not include maintenance activities like dust abatement, reshaping the crown and cross section, or ditch cleaning and regrading, which are necessary costs for maintaining gravel roads in Milton. These discrepancies and unique features of each agency and each gravel road illustrate the difficulty of comparing agency costs and techniques. The variability in cross section, traffic, use, user expectation, maintenance staff, and quality of the roadway are much higher for a gravel road than for a standard low-volume asphalt roadway. Therefore, agencies should consider their maintenance needs and historical unit bids to determine their budget and cost comparisons.

According to a North Fulton Online article, Fulton County, the prior responsible party for gravel road maintenance in the Milton community, spent $73,442 a year on gravel road maintenance including three scrapings a year and a little gravel and dust abatement when required.[5] This budget over thirteen miles of public gravel roadways is approximately $5,650 per mile, which is similar to what SDDOT and MnDOT reported.

However, the City of Milton situation is even further unique from these counties and other municipalities in that the City does not have a maintenance staff and equipment available and dedicated to the maintenance of their gravel road system. Unlike the counties in South Dakota and even Fulton County, the City must scope and bid projects in the competitive market incurring overhead, profit, and mobilization costs of the construction firms as well as indirect costs or setbacks in managing these contracts, scoping the work, and a learning curve that must be established with each newly selected firm. For example, in discussions with SDDOT, they described a crew that essentially continually maintains their gravel roads within a district by scraping and performing pothole repairs on one roadway, then the next, then continues the cycle; thus, it is not uncommon to have 50 bladings a year per roadway at a significantly low price of $65 per mile. Further, this reported price assumedly includes only the labor time and equipment maintenance, not the capital budget necessary to have a maintenance staff; overhead to manage that staff; equipment costs including capital, storage, and maintenance; etc. The City of Milton does not have those overhead costs, but does see them in the unit costs of construction activities. For example, according to available resources, a finish grading activity or blading would cost the City of Milton closer to $1,500 a mile for the same activity South Dakota reported at $65. Subsequently, Milton must consider their unique circumstances, evaluate historical bids, and clearly understand, plan and communicate the anticipated budget and performance of their gravel roads.

7.3 Milton Maintenance Strategy

To determine a maintenance schedule appropriate for Milton, KHA staff conducted multiple meetings with the Department of Public Works, attended a public meeting regarding gravel roads, conducted site investigations of the roadways, and gathered information on the previous maintenance schedule of Fulton County. From these various sources, KHA gained an understanding that Milton residents enjoy the gravel roads, and the residents that live on these roadways want the roads to remain gravel as a way to maintain their rural character, promote local traffic only, and slow speeds on residential roadways.

Recently, the City of Milton cement stabilized 2.6 miles of unbound roads. Cement stabilization is a new maintenance and rehab technique for this area, but is not uncommon in other areas of the country. Some of the expected benefits of a stabilized roadway could be safety with better stopping ability as well as improved durability. The more durable surface may allow for longer durations between maintenance

[5] Wright, Jason. "Milton wants input on dirt roads," NorthFulton.com, www.northfulton.com, accessed April 30, 2009.

activities, possibly saving money in the long run and minimizing disruptions to residents. On the other hand, possible rebuttals may include that the stabilized roads present a dust abatement issue due to the finer aggregate size and dense composition or promote more traffic volumes and higher speeds due to the relatively smoother surface. KHA recommends that the City closely monitor the performance of the stabilized roadways as well as solicit feedback from a sample of residents to weigh the pros and cons to evaluate this technique as an option in the future.

What the public was interested in was a clear plan of maintenance as well as an understanding of the necessary costs. To help answer that question, KHA has utilized the software tool developed by the SDDOT team to consider a variety of maintenance options described in the scenarios below. The main activities included in the maintenance strategy are: blading, re-gravel, reshape cross section, spot gravel, and dust abatement. Multiple maintenance scenarios and cost information were investigated for gravel roads as well as asphalt for comparison. Each scenario is described in detail below, and a summary is reported in Table 7-5 with discussion to follow. The unit cost data, unless otherwise described in the detail scenario descriptions, considered for Milton came from two common sources of cost data: the *RS Means Site and Landscape Cost Data*[6] and the GDOT Item Means Summary which lists actual project unit costs from 2007-2008 as well as engineering judgment and experience. KHA has confidence in these materials as good sources of useful cost information for planning purposes. Of course, construction prices are volatile, especially in recent times, and prices are always subject to change. The user costs presented in the summary were default values provided by SDDOT. Each scenario and cost information is given for a 20-year design life or life cycle with an interest rate of 5%.

Asphalt maintenance

Asphalt paving or hot mix asphalt (HMA) was investigated as a comparison tool to determine the relative cost for gravel road maintenance versus asphalt. The SDDOT program is set up to be a comparative tool between pavement options, so each following scenario will be compared to the asphalt paving option. Two scenarios for asphalt paving were considered with two different initial costs shown as Ashpalt 1 and 2 in Table 7-5. The first is a conservative approach with an additional $50,000 of initial construction costs due to the costs beyond the asphalt pavement to upgrade the current unbound road to a paved road. Without detailed analysis for each roadway, it is difficult to determine specific costs. From Table 7-1, the typical asphalt maintenance schedule consists of crack sealing every five years, striping and marking every ten years, pothole repairs yearly and an overlay after twenty years. The unit costs for maintenance were developed based on the references noted above and experience.

Table 7-1. Asphalt Maintenance Schedule and Unit Cost

	Times per year	Years between application	Start Year	Unit Cost $/mile
Crack Seal	1	5	5	$3,000
Striping	1	10	10	$1,000
Patching	1	1	1	$1,600
Mill & Overlay (1.5")	1	20	20	$200,000
Average Annual (not adjusted for inflation)				$12,300

[6] Spencer, Eugene R., Ed. *RS Means Site Work & Landscape Cost Data*, 27th Edition, Kingston, MA, 2008.

Scenario 1 – Literature maintenance schedule with Georgia unit cost

The first scenario considers a maintenance schedule that one might determine is appropriate based on the literature review, and it is a hybrid of the MnDOT and SDDOT default maintenance schedule with unit costs determined through KHA's investigation of GDOT and other resources as mentioned earlier that are more applicable to the City of Milton. This scenario reports a substantial average annual maintenance cost per mile mostly due to the high frequency of blading suggested by the literature (we used the *lower* of the two values) and the substantially higher unit cost of the same activity. Considering Milton's thirteen miles of gravel roads, this would total to an annual maintenance budget of nearly $500,000, which is not feasible. Further, this cost does not include important maintenance activities for the City like dust abatement and ditch-shaping work. Therefore, more economically suitable options with less frequent maintenance, which is also more comparable to the historical maintenance strategies, are presented in Scenarios 2 and 3, but this provides a good tie back to the literature review.

Table 7-2. Scenario 1 Maintenance Schedule and Unit Cost

	Times per year	Years between application	Start Year	Unit Cost $/mile
Blading	21	1	1	$1,500
Re-gravel (1.0")[1]	1	6	6	$13,000
Spot gravel	1	1	1	$650
Average Annual (not adjusted for inflation)				$34,317

1. Material cost per GDOT Item Means Summary at $20.47/ton and 650 tons/mile

Scenario 2 – General maintenance schedule with Georgia unit costs

The second scenario considers a maintenance schedule and activities more tailored to the Georgia situation again with unit costs developed from available resources. This maintenance schedule considers essentially three maintenance visits with either blading or reshaping as well as dust abatement. The scenario also includes a spot gravel activity for pothole and other repair as well as a re-graveling every six years. From the gathered data, this scenario is probably the best aligned scenario with user expectation of the gravel road condition and activity schedule.

Table 7-3. Scenario 2 Maintenance Schedule and Unit Cost

	Times per year	Years between application	Start Year	Unit Cost $/mile
Blading	2	1	1	$1,500
Re-shape Cross section; Ditch	1	1	1	$7,400
Spot gravel	1	1	1	$650
Dust Abatement[1]	3	1	1	$2,050
Re-gravel (1.0")[2]	1	6	6	$13,000
Average Annual (not adjusted for inflation)				$19,367

1. Application rate of 0.2gal/sy at $0.97/gal
2. Material cost per Georgia DOT Item Means Summary at $20.47/ton and 650 tons/mile

Scenario 3 – Modified maintenance schedule with Milton unit costs

The City of Milton Department of Public Works staff provided KHA unit price information for current maintenance activities some of which are higher or lower than what KHA found in the historical GDOT, Milton bid documents and the RS Means resource, and those costs are included in Table 7-4. For example, general maintenance, which we show as 'blading' in the table is higher than reported in Scenario 2, but probably includes more than the blading, such as minor ditch cleaning or other work. On the other hand, it may just be another example in construction pricing variability.

Scenario 3 considers the maintenance schedule that is probably the most economically appropriate for Milton, is adaptable to what is currently planned by the Public Works staff, and is similar to what KHA has surmised that Fulton County performed in the past. This maintenance schedule considers work on three times annually including two bladings with dust abatement, one reshaping activity with dust abatement with an allowance for needed gravel shown as spot maintenance on the table and no re-graveling. According to the staff, the average gravel used in one year is close to 300 tons. The re-graveling activity, at any interval, is a very costly investment for the City due to the material and labor costs and does not seem economically appropriate for the given situation. Further, from what KHA has gathered, a significant re-graveling or capital-type investment has not been performed in the past with acceptable results; that is, in the past prior to the cement stabilization work.

Table 7-4. Scenario 3 Maintenance Schedule and Unit Cost

	Times per year	Years between application	Start Year	Unit Cost $/mile
Blading	2	1	1	$2,800
Re-shape Cross section with Ditch	1	1	1	$5,400
Spot[1]	1	1	1	$350
Dust Abatement[2]	3	1	1	$1,750
Average Annual (not adjusted for inflation)				$16,600

1. Material cost per gravel road bid tab provided by Milton at $15.22/ton
2. Application rate of 0.2gal/sy at $0.83/gal

Summary

A summary of the life cycle costs per scenario in dollars per mile is given below in Table 7-5 to illustrate the different pavement and maintenance options for consideration. As discussed above, the maintenance frequency as suggested by the literature (Scenario 1) is not an economically feasible alternative for the City of Milton given high construction and material costs previously discussed. Given this option, it would be cheaper to pave the roads, even at the higher initial construction cost considered in the Asphalt 1 scenario, due to the frequency of maintenance gravel roads require.

Table 7-5. Summary of Scenario Life Cycle Cost ($/mile)[1]

	Asphalt 1	Asphalt 2	Scenario 1	Scenario 2	Scenario 3
Agency Cost	$330,222	$280,222	$429,052	$242,742	$215,373
User Cost	$16,271	$16,271	$10,994	$10,994	$10,994
Total Cost	$346,492	$296,492	$440,046	$253,736	$226,367

1. Life cycle of 20 years at 5%

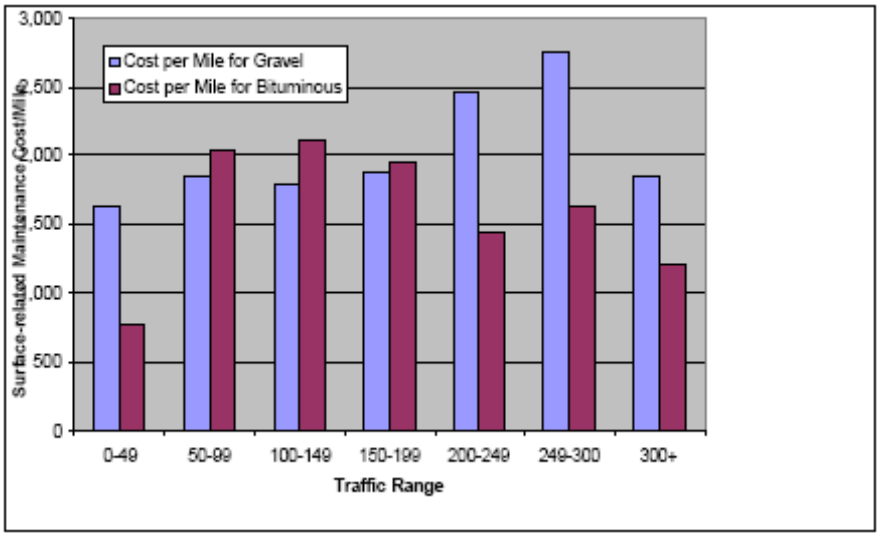
As far as the other two more reasonable scenarios (2 and 3), the life cycle costs are lower than the asphalt options. However, it is important to note that the two scenarios are not too far from the Asphalt 2 scenario, and without the overlay costs at year 20, the Asphalt 2 option would actually be a more cost effective solution. This does not necessarily conclude that asphalt is the best economic option, but it does suggest that the gravel road maintenance budgets need to be watched very closely to be sure that they are still the most economically advantageous solution. If cost or frequency of maintenance increases, whether a result of natural events, increased traffic, or user expectations, then the gravel road option could quickly become the more expensive alternative.

7.4 Traffic Considerations

The second focus of the research at MnDOT LRRB considered the effect of traffic volumes on required maintenance and therefore cost for bound and unbound roads. They took historical economic and traffic volume data from four counties to determine not only the comparison between asphalt and gravel costs, but what affect traffic or ADT had on those figures. They hypothesized that at some traffic level, gravel road maintenance frequency would increase to where it would surpass asphalt in maintenance costs. Their objective was to determine such a threshold.

Investigation into the individual county data and the dataset as a whole led LRRB to identify the threshold where gravel road maintenance is more costly than the investment in asphalt or bound options to be between 100-200 ADT. From Figure 7-1, the cost per mile for gravel and bituminous (asphalt) are shown versus traffic or ADT, and it shows the change in relative costs around 150 vehicles per day. The researchers recommend from an economic viewpoint, that a jurisdiction should begin planning the investment to pave or upgrade a road when traffic volumes reach 100 vehicles and conduct the upgrade before the growth reaches 200 at which point the cost of the gravel road maintenance to the agency is higher than that of asphalt.

Figure 7-1. Five Year Average Maintenance Cost/Mile vs. ADT[7]



The City of Milton obtained JAMAR Technologies, Inc. to provide traffic counts and ADT values for City's gravel roads, and these findings are presented on a map included in Appendix B. From the data, many of Milton's gravel roads are above the 100 vehicle per day threshold that LRRB reported, and two count locations are above the 200 threshold. Therefore, it is reasonable to assume from the available research that many of Milton's gravel roads are reaching a traffic level that creates maintenance issues including poor conditions and thus increased maintenance efforts and dollars. This situation is apparent in the traffic data as well as reports from staff and the public, increasing confidence in the numbers reported by LRRB. It should be noted, however, that these counts were conducted after the 2.6 mile stabilization project, and many residents reported higher traffic volumes after the stabilization at the public meeting conducted on April 30, 2009; therefore, the effect areas may have recently inflated numbers.

7.5 Conclusions and Recommendations

From the above discussion, investigation, and available research, KHA recommends that the City of Milton consider following a maintenance strategy as outlined in Scenario 3 and modified as required to fit budget constraints. The recommended strategy would cost approximately $215,800 annually. Depending on annual funding levels, the City will have to determine the realistic amount of maintenance, and KHA recommends that the City communicate to the community the yearly maintenance plan and costs in comparison to this recommendation. This will give the users an idea of the expected level of service. KHA recommends that the City and staff use the presented information to evaluate their maintenance strategy, plan for necessary funding, and communicate with the residents in the future.

In addition, KHA recommends that the City of Milton monitor the maintenance costs and the performance of the gravel roads as they continue to manage these roadways. The City should separately monitor the performance, maintenance cost, and user experience of the cement stabilized sections. From this investigation, it was found that the maintenance costs for the gravel roads are fairly close to those of a paved road, and the traffic volumes support the idea that gravel maintenance is increasingly

[7] Jahren, Charles T. et. al. "Economics of Upgrading an Aggregate Road," Minnesota Department of Transportation, St. Paul, Mn, January 2005.

more costly to the City as discussed in section 7.4. The City should closely monitor the costs of maintenance and consider other options that may be less costly over the long term whether that is an on-call contract with a contractor for maintenance or investing in City equipment or staff. The other evident options are to lower expectations of the quality and service of the roads or continue to allocate more funds for higher frequency maintenance. Other less direct options include deterring traffic or otherwise limiting access to these roadways. In any case, gravel road maintenance will require attention and time of the City as determined by experience and supported by the available research.

APPENDIX A

Prioritized Capital Roadway Paving Projects

City of Milton, GA

Recommended Capital Roadway Paving Projects

Arterial and Collector Roadway Classifications Only

Priority	Roadway Name	From	To	Estimated Total Length (Miles) From IMS	Estimated Total Area (SY) From IMS	Number of Segments From IMS	PCI Range From IMS	2008 Area Weighted PCI (All Segments - IMS)	Rehabilitation Recommendation	2009 Unit Cost (per SY)	Est. 2009 Project Cost	Est. 2009 Project Cost for Reconstruction
1	Morris Road	Deerfield Parkway	Webb Road	0.79	22,440	4	5-37	15	Full-Depth Reconstruction - Est. 40% of Total Pvmt Area Pre-Overlay Asphalt Patching (3" Depth) - 30% of Overlay Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$26.50	$594,661	$645,151
2^	Morris Road	Webb Road	Bethany Bnd/McGinnis Ferry Rd	0.58	13,450	5	5-50	15	Full-Depth Reconstruction - Est. 40% of Total Pvmt Area Pre-Overlay Asphalt Patching (3" Depth) - 30% of Overlay Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$26.50	$356,425	$386,688
3	Thompson/S. Thompson Road	Redd Road	Hopewell Road	2.39	33,600	9	5-18	7	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$524,153	$965,988
4!	Hickory Flat Road	Birmingham Hwy/SR372	City Limits	1.35	19,776	6	10-41	24	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$308,507	$568,563
5!	New Bullpen/Union Hill Road	Birmingham Hwy/SR372	City Limits	0.80	11,245	1	N/A	10	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$175,420	$323,290
6!	Birmingham Road	Birmingham Hwy/SR372	Hopewell Road	2.76	44,257	7	30-10	18	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$690,406	$1,272,384
7!	Freemanville Road #	Providence Road	Louis Road	1.73	25,237	5	5-47	34	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$393,702	$725,573
8!	Hagood Road	Bethany Road	Redd Road	0.51	7,165	1	N/A	19	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$111,768	$205,984
9!	Bethany Road/Way	Hopewell Road	Mayfield Road	2.68	37,838	6	5-77	36	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$590,279	$1,087,854
10!	Batesville Road @	Birmingham Hwy/SR372	City Limits	1.31	18,499	2	83-84	84	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$288,580	$531,838
11	Webb Road	Cogburn Road	Morris Road	1.20	17,601	6	5-35	15	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$274,572	$506,022
12	Dinsmore Road	South Thompson Road	Freemanville Road	1.73	24,402	7	11-70	35	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$380,679	$701,571
13	Henderson Road	Birmingham Road	Freemanville Road	1.29	18,114	6	10-46	22	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$282,573	$520,767
14	Hopewell Road	City Limits	Cogburn Road	3.90	54,853	16	29-79	51	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$855,708	$1,577,027
15	Mountain Road	Hopewell Road	Freemanville Road	1.70	24,432	6	32-46	39	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$381,133	$702,408
16	Longstreet Road	Hopewell Road	City Limits	1.05	14,770	3	10-73	45	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$230,416	$424,645
17	Freemanville Road #	Louis Road	Birmingham Road	1.78	29,969	7	70-84	80	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$467,516	$861,609
18	Freemanville Road #	Providence Road	Mayfield Road	1.74	24,543	4	67-83	79	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$382,868	$705,606
19	Broadwell Road Charlotte Drive Mayfield Road Mid Broadwell Road	State Hwy 372 Mid Broadwell Road Mid Broadwell Road Mayfield Road	City Limits Mayfield Road Freemanville Road Charlotte Dr.	2.05	30,258	8	5-80	39	Pre-Overlay Asphalt Patching (3" Depth) - 30% of Total Area (TBD in Field) 1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay	$15.60	$472,029	$869,925

NOTES

* Unit Costs were developed using bid results from FY2009 capital paving projects and inflated by 5% for current year costs
* Unit Costs include additional items such as traffic control and pavement marking
* Pre-overlay repairs prior to LARP paving on an annual basis are the responsibility of the City and will be in addition to annual paving projects selected thus impacting the overall annual budgets
  - Annually approximately $100k in pre-overlay repairs for LARP is anticipated, although this number will fluctuate annually based on the amount of LARP funding
* Generally a Worst-First Rehabilitation Strategy based on city priorities and conditions reported in the IMS Analysis used for developing recommendations
* For every year that recommended projects are not addressed it is recommended that the 2009 estimated project costs be inflated by 5% annually
* Estimated project costs do not include shoulder widening
* Based on annual budgets, consideration should be given to arrange and group priorities that are in close proximity for phasing

Freemanville Road from Brimingham Rd. to Mayfield Road submitted for Phase II Stimulus
  - Brimingham Rd. to Louis Rd. has a area-weighed PCI value of 80, Louis Rd. to Providence Rd. has a area-weighted PCI value of 34, and Providence Rd. to Mayfield Rd. has a area-weighted PCI value of 79

^ Morris Road from Webb to Bethany Bnd/McGinnis Ferry submitted for State Aid, unit costs shown does not reflect all items in State Aid application i.e. traffic control

! Project included on City of Milton Phase 2 Local Stimulus Transportion Projects List submitted to GDOT March 20, 2009

@ PCI Values reported for Batesville Road are not indicative of the actual condition which is significantly worse than reported

REFERENCES

City of Milton Pavement Management Analysis, Revision 3 - October 2008, IMS Infrastructure Management Services

City of Milton, GA

Recommended Capital Roadway Paving Projects

Residential Roadways

Roadway Name	From	To	Estimated Total Length (Miles) From IMS	Estimated Total Area (SY) From IMS	Number of Segments From IMS	PCI Range From IMS	2008 Area Weighted PCI (All Segments - IMS)	Rehabilitation Recommendation	2009 Unit Cost (per SY)	Est. 2009 Project Cost
Athlone Court#	Tullegan Dr	End	0.09	1,286	1	N/A	5	1 1/4" Superpave GP 2 Typ. 1 Asphalt Overlay Only - No Pre-Overlay Repairs	$6.75	$8,682
Tullamore Way#	Birmingham Hwy/SR372	End	0.41	5,801	3	10-35	19	1 1/4" Superpave GP 2 Typ. 1 Asphalt Overlay Only - No Pre-Overlay Repairs	$6.75	$39,155
Tullegan Drive#	Tullamore Way	End/Guadahoochie Lane	0.60	8,504	2	N/A	5	1 1/4" Superpave GP 2 Typ. 1 Asphalt Overlay Only - No Pre-Overlay Repairs	$6.75	$57,404
Thorntree Run#	Tullamore Way	End	0.33	4,550	1	N/A	5	1 1/4" Superpave GP 2 Typ. 1 Asphalt Overlay Only - No Pre-Overlay Repairs	$6.75	$30,710
Cedar Farms Court#	End	End	0.41	5,713	2	5-17	11	1 1/4" Superpave GP 2 Typ. 1 Asphalt Overlay Only - No Pre-Overlay Repairs	$6.75	$38,565
Oakmeade Trace#	Bethany Bnd	Cedar Farms Court	0.17	2,441	1	N/A	10	1 1/4" Superpave GP 2 Typ. 1 Asphalt Overlay Only - No Pre-Overlay Repairs	$6.75	$16,477
Drummond Pond Road#	N. Valleyfield Road	End	0.36	5,083	1	N/A	10	1 1/4" Superpave GP 2 Typ. 1 Asphalt Overlay Only - No Pre-Overlay Repairs	$6.75	$34,313
East Bluff Road#	Thompson/S. Thompson Road	End	1.26	17,280	2	N/A	5	1 1/4" Superpave GP 2 Typ. 1 Asphalt Overlay Only - No Pre-Overlay Repairs	$6.75	$116,640
N. Valleyfield Road#	East Bluff Road	Dinsmore Road	0.30	4,287	2	10	10	1 1/4" Superpave GP 2 Typ. 1 Asphalt Overlay Only - No Pre-Overlay Repairs	$6.75	$28,938
Cherington Way	Morning Mountain Way	SE End	0.11	1,540	1	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$18,094
Chipping Wood Court	Creek Club Drive	NE End	0.35	4,961	3	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$58,290
Cowart Road	Providence Road	Summit Road	0.32	8,994	1	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$105,683
Double Creek Lane	Hopewell Road	East End	0.37	4,978	3	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$58,496
Ebenezer Road	Cox Road	Eubanks Avenue	1.09	15,241	2	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$179,086
Emmaus Road	Providence Road	South End	0.07	2,152	1	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$25,290
Gunston Hall Circle	Providence Lake Drive	Providence Lake Drive	0.43	3,019	1	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$35,468
Highlands Manor Trace	Cul-De-Sac	White Columns Drive	0.07	954	1	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$11,206
Powers Court Ave	State Hwy 372	End	0.66	9,266	5	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$108,870
Providence Park Drive	NW End	Providence Road	0.23	5,460	1	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$64,150
Richmond Glen Drive	Birmingham Highway	Richmond Glen Circle	0.50	7,043	3	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$82,758
Sandpoint Trace	North End	South End	0.23	3,150	3	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$37,010
Sweet Briar Court	Providence Plantation Drive	North End	0.12	919	1	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$10,794
Uplands Court	Double Creek Lane	NW End	0.11	1,566	1	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$18,402
Wilkie Road	Mountain Road	NE End	0.10	2,809	1	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$33,000
Blackrock Trace	North End	South End	0.22	3,062	2	N/A	5	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$35,982
Hampton Bluff Drive	White Columns Drive	End	0.41	5,766	2	5-22	9	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$67,748
Glendalough Court	Powers Court Avenue	End	0.15	2,126	2	5-13	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$24,982
Gunston Hall Drive	SW End	Providence Lake Drive	0.21	3,019	1	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$35,468
Highlands Manor Court	White Columns Drive	Cul-De-Sac	0.12	1,776	1	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$20,869
Kensington Farms Drive	Birmingham Hwy/SR372	End - West of SR372	0.85	12,022	8	5-23	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$141,254
Kiltirnan Court	Powers Court Avenue	South End	0.09	1,234	1	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$14,495
Lexington Plantation Lane	State Highway 372	NW End	0.18	2,494	1	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$29,299
Northern Oaks Court	Freemanwood Lane	SE End	0.22	3,080	1	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$36,187
Providence Farms Lane	West End	Providence Road	0.34	4,698	1	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$55,206
Richmond Glen Circle	Virginia Gleen	Richmond Glen Drive	0.28	4,025	1	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$47,290
Shadecrest Court	West End	Oakhurst Leaf Drive	0.05	717	1	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$8,430
Stonebrook Farms Drive	Thompson Road	End	0.12	1,706	2	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$20,047
Wynstead Court	Kensington Farms Drive	North End	0.06	875	1	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$10,280
Old Northpark Lane	Hopewell Road	East End	0.31	4,462	1	N/A	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$52,430
Wigton Drive	SW End	Circle	0.19	2,581	2	10-11	10	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$30,327
Providence Lake Point	West End	New Providence Road	0.05	822	1	N/A	12	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$9,664
Freemanwood Lane	Freemanville Road	End	0.48	6,614	2	10-13	12	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$77,720
Providence Lake Drive	New Providence Road	End	1.05	14,550	5	5-26	12	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$170,964
Hallbrook Lane	Cul-De-Sac	Treyburn Manor View	0.24	3,438	1	N/A	12	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$40,402
White Columns Drive	Hampton Bluff Drive	End	0.94	13,098	6	5-22	12	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$153,899
Plantation Cv	Plantation Trace	NW End	0.18	2,546	1	N/A	13	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$29,916
Champions View Drive	North End	South End	0.70	9,922	4	5-73	14	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$116,580
Reddstone Close	Redd Road	Blackrock Trace	0.21	3,054	2	12-19	14	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$35,879
Glen Hampton Drive	White Columns Drive	End	0.37	5,118	4	5-40	14	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$60,141
Blue Heron Way	Long Hollow Lane	NE End	0.29	4,103	1	N/A	14	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$48,215

City of Milton, GA

Recommended Capital Roadway Paving Projects

Residential Roadways

Roadway Name	From	To	Estimated Total Length (Miles) From IMS	Estimated Total Area (SY) From IMS	Number of Segments From IMS	PCI Range From IMS	2008 Area Weighted PCI (All Segments - IMS)	Rehabilitation Recommendation	2009 Unit Cost (per SY)	Est. 2009 Project Cost
Lake Grove Lane	Laurel Grove Drive	Dinsmore Road	0.27	3,867	1	N/A	15	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$45,440
Buckland Run	Providence Land Drive	East End	0.17	2,301	1	N/A	16	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$27,038
Treyburn Run	Treyburn Manor View	Treyburn Manor Drive	0.37	5,223	3	5-31	17	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$61,374
S. Vineyard Way	Stonebrook Farms Dr	End	0.21	3,045	2	10-26	18	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$35,776
Willowbank Lane	Sandy Creek Farm Road	NE End	0.14	1,969	1	N/A	20	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$23,131
Cadence Court	Sonata Lane	Sound End	0.04	621	1	N/A	21	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$7,299
Fieldstone Trail	Freemanville Road	End	0.33	4,707	3	17-25	23	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$55,309
Glencreek Way	South End	Francis Road	0.73	10,202	1	N/A	23	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$119,870
Harmony Court	West End	Avensong Ives Way	0.10	1,479	1	N/A	24	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$17,374
Country Ridge Road	Thompson Road	East End	0.39	5,451	1	N/A	24	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$64,047
Petersford Way	West End	Kensington Farms Drive	0.29	4,191	1	N/A	24	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$49,243
Weatherwood Circle	Sweet Briar Court	South End	0.29	4,042	1	N/A	24	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$47,496
Thomas Creek Court	West End	East End	0.11	1,584	2	21-28	25	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$18,608
Northwood Drive	Henderson Road	Sable Court	0.88	11,365	6	5-46	25	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$133,543
Hopewell Plantation Drive	Hopewell Road	Cogburn Road	0.98	13,885	5	5-25	26	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$163,151
McGinnis Ferry Road	Bethany Bnd	City Limits	0.58	8,163	1	N/A	26	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$95,912
Sable Pointe Road	Sable Creek Drive	End	0.37	5,118	3	10-45	27	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$60,141
Providence Plantation Drive	New Providence Road	End	0.53	7,192	2	5-38	28	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$84,505
Gladwyne Ridge Drive	New Providence Road	End	0.36	4,742	2	21-38	29	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$55,720
Double Springs Way	Thompson Springs Drive	SE End	0.29	4,121	1	N/A	31	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$48,421
Hampton Trace Lane	Glen Hampton Drive	Cul-De-Sac	0.11	1,487	1	N/A	31	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$17,477
Brookshade Parkway	Hopewell Road	Oakhurst Leaf Drive	0.42	6,002	3	10-52	32	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$70,524
Hampton View Court	Glen Hampton Drive	Cul-De-Sac	0.08	1,155	1	N/A	34	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$13,570
Wyndham Farms Drive	Cogburn Road	End	0.53	7,358	3	5-68	37	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$86,459
Copper Creek Circle	Creek Club Drive	North End	0.26	3,666	3	10-82	38	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$43,075
Morning Mountain Way	Creek Club Drive	End	0.68	9,607	2	5-43	39	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$112,880
Soneley Court	West End	State Highway 9	0.00	219	1	N/A	44	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$2,570
Gladwyne Court	Gladwyne Ridge Drive	South End	0.03	394	1	N/A	56	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$4,626
Providence Oaks Street	Old Providence Court	End	0.44	6,212	4	39-77	63	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$72,991
Providence Oaks Circle	Providence Oaks Street	End	0.52	7,498	2	69-73	70	1 1/2" Superpave GP 2 Typ. 1 Mill and Overlay - Necessary Pre-Overlay Repairs (TBD in Field)	$11.75	$88,104

NOTES

* Unit Costs were developed using bid results from FY2009 capital paving projects and inflated by 5% for current year costs
* Unit Costs include additional items such as traffic control and pavement marking
* Unit Costs for LARP roads submitted in 2009 and indicated by # include only 1 1/4" asphalt paving and tack coat, no pre-overlay repairs are assumed
  - If pre-overlay repairs are deemed necessary prior to LARP paving when funding becomes available they are the responsibility of the City thus impacting the overall fiscal budget
* LARP roads submitted in 2009 are listed first with the remaining residential roadways in need of rehabilitation listed by area-weighted PCI value (worst first)
* **Rehabilitation priorities are not identified for the residential roadways the list simply summarizies the roadways in need of rehabilitation, specific activities and funding mechanisms (LARP or Capital) are the responsibility of the City**
  - **Unit costs for rehabilitation applied to residential roadways are dependent upon specific funding mechanism (LARP or Capital) therefore adjustments to the estimated project costs presented herein may be necessary as specific rehabilitation options are determined by the City**
  - **Estimated project costs for residential roadways presented herein should only be used as a general guide as it is anticipated that the project cost will change based on actual rehabilitation option chosen and funding mechanism**
* For every year that recommended projects are not addressed it is recommended that the 2009 estimated project costs be inflated by 5% annually
* Based on annual budgets, consideration should be given to arrange and group projects that are in close proximity for phasing

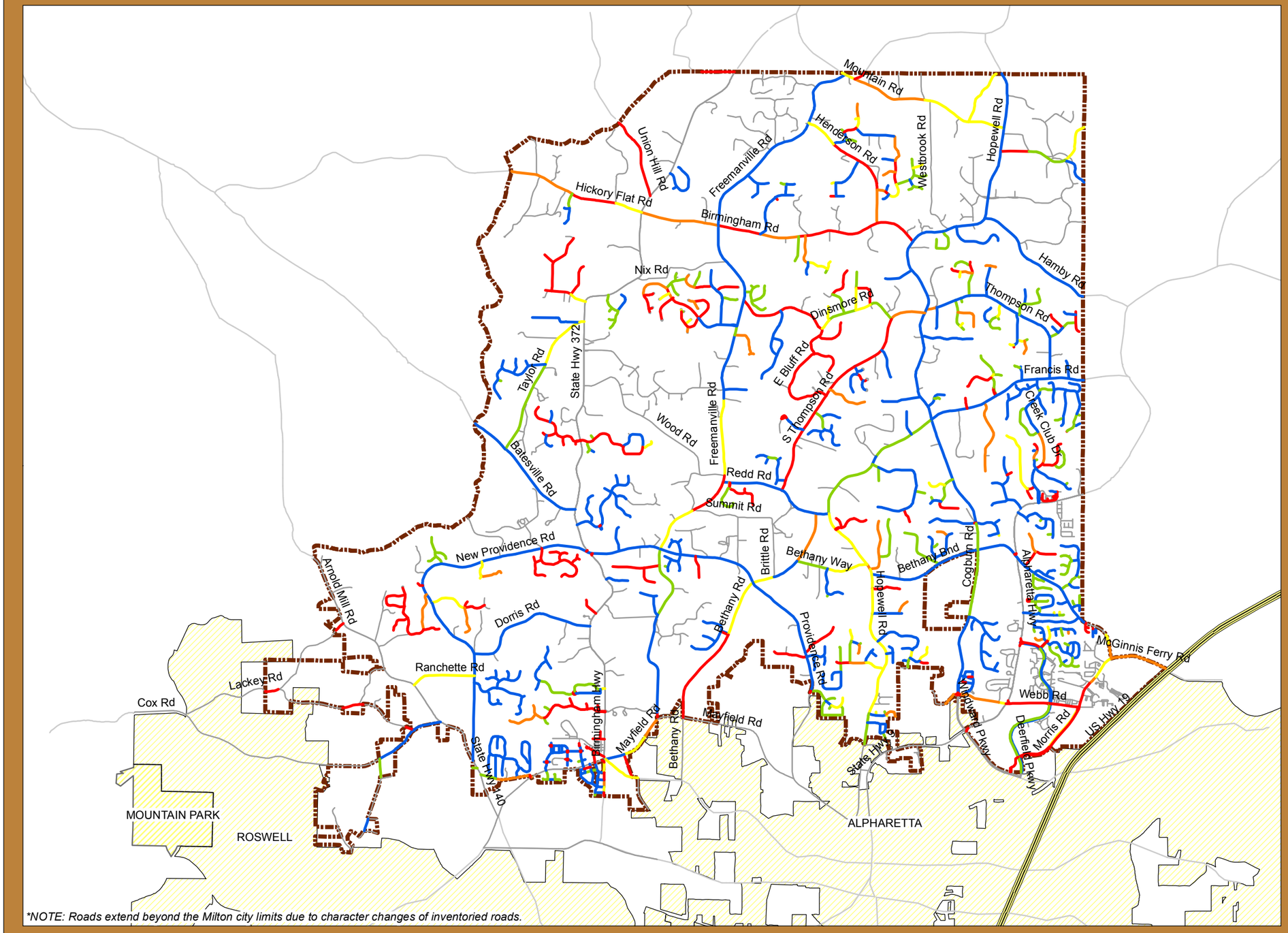
REFERENCES

City of Milton Pavement Management Analysis, Revision 3 - October 2008, IMS Infrastructure Management Services

APPENDIX B

Maps

City of Milton Transportation Plan



*NOTE: Roads extend beyond the Milton city limits due to character changes of inventoried roads.

Pavement Management

2007 Pavement Conditions
Per IMS Condition Survey

PCI Ranking

- 80 - 100 Good
- 60 - 80 Fair
- 40 - 60 Poor
- 20 - 40 Very Poor
- 0 - 20 Failed

Other Items

- Other Streets
- Expressways
- City of Milton
- Other Fulton County Cities

N
W E
S

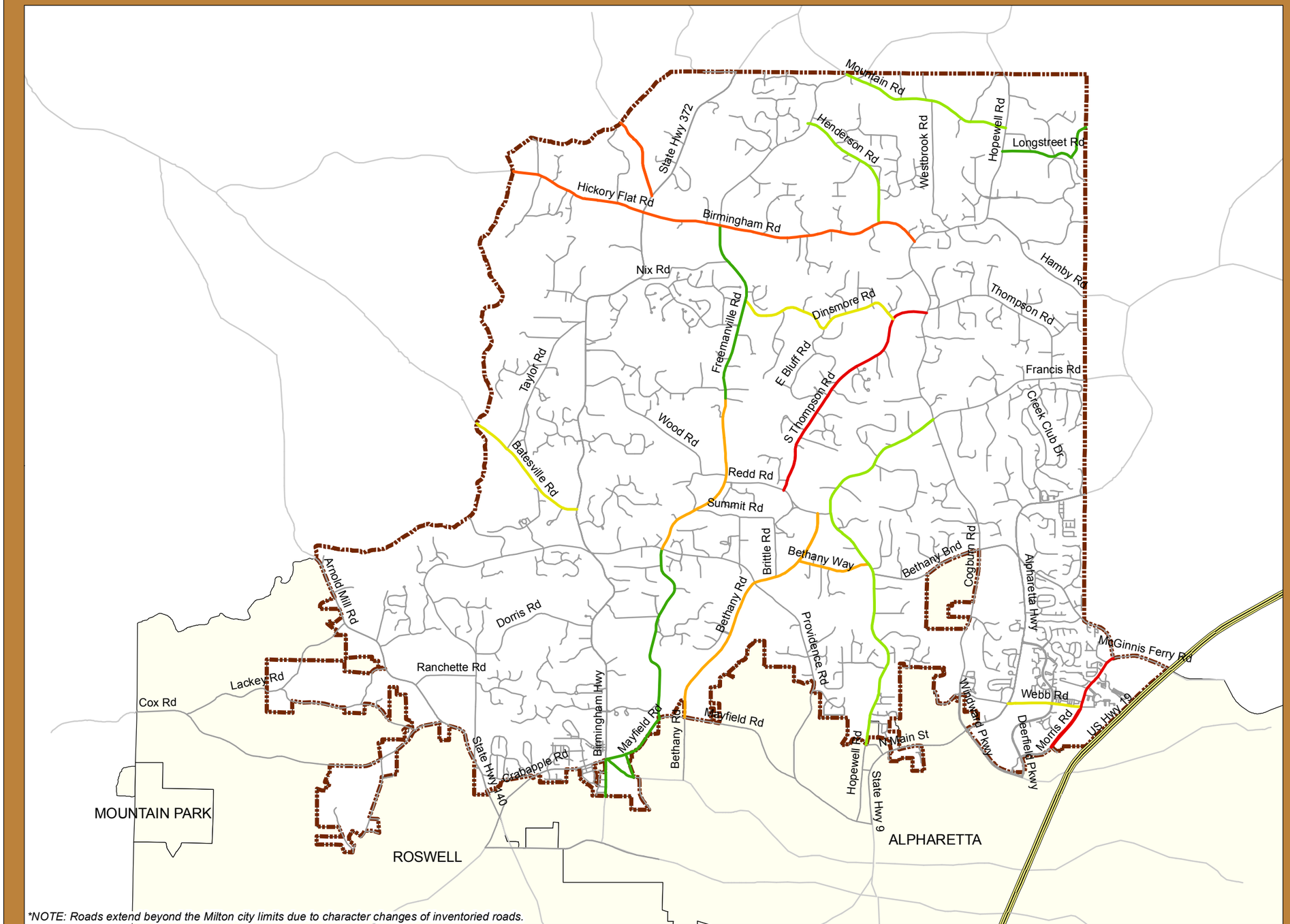
0 0.25 0.5 1 1.5 Miles

Prepared by: Kimley-Horn and Associates, Inc.

Date: April 30, 2009

Source: City of Milton, Kimley-Horn

City of Milton Transportation Plan



*NOTE: Roads extend beyond the Milton city limits due to character changes of inventoried roads.

Pavement Management

Prioritized Pavement Rehabilitation Recommendations For Arterial/Collector Roadways

LEGEND

- Priorities 1-3
- Priorities 4-6
- Priorities 7-9
- Priorities 10-12
- Priorities 13-15
- Priorities 16-19
- Other Streets
- Expressways
- City of Milton
- Other Fulton County Cities

N
W E
S

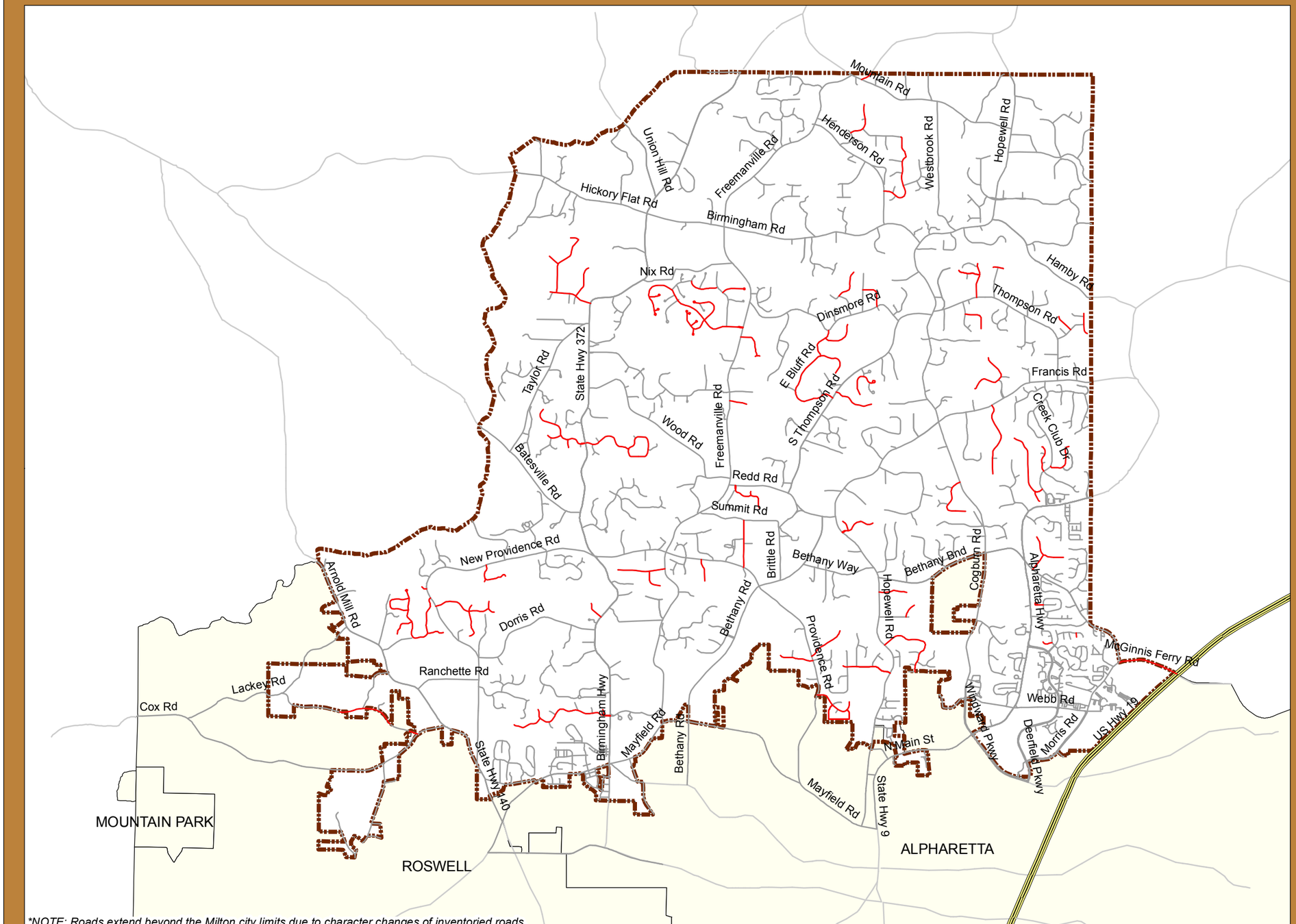
0 0.25 0.5 1 1.5 Miles

Prepared by: Kimley-Horn and Associates, Inc.

Date: July 24, 2009

Source: City of Milton, Kimley-Horn

City of Milton Transportation Plan



*NOTE: Roads extend beyond the Milton city limits due to character changes of inventoried roads.

Pavement Management

Pavement Rehabilitation Recommendations for Residential Streets

LEGEND

- Residential Streets Identified for Rehab.
- Other Streets
- Expressways
- City of Milton
- Other Fulton County Cities

N
W E
S

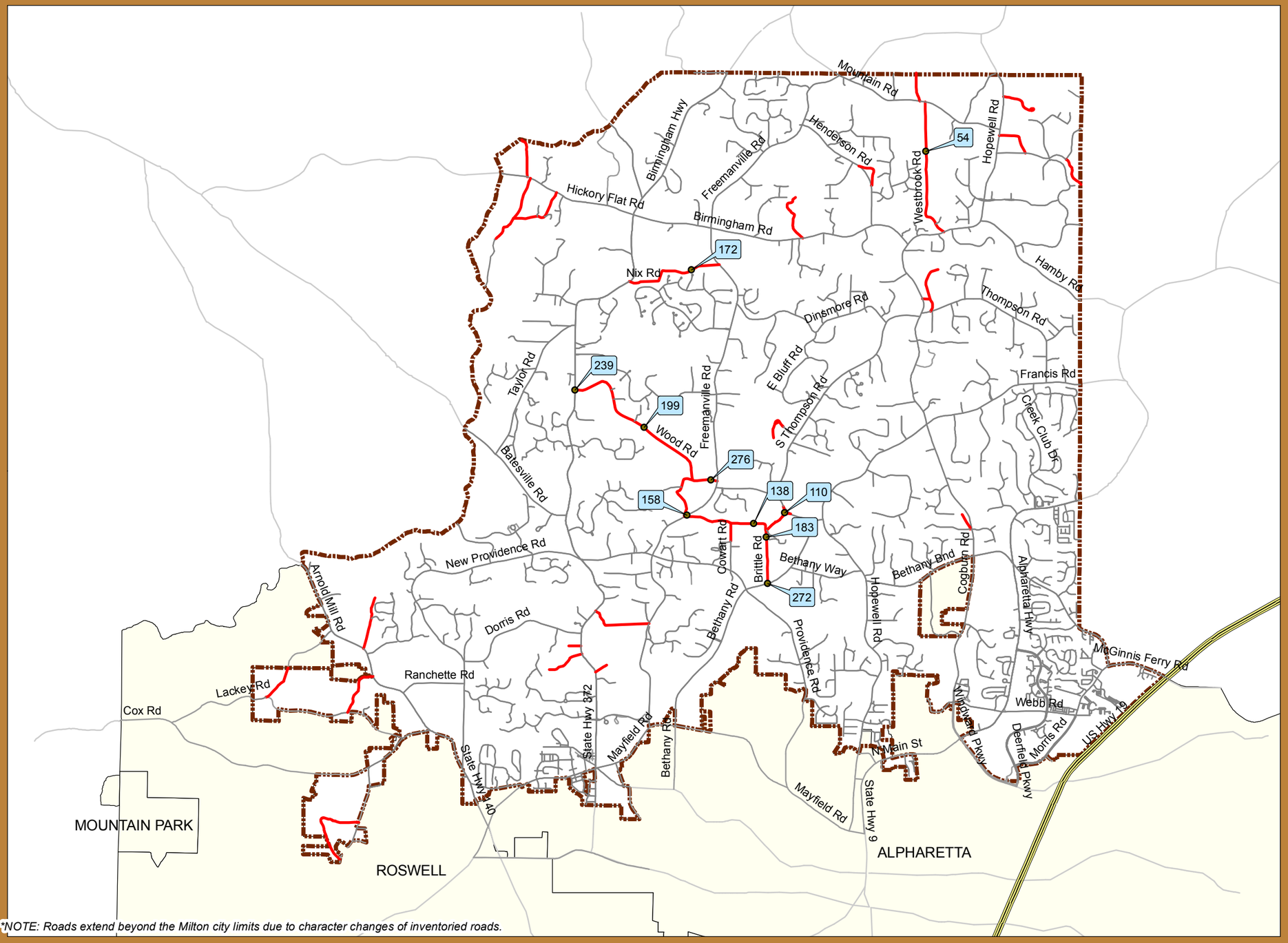
0 0.25 0.5 1 1.5 Miles

Prepared by: Kimley-Horn and Associates, Inc.

Date: July 24, 2009

Source: City of Milton, Kimley-Horn

City of Milton Transportation Plan



*NOTE: Roads extend beyond the Milton city limits due to character changes of inventoried roads.

Pavement Management

Gravel Roadways
2009 ADT

LEGEND

- Gravel ADTs
- Gravel Roads (City maintained)
- Other Roads
- Expressways
- City of Milton
- Other Fulton County Cities

N
W E
S

0 0.25 0.5 1 1.5 Miles

Prepared by: Kimley-Horn and Associates, Inc.

Date: July 24, 2009

Source: City of Milton; Jamar Technologies, Inc.; Kimley-Horn

APPENDIX C

Letter to Fulton County Regarding Bridge Conditions

Gerald M. Ross, P.E., Commissioner/Chief Engineer

DEPARTMENT OF TRANSPORTATION

One Georgia Center, 600 West Peachtree Street, NW
Atlanta, Georgia 30308
Telephone: (404) 631-1000

May 18, 2009

Honorable John Eaves, Chairman
Fulton County Board of Commissioners
141 Pryor Street, S.W.
Atlanta, Georgia 30303

Dear Commissioner Eaves:

A re-inspection of your County and Federal Aid Secondary bridges has been completed. This re-inspection will maintain your County's Compliance with the Federal Law and Regulations requiring all public bridges be inspected biennially. Only bridges as set forth in the Federal Regulations were inspected. A bridge is defined as a structure including supports erected over a depression or an obstruction, such as water, highways, or railways, and having a track or passageway for carrying traffic or other moving loads and having an opening measured along the center of the roadway of more than twenty feet between undercopings or abutments or spring lines including multi-pipes, where the clear distance between openings is less than half of the smaller contiguous opening.

Attached is a report reflecting the results of the above inspection. It is the responsibility of the county government to forward a copy of this report to local municipalities for bridges owned and maintained by city governments within the county boundaries. It is also the responsibility of the county government to advise local school boards of the location of any bridge structure that is not capable of sustaining school bus loads as noted in this report. This report briefly advises you of the condition of your bridge structures and notes which structures should be posted with load limit signs and which ones should be closed to traffic if conditions do not meet minimum standards according to Federal Law. Those structures requiring posting or closure have been identified within the text with an asterisk (*). It is extremely important that the local jurisdiction comply with Federal Posting and Closing Regulations. Counties not in compliance will not have any projects authorized that utilize federal highway funds until compliance with these regulations has been obtained.

Attached to the report is a copy of the Structure Inventory and Appraisal (SI&A) sheet for each structure in the report. This sheet contains additional information that is not necessarily contained in this written report such as whether or not the bridge rails meet current standards and if delineation signs are present. A Posting Summary sheet of all the structures that require posting showing their load carrying capacities has also been included. Attached to the Posting Summary sheet, you will find a drawing of two load limit signs and a drawing of required bridge closing methods. The R12-1 (Type A) sign is for gross load posting while the R12-5 modified (Type B) sign is for multi-posting. Please note that all structures requiring closing must be properly closed in accordance with the attached methods.

Please note that on the Posting Summary sheet, all bridges marked with a plus sign (+) are presently not posted and require posting. On the same summary sheet, all bridges marked with a pound symbol (#) are presently posted with an inappropriate sign and should be re-posted with a proper type sign and/or proper load limits. The load limit will be in the appropriate column, depending on the type sign recommended. In addition, all bridges marked with a (B) are bridges located on an identified School Bus Route. All bridges carrying school buses should have a minimum capacity of 10 tons.

Assistance in the rehabilitation or replacement of deficient bridges may be obtained through the State Aid Program. This assistance can include funds for materials such as concrete, reinforcement steel, piles or pipe. The state owned crane can be scheduled for repairs as in the replacement of deteriorated piles. Based on your county's transportation needs, eligible deficient bridges can be added to the Construction Work Program for replacement. In addition, engineering services are available through this program. For information with this service, please contact our Office of State Aid at (404) 656-5185.

All structural calculations are based on the inventory stress level. This is the normal design criterion and includes a reasonable factor of safety. Loads exceeding those allowed at the inventory stress level can be applied on an occasional basis without seriously damaging the structure but the operating rating (at the higher operating stress level) should generally not be exceeded without a detailed structural analysis.

If you have any questions concerning any of the structures in this report or need a copy of the Bridge Inventory Coding Guide to interpret the Structure Inventory and Appraisal sheet, please contact Mr. Kerry Wood, of my office, at (404) 635-8189.

Sincerely,

Mike Clements, P.E.
State Bridge Maintenance Engineer

MLC/gmc
Enclosures

cc: Cindy Loe, Ph.D., Superintendent, Fulton County Board of Education
Carol Bentley, Safety Investigation, Fulton County Schools
Angela Parker, Public Works Director, Fulton County
Rachel Brown, Acting District Engineer, District 7, Chamblee (via email)
Ernay Robinson, Area Engineer, District 7, Area 3, Hapeville (via email)
David Huff, State Aid (via email)
Jerry Cooper, Bridge Inspection Supervisor (via email)
File

Georgia Department of Transportation

Posting Summary for Fulton County

	LOCATION ID	STRUCTURE ID	ACTION	H TRUCK	TYPE-3 TRUCK	TIMBER TRUCK	HS TRUCK	3S2 TRUCK
B	121-02365F-004.28N	121-0283-0	POSTED	20	19	28		
B	121-02564F-001.53E	121-0284-0	POSTED	19	19	24		
#B	**121-02564F-003.10E**	**121-0286-0**	**REPOST FOR**	**14**	**13**	**18**	**15**	**23**
B	121-02564F-005.47E	121-0287-0	POSTED	15	15	20	17	
#B	**121-02564F-007.12E**	**121-0288-0**	**REPOST FOR**	**10**	**12**	**15**		**18**
B	121-09069M-008.95E	121-0355-0	POSTED	11	14	20		
B	121-09075M-000.80N	121-5201-0	POSTED	09	12	16	15	22
B	121-09104M-000.33E	121-0294-0	POSTED	08	10	15	13	20
#B	**121-09104M-001.03E**	**121-0295-0**	**REPOST FOR**	**19**	**19**	**24**		
#B	**121-09248M-001.88N**	**121-0453-0**	**REPOST FOR**	**17**	**18**	**26**		
B	121-09381M-001.68W	121-5063-0	POSTED	10	12	15		18
B	121-09407M-001.38E	121-0305-0	CLOSED	13	13	18	16	20
B	121-09407M-001.66E	121-0306-0	CLOSED	19	19	24		
B	121-09408M-000.08E	121-0304-0	POSTED	11	11	13	12	17
+B	**121-09415M-001.80N**	**121-5016-0**	**POST FOR**	**16**	**17**	**24**		
B	121-09479M-004.54E	121-0291-0	POSTED	15	14	19	16	
+B	**121-09479M-005.33E**	**121-0292-0**	**POST FOR**	**15**	**15**	**20**		**24**
+	**121-00003X-000.38N**	**121-5002-0**	**POST FOR**	**06**				
	121-00004X-000.01E	121-5151-0	POSTED	10	12	15		18
B	121-00004X-003.99E	121-5003-0	POSTED	10	10	13	13	16
B	121-00012X-000.17E	121-5004-0	POSTED	19	19	23		
B	121-00012X-000.67E	121-5005-0	POSTED	18	18	23		
B	121-00034X-006.31S	121-5153-0	POSTED	18	18	22		
+B	**121-00064X-000.94N**	**121-5017-0**	**POST FOR**	**07**				
B	121-00072X-001.44E	121-5019-0	POSTED	10	12	15		18
B	121-00072X-002.29E	121-5020-0	POSTED	18	17	22		
B	121-00079X-001.52N	121-5022-0	POSTED	10	12	15		17

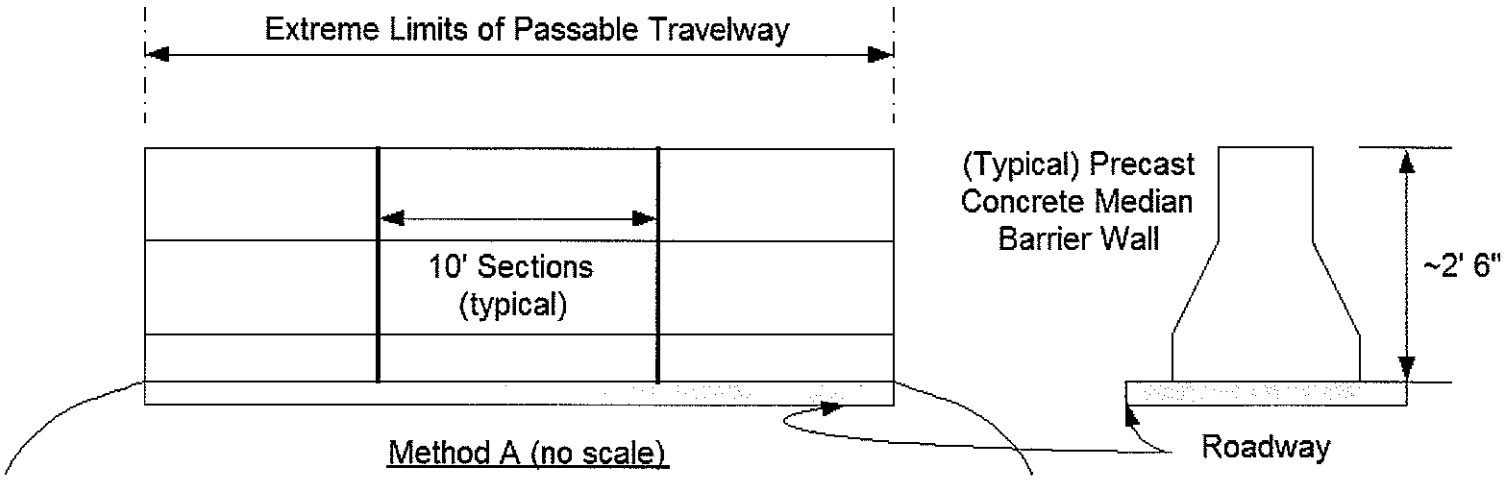
	LOCATION ID	STRUCTURE ID	ACTION	H TRUCK	TYPE-3 TRUCK	TIMBER TRUCK	HS TRUCK	3S2 TRUCK
+B	121-00103X-000.53S	121-5024-0	POST FOR	19	18	23		
B	121-00111X-000.75N	121-5026-0	POSTED	19	18	23		
	121-00126X-000.14W	121-5027-0	CLOSED					
+B	121-00219X-000.59S	121-5034-0	POST FOR	18	18	22		
#B	121-00331X-000.57S	121-5176-0	REPOST FOR	11	13	17		18
B	121-00415X-000.01W	121-5038-0	POSTED	20	19	24		
	121-00420X-001.20N	121-5040-0	POSTED	10	12	15		18
	121-00426X-002.30N	121-5044-0	POSTED	10	12	15		18
B	121-00435X-001.74W	121-5046-0	POSTED	03				
B	121-00443X-000.34N	121-5050-0	POSTED	10	12	15		18
B	121-00485X-008.46S	121-5056-0	POSTED	13	17	23		24
	121-00515X-001.01N	121-5061-0	POSTED	10	12	15		18
B	121-00518X-000.35N	121-5064-0	POSTED	19	19	24		
#	121-00522X-000.19E	121-5065-0	REPOST FOR	11	14	18		20
+B	121-00614X-001.02N	121-5077-0	POST FOR	10	12	15		18
#B	121-00618X-000.59S	121-5078-0	REPOST FOR	10	12	15		18
#B	121-00621X-000.28E	121-5079-0	REPOST FOR	10	12	15		18
B	121-00629X-000.01W	121-5081-0	POSTED	09	10	14	16	18
+	121-00637X-000.42E	121-5086-0	NEED TO CLOSE					
B	121-00650X-001.10N	121-5274-0	POSTED	10	12	15		18
B	121-01390X-002.95E	121-5109-0	POSTED	10	12	15		18
	121-01392X-006.02N	121-5114-0	POSTED	06	13	15	11	19
	121-01527X-000.14E	121-5118-0	POSTED	05				
	121-01529X-002.14N	121-5119-0	POSTED	10	10	14	12	15
#	121-01529X-002.96N	121-5120-0	REPOST FOR	09				
B	121-01638X-000.25E	121-5210-0	POSTED	20	19	24		
+B	121-02233X-003.02E	121-0629-0	POST FOR	12	12	16		
+B	121-02233X-003.03E	121-0630-0	POST FOR	12	12	16		
B	121-02233X-003.73E	121-5286-0	POSTED	13	17	24		

	LOCATION ID	STRUCTURE ID	ACTION	H TRUCK	TYPE-3 TRUCK	TIMBER TRUCK	HS TRUCK	3S2 TRUCK
B	121-03079X-000.55E	121-5134-0	POSTED	19	19	24		
#B	**121-03337X-000.09E**	**121-5133-0**	**REPOST FOR**	**10**	**09**	**14**	**12**	**15**
	121-05016X-000.44S	121-5197-0	CLOSED					
B	121-07001X-000.03N	121-5198-0	POSTED	14	14	17	16	23

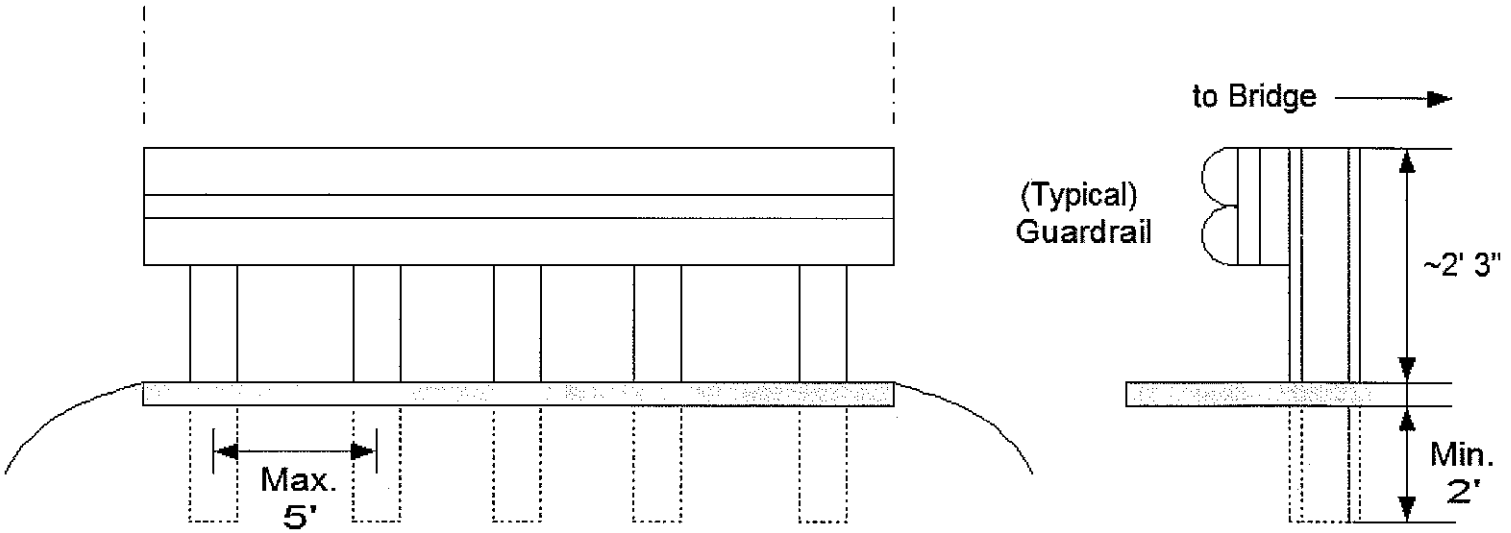
Bridge Posted incorrectly, Reposting required
+ Bridge not Posted, Posting Required
B Bridge located on an identifying School Bus Route
All Bridges carrying School Buses should have a minimum capacity of 10 Tons.

Please indicate which alternate closing method the county uses to close a structure.

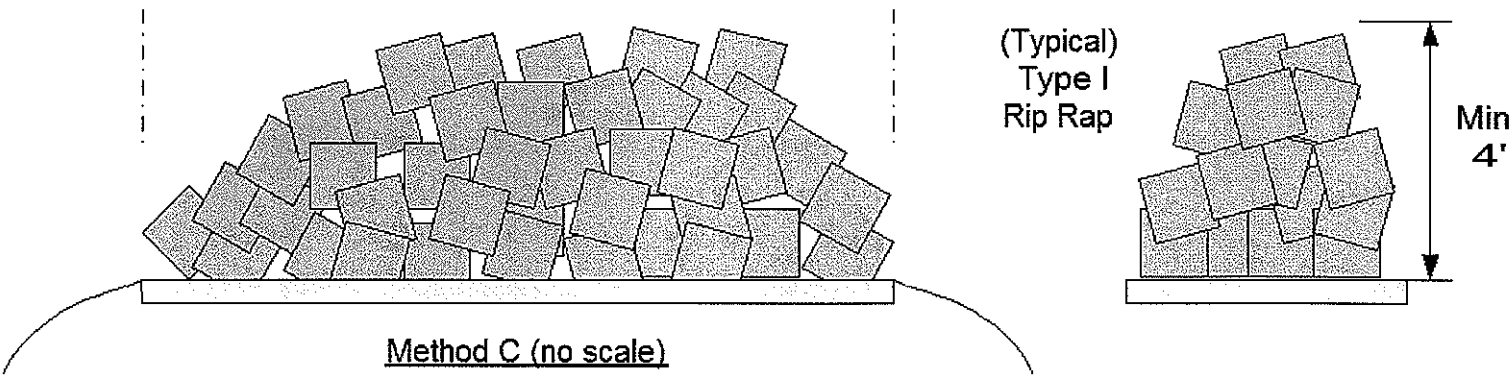
Note: It is recommended that advanced weight limit signs be placed.



Method A (no scale)



Method B (no scale)

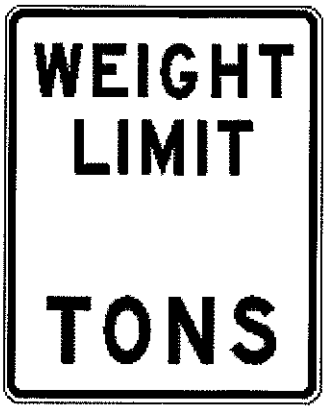


Method C (no scale)

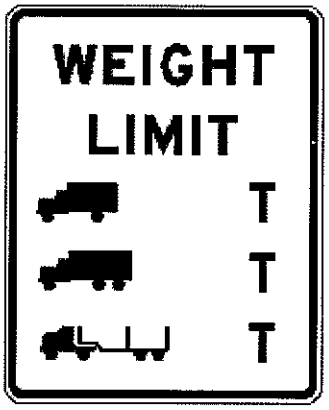
LOCAL BRIDGE CLOSING METHODS

NOTE: In addition to the above permanent closure, appropriate advance warning signs and barricades should be used. Please reference the Manual on Uniform Traffic Control Devices, current edition. Also, advanced warning signs should be used at the last intersection prior to each end of the structure.

Georgia Weight Limit Signs



R12-1
GROSS WEIGHT LIMIT SIGN
(Type A)



MODIFIED R12-5
WEIGHT LIMIT SYMBOL SIGN
(Type B)

H-TRUCK

TYPE 3

TIMBER

HS-TRUCK (Add as required)

3S2 (Add as required)

PIGGYBACK (Add as required)

Revised 1-25-99

LOCALLY OWNED FEDERAL AID ROUTE BRIDGE INSPECTIONS:

STRUCTURE ID 121-0511-0 / LOCATION ID 121-00846F-001.33E
FAS 846, CR 1391, Fayetteville Road under CSX Railroad

This non-roadway railroad structure has been inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 9'-10". At the present time, the County should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5312-0 / LOCATION ID 121-01324F-006.40N
FAU 1324, CR 1386, Stonewall Tell Road over Camp Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0280-0 / LOCATION ID 121-02356F-001.88E
FAS 2356, CR 1391, Hutchenson Ferry Road over Dry Branch

This bridge culvert is in good condition with no reported deficiencies.

STRUCTURE ID 121-5307-0 / LOCATION ID 121-02364F-001.01E
F 2364, CR 1331, Rucker Road over Foe Killer Creek

This bridge structure is in good condition. Erosion at the western abutment has exposed the foundation piles and should be repaired to prevent loss of fill and possible damage to the roadway.

STRUCTURE ID 121-0282-0 / LOCATION ID 121-02365F-001.45N
FAS 2365, CR 1323, Hopewell Road over Chicken Creek Tributary

This bridge culvert is in good condition but has approximately 0.5 feet of scour damage at the inlet end of barrels #2 and #3. This scour damage should be monitored for further signs of degradation.

*STRUCTURE ID 121-0283-0 / LOCATION ID 121-02365F-004.28N
FAS 2365, CR 1323, Hopewell Road over Chicken Creek

At the present time, Post this structure for 20 Tons H-Truck; 19 Tons Type 3 Truck and 28 Tons Timber Truck.

This structure requires posting due to overstress caused by the extra dead load of the 4.5 inch asphalt overlay. Upgrading the load carrying capacity to a point where posting is not required would require removal of this overlay. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in good condition but has corrosion of the steel superstructure. The beams throughout the structure should be cleaned and painted. The beaver dam located upstream of the structure should be removed to prevent further accumulation of debris and reduce the possibility of scour.

***STRUCTURE ID 121-0284-0 / LOCATION ID 121-02564F-001.53E**
FAS 2564, CR 41, McGinnis Ferry Road over Camp Creek Tributary
At the present time, Post this structure for 19 Tons H-Truck; 19 Tons Type 3 Truck and 24 Tons Timber Truck.

This structure requires posting due to overstress caused by the extra dead load of the 3.5 inch asphalt overlay. Upgrading the load carrying capacity to a point where posting is not required would require removal of this overlay. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in satisfactory condition with the exception of the steel substructure piles. The steel piles throughout the structure should be cleaned and painted. The joints throughout the deck should be cleaned and sealed. Vegetation growing in the vicinity of the structure should be cut and removed.

***STRUCTURE ID 121-0286-0 / LOCATION ID 121-02564F-003.10E**
FAS 2564, CR 1319, McGinnis Ferry Road over Big Creek
At the present time, Post this structure for 14 Tons H-Truck; 13 Tons Type 3 Truck; 18 Tons Timber Truck; 15 Tons HS-Truck and 23 Tons Type 3S2 Truck.

This structure requires posting due to insufficient flexural capacity of the steel piles. Any upgrade of the load carrying capacity would require strengthening or replacement of the substructure and removal of the asphalt overlay. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in fair condition with corrosion of the steel piles. The piles in bent #2 should be protected with reinforced concrete encasements extending from a point 2 feet below the mud line to a point 2 feet above normal water. The concrete encasements at bent #3 have been undermined and should be extended to points 2 feet below the mud line. The steel piles throughout the structure should be cleaned and painted. Spalls in the cap at bent #2 and #3 should be repaired and the bearing material replaced to prevent future spalling. Minor spalls on the bottom of the precast superstructure units should be repaired to protect the exposed reinforcement steel from corrosion. Spalling of the asphalt overlay should be repaired. The bridge railing on the western end of the structure is loose and should be repaired. At the time of the inspection the posting signs were incorrect. ***The existing signs have the silhouette of a Type 3-S-2 Truck instead of the HS Type Truck and the Type 3 Truck is incorrectly posted. The HS Truck and the Type 3 Truck are therefore considered as not being posted. The signing must be corrected.***

***STRUCTURE ID 121-0287-0 / LOCATION ID 121-02564F-005.47E**
FAS Route 2564, CR 1319, McGinnis Ferry Road over Caney Creek
At the present time, Post this structure for 15 Tons H-Truck; 15 Tons Type 3 Truck; 20 Tons Timber Truck and 17 Tons HS-Truck.

This structure requires posting due to insufficient flexural capacity of the steel piles and the excessive 5.0 inch asphalt overlay. Any upgrade of the load carrying capacity would require strengthening or replacement of the substructure and removal of the asphalt overlay. This bridge structure is in good condition with no other reported deficiencies.

***STRUCTURE ID 121-0288-0 / LOCATION ID 121-02564F-007.12E**
FAS 2564, CR 1319, McGinnis Ferry Road over Johns Creek
At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.
This structure requires posting due to the low original design capacity of the structure and due to the concrete deck slabs not being properly bolted together. A replacement structure is required to upgrade this structure to a point where posting is no longer required. The following maintenance recommendations are provided to maintain this structure at the current rating. The cracks and spalls in all precast waffle panels should be sealed to protect the reinforcement steel from corrosion. All of the deck joints have failed and should be cleaned and sealed. ***At the time of inspection, the posting signs were inadequate. The existing signs have the silhouette of a Tri-Axle Truck instead of a Type 3 Truck . The Type 3 Truck is therefore considered as not being posted. The signing must be corrected.***

STRUCTURE ID 121-0289-0 / LOCATION ID 121-02564F-012.08E
FAS 2564, CR 1319, McGinnis Ferry Road over Chattahoochee River
This bridge structure is in fair condition. The steel beams and bearing assemblies are corroded and should be cleaned and painted. Scour and undermining of the footing at bent #3 should be repaired before load reductions or possible closure become necessary. The deck joints have failed and should be cleaned and sealed. Dirt and debris in the deck gutters and drains should be removed to allow proper drainage.

STRUCTURE ID 121-0317-0 / LOCATION ID 121-09000M-001.80N
FAM 9000, CS 3003, Herchell Road over Camp Creek
This bridge structure is in satisfactory condition but has corrosion and section loss of the steel superstructure members. The steel beams throughout the structure should be cleaned and painted. The cracking in the northern abutment should be sealed.

STRUCTURE ID 121-0319-0 / LOCATION ID 121-09000M-005.80N
FAM 9000, CS 3003, Dodson Drive over South Utoy Creek
This bridge structure is in fair condition. However, scour damage at the southern abutment should be corrected with rip rap. Both abutments exhibit signs of scaling and cracking which should be sealed.

STRUCTURE ID 121-0572-0 / LOCATION ID 121-09003M-000.07N
FAM 9003, CS 1790, Decatur Street under Pedestrian Overpass
This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0571-0 / LOCATION ID 121-09003M-000.08N
FAM 9003, CS 1790, Decatur Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0570-0 / LOCATION ID 121-09003M-000.14N
FAM 9003, CS 1790, Decatur Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0004-0 / LOCATION ID 121-09003M-002.68N
FAM 9003, CS 3498, Marietta Street over Southern and CSX Railroad

This bridge structure is in good condition. The steel superstructure is corroded and should be cleaned and painted. The silicone joint at abutment #1 has failed and should be cleaned and sealed. The armored joint at abutment #2 should be tightened and sealed.

STRUCTURE ID 121-0005-0 / LOCATION ID 121-09003M-003.73N
FAM 9003, CS 3498, Marietta Boulevard over Southern and CSX Railroad

This bridge structure is in fair condition. The ends of the steel beams and bearing assemblies are corroded and should be cleaned and painted. The deck joints have failed and should be cleaned and sealed. Spans #1 and #2 exhibit signs of scaling on the deck which has exposed the reinforcing steel. The reinforcing steel should be cleaned and sealed. The scaling should then be repaired. The asphalt pavement at the end of the structure shows signs of deep rutting and should be repaired to provide a smooth transition onto the bridge structure. Dirt and debris in the deck gutters should also be cleaned to allow proper drainage. Collision damage to the right handrail should be repaired. The handrail posts should be re-attached securely to the curb.

STRUCTURE ID 121-0006-0 / LOCATION ID 121-09003M-004.38N
FAM 9003, CS 3498, Marietta Boulevard over Spur Railroad Track

This bridge structure is in fair condition with corrosion of the steel superstructure. The steel beams in span #2 should be cleaned and painted. The deck joints have also failed and should be cleaned and sealed. The slope at abutment #1 has severe erosion and should be repaired.

STRUCTURE ID 121-0681-0 / LOCATION ID 121-09003M-006.95N
FAM 9003, CS 3498, Marietta Boulevard over Sewage Channel & Service Road

This bridge culvert is in satisfactory condition. Spalling within the barrels has exposed the reinforcement steel. These spalls should be sealed.

STRUCTURE ID 121-5322-0 / LOCATION ID 121-09003M-007.05N
FAM 9003, CS 3498, Atlanta Road Over Chattahoochee River

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0512-0 / LOCATION ID 121-09007M-002.04N
FAM 9007, CS 1860, Piedmont Avenue under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0513-0 / LOCATION ID 121-09007M-002.06N
FAM 9007, CS 1860, Piedmont Avenue under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

***STRUCTURE ID 121-0322-0 / LOCATION ID 121-09007M-002.60N**
FAM 9007, CS 1868, Courtland Street over Decatur Street and CSX Railroad
At the present time, Post this structure for 15 Tons H-Truck; 18 Tons Type 3 Truck; 25 Tons Timber Truck and 32 Tons Type 3S2 Truck.

This structure requires posting due to the low original design capacity of the structure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in fair condition. The steel beams and columns throughout the structure are corroded and should be cleaned and painted. The edge beams at the joints and the bottom of the deck have extensive spalling with exposed reinforcement steel. The exposed reinforcement steel throughout the deck should be covered to protect it from corrosion. Due to the age of the structure, the spalling will probably continue and is of concern due to the large volume of pedestrian traffic under the bridge. The deck joints throughout the structure have failed and are contributing to the deterioration of the concrete at the joints and should be cleaned and sealed. Some of the concrete footings supporting the steel piles are damaged and should be repaired.

STRUCTURE ID 121-0682-0 / LOCATION ID 121-09007M-003.82N
FAM 9007, CS 3462, Juniper Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0627-0 / LOCATION ID 121-09007M-004.58N
FAM 9007, CS 3462, Juniper Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearances only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0036-0 / LOCATION ID 121-09007M-005.42N
FAM 9007, CS 3463, Piedmont Avenue over Southern Railroad

This bridge structure is in fair condition. The joints at bents #2 and #3 are jammed and have allowed the structure to shift laterally approximately 2 inches. The joints should be cleaned of all debris and sealed with a flexible sealant to prevent any further lateral movement. The concrete cap at bent #2 under beams #3, #8 and #9 and bent #3 under beams #2 and #8 have spalled and exposed the reinforcement steel. These spalls should be repaired.

STRUCTURE ID 121-0037-0 / LOCATION ID 121-09007M-005.51N
FAM 9007, CS 3463, Piedmont Avenue over Clear Creek

This bridge structure is in good condition. The steel beams, diaphragms, and bearing assemblies are corroded and should be cleaned and painted. A void under the cap at the north abutment should be filled. The deck joints have failed and should be cleaned and sealed. Dirt and debris in the deck gutters and drains should be removed to allow proper drainage. Vegetation around the structure should be cut and removed.

STRUCTURE ID 121-0068-0 / LOCATION ID 121-09013M-003.92N
FAM 9013, CS 3484, Bolton Road over Southern Railroad

This bridge structure is in good condition with corrosion of the steel superstructure. The steel beams and bearings throughout the structure should be cleaned and painted. The gland in the deck joint at the north abutment has failed and should be replaced. A section of the aluminum joint at this location is missing and should be repaired. The remaining joints through out the deck have also failed and should be cleaned and sealed.

STRUCTURE ID 121-0501-0 / LOCATION ID 121-09013M-005.44N
FAM 9013, CS 3484, Bolton Road under CSX Railroad

This non-roadway structure has been inspected for clearance only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 13' -11". At the present time, post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0683-0 / LOCATION ID 121-09013M-005.79N
FAM 9013, CS 3484, Bolton Road over Whetstone Creek

This bridge culvert is in good condition. However the accumulated debris at the inlet end should be removed.

STRUCTURE ID 121-0324-0 / LOCATION ID 121-09013M-006.20N
FAM 9013, CS 253, Moores Mill Road over CSX Railroad

This bridge structure is in satisfactory condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. The drop inlet at the south end of the structure is clogged with debris and should be cleaned out to allow proper drainage of the approach roadway. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-0325-0 / LOCATION ID 121-09013M-006.71N
FAM 9013, CS 253, Moores Mill Road over Peachtree Creek

This bridge structure is in fair condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. Scour in the vicinity of bent #2 and bent #3 should be corrected. One of the upstream wing walls has cracked and shifted approximately 3 inches. This wingwall should be stabilized and the crack sealed.

STRUCTURE ID 121-0672-0 / LOCATION ID 121-09013M-012.30N
FAM 9013, CS 3369, E. Paces Ferry Road under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0328-0 / LOCATION ID 121-09035M-000.01E
FAM 9035, CS 3090, Paces Ferry Road over Chattahoochee River

This bridge structure is in satisfactory condition with significant scour under the column seal of columns #1 and #2 at bent #4. On the left face of column #1, a void approximately 2 feet high extends 6 feet under the seal. On the front and left faces, the voids are approximately 1 foot high and extend 4 feet under the seal. Column #2 has a void under the right back corner and the front face that is 6 inches high and extends 1 foot under the seal. This undermining should be repaired with sand bag forms followed by grout pumped in the voids. The drift in the channel should also be removed. Voids under the cap at the east abutment and erosion down the end roll should be repaired. The steel bearing assemblies have corroded and should be cleaned and painted. The anchor bolts at bents #2, #5, and #6 are loose and should be securely grouted in place. The deck joints throughout the structure have failed and should be cleaned and sealed. The accumulated debris at bents #2, #3, #4 and #5 should be removed.

STRUCTURE ID 121-0329-0 / LOCATION ID 121-09035M-001.50E
FAM 9035, CS 3090, Paces Ferry Road over Nancy Creek

This bridge structure is in good condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted.

STRUCTURE ID 121-0574-0 / LOCATION ID 121-09042M-001.31N
FAM 9042, CS 2661, Hollywood Road over Proctor Creek Tributary

This bridge culvert is in fair condition. Up to 3.5 feet of scour at the inlet end is undermining the wingwall and should be repaired with rip rap to prevent structural damage.

STRUCTURE ID 121-5294-0 / LOCATION ID 121-09042M-001.80N
FAM 9042, CS 2661, Hollywood Road over Procter Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0331-0 / LOCATION ID 121-09042M-002.53N
FAM 9042, CS 2661, Hollywood Road over Southern Railroad Yard

This bridge structure is in fair condition. **The concrete beams in span #5 have extensive spalling with exposed reinforcement steel which has heavy section loss. These spalls should be repaired to prevent further deterioration of the beams.** The steel beams in spans #1 and #2 are corroded and should be cleaned and painted. Collision damage to the right side handrail should also be repaired. ***At the time of inspection this structure was posted with a restricted load limit sign. This sign is not needed and may be removed.***

STRUCTURE ID 121-5180-0 / LOCATION ID 121-09044M-000.93E
FAM 9044, CS 809, Baker Road over Proctor Creek Tributary

This bridge culvert is in good condition with no reported deficiencies.

STRUCTURE ID 121-0332-0 / LOCATION ID 121-09045M-004.90E
FAM 9045, CS 843, Simpson Street over Proctor Creek

This bridge structure is in good condition. The steel beams are corroded and should be cleaned and painted.

STRUCTURE ID 121-5241-0 / LOCATION ID 121-09045M-005.11E
FAM 9045, CS 843, Simpson Street over Marta Rail Line

This all concrete bridge structure is in good condition but the deck joints at both abutments have failed. These joints should be repaired, cleaned and sealed.

STRUCTURE ID 121-0333-0 / LOCATION ID 121-09045M-006.62E
FAM 9045, CS 843, Jones Avenue over Southern and CSX Railroad

This bridge structure is in satisfactory condition with the exception of the steel superstructure. The steel beams and bearing assemblies throughout the structure are corroded and should be cleaned and painted. The steel deck joints at the eastern abutment and bent #2 are loose and should be repaired.

STRUCTURE ID 121-0563-0 / LOCATION ID 121-09045M-007.94E
FAM 9045, CS 1810, Alexander Street over Techwood Spring Street Connector

This all concrete bridge structure is in good condition with no serious reported structural defects. The retaining wall panels beneath the structure are leaning out of plumb and should be monitored for further signs of movement.

STRUCTURE ID 121-0515-0 / LOCATION ID 121-09045M-008.82E
FAM 9045, CS 1810, Ralph McGill Boulevard under Southern Railroad

This non-roadway railroad structure has been inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 14'-00". At the present time, the county should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0335-0 / LOCATION ID 121-09048M-001.10N
FAM 9048, CS 2645, Northwest Road over Proctor Creek

This bridge structure is in good condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-0338-0 / LOCATION ID 121-09052M-000.32E
FAM 9052, CS 1057, Benjamin E. Mays Road over North Utoy Creek

This bridge structure is in fair condition. Spalls on the beams and bottom of the deck should be repaired to protect the reinforcing steel. The previous repairs to the scour at the east abutment have failed and additional repairs are required.

STRUCTURE ID 121-0089-0 / LOCATION ID 121-09053M-001.41E
FAM 9053, CR 4176, Cascade Road over Branch of Utoy Creek

This bridge culvert is in fair condition but has channel bed scour problems at the inlet end of the structure. This scour damage is 3 feet in depth and should be repaired with rip rap before undermining of the structure can occur. One of the southern wingwall is cracked. This crack is 2 inches in width and should be sealed. Old form work in the channel approximately 10 feet upstream of the structure should also be removed to allow proper stream flow. The 2 feet of accumulated silt in barrel #2 should be removed to allow for proper flow of water through the structure.

STRUCTURE ID 121-0090-0 / LOCATION ID 121-09053M-003.54E
FAM 9053, CR 4176, Cascade Road over CSX Railroad

This bridge structure is in fair condition. The steel beams and bearing assemblies are corroded and should be cleaned and painted. The steel armored joint at the west abutment is loose and should be tightened. The remaining deck joints have also failed and should be cleaned and sealed.

STRUCTURE ID 121-0091-0 / LOCATION ID 121-09053M-004.20E
FAM 9053, CR 4176, Cascade Road over South Utoy Creek

This bridge structure is in good condition but has extensive drift accumulated at bent #2 and on a utility line. This drift should be removed to prevent further drift accumulation and the possibility of scour. The steel piles at bent #2 should be protected with reinforced concrete encasements extending from a point 2 feet below the mud line to a point 2 feet above normal water. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-0516-0 / LOCATION ID 121-09053M-010.40E
FAM 9053, CS 2328, Glenn Street under Norfolk Southern Railroad

This non-roadway railroad structure has been inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 13'-11". At the present time, the City should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0517-0 / LOCATION ID 121-09053M-010.90E
FAM 9053, CS 2260, Georgia Avenue under NorfolkSouthern Railroad

This non-roadway railroad structure has been inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 13'-07". At the present time, the City should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5290-0 / LOCATION ID 121-09054M-000.85N
FAM 9054, CR 495, Old Fairburn Road over Wolf Creek

This bridge culvert is in good condition with no reported structural defects. However, the void under the southern sidewalk should be repaired. The channel should be excavated and the accumulated silt in the barrels should be removed to provide a proper hydraulic section.

STRUCTURE ID 121-5301-0 / LOCATION ID 121-09054M-002.67N
CR 495, Old Fairburn Road over Camp Creek

This all concrete structure is in good condition with no reported deficiencies.

***STRUCTURE ID 121-0341-0 / LOCATION ID 121-09054M-002.85N**
FAM 9054, CR 1349, Fairburn Road over CSX Railroad

This bridge structure is not considered to be safe for live vehicular loading, and thus falls below standards as set forth in accordance with the Federal Law, Title 23, USC, and Federal Regulations, and should be closed until repairs or replacement can be made. This bridge requires immediate closing due to excessive deterioration of the timber deck specifically span #7. The city has steel plated over a broken through section in the southbound lane. The northbound lane has an area in span #7 in which the deck members are broken and the apshalt has cracked through. This area is moving vertically under live loads. The excessive 7 inch asphalt riding surface substantially reduces the capacity of this structure and should be removed. The riding surface has pot holes which should be repaired. ***Our records indicate that this structure is located on a school bus route. If this route is utilized by school bus traffic, this bridge should be upgraded to a 10 Ton or better capacity. To accomplish this, a replacement structure would be required.***

Please note that all structures requiring closing must be properly closed in accordance with the attached methods. In addition, appropriate advanced warning signs and barricades should be used. Please reference the Manual on Uniform Traffic Control Devices, current edition. Also, advanced warning signs should be used at the last intersection prior to each end of the structure.

At the time of the inspection, this structure was properly closed according to the approved closing alternatives.

STRUCTURE ID 121-0343-0 / LOCATION ID 121-09054M-008.54N
FAM 9054, CR 1349, Fairburn Road over South Utoy Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0344-0 / LOCATION ID 121-09054M-008.60N
FAM 9054, CR 1349, Fairburn Road over North Utoy Creek

This bridge structure is in satisfactory with moderate scour along the base of both abutments that should be repaired. ***At the time for the inspection, this structure was posted with restrictive load limit signs. These signs are not required and may be removed at the discretion of the county.***

STRUCTURE ID 121-5318-0 / LOCATION ID 121-09054M-008.74N
FAM 9054, CR 1349, Fairburn Road Over CSX Railroad (638628J)

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0347-0 / LOCATION ID 121-09054M-010.70N
FAM 9054, CR 1349, Fairburn Road over Sandy Creek

This bridge structure is in good condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. The sheet piling driven at the south upstream side of the structure to provide protection for the approach roadway are falling over and a properly constructed wingwall should be utilized at this location.

STRUCTURE ID 121-5277-0 / LOCATION ID 121-09056M-000.72E
FAM 9056, CS 3029, Stone Road over North Fork Camp Creek

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed.

STRUCTURE ID 121-0350-0 / LOCATION ID 121-09057M-004.10N
FAM 9057, CS 2991, Childress Drive over South Utoy Creek

This bridge structure is in fair condition. The steel beams are corroded and should be cleaned and painted. Erosion at the south left shoulder should be immediately repaired.

STRUCTURE ID 121-0351-0 / LOCATION ID 121-09057M-006.40N
FAM 9057, CS 2841, Lynhurst Drive over North Utoy Creek

This bridge structure is in good condition. The steel beams are corroded and should be cleaned and painted.

STRUCTURE ID 121-0575-0 / LOCATION ID 121-09060M-000.32N
FAM 9060, CS 3072, Stone Hogan Connector over North Fork Camp Creek

This bridge culvert is in good condition. Minor scour at the inlet end should be monitored for further signs of degradation. Drift at the inlet and outlet ends should also be removed to allow proper stream flow.

STRUCTURE ID 121-0518-0 / LOCATION ID 121-09064M-000.53N
FAM 9064, CS 6029, Norman Berry Road under Norfolk Southern Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0598-0 / LOCATION ID 121-09064M-002.97N
FAM 9064, CS 6029, M-9064 Norman Berry Road under Southern Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The existing minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0354-0 / LOCATION ID 121-09065M-001.72E
FAM 9065, CS 1394, Campbellton Road over South Utoy Creek

This bridge structure is in fair condition. The steel beams are corroded and should be cleaned and painted. Cracking in the deck should be sealed to protect the reinforcing steel and the steel beams.

STRUCTURE ID 121-5271-0 / LOCATION ID 121-09069M-003.52E
FAM 9096, CR 1374, Butner Road over Deep Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0272-0 / LOCATION ID 121-09069M-006.85E
FAM 9069, CR 1374, Butner Road over Camp Creek Tributary

This bridge culvert is in satisfactory condition but has channel bed scour problems at the outlet end of the structure. This scour damage is 2.0 feet in depth and should be repaired with rip rap to prevent serious structural damage.

STRUCTURE ID 121-0273-0 / LOCATION ID 121-09069M-008.15E
FAM 9069, CR 1374, Butner Road over Wolf Creek

This bridge culvert is in satisfactory condition with cracking of the eastern outlet wingwall and the adjacent barrel wall. These cracks should be sealed to protect the reinforcing from corrosion. The accumulated drift and debris at the inlet end should also be removed.

***STRUCTURE ID 121-0355-0 / LOCATION ID 121-09069M-008.95E**
FAM 9069, CR 1374, Butner Road over Camp Creek
At the present time, Post this structure for 11 Tons H-Truck; 14 Tons Type 3 Truck and 20 Tons Timber Truck.

This structure requires posting due to the extensive deterioration and cracking of the concrete substructure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in poor condition. The concrete cap at bent #3 has minor cracks, while the cap at bent #2 has cracks ranging from 0.25 to 0.75 inches wide. These conditions should be corrected with properly designed reinforced concrete encasements. The concrete handrail in span #2 and #3 on the right side of the structure has incurred severe collision damage and should be repaired. The accumulated debris at bent #3 should be removed to reduce the further accumulation of drift and the possibility of scour. The 1.0 foot of scour at bents #2 and #3 should be repaired with rip rap.

STRUCTURE ID 121-0356-0 / LOCATION ID 121-09070M-000.50E
FAM 9070, CS 791, Johnson Road over Proctor Creek

This all concrete bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0357-0 / LOCATION ID 121-09071M-001.80N
FAM 9071, CS 1220, Delowe Drive over South Utoy Creek Tributary

This bridge culvert is in good condition with no reported deficiencies.

STRUCTURE ID 121-0358-0 / LOCATION ID 121-09072M-002.02N
FAM 9072, CS 1211, Stanton Street over South Utoy Creek

This bridge culvert is in good condition. However, the accumulated drift at the inlet end should be removed to prevent possible scour.

STRUCTURE ID 121-0359-0 / LOCATION ID 121-09073M-000.60N
FAM 9073, CS 2397, Techwood Drive over Southern Railroad and M-9161

This bridge structure is in fair condition with general age deterioration throughout. The deck joints throughout the structure have failed and should be cleaned and sealed. The steel beams and bearings through out the structure exhibit signs of corrosion and should be cleaned and painted. Some of the rocker bearings at bents #13 and #17 are not in the correct position. ***All of the bearings throughout the structure should be reviewed by the city and the inclination and disposition of the bearings recorded as well as the ambient temperature. The bearings should be in a vertical position when the temperature is approximately 60 degrees Fahrenheit. Any bearings in need of repair should be repositioned to the correct angle for the temperature on the day of the repair.*** The handrail in spans #10, #11 and #12 has incurred collision damage and has been repaired with guardrail. It is recommended that these sections be more permanently repaired with an aluminum handrail to match the existing rail in the structure. Spalling with exposed reinforcement steel should be cleaned and sealed. The asphalt overlay exhibits signs of pot holes and cracking. The cracks should be sealed and the pot holes repaired.

***STRUCTURE ID 121-0010-0 / LOCATION ID 121-09073M-000.95N**
FAM 9073, CS 3586, Spring Street over Southern Railroad and Parking Lots
At the present time, Post this structure for 13 Tons H-Truck; 21 Tons Type 3 Truck; 25 Tons Timber Truck; 16 Tons HS-Truck and 25 Tons Type 3S2 Truck.

This structure requires posting due to the low original design capacity of the structure. A partial replacement of the structure is required to upgrade this structure to a point where posting is no longer required. This bridge structure has had old spans #9 through #16 reconstructed. The new portion is in good condition with no reported deficiencies. The older portion is in poor condition with extensive deterioration. The steel girders are corroded resulting in spalls of the gunite coating. The majority of the bearings are frozen due to corrosion. The deck joints have failed and should be cleaned and sealed. The majority of the steel armored joints are loose and should be tightened. The concrete deck has extensive cracking. The steel H-pile safety support at bent 18 should be monitored. The asphalt overlay has extensive cracking and potholes which should be sealed and repaired. ***Any significant upgrading of this bridge would require replacement of the old portion of the structure. At the time of the inspection one of the posting signs was missing. This sign is required and must be replaced.***

STRUCTURE ID 121-0684-0 / LOCATION ID 121-09073M-001.44N
FAM 9073, CS 3479, Spring Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0685-0 / LOCATION ID 121-09073M-002.15N
FAM 9073, CS 3479, Spring Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5242-0 / LOCATION ID 121-09074M-000.93N
FAM 9074, CR 1388, Welcome All Road over South Fulton Parkway CR 2043

This all concrete bridge structure is in good condition with no reported structural deficiencies. The deck joints throughout the structure have failed and should be cleaned and sealed. The void in the vicinity of the southern abutment should also be repaired.

STRUCTURE ID 121-0361-0 / LOCATION ID 121-09074M-001.43N
FAM 9074, CR 1388, Welcome All Road over CSX Railroad

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed. The steel bearings are corroded and should be cleaned and sealed. Debris on the caps should be removed. Some of the expansion sleeves on the bridge railing are missing and should be replaced.

*STRUCTURE ID 121-0362-0 / LOCATION ID 121-09074M-003.37N
FAM 9074, CR 1388, Welcome All Road over Camp Creek
Post for 09 Tons, Type A Sign.

This structure requires posting due to the severe corrosion and section loss of the steel piles. Repairs to the piles at bent #2 and bent #3 are required to upgrade the load carrying capacity. The following maintenance is recommended to maintain this structure at the current rating. This bridge structure is in poor condition. The steel piles are corroded and should be cleaned and painted. The steel piles at bent #3 have severe section loss and some piles at bent #2 are also heavily corroded. All piles at bents #2 and #3 should be repaired with reinforced concrete encasements that extend from a point 2 feet below the mud line to a point 2 feet above normal water. The deck joints have failed and should be cleaned and sealed. The void under the approach slab and the cap at the north abutment should be filled to prevent possible damage to the approach slab. **If the piles at bents #2 and #3 are properly repaired, the load carrying capacity of this structure could be significantly upgraded.**

***STRUCTURE ID 121-5201-0 / LOCATION ID 121-09075M-000.80N**
FAM 9075, CR 1385, Buffington Road over Morning Creek Tributary
At the present time, Post this structure for 09 Tons H-Truck; 12 Tons Type 3 Truck; 16 Tons Timber Truck; 15 Tons HS-Truck and 22 Tons Type 3S2 Truck.
This structure requires posting due to insufficient pile capacity of the timber substructure. A replacement substructure is required to upgrade this structure to a point where posting is no longer required. The following maintenance recommendations are provided to maintain this structure at the current rating. The piles throughout the structure exhibit signs of advanced decay and should be scheduled for replacement. The precast concrete cap at bent #2 has cracking under one of the exterior beams. This cracking should be sealed to prevent corrosion of the steel reinforcement. Spalls located in the vicinity of the connection bolts of the precast superstructure panels should be sealed to protect the reinforcement steel from corrosion. The deck joints have failed and should be cleaned and sealed. ***At the time of inspection, the structure was not properly posted. The structure was posted with the Piggy-Back Type Truck. This sign in not required and should be removed.***

STRUCTURE ID 121-5243-0 / LOCATION ID 121-09075M-002.02N
FAM 9075, CR 1385, Buffington Road over Morning Creek
This bridge culvert is in good condition erosion under the sidewalk on the upstream side. This erosion should be immediately repaired.

STRUCTURE ID 121-0275-0 / LOCATION ID 121-09077M-001.50E
FAM 9077, CR 1384, Flat Shoals Road over Morning Creek Tributary
This bridge structure is in satisfactory condition. ***At the time of the inspection, this structure was posted with restrictive load limit signs. These signs are not required and may be removed at the discretion of the county.***

STRUCTURE ID 121-0277-0 / LOCATION ID 121-09077M-003.48E
FAM 9077, CR 1384, Flat Shoals Road over Morning Creek
This bridge culvert is in good condition but has slight channel bed scour at the inlet end of the structure. Rip rap has been placed at the inlet end but additional repair is required.

STRUCTURE ID 121-0369-0 / LOCATION ID 121-09077M-004.07E
FAM 9077, CR 1384, Flat Shoals Road over Morning Creek Tributary
This bridge culvert is in good condition with no reported serious structural defects.

STRUCTURE ID 121-0371-0 / LOCATION ID 121-09079M-001.72N
FAM 9079, CS 6022, Central Avenue over Norman Berry Drive
This bridge structure is in good condition but has corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-0519-0 / LOCATION ID 121-09080M-000.10E
FAM 9080, CS 6007, Willingham Drive under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0622-0 / LOCATION ID 121-09080M-000.12E
FAM 9080, CS 6007, Willingham Drive under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0367-0 / LOCATION ID 121-09082M-001.99E
FAM 9082, CR 1389, Washington Road over Fur Creek

This bridge culvert is in good condition but has 2.0 feet of channel bed scour at both the inlet and outlet ends of the structure. The culvert floor at the inlet has begun to undermine. These areas of scour and undermining should be repaired with rip rap before serious damage to the structure can occur. Drift accumulated at the inlet end of the structure should be removed to allow proper stream flow through the structure and reduce the potential for scour.

STRUCTURE ID 121-0368-0 / LOCATION ID 121-09082M-002.12E
FAM 9082, CR 1389, Washington Road over Camp Creek

This bridge structure is in good condition but has surface corrosion on all substructure piles. The piles should be cleaned and painted. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-5183-0 / LOCATION ID 121-09082M-005.52E
FAM 9082, CS 6382, Irene Kidd Parkway over Marta

This bridge structure is in good condition. The deck joints are failing and should be cleaned and sealed. A spall in beam #1 should be repaired. The right sidewalk has settled at the east abutment and should be repaired.

STRUCTURE ID 121-5184-0 / LOCATION ID 121-09082M-005.60E
FAM 9082, CS 6382, Irene Kidd Parkway over CSX Railroad

This concrete bridge structure is in good condition with no reported structural defects.

STRUCTURE ID 121-5185-0 / LOCATION ID 121-09082M-005.68E
FAM 9082, CS 6382, Irene Kidd Parkway over Central of Georgia Railroad

This bridge structure is in good condition. The metal expansion joints are loose and should be tightened. Spalls along the joints should also be repaired.

STRUCTURE ID 121-0576-0 / LOCATION ID 121-09085M-001.75N
FAM 9085, CS 1381, Browns Mill Road over South River Tributary

This bridge structure is in fair condition. The steel beams are corroded and should be cleaned and painted.

STRUCTURE ID 121-0376-0 / LOCATION ID 121-09085M-003.11N
FAM 9085, CS 1381, Browns Mill Road over South River

This bridge structure is in fair condition. The steel beams are corroded and have minor section loss. The beams should be cleaned and painted to prevent further section loss.

STRUCTURE ID 121-0577-0 / LOCATION ID 121-09085M-004.16N
FAM 9085, CS 1537, Constitution Road over South River Tributary

This bridge culvert is in good condition. Two holes in the outlet apron should be filled to prevent water flow (piping) underneath the structure. Minor scour at the inlet end should be moinitored for signs of further degradation.

STRUCTURE ID 121-0581-0 / LOCATION ID 121-09086M-000.74N
FAM 9086, CS 521, Pryor Road over South River Tributary

This bridge culvert is in fair condition with no structural defects reported.

STRUCTURE ID 121-0377-0 / LOCATION ID 121-09086M-001.18N
FAM 9086, CS 1317, Macon Drive over South River

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed.

STRUCTURE ID 121-0525-0 / LOCATION ID 121-09086M-001.98N
FAM 9086, CS 1289, Pryor Road under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0524-0 / LOCATION ID 121-09086M-002.40N
FAM 9086, CS 1289, Pryor Street under Norfolk Southern Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0686-0 / LOCATION ID 121-09089M-000.30N
FAM 9089, CS 1536, River Industrial Boulevard over Federal Prison Branch

This bridge culvert is in good condition with channel bed scour at both the inlet and outlet ends of the structure. The scour damage is minor at the inlet end of the structure and is 1.2 feet deep at the culvert outlet. This scour damage should be repaired with rip rap at both the inlet and outlet ends of the structure. The northern inlet wingwall is cracked and should be sealed.

STRUCTURE ID 121-0578-0 / LOCATION ID 121-09089M-001.15N
FAM 9089, CS 1536, Forest Park Road over Federal Prison Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0379-0 / LOCATION ID 121-09093M-002.40N
FAM 9093, CS 3186, Forest Park Road over South River

This bridge structure is in good condition. The steel beams and bearing assemblies are corroded and should be cleaned and painted. The deck joints have never been sealed. The joints should be cleaned and sealed. Voids beneath the caps at both abutments have exposed the steel foundation piles. These voids should be filled and the piles covered to protect them from corrosion.

STRUCTURE ID 121-0599-0 / LOCATION ID 121-09095M-000.01E
FAM 9095, CS 6000, M-9095 Virginia Avenue under CSX Railroad-Marta

This non-roadway structure was inspected for clearance purposes only. The existing minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0382-0 / LOCATION ID 121-09095M-001.34E
FAM 9095, CS 6000, Virginia Avenue over Flint River

This bridge culvert is in good condition. Vegetation around the structure should be cut and removed. Minor scour at the inlet end should be monitored for signs of further degradation.

STRUCTURE ID 121-0579-0 / LOCATION ID 121-09096M-002.11E
FAM 9096, CR 9999, Loop Road over Flint River

This bridge culvert is in good condition with no reported serious structural defects. Drift accumulated at the inlet end of the structure should be removed.

***STRUCTURE ID 121-0294-0 / LOCATION ID 121-09104M-000.33E**
FAM 9104, CR 581, Bethsaida Road over Morning Creek Tributary
At the present time, Post this structure for 08 Tons H-Truck; 10 Tons Type 3 Truck; 15 Tons Timber Truck; 13 Tons HS-Truck and 20 Tons Type 3S2 Truck.

This structure requires posting due to the low original design capacity, plus extensive decay of the timber substructure components. All the piles at bent #2 exhibit signs of advanced decay and have reduced load carrying capacities. A complete replacement of the substructure is required to upgrade this structure to a point where posting is no longer required. The following maintenance recommendations are provided to maintain this structure at the current rating. The nuts on one of the connecting bolts on one of the precast superstructure deck panels in span #1, and two of these bolts in span #2 are missing and must be replaced. The eastern approach roadway has settled and should be leveled with the deck. ***Our records indicate that this structure is located on a school bus route. If this route is utilized by school bus traffic, this bridge should be upgraded to a 10 ton or better capacity. Due to the extensive number of replacement piles required in the substructure, any cost effective upgrade of this structure would require complete replacement of the substructure. The precast concrete superstructure could be salvaged and utilized after the substructure is replaced.***

***STRUCTURE ID 121-0295-0 / LOCATION ID 121-09104M-001.03E**
FAM 9104, CR 1115, Bethsaida Road over Morning Creek
At the present time, Post this structure for 19 Tons H-Truck; 19 Tons Type 3 Truck and 24 Tons Timber Truck.

This structure requires posting due to overstress caused by the extra dead load of the 3.0 inch asphalt overlay. Any upgrade of the load carrying capacity would require removal of this overlay. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in satisfactory condition with corrosion of the steel substructure. The steel piles throughout the structure should be cleaned and painted. At the time of inspection, the encasements at bent #3 had been undermined and should be extended to a point 2 feet below the mud line. Two of the connecting bolt nuts for the precast concrete superstructure units are missing and should be replaced. Minor spalls have exposed the reinforcement steel of the pre-cast panel. These spalls should be repaired to protect the steel from corrosion. ***The existing signs have the silhouette of an HS Truck instead of a Timber Truck. The Timber Truck is therefore considered as not being posted. The signing must be corrected.***

STRUCTURE ID 121-0385-0 / LOCATION ID 121-09112M-000.50E
FAM 9112, CS 3191, Hutchens Road over Poole Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0008-0 / LOCATION ID 121-09124M-004.01N
FAM 9124, CS 3478, Whitehall Street over Southern Railroad

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed. Vegetation on the structure's fencing should be removed.

STRUCTURE ID 121-0009-0 / LOCATION ID 121-09124M-004.60N
FAM 9124, CS 3478, Whitehall Street over Spring Street

This bridge structure is in good condition but has several items in need of repair. The steel beams throughout the structure are corroded and should be cleaned and painted. There are cracks and spalls along the coping on the bottom side of the deck in spans #2 and #3. This loose concrete should be removed to prevent it from falling on traffic underneath the structure. The deck joints throughout the structure have also failed and should be cleaned and sealed.

STRUCTURE ID 121-0594-0 / LOCATION ID 121-09124M-004.62N
FAM 9124, CS 3478, Forsyth-Whitehall under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0595-0 / LOCATION ID 121-09124M-004.63N
FAM 9124, CS 3478, Whitehall-Fulton under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0386-0 / LOCATION ID 121-09128M-000.99E
FAM 9128, CS 1047, Beecher Street over Utoy Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0387-0 / LOCATION ID 121-09130M-001.16N
FAM 9130, CS 1149, Lawton Street over CSX Railroad

This bridge structure is in satisfactory condition but has corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. The polymer joint header at the southern abutment has spalled and should be repaired. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-0388-0 / LOCATION ID 121-09130M-001.20N
FAM 9130, CS 1149, Lawton Street over White Street

This all concrete bridge structure is in satisfactory condition with general deterioration throughout the structure. The transverse and longitudinal cracks in the deck should be sealed.

STRUCTURE ID 121-0390-0 / LOCATION ID 121-09133M-000.69E
FAM 9133, CS 1002, Westview Drive over White Street

This bridge structure is in satisfactory condition. The deck surface has spalls throughout. The spall located at bent #5 is approximately 5 feet long, 1.5 feet wide, and 2 inches deep. This large spall has a temporary asphalt patch that should be replaced with a permanent concrete repair. The steel beams are also corroded and should be cleaned and painted. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-0520-0 / LOCATION ID 121-09134M-001.30E
FAM 9134, CS 904, M.L.K. Jr. Drive under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 13'-02". At the present time, the city should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0521-0 / LOCATION ID 121-09134M-002.40E
FAM 9134, CS 904, M.L.K. Jr. Drive under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0391-0 / LOCATION ID 121-09134M-002.92E
FAM 9134, CS 904, M.L.K. Jr. Drive over Southern Railroad and Mangum Street

This bridge structure is in fair condition with general age deterioration throughout. Several spalls in the deck should have the asphalt patches removed and be repaired with concrete. Several pieces of loose concrete over the parking lot area should be removed to prevent them from falling on people and objects below. The ends of the steel beams and the bearing assemblies are corroded and should be cleaned and painted. Numerous anchor bolts are loose or missing at the bearing assemblies and should be tightened or replaced. Reinforcing steel that has been exposed by spalling throughout the structure should be cleaned and sealed. Damaged or missing portions of the handrail should be repaired or replaced. The deck joints have failed and should be cleaned and sealed. Dirt and debris in the deck gutters and drains should be removed to allow proper drainage. Some areas of the deck drainage system are corroded and leaking. The city should repair or replace the drainage system and make sure the system is performing as intended. ***At the time of inspection, this structure was posted with restrictive load limit signs. These signs are not required and may be removed.***

*STRUCTURE ID 121-5239-0 / LOCATION ID 121-09134M-003.25E
FAM 9134, CS 904, M.L.K. Jr. Drive over Parking Lot
At the present time, Post this structure for 13 Tons H-Truck; 28 Tons Type 3 Truck and 36 Tons Timber Truck.

This structure requires posting due to the low original design capacity of the structure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. The following maintenance recommendations are provided to maintain this structure at the current rating. The northern half of the bridge structure is in good condition with no reported deficiencies. The southern half of this bridge structure was closed at the time of inspection. This portion of the bridge structure is in poor condition with extensive deterioration of the concrete components. Extensive spalls were observed in both the substructure and superstructure with severe corrosion of the reinforcement steel. The steel beams exhibit signs of corrosion. All exposed reinforcement steel throughout the structure should be cleaned and sealed to protect it from corrosion. The deck joints throughout the structure should be cleaned and sealed.

STRUCTURE ID 121-0393-0 / LOCATION ID 121-09135M-000.30N
FAM 9135, CS 942, Anderson Avenue over CSX and Marta Rail Lines

This bridge structure is in fair condition. The steel beams and the steel bent added at the north abutment are corroded and should be cleaned and painted. Cracks and spalls located on the the caps at bents #2, #3, and #4, and on the column of bent #4 should be sealed. The deck joints have failed and should be cleaned and sealed. The sidewalk on the right has settled and there is a void under the left sidewalk. These pose a hazard to pedestrians and should be repaired.

STRUCTURE ID 121-0394-0 / LOCATION ID 121-09136M-000.29N
FAM 9136, CS 797, West Lake Avenue over CSX and Marta Rail Lines

This bridge structure is in poor condition. There is heavy corrosion and major section loss at beam ends and bearings, which should be cleaned and painted. It is recommended that temporary shoring be installed until permanent repairs are made. The deck joints have failed and are contributing to the corrosion of the superstructure components. These joints should be cleaned and sealed. The sidewalk approaches have settled, creating tripping hazards and should be repaired. Dirt and debris should also be cleaned from the right sidewalk.

STRUCTURE ID 121-0395-0 / LOCATION ID 121-09137M-000.13N
FAM 9137, CS 867, Chappell Road over Marta Rail Line

This all concrete bridge structure is in good condition with no reported serious structural defects. However, the deck joints throughout the structure have failed and should be cleaned and sealed. The minor spall in the cap at bent #2 should be sealed.

STRUCTURE ID 121-0396-0 / LOCATION ID 121-09141M-000.45N
FAM 9141, CS 57, Chattahoochee Avenue over CSX and Southern Railroad

This bridge structure is in fair condition. The steel beams and bearing assemblies should be cleaned and painted. The deck joints have failed and should be cleaned and sealed. The steel armored joints at both abutments are loose and should be tightened. Erosion at both abutments should be repaired.

STRUCTURE ID 121-0397-0 / LOCATION ID 121-09141M-001.00N
FAM 9141, CS 57, Chattahoochee Avenue over Peachtree Creek Tributary

This bridge structure is in good condition. The steel beams are corroded and should be cleaned and painted. Scour at the north abutment should be repaired to prevent undermining.

STRUCTURE ID 121-0398-0 / LOCATION ID 121-09142M-002.12N
FAM 9142, CS 37, Bohler Road over Peachtree Creek

This bridge structure is in fair condition. The steel beams are corroded and should be cleaned and painted. Debris caught between the beams should be removed.

STRUCTURE ID 121-0399-0 / LOCATION ID 121-09142M-003.67N
FAM 9142, CS 6, West Wesley Road over Nancy Creek

This bridge structure is in satisfactory condition with corrosion of the steel superstructure. The accumulated debris on the cap at bent #2 should be removed. The steel beams throughout the structure should be cleaned and painted. The southern right drop inlet is clogged with debris and should be cleaned to allow proper drainage. It was noted at the time of inspection that this structure is inundated during periods of heavy rain. If this structure is scheduled for replacement in the near future, it should be replaced at a higher elevation.

STRUCTURE ID 121-0400-0 / LOCATION ID 121-09143M-000.50N
FAM 9143, CS 135, Howell Mill Road over Southern Railroad

This bridge structure is in good condition. The steel H-piles and the steel beams are corroded and should be cleaned and painted. Collision damage to beam #2 in span #3 should be monitored for further signs of deterioration and fatigue cracking. The deck joints have failed and should be cleaned and sealed.

STRUCTURE ID 121-0401-0 / LOCATION ID 121-09143M-001.20N
FAM 9143, CS 135, Howell Mill Road over CSX Railroad

This bridge structure is in good condition. The deck joints are beginning to leak and should be cleaned and sealed. Cracks in the north abutment at the wingwall should be sealed to protect the steel reinforcement.

STRUCTURE ID 121-0403-0 / LOCATION ID 121-09143M-003.40N
FAM 9143, CS 135, Howell Mill Road over Peachtree Creek

This bridge structure is in poor condition with corrosion and section loss of the steel superstructure. The steel beams and bearing assemblies throughout the structure should be cleaned, cover plated in areas of section loss and painted. The cracks and spalls in the cap under beams #1 and #9 at bent #3 and beam #7 at bent #4 should be immediately repaired. The deck joints throughout the structure have failed and should be cleaned and sealed. Repairs have been made to the erosion in the south end roll but additional repair is required. The delamination area in the gutter of span #1 should be permanently repaired. ***If the corrosion and section loss is not repaired, this could result in posting or closing of the structure.***

STRUCTURE ID 121-0404-0 / LOCATION ID 121-09144M-000.60E
FAM 9144, CS 101, Huff Road over CSX Railroad

This bridge structure is in good condition. The steel beams and bearing assemblies are corroded and should be cleaned and painted. The deck joints have failed and should be cleaned and sealed. Dirt and debris in the deck gutters and drains should be removed to allow proper drainage. Spalls in the handrail should be repaired.

STRUCTURE ID 121-0408-0 / LOCATION ID 121-09149M-002.63E
FAM 9149, CS 1773, Virginia Avenue over Southern Railroad

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed.

STRUCTURE ID 121-0688-0 / LOCATION ID 121-09154M-000.27E
FAM 9154, CS 2000, Harris & Spring Streets under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0689-0 / LOCATION ID 121-09154M-000.44E
FAM 9154, CS 2000, Harris Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0690-0 / LOCATION ID 121-09154M-000.46E
FAM 9154, CS 2000, Harris/Peachtree Connector under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0691-0 / LOCATION ID 121-09155M-000.21E
FAM 9155, CS 2001, International Boulevard under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5320-0 / LOCATION ID 121-09158M-000.20N
FAM 9158, CS 665, Peachtree Street Over CSX Railroad

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0414-0 / LOCATION ID 121-09158M-001.58N
FAM 9158, CS 665, West Peachtree - Marta over I-75

This bridge structure is in good condition but has deck joint failure at the abutments. The deck joints should be cleaned and sealed.

STRUCTURE ID 121-0580-0 / LOCATION ID 121-09161M-000.25E
FAM 9161, CS 1985, Mitchell Street over Abandoned Railroad

This bridge culvert is in poor condition with extensive deterioration and cracking throughout the structure. Since the tracks beneath the structure have been removed, it would be in the best interest of the City to negotiate with the railroad for the removal of this structure if at all possible.

***STRUCTURE ID 121-0415-0 / LOCATION ID 121-09161M-000.34E**
FAM 9161, CS 1985, Mitchell Street over Southern Railroad

This bridge structure is not considered to be safe for live vehicular loading, and thus falls below standards as set forth in accordance with the Federal Law, Title 23, USC, and Federal Regulations, and should be closed until repairs or replacement can be made. This bridge structure requires immediate closing due to major deterioration and section loss in critical structural components. ***Our records indicate that this structure is located on a school bus route. If this structure is utilized by school bus traffic, this structure should be upgraded to a 10 Ton or greater capacity.***

Please note that all structures requiring closing must be properly closed in accordance with the attached methods. In addition, appropriate advanced warning signs and barricades should be used. Please reference the Manual on Uniform Traffic Control Devices, current edition. Also, advanced warning signs should be used at the last intersection prior to each end of the structure.

At the time of the inspection, this structure was improperly closed according to the approved closing alternatives.

STRUCTURE ID 121-0417-0 / LOCATION ID 121-09164M-001.30N
FAM 9164, CS 2003, Central Avenue over Georgia Railroad, Marta & Lower Wall Street

This bridge structure is in fair condition with cracking throughout the entire structure. These cracks should be sealed and all exposed reinforcement steel covered. The deck joints throughout the structure have failed and should be cleaned and sealed. ***At the time of inspection, this structure was posted with restrictive load limit signs. These signs are not required and may be removed.***

STRUCTURE ID 121-0692-0 / LOCATION ID 121-09164M-001.72N
FAM 9164, CS 2003, Peachtree Center under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0693-0 / LOCATION ID 121-09164M-001.92N
FAM 9164, CS 2003, Peachtree Center under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0522-0 / LOCATION ID 121-09165M-000.52N
FAM 9165, CS 1431, Hill Street under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0523-0 / LOCATION ID 121-09165M-002.48N
FAM 9165, CS 1431, Hill Street under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 13'-06". At the present time, the city should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5248-0 / LOCATION ID 121-09166M-004.84N
FAM 9166, CS 2044, Pryor Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0421-0 / LOCATION ID 121-09170M-001.57N
FAM 9170, CS 2368, McDaniel Street over Southern Railroad

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed. The deck drain at the south abutment should be cleaned out to allow proper drainage. A spall in the endpost at the south abutment should also be repaired.

STRUCTURE ID 121-5298-0 / LOCATION ID 121-09171M-002.60N
FAM 9171, CS 1259, Lakewood Avenue over Southern Railroad

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed. Cracks in the deck should also be sealed.

STRUCTURE ID 121-0582-0 / LOCATION ID 121-09172M-000.31E
FAM 9172, CS 1348, Clair Drive over South River Tributary

This bridge structure is in fair condition. The steel beams are corroded and should be cleaned and painted.

STRUCTURE ID 121-0526-0 / LOCATION ID 121-09175M-000.63E
FAM 9175, CS 2199, Confederate Avenue under CSX Railroad

This non-roadway railroad structure has been inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 13'-00". At the present time, the City should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0527-0 / LOCATION ID 121-09180M-002.57N
FAM 9180, CS 520, Boulevard under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 13'-10". At the present time, the city should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0628-0 / LOCATION ID 121-09180M-003.40N
FAM 9180, CS 520, Boulevard under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0528-0 / LOCATION ID 121-09182M-000.70E
FAM 9182, CS 2197, Ormewood Avenue under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0427-0 / LOCATION ID 121-09183M-000.80E
FAM 9183, CS 2176, Berne Street over CSX Railroad

This bridge structure is in good condition. The deck joints are failing and should be cleaned and sealed.

STRUCTURE ID 121-0023-0 / LOCATION ID 121-09184M-001.39E
FAM 9184, CS 3460, Edgewood Avenue over Airline Street

This bridge structure is in good condition but has corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. The deck joints at both abutments have failed and should be cleaned and sealed.

STRUCTURE ID 121-0024-0 / LOCATION ID 121-09184M-001.42E
FAM 9184, CS 3460, Edgewood Avenue over Southern Railroad

This bridge structure is in poor condition with general age deterioration throughout. The concrete beams are cracked and spalled with exposed reinforcement steel. These cracks and spalls should be repaired. The bearing assemblies at the abutments are severely corroded and should be replaced. The deck joints have also failed and should be cleaned and sealed.

STRUCTURE ID 121-0428-0 / LOCATION ID 121-09187M-000.92E
FAM 9187, CS 610, Highland Avenue over Southern Railroad

This bridge structure is in good condition with no serious reported structural defects. However, the deck joints at both abutments have failed and should be cleaned and sealed. Erosion under the slope paving at both abutments should be repaired.

STRUCTURE ID 121-0529-0 / LOCATION ID 121-09189M-001.10E
FAM 9189, CS 1835, North Avenue under Southern Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0530-0 / LOCATION ID 121-09189M-001.11E
FAM 9189, CS 1835, North Avenue under Southern Railroad Spur

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 14'-04". At the present time, the city should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0430-0 / LOCATION ID 121-09199M-000.30N
FAM 9199, CS 497, Lenox Road over South Fork Peachtree Creek

This bridge structure is in fair condition. The steel beams are corroded and should be cleaned and painted. Dirt and debris in the deck drains should be removed to allow proper drainage. It was noted at the time of inspection that the superstructure is inundated during periods of heavy rain. If this structure is replaced in the future, it is recommended that it be replaced at a higher elevation.

STRUCTURE ID 121-0566-0 / LOCATION ID 121-09200M-001.06S
FAM 9200, CS 1708, Williams Street over Techwood-Spring St. Connector

This bridge structure is in good condition with no serious reported structural defects. The deck joints throughout the structure have failed and should be cleaned and sealed. Three of the retaining wall panels beneath the structure are out of plumb 10 inches and should be repaired.

STRUCTURE ID 121-0694-0 / LOCATION ID 121-09200M-001.33S
FAM 9200, CS 1708, Williams Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0695-0 / LOCATION ID 121-09200M-001.36S
FAM 9200, CS 1708, Williams Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0433-0 / LOCATION ID 121-09202M-001.50E
FAM 9202, CS 533, Montgomery Ferry Drive over Clear Creek

This bridge structure is in fair condition with age deterioration of the concrete.

***STRUCTURE ID 121-5278-0 / LOCATION ID 121-09202M-001.70E**
FAM 9202, CS 533, Montgomery Ferry Drive over Southern Railroad
At the present time, Post this structure for 15 Tons H-Truck; 15 Tons Type 3 Truck; 19 Tons Timber Truck and 16 Tons HS-Truck.

This structure requires posting due to the superstructure having insufficient flexural capacity. A replacement structure is required to upgrade the load carrying capacity to a point where posting is no longer required. This bridge structure is in good condition with no other reported deficiencies.

STRUCTURE ID 121-0016-0 / LOCATION ID 121-09204M-000.20E
FAM 9204, CS 3483, Fair Drive over South River Tributary

This bridge culvert is in good condition. Drift at the inlet end should be removed to prevent additional accumulation and possible scour.

STRUCTURE ID 121-0018-0 / LOCATION ID 121-09204M-000.48E
FAM 9204, CS 3483, Fair Drive over South River Tributary

This bridge culvert is in good condition. Drift at the inlet end, including an old car, should be removed to prevent additional accumulation and further scour. This obstruction restricts the stream flow here and could cause overtopping and damage to the roadway during a highwater event. Silt in barrels #1 and #2 should be removed to allow proper stream flow. Up to 1 foot of scour at the inlet end of barrel #3 should be monitored for signs of further degradation.

STRUCTURE ID 121-0435-0 / LOCATION ID 121-09205M-000.10E
FAM 9205, CS 53, Collier Road over Peachtree Creek Tributary

This bridge structure is in satisfactory condition with corrosion and section loss of the superstructure. The steel beams throughout the structure should be cleaned and painted. Scour located at the west abutment has not resulted in undermining. This portion of the stream bank should be stabilized with large rip rap to prevent future scour and the possibility of undermining the abutment. Debris around the utility line and on the exterior beam at the upstream side should be removed. Erosion under the approach pavement should be immediately repaired.

STRUCTURE ID 121-0531-0 / LOCATION ID 121-09205M-000.40E
FAM 9205, CS 53, Collier Road under CSX Railroad

This non-roadway structure was inspected for clearances only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0436-0 / LOCATION ID 121-09205M-002.30E
FAM 9205, CS 53, Collier Road over Tanyard Creek

This bridge structure is in good condition. Cracking in the deck and spalls on the underside should be cleaned and sealed to protect the steel reinforcement. The deck joints have failed and should be cleaned and sealed.

STRUCTURE ID 121-0437-0 / LOCATION ID 121-09205M-002.60E
FAM 9205, CS 53, Collier Road over CSX Railroad

This bridge structure is in fair condition. The steel beams and bearing assemblies are corroded and should be cleaned and painted. The concrete encasements of the steel beams have spalled exposing the original beam and should be repaired. Spalls in the handrail should also be repaired.

STRUCTURE ID 121-0532-0 / LOCATION ID 121-09206M-000.20E
FAM 9206, CS 16, De Foors Ferry Road under CSX Railroad

This non-roadway structure has been inspected for clearances only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 12'-07". At the present time, the county should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0438-0 / LOCATION ID 121-09206M-000.96E
FAM 9206, CS 16, De Foors Ferry Road over Peachtree Creek Tributary

This bridge culvert is in good condition with up to 1.2 feet of channel bed scour at the inlet end. The accumulated drift at the inlet end should be removed and all scour repaired with rip rap.

STRUCTURE ID 121-0439-0 / LOCATION ID 121-09207M-000.30N
FAM 9207, CS 3, Ridgewood Road over Peachtree Creek

This bridge structure is in satisfactory condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted.

STRUCTURE ID 121-0440-0 / LOCATION ID 121-09208M-001.00E
FAM 9208, CS 4, West Paces Ferry Road over Nancy Creek

This all concrete bridge structure is in good condition. However, both approaches have settled from 1 to 3 inches. The approaches should be leveled to reduce impact loading of the structure.

STRUCTURE ID 121-0442-0 / LOCATION ID 121-09212M-001.93N
FAM 9212, CR 1318, Northside Drive over Nancy Creek

This bridge structure is in satisfactory condition with corrosion of the steel superstructure components. All of the steel beams and bearings should be cleaned and painted. Erosion under the northern curb should be repaired.

STRUCTURE ID 121-0443-0 / LOCATION ID 121-09212M-004.30N
FAM 9212, CR 1318, Northside Drive over Long Island Creek

This bridge structure is in satisfactory condition. The minor scour at both abutments should be monitored.

STRUCTURE ID 121-0038-0 / LOCATION ID 121-09213M-000.48N
FAM 9213, CS 3463, Chester Bridge Road over CSX Railroad

This bridge structure is in fair condition. The steel beams in span #3 are corroded and should be cleaned and painted. The deck has shifted along the skew and has jammed the deck joints. This has caused minor spalls on the curb, overhang, lateral supports, beams, and caps. These joints should be repaired. The deck joints should also be cleaned and sealed. Spalls on the caps at bents #4 and #5 should be repaired to protect the reinforcing steel.

STRUCTURE ID 121-0039-0 / LOCATION ID 121-09213M-000.70N
FAM 9213, CS 3463, Chester Bridge Road over South Fork Peachtree Creek

This all concrete bridge structure is in satisfactory condition. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-0040-0 / LOCATION ID 121-09213M-001.56N
FAM 9213, CS 3463, Lenox Road over North Fork Peachtree Creek

This bridge structure is in good condition. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-0446-0 / LOCATION ID 121-09213M-003.09N
FAM 9213, CS 434, Lenox Road over Southern Railroad & Marta Rail Line

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed. Potholes near the north abutment should be repaired to provide a safe driving environment.

STRUCTURE ID 121-0507-0 / LOCATION ID 121-09215M-000.88E
FAM 9215, CS 3487, Lindbergh Drive under Southern Railroad

This non-roadway structure has been inspected for clearances only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 13' 11". At the present time, the city should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0606-0 / LOCATION ID 121-09215M-001.03E
FAM 9215, CS 3487, Lindbergh Road over Marta Rail Line

This all concrete bridge structure is in good condition with no reported structural deficiencies. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-5314-0 / LOCATION ID 121-09219M-000.35N
Norfolk Southern Railroad Under M9219/ Roxboro Road

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0583-0 / LOCATION ID 121-09219M-000.37N
FAM 9219, CR 2066, Roxboro Road under Marta Rail Line

This non-roadway structure was inspected for clearances only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0447-0 / LOCATION ID 121-09219M-003.30N
FAM 9219, CR 2066, Peachtree-Dunwoody Road over Nancy Creek

This bridge structure is in fair condition. Scour at the southern abutment and at bent #3 should be repaired with rip rap.

STRUCTURE ID 121-0592-0 / LOCATION ID 121-09219M-005.23N
FAM 9219, CR 2069, Peachtree-Dunwoody Road over Nancy Creek Tributary

This bridge culvert is in good condition but has a scour problem around a utility line near the outlet end of the structure. This scour damage should be repaired with rip rap.

STRUCTURE ID 121-0448-0 / LOCATION ID 121-09243M-001.04N
FAM 9243, CR 300, Powers Ferry Road over Nancy Creek

This bridge structure is in poor condition with corrosion of the steel components. The steel beams, bearing assemblies and temporary repairs to the bearing areas should be cleaned and painted. The deck joints throughout the structure have failed and should be cleaned and sealed. The cap under beam #4 at bent #2 has spalled and should be immediately repaired. The spall in the back wall at the northern abutment between beams 5 and 6 should be repaired.

STRUCTURE ID 121-0449-0 / LOCATION ID 121-09244M-001.60N
FAM 9244, CS 2498, Wieuca Road over Nancy Creek Tributary

This bridge structure is in satisfactory condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted.

STRUCTURE ID 121-0450-0 / LOCATION ID 121-09244M-001.80N
FAM 9244, CS 2498, Wieuca Road over Nancy Creek

This bridge structure is in satisfactory condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. The concrete deck has extensive deterioration with exposed reinforcement steel on the bottom. This reinforcement steel should be covered to protect it from corrosion. An open crack in the north abutment should be sealed to protect the steel reinforcement from corrosion.

STRUCTURE ID 121-5262-0 / LOCATION ID 121-09245M-000.85E
FAM 9245, CS 2497, Old Ivy Road under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0451-0 / LOCATION ID 121-09247M-001.50N
FAM 9247, CR 300, Powers Ferry Road over Long Island Creek

This bridge structure is in fair condition. However, erosion beneath the cap at both abutments should be repaired to protect the steel foundation piles from corrosion.

***STRUCTURE ID 121-0453-0 / LOCATION ID 121-09248M-001.88N**
FAM 9248, CR 209, Riverside Drive over Chattahoochee River Tributary
At the present time, Post this structure for 17 Tons H-Truck; 18 Tons Type 3 Truck and 26 Tons Timber Truck.

This structure requires posting due to insufficient shear capacity of the concrete superstructure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. This bridge structure is in good condition with no reported deficiencies. ***The existing signs have the silhouette of an HS Truck instead of a Type 3 Truck and the Piggy Back Truck instead of the Timber Truck. The Type 3 Truck and the Timber Truck are therefore considered as not being posted. The signing must be corrected.***

STRUCTURE ID 121-0454-0 / LOCATION ID 121-09248M-003.35N
FAM 9248, CR 209, Riverside Drive over Marsh Creek

This bridge structure is in fair condition with general age deterioration throughout. Debris accumulated in the deck gutters and drains should be removed to allow proper drainage of the deck.

STRUCTURE ID 121-0456-0 / LOCATION ID 121-09249M-000.50N
FAM 9249, CR 296, Long Island Drive over Long Island Creek

This bridge structure is in fair condition with no reported deficiencies.

STRUCTURE ID 121-0458-0 / LOCATION ID 121-09254M-002.20E
FAM 9254, CR 361, Windsor Parkway over Nancy Creek

This bridge structure is in satisfactory condition, but has collision damage to the left wing wall and bridge railing at the western abutment. This damage should be repaired. Scour around the base of all substructure units should be repaired by adding rip rap.

STRUCTURE ID 121-0593-0 / LOCATION ID 121-09255M-002.08E
FAM 9255, CR 262, Hammond Drive over Nancy Creek Tributary

This bridge culvert is in good condition with 1.8 feet of scour at the inlet end of the structure. This scour should be repaired with rip rap before undermining of the structure can occur.

STRUCTURE ID 121-0278-0 / LOCATION ID 121-09268M-000.50E
FAM 9268, CR 1435, Spalding Drive over Crooked Creek

This bridge structure is in fair condition with corrosion of the steel components. Beam #1 at the west abutment and beams #1 and #2 at the east abutment, have minor section loss. These areas of section loss should be cover plated. The steel beams and piling throughout the structure should then be cleaned and painted. Erosion on the right side of the eastern abutment should be repaired.

STRUCTURE ID 121-5280-0 / LOCATION ID 121-09315M-000.10E
FAM 9315, CS 1940, International Boulevard under Pedestrian Bridge

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0535-0 / LOCATION ID 121-09315M-000.24E
FAM 9315, CS 1940, International Boulevard under Southern Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0536-0 / LOCATION ID 121-09315M-000.25E
FAM 9315, CS 1940, International Boulevard under Southern Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0584-0 / LOCATION ID 121-09315M-000.35E
FAM 9315, CS 1940, International Boulevard under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0281-0 / LOCATION ID 121-09373M-001.14N
FAM 9373, CS 1324, Bethany Road over Cooper Sandy Creek

This bridge structure is in poor condition with corrosion of the steel substructure components. The steel piles in the stream channel should be cleaned and painted. Furthermore, these piles should be protected with reinforced concrete encasements extending from points 2 feet below the mud line to a point 2 feet above normal water. Spalls on the bottom of the beams have exposed portions of the reinforcement steel. This reinforcement should be covered to protect it from corrosion.

STRUCTURE ID 121-0268-0 / LOCATION ID 121-09378M-000.38W
FAM 9378, CR 1373, Rivertown Road over King Branch

This all concrete bridge structure is in good condition with no reported serious structural defects. However, the deck joints at each abutment have failed and should be cleaned and sealed.

STRUCTURE ID 121-0510-0 / LOCATION ID 121-09379M-003.73N
FAM 9379, CR 1316, Cole Street under CSX Railroad

This non-roadway structure has been inspected for clearances only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 9'-08". At the present time, the county should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

***STRUCTURE ID 121-5063-0 / LOCATION ID 121-09381M-001.68W**
FAM 9381, CR 516, Koweta Road over Deep Creek
At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.
This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in fair condition but the precast concrete superstructure units are not properly bolted together and do not provide adequate load distribution. Spalls in the concrete beams should be sealed to protect the reinforcement steel within. Erosion in the vicinity of the eastern abutment has exposed the foundation piling. These piles should be covered to protect them from the environment. The deck joints have failed and should be cleaned and sealed. ***If these units were properly bolted and grouted together, this bridge could be upgraded to a point where posting would no longer be required.***

STRUCTURE ID 121-0293-0 / LOCATION ID 121-09387M-000.49E
FAM 9387, CR 1435, Dunwoody Club Drive over Ball Creek
This bridge structure is in good condition but has corrosion of the steel superstructure units. The steel beams throughout the structure should be cleaned and painted. One of the wingwalls at the western abutment has broken and should be repaired.

STRUCTURE ID 121-5296-0 / LOCATION ID 121-09404M-000.00E
FAM 9404, CS 03242, Pine Grove Road Over Willeo Creek
This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-0309-0 / LOCATION ID 121-09405M-000.51E
FAM 9405, CS 3233, Norcross Street over Hog Waller Creek
This bridge structure is in good condition but has corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted.

STRUCTURE ID 121-0310-0 / LOCATION ID 121-09406M-000.82N
FAM 9406, CR 1441, Crabapple Road over Hogwaller Creek
This bridge culvert is in good condition with up to 1.3 feet of scour at both the inlet and outlet ends of the structure. This scour should be repaired with rip rap before serious damage can occur. The extensive drift accumulated across the inlet end of the structure should be removed to prevent further accumulation and the possibility of additional scour.

***STRUCTURE ID 121-0305-0 / LOCATION ID 121-09407M-001.38E**
FAM 9407, CR 1332, Old Roswell Road over Foe Killer Creek
At the present time, Post this structure for 13 Tons H-Truck; 13 Tons Type 3 Truck; 18 Tons Timber Truck; 16 Tons HS-Truck and 20 Tons Type 3S2 Truck.
At the time of the inspection, this structure was closed and being replaced. Please notify the Georgia Department of Transportation, Office of Maintenance, when traffic is placed on the new structure.

***STRUCTURE ID 121-0306-0 / LOCATION ID 121-09407M-001.66E**
FAM 9407, CR 1332, Rockmill Road over Foe Killer Creek Tributary
At the present time, Post this structure for 19 Tons H-Truck; 19 Tons Type 3 Truck and 24 Tons Timber Truck.
At the time of the inspection, this structure was closed and being replaced. Please notify the Georgia Department of Transportation, Office of Maintenance, when traffic is placed on the new structure.

***STRUCTURE ID 121-0304-0 / LOCATION ID 121-09408M-000.08E**
FAM 9408, CR 1437, Riverside Road over Big Creek
At the present time, Post this structure for 11 Tons H-Truck; 11 Tons Type 3 Truck; 13 Tons Timber Truck; 12 Tons HS-Truck and 17 Tons Type 3S2 Truck.
This structure requires posting due to insufficient shear capacity of the concrete superstructure and of the concrete intermediate bent caps. Any upgrade of the load carrying capacity would require a replacement structure. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in satisfactory condition but has drift accumulated both in the stream channel and along the utility line at the site. This drift should be removed to prevent further accumulation and the possibility of scour. The deck joints throughout the structure have failed and should be cleaned and sealed. The left handrail has incurred collision damage and should be repaired.

STRUCTURE ID 121-5273-0 / LOCATION ID 121-09409M-001.90N
FAM 9409, CR 1334, Haynes Bridge Road over Big Creek
This all concrete bridge structure is in good condition with no reported serious structural defects. However, the deck joints at each abutment have failed and should be cleaned and sealed.

STRUCTURE ID 121-0301-0 / LOCATION ID 121-09410M-000.30E
FAM 9410, CR 1331, Rucker Road over Foe Killer Creek
This bridge structure is in fair condition with no reported deficiencies.

STRUCTURE ID 121-0300-0 / LOCATION ID 121-09411M-005.80E
FAM 9411, CR 70, Webb Bridge Road over Big Creek
This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5107-0 / LOCATION ID 121-09413M-002.41N
FAM 9413, CR 1323, Hopewell Road over Cooper Sandy Creek
This bridge culvert is in good condition with no reported deficiencies.

***STRUCTURE ID 121-5016-0 / LOCATION ID 121-09415M-001.80N**
FAM 9415, CR 27, Providence Road over Cooper Sandy Creek
At the present time, Post this structure for 16 Tons H-Truck; 17 Tons Type 3 Truck and 24 Tons Timber Truck.

This structure requires posting due to the low original design capacity of the structure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. This bridge structure is in fair condition with no reported deficiencies. ***At the time of the inspection, the posting signs were missing. These signs are required and must be replaced.***

STRUCTURE ID 121-5031-0 / LOCATION ID 121-09430M-002.33E
FAM 9430, CR 186, Hembree Road over Foe Killer Creek

This bridge structure is in good condition. However, extensive drift accumulated against the upstream side of the structure should be removed to allow proper stream flow through the structure and reduce the potential for scour.

STRUCTURE ID 121-0290-0 / LOCATION ID 121-09479M-000.33E
FAM 9479, CR 107, Barnwell Road over Hogan Creek

This bridge structure is in fair condition with minor cracks in the masonry wall at the east abutment which should be monitored for further signs of deterioration. A large drift accumulation on the utility line upstream from the structure should be removed. ***At the time of the inspection, this structure was posted with restrictive load limit signs. These signs are not required and may be removed at the discretion of the county.***

***STRUCTURE ID 121-0291-0 / LOCATION ID 121-09479M-004.54E**
FAM 9479, CR 110, Old Alabama Road over Johns Creek Tributary
At the present time, Post this structure for 15 Tons H-Truck; 14 Tons Type 3 Truck; 19 Tons Timber Truck and 16 Tons HS-Truck.

This structure requires posting due to insufficient flexural capacity of the steel piles. Any upgrade of the load carrying capacity would require strengthening or replacement of the substructure and removal of the asphalt overlay. The following maintenance recommendation is provided to maintain this structure at the current rating. The steel piles throughout the structure are corroded and should be cleaned and painted.

***STRUCTURE ID 121-0292-0 / LOCATION ID 121-09479M-005.33E**
FAM 9479, CR 110, Old Alabama Road over Johns Creek
At the present time, Post this structure for 15 Tons H-Truck; 15 Tons Type 3 Truck; 20 Tons Timber Truck and 24 Tons Type 3S2 Truck.
This structure requires posting due to overstress caused by the extra dead load of the 6.5 inch asphalt overlay. Any upgrade of the load carrying capacity would require removal of this overlay. The following maintenance recommendations are provided to maintain this structure at the current rating. The pile encasement at pile #4 in bent #4 is undermining and should be extended to a point 2 feet below the mud line. ***At the time of the inspection, the posting sign on the eastern end of the structure was missing. This sign is required and must be replaced.***

STRUCTURE ID 121-5258-0 / LOCATION ID 121-09486M-001.47E
FAM 9486, CR 2227, Mansell Road EBL over Foe Killer Creek
This all concrete bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5259-0 / LOCATION ID 121-09486M-001.48E
FAM 9486, CR 2227, Mansell Road WBL over Foe Killer Creek
This all concrete bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5260-0 / LOCATION ID 121-09486M-002.33E
FAM 9486, CR 2227, Mansell Road EBL over Big Creek
This bridge structure is in good condition with corrosion of the steel substructure. All of the steel H-piles should be cleaned and painted.

STRUCTURE ID 121-5261-0 / LOCATION ID 121-09486M-002.34E
FAM 9486, CR 2227, Mansell Road WBL over Big Creek
This bridge structure is in good condition with corrosion of the piling in bents #4 thru #7. All steel H-piling should be cleaned and painted.

LOCALLY OWNED BRIDGE INSPECTIONS:

*STRUCTURE ID 121-5002-0 / LOCATION ID 121-00003X-000.38N
CR 3, Clarity Road over Little River
Post for 06 Tons, Type A Sign.

This structure requires posting due to the low original design capacity of the structure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. This bridge structure is in good condition with no reported deficiencies. If the timber runners were re-positioned directly above the beams, this bridge could be upgraded to a 9 Ton capacity. ***At the time of the inspection, the posting sign on the northern end of the structure was missing. This sign is required and must be replaced.***

*STRUCTURE ID 121-5151-0 / LOCATION ID 121-00004X-000.01E
CR 4, Birminngham Road over Little River
At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in satisfactory condition with the exception of the substructure units. The concrete encasement at pile #2 of bent #2 has undermined. This encasement should be extended to a point 2 feet below the existing mud line. ***If the concrete superstructure units were properly bolted and grouted together, this bridge could be upgraded to a point where posting would no longer be required.***

*STRUCTURE ID 121-5003-0 / LOCATION ID 121-00004X-003.99E
CR 4, Birmingham Road over Chicken Creek Tributary
At the present time, Post this structure for 10 Tons H-Truck; 10 Tons Type 3 Truck; 13 Tons Timber Truck; 13 Tons HS-Truck and 16 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in satisfactory condition with corrosion of the steel substructure units. The steel piles throughout the structure should be cleaned and painted. Furthermore, these piles should be protected with reinforced concrete encasements extending from points 2 feet below the mud line to a point 2 feet above normal water. The pre-cast concrete superstructure panels have areas of spalls with exposed reinforcement steel on the underside of the deck. This reinforcement steel should be cleaned and sealed to protect it from corrosion. ***If the deck slabs are properly bolted together, then this structure could be significantly upgraded.***

***STRUCTURE ID 121-5004-0 / LOCATION ID 121-00012X-000.17E**
CR 12, Hamby Road over Chicken Creek
At the present time, Post this structure for 19 Tons H-Truck; 19 Tons Type 3 Truck and 23 Tons Timber Truck.
This structure requires posting due to overstress caused by the extra dead load of the 4 inch asphalt overlay. Any upgrade of the load carrying capacity would require removal of this overlay. This bridge structure is in satisfactory condition with no other reported deficiencies.

***STRUCTURE ID 121-5005-0 / LOCATION ID 121-00012X-000.67E**
CR 12, Hamby Road over Chicken Creek Tributary
At the present time, Post this structure for 18 Tons H-Truck; 18 Tons Type 3 Truck and 23 Tons Timber Truck.
This structure requires posting due to overstress caused by the extra dead load of the 4 inch asphalt overlay. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in satisfactory condition with the exception of the substructure which is in fair condition. The foundation piles beneath both abutments are exposed and should be cleaned, painted and covered to protect them from corrosion. ***Any upgrade of the load carrying capacity would require removal of the asphalt overlay.***

STRUCTURE ID 121-5177-0 / LOCATION ID 121-00013X-000.30N
CS 13, Coronet Way under CSX Railroad
This non-roadway structure was inspected for clearances only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5006-0 / LOCATION ID 121-00013X-000.31E
CR 13, Longstreet Road over Chicken Creek Tributary
This bridge structure is in good condition with no reported structural deficiencies. ***At the time of inspection, this structure was posted with a restrictive load limit sign. This sign is not required and may be removed.***

STRUCTURE ID 121-5007-0 / LOCATION ID 121-00018X-000.57S
CR 18, Westbrook Road over Chicken Creek Tributary
This bridge structure is in good condition with no serious reported structural defects. Problems with the approach pavement and pot holes should be repaired. ***At the time of inspection, this structure was posted with a restrictive load limit sign. This sign is not required and may be removed.***

STRUCTURE ID 121-5008-0 / LOCATION ID 121-00018X-000.97S
CR 18, Westbrook Road over Chicken Creek Tributary

This all concrete bridge structure is in fair condition. Minor cracking and spalls on the bottom of several superstructure panels have exposed the reinforcement steel. These spalls should be repaired to protect the reinforcement steel from corrosion. ***At the time of inspection, this structure was posted with a restrictive load limit sign. This sign is not required and may be removed.***

STRUCTURE ID 121-5009-0 / LOCATION ID 121-00019X-000.38N
CR 19, Thompson Road over Chicken Creek Tributary

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5010-0 / LOCATION ID 121-00020X-001.18W
CR 20, Dinsmore Road over Chicken Creek

This bridge structure is in satisfactory condition with drift accumulated at bent #2. This drift should be removed to reduce further accumulation and the possibility of scour. ***At the time of inspection, this structure was posted with a restrictive load limit sign. This sign is not required and may be removed.***

STRUCTURE ID 121-5011-0 / LOCATION ID 121-00023X-000.69N
CR 23, Batesville Road over Chicken Creek

This bridge structure is in satisfactory condition with undermining of the concrete encasements at piles #1 and #3 at bent #2. These encasements should be extended to a point 2 feet below the mud line.

STRUCTURE ID 121-5012-0 / LOCATION ID 121-00023X-001.31N
CR 23, Batesville Road over Little River

This bridge structure is in satisfactory condition with spalling of the concrete superstructure. Beam #1 in Span #1 is spalled rear of bent #2. This spall should be sealed. ***At the time of inspection, this structure was posted with a restrictive load limit sign. This sign is not required and may be removed.***

STRUCTURE ID 121-5013-0 / LOCATION ID 121-00024X-000.43N
CR 24, Wood Road over Chicken Creek

This bridge structure is in fair condition with undermining of the pile encasements at bent #3. The encasements should be extended to a point 2 feet below the mud line. The cracks and spalls in all precast concrete superstructure panels should be sealed to protect the reinforcement steel from corrosion. ***At the time of inspection, this structure was posted with a restrictive load limit sign. This sign is not required and may be removed.***

STRUCTURE ID 121-5014-0 / LOCATION ID 121-00024X-000.91N
CR 24, Wood Road over Chicken Creek Tributary

This bridge structure is in satisfactory condition with no reported serious structural defects. The old timber pile cut-offs left in the stream channel should be removed to reduce the potential for drift accumulation. The spalling in the cap at the southern abutment should be sealed.

STRUCTURE ID 121-5015-0 / LOCATION ID 121-00027X-001.93N
CR 27, New Providence Road over Cooper Sandy Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5303-0 / LOCATION ID 121-00034X-004.28S
CR 34, Freemanville Road over Chicken Creek

This bridge structure is in good condition with no reported deficiencies. ***At the time of the inspection, this structure was posted with restrictive load limt signs. These signs are not required and may be removed at the discretion of the county.***

***STRUCTURE ID 121-5153-0 / LOCATION ID 121-00034X-006.31S**
CR 34, Freemanville Road over Cooper Sandy Creek
At the present time, Post this structure for 18 Tons H-Truck; 18 Tons Type 3 Truck and 22 Tons Timber Truck.

This structure requires posting due to overstress caused by the extra dead load of the 4.5 inch asphalt overlay. Any upgrade of the load carrying capacity would require removal of this overlay. At the present time, no maintenance repairs are required to maintain this structure at the current rating.

STRUCTURE ID 121-5202-0 / LOCATION ID 121-00037X-003.03N
CR 37, Cogburn Road over Chicken Creek Tributary

This bridge structure is in good condition with no reported serious structural defects.

STRUCTURE ID 121-5225-0 / LOCATION ID 121-00055X-000.05N
CS 55, Seaboard Industrial Boulevard over Peachtree Creek Tributary

This bridge culvert is in good condition with no reported structural deficiencies. However, erosion behind the curbs and in the vicinity of the catch basins should be repaired. The accumulated debris located at the inlet ends should also be removed.

STRUCTURE ID 121-5226-0 / LOCATION ID 121-00056X-000.02E
CS 56, Logan Circle (North) over Peachtree Creek Tributary

This bridge culvert is in good condition with no reported structural deficiencies. Rip rap at the outlet end of barrel #2 should be redistributed to reduce further bank erosion. The south eastern pavement has begun to settle and should be monitored for signs of further settlement.

STRUCTURE ID 121-5227-0 / LOCATION ID 121-00056X-000.55E
CS 56, Logan Circle (South) over Peachtree Creek Tributary

This bridge culvert is in good condition. However, the accumulated silt in barrel #2 should be removed to allow proper flow of water through the structure.

***STRUCTURE ID 121-5017-0 / LOCATION ID 121-00064X-000.94N**
CR 64, Douglas Road over Caney Creek
Post for 07 Tons, Type A Sign.

This structure requires posting due to insufficient flexural capacity of the steel superstructure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. This bridge structure is in good condition with no serious reported structural defects. ***Our records indicate that this structure is located on a school bus route. If this route is utilized by school bus traffic, this bridge should be upgraded to a 10 ton or better capacity. To accomplish this a replacement structure would be required. Due to re-evaluation of the structure, the posting capacity of this structure has been decreased. At the time of the inspection, the posting signs were missing. These signs are required and must be replaced.***

STRUCTURE ID 121-5209-0 / LOCATION ID 121-00067X-000.48N
CR 67, Finley Road over Johns Creek

This bridge culvert is in good condition with no reported deficiencies.

***STRUCTURE ID 121-5019-0 / LOCATION ID 121-00072X-001.44E**
CR 72, Bell Road over Cauley Creek
At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly grouted. The following maintenance recommendations are provided to maintain this structure at the current rating. The connecting bolts for the precast concrete superstructure units are loose and /or missing and therefore causing the panels to not act as a unit. These panels should be properly bolted. The joints throughout the deck have failed and should be cleaned and sealed. ***If the panels were properly bolted together, the structure could be significantly upgraded.***

***STRUCTURE ID 121-5020-0 / LOCATION ID 121-00072X-002.29E**
CR 72, Bell Road over Chattahoochee River Tributary
At the present time, Post this structure for 18 Tons H-Truck; 17 Tons Type 3 Truck and 22 Tons Timber Truck.

This structure requires posting due to the excessive 6.5 inch overlay that has reduced the live load carrying capacity of the structure. If the excessive overlay was removed, posting of this structure would no longer be required. At the present time, no maintenance repairs are required to maintain this structure at the current rating.

STRUCTURE ID 121-5150-0 / LOCATION ID 121-00077X-000.03N
CS 77, Marietta Road over Southern Railroad/Inman Yard

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed. Cracks in the north abutment should be cleaned and sealed. ***An electrical line was run under the access panel on the bottom of the steel box beam. This electric line should be relocated to allow access.***

STRUCTURE ID 121-5149-0 / LOCATION ID 121-00077X-000.93N
CS 77, Marietta Road over CSX Railroad

This bridge structure is in fair condition. The gland joints at bents #2, #3 and #4 are leaking and should be replaced. The polymer joint at bent # 5 should also be replaced. The longitudinal joints between the precast concrete deck panels are leaking and one panel has spalled. Corrosion of the pre-stressing strands in this type of panel can result in beam failure. These panels need to be monitored for signs of deterioration since more serious corrosion might be hidden and not inspectable. It is recommended that the asphalt overlay be removed and replaced along with the installation of a waterproof membrane under the overlay. Spalls located on the superstructure panels and on the substructure units should be repaired to protect the exposed reinforcement steel. The concrete "stay blocks" which retain the superstructure units have cracked and sheared and should be repaired. Spalling concrete at these stay blocks poses a danger to people below. Safety nets should be installed until more permanent repairs can be made. The separation between the left wingwall and cap at the south abutment and a large crack at the right side of the cap should be repaired. The damaged handrail and post at the south abutment should be repaired. ***It was noted at the time of inspection that this structure is posted with a restricted load limit sign. This sign is not required and may be removed.***

*STRUCTURE ID 121-5022-0 / LOCATION ID 121-00079X-001.52N
CR 79, Parsons Road over Johns Creek

At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 17 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating. The steel piling should be protected with reinforced concrete encasements extending from points 2 feet below the mud line to a point 2 feet above normal water. The connecting bolts for the recast concrete superstructure units are missing between panels #1 and #2 in span #2 and panel #7 and #8 in span #3. The accumulated dirt in the deck gutters should be removed to allow for proper drainage. ***If the panels were properly bolted together, the structure could be significantly upgraded.***

STRUCTURE ID 121-5023-0 / LOCATION ID 121-00085X-001.63E
CR 85, Kimball Bridge Road over Big Creek

This bridge structure is in satisfactory condition with accumulated drift at the inlet end. This drift should be removed. ***At the time of the inspection, this structure was posted with restrictive load limit signs. These signs are not required and may be removed at the discretion of the county.***

***STRUCTURE ID 121-5024-0 / LOCATION ID 121-00103X-000.53S**
CR 103, Waters Road over Long Indian Creek
At the present time, Post this structure for 19 Tons H-Truck; 18 Tons Type 3 Truck and 23 Tons Timber Truck.

This structure requires posting due to the dead load from the 6 inch overlay that has reduced the load carrying capacity of this structure. If the excessive overlay were removed, load limit posting of this structure would no longer be required. Erosion and wingwall cracking at the upstream end of both abutments should be repaired. The downstream wingwalls at both abutments have also failed and should be replaced.

STRUCTURE ID 121-5025-0 / LOCATION ID 121-00109X-000.77N
CR 109, Brumbelow Road over Chattahoochee River Tributary

This bridge structure is in satisfactory condition with undermining of the concrete encasements at bent #2. These encasements should be extended to a point 2 feet below the mud line. Erosion in the vicinity of both abutments should be repaired.

***STRUCTURE ID 121-5026-0 / LOCATION ID 121-00111X-000.75N**
CR 111, Buice Road over Johns Creek
At the present time, Post this structure for 19 Tons H-Truck; 18 Tons Type 3 Truck and 23 Tons Timber Truck.

This structure requires posting due to the dead load from the 3 inch overlay that has reduced the load carrying capacity of this structure. If the excessive overlay were removed, load limit posting of this structure would no longer be required. This bridge is in satisfactory condition. The concrete encasements for pile #4 at bent #3 and piles #1 and #3 at bent #4 have undermined and should be extended downward to a point 2 feet below the mud line.

STRUCTURE ID 121-5257-0 / LOCATION ID 121-00111X-003.45N
CR 111, Buice Road over Long Indian Creek

This bridge culvert is in good condition with up to 1.2 feet of scour at the inlet end. This scour should be repaired with rip rap to prevent possible structural damage.

STRUCTURE ID 121-5285-0 / LOCATION ID 121-00119X-002.86E
FAS 1891, CR 119, State Bridge Road over Johns Creek

This all concrete bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5319-0 / LOCATION ID 121-00119X-002.87E
FAP 1891, CR 119, State Bridge Road WBL over Johns Creek

This bridge structure is in good condition with no reported deficiencies.

***STRUCTURE ID 121-5027-0 / LOCATION ID 121-00126X-000.14W**
CR 126, Rockmill Way over Foe Killer Creek

At the time of the inspection, this structure was closed to traffic. It is our understanding that this structure will be removed when an adjacent project is completed. Please notify the Georgia Department of Transportation, Office of Maintenance, when this structure is removed.

STRUCTURE ID 121-5028-0 / LOCATION ID 121-00137X-000.80S
CR 137, Riverside Road over Chattahoochee River Tributary

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5029-0 / LOCATION ID 121-00137X-001.28S
CR 137, Riverside Road over Chattahoochee River Tributary

This bridge structure is in satisfactory condition with minor cracks and spalls on the bottom of all panels. A spall on the bottom of the beam in panel #11 at abutment #2 has exposed the reinforcement steel approximately 2 feet. This spall should be repaired to protect the reinforcement steel from corrosion.

STRUCTURE ID 121-5030-0 / LOCATION ID 121-00138X-001.25E
CR 138, Spalding Drive over Ball Mill Creek

This bridge structure is in poor condition with scour and undermining problems at the eastern abutment. The scour and undermining should be immediately repaired with rip rap before serious damage can occur to the structure. The eastern left wingwall has incurred some collision damage and should also be repaired.

STRUCTURE ID 121-5313-0 / LOCATION ID 121-00188X-001.07W
CR 188 Uupper Hembree Road Over Four Killer Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5292-0 / LOCATION ID 121-00189X-000.18N
CR 189, Harris Road over Foe Killer Creek Tributary

This bridge culvert is in good condition with no reported structural defects.

***STRUCTURE ID 121-5034-0 / LOCATION ID 121-00219X-000.59S**
CR 219, Brandon Mill Road over Marsh Creek
At the present time, Post this structure for 18 Tons H-Truck; 18 Tons Type 3 Truck and 22 Tons Timber Truck.
This structure requires posting due to the dead load from the 4 inch overlay that has reduced the load carrying capacity of this structure. If the excessive overlay were removed, load limit posting of this structure would no longer be required. Erosion around the base of both abutments should be repaired by adding rip rap. ***At the time of the inspection, the posting signs for this structure were missing. These signs are required and must be replaced.***

STRUCTURE ID 121-5035-0 / LOCATION ID 121-00255X-001.29N
CR 255, Glenridge Road over Marsh Creek
This bridge structure is in fair condition. Channel bed scour beneath the footing at bent #2 should be repaired with rip rap.

STRUCTURE ID 121-5289-0 / LOCATION ID 121-00256X-002.04N
CR 256, Glenlake Parkway over Marsh Creek
This bridge culvert is in good condition but has channel bed scour at both the inlet and outlet ends of the structure. The inlet scour damage is 1.7 feet in depth, and the outlet scour is 2.2 feet deep. The outlet culvert floor has begun to undermine. All scour and undermining should be repaired with rip rap before serious structural damage can occur. Drift accumulated at the culvert inlet should also be removed to allow proper stream flow through the structure.

STRUCTURE ID 121-5178-0 / LOCATION ID 121-00263X-000.70N
CS 263, Randall Mill Road over Nancy Creek
This bridge structure is in good condition. The steel beams are corroded and should be cleaned and painted. Up to 2.0 feet of scour around bent #2 should be monitored for signs of further degradation. Vegetation around the structure should be cut and removed. Dirt and debris in the deck gutters and drains should be removed to allow proper drainage.

STRUCTURE ID 121-5036-0 / LOCATION ID 121-00299X-001.14S
CR 299, Lake Forest Drive over Long Island Creek
This bridge structure is in fair condition. However, holes in the deck between beams #9 and #10 should be repaired. The minor scour and undermining at the northern abutment should be monitored.

STRUCTURE ID 121-5037-0 / LOCATION ID 121-00299X-003.83S
CR 299, Lake Forest Drive over Nancy Creek
This bridge structure is in good condition with the exception of the substructure. Both abutments are cracked approximately 1 inch. The south abutment has rotated forward 1 inch. The south abutment should be stabilized and all cracks sealed. A scour hole under the north span has been repaired with rip rap, but more should be added.

***STRUCTURE ID 121-5176-0 / LOCATION ID 121-00331X-000.57S**
CR 331, Jett Road over Long Island Creek
At the present time, Post this structure for 11 Tons H-Truck; 13 Tons Type 3 Truck; 17 Tons Timber Truck and 18 Tons Type 3S2 Truck.
This structure requires posting due to the low original design capacity of the structure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. This bridge structure is in good condition with no reported deficiencies. ***At the time of the inspection, the posting sign on the northern end had the incorrect truck silhouettes and the sign on the southern end had the incorrect weight limit for the timber truck. These signs must be replaced.***

***STRUCTURE ID 121-5038-0 / LOCATION ID 121-00415X-000.01W**
CR 415, Woodruff Road over Little Pea Creek Tributary
At the present time, Post this structure for 20 Tons H-Truck; 19 Tons Type 3 Truck and 24 Tons Timber Truck.
This structure requires posting due to overstress caused by the extra dead load of the 2.5 inch asphalt overlay. Any upgrade of the load carrying capacity would require removal of this overlay. The following maintenance recommendations are provided to maintain this structure at the current rating. The exposed steel piles in both abutments should be covered to protect the piles from corrosion. Four of the bolts connecting the precast concrete superstructure units are missing and should be properly replaced.

STRUCTURE ID 121-5299-0 / LOCATION ID 121-00416X-000.85W
CR 416, Waterworks Road Over Cedar Creek
This bridge structure is in good condition with no reported structural deficiencies. However, the scour problem in the vicinity of the eastern abutment should be repaired with rip rap. ***At the time of the inspection, this structure was posted with restrictive load limit signs. These signs are not required and may be removed at the discretion of the county.***

***STRUCTURE ID 121-5040-0 / LOCATION ID 121-00420X-001.20N**
CR 420, Phillips Road over Little Bear Creek
At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.
This structure requires posting due to not being constructed as designed. The precast concrete superstructure units are not properly bolted together and do not provide adequate load distribution. If these units were properly bolted together, this bridge could be upgraded to a point where posting would no longer be required. The following maintenance recommendation is provided to maintain this structure at the current rating. Localized scour at each abutment should be corrected with rip rap.

STRUCTURE ID 121-5315-0 / LOCATION ID 121-00421X-001.04E
CR 421, Rico-Tatum Road Over Cedar Branch
This bridge culvert is in good condition with no reported deficiencies.

STRUCTURE ID 121-5042-0 / LOCATION ID 121-00424X-001.57S
CR 424, Atlanta Newnan Road over Cedar Creek

This bridge structure is in satisfactory condition with spalling of the concrete deck slab in span #1. The spall has exposed reinforcement steel which should be sealed to protect the reinforcement steel from corrosion. The concrete pile encasements at bent #2 have been undermined and should be extended to a point 2 feet below the existing mud line. Two of the slab units in span #1 are not properly bolted together. These bolts should be replaced. The settlement under both abutments should also be repaired.

STRUCTURE ID 121-5043-0 / LOCATION ID 121-00426X-000.59N
CR 426, Sardis Church Road over Dry Branch

This bridge structure is in good condition with no reported deficiencies.

***STRUCTURE ID 121-5044-0 / LOCATION ID 121-00426X-002.30N**
CR 426, Vernon Grove Road over Longino Creek
At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly bolted together. The precast concrete superstructure units are not properly bolted together, have begun to separate as much as 1.5 inches and do not provide adequate load distribution. ***If these units were properly bolted together and grouted, this bridge could be upgraded to a point where posting would no longer be required.***

STRUCTURE ID 121-5045-0 / LOCATION ID 121-00433X-001.10W
CR 433, Woodruff Road over Bear Creek

This bridge structure is in good condition with no reported deficiencies.

***STRUCTURE ID 121-5046-0 / LOCATION ID 121-00435X-001.74W**
CR 435, Garretts Ferry Road over Chattahoochee River Tributary
Post for 03 Tons, Type A Sign.

This structure requires posting due the major scour and undermining at the western abutment. The following maintenance recommendations are provided to maintain this structure at the current rating. To repair this structure, full bearing would have to be established under the cap. Once the cap has been stabilized, the end roll should be protected with rip rap or other scour protection measures. The east abutment was constructed with similar methods and is susceptible to scour. Preventative measures should also be added to the east abutment to protect it from scour. Minor cracking and spalling on the bottom of several panels has exposed the reinforcement steel. These spalls should be repaired to protect the reinforcement steel from corrosion. ***Our records indicate that this structure is located on a school bus route. If this route is utilized by school bus traffic, this bridge should be upgraded to a 10 ton or better capacity. To accomplish this, both abutments should be stabilized and the fill material protected from scour.***

STRUCTURE ID 121-5047-0 / LOCATION ID 121-00438X-000.78W
CR 438, Hamilton Road over White Oak Creek

This bridge structure is in good condition but three of the bolts connecting the precast concrete superstructure units together are missing and should be replaced.

STRUCTURE ID 121-5048-0 / LOCATION ID 121-00441X-002.44E
CR 441, Jones Ferry Road over White Oak Creek

This bridge culvert is in good condition with no reported serious structural defects. However, small beaver dams located within all barrels should be removed.

STRUCTURE ID 121-5049-0 / LOCATION ID 121-00442X-001.54S
CR 442, Westside Road over Mill Branch

This all concrete bridge structure is in satisfactory condition with minor cracks and spalls on the bottom of several panels which has exposed the reinforcement steel. These spalls should be repaired to protect the reinforcement steel from corrosion.

*STRUCTURE ID 121-5050-0 / LOCATION ID 121-00443X-000.34N
CR 443, Phillips Road over Longino Creek

At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in satisfactory condition but was not constructed as designed. The precast concrete superstructure panels are not properly bolted together, have begun to separate as much as 3 inches and do not provide adequate load distribution. The cap at the northern abutment exhibits signs of cracking and should be sealed. ***If these units were properly bolted together and then grouted, this bridge could be upgraded to a point where posting would no longer be required.***

STRUCTURE ID 121-5051-0 / LOCATION ID 121-00449X-000.43S
CR 449, Short Road over Pea Creek

This bridge structure is in good condition with minor cracks and spalls on the bottom of several panels which has exposed the reinforcement steel. These spalls should be repaired to protect the reinforcement steel from corrosion. All of the deck joints have failed and should be cleaned and sealed.

STRUCTURE ID 121-5052-0 / LOCATION ID 121-00456X-001.01E
CR 456, Creel Road over Little Pea Creek

This bridge structure is in good condition with undermining of the concrete encasements at bent #2. The accumulated drift at bent #2 should be removed and the encasements extended to a point 2 feet below the existing mud line. Erosion at the eastern abutment has exposed the foundation piles. This erosion damage should be corrected and the foundation piles covered to protect them from corrosion. The deck joints have failed and should be cleaned and sealed. ***It was noted at the time of inspection that this structure is posted with a restricted load limit sign. This sign is not needed and can be removed at the County's discretion.***

STRUCTURE ID 121-5053-0 / LOCATION ID 121-00476X-002.55W
CR 476, Boat Rock Road over Cascade Creek

This bridge culvert is in good condition. Silt accumulated in barrels #1 and #3 should be removed to allow proper stream flow through the structure and reduce the potential for scour. Vegetation growing in the vicinity of the structure should be cut and removed.

STRUCTURE ID 121-5203-0 / LOCATION ID 121-00482X-000.24N
CS 482, Garson Drive over Marta

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5304-0 / LOCATION ID 121-00485X-002.39S
CR 485, Enon Road over Camp Creek

This bridge structure is in good condition with no deficiencies reported.

STRUCTURE ID 121-5269-0 / LOCATION ID 121-00485X-003.62S
CR 485, Enon Road over Camp Creek Tributary

This bridge culvert is in good condition with up to 1.0 foot of scour at outlet end which should be monitored for signs of further degradation. The accumulated drift at the inlet end should also be removed. Cracks and spalls in the northern outlet wing wall should be sealed.

*STRUCTURE ID 121-5056-0 / LOCATION ID 121-00485X-008.46S
CR 485, Demooney Road over Deep Creek

At the present time, Post this structure for 13 Tons H-Truck; 17 Tons Type 3 Truck; 23 Tons Timber Truck and 24 Tons Type 3S2 Truck.

This structure requires posting due to the low original design capacity of the structure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. This bridge is in satisfactory condition. ***Our records indicate that a "State Aid" project for pile encasements has been approved. Our records also indicate that this structure is presently scheduled for future contract replacement.***

STRUCTURE ID 121-5302-0 / LOCATION ID 121-00493X-002.08N
CR 493, Northcutt Road over Pea Creek

This bridge structure is in good condition with no reported deficiencies. ***At the time of the inspection, this structure was posted with restrictive load limit signs. These signs are not required and may be removed at the discretion of the county.***

STRUCTURE ID 121-5058-0 / LOCATION ID 121-00498X-000.37N
CR 498, Aldredege Road over Wolf Creek

This bridge structure is in satisfactory condition but has undermining of the pile encasements at bent #2. All encasements should be extended to a point 2 feet below the mud line.

STRUCTURE ID 121-5059-0 / LOCATION ID 121-00498X-001.32N
CR 498, Merk Road over Camp Creek

This bridge structure is in good condition but has major stream bank scour at bents #3 and #5. This scour has increased the unbraced pile lengths and should be repaired with rip rap. The piles at bent #3 should be repaired with properly designed sway bracing. The bent should be further protected with reinforced concrete encasements extending from a point 2 feet above normal water to a point 2 feet below the mud line. The deck joints at both abutments have failed and should be cleaned and sealed. The accumulated drift at bents #3 and #4 should be removed. ***Repairs should include sway bracing bent #3, taking erosion control measures to stop stream bed scour and removal of debris from bent #4. This debris build up is one cause of continued scour at bent #3. If an addition 4 feet of scour takes place at this location a bridge closure will be required.***

STRUCTURE ID 121-5060-0 / LOCATION ID 121-00500X-000.28E
CR 500, Wilkerson Mill Road over Little Bear Creek

This bridge structure is in fair condition with spalls at the bolt holes in spans #1 and #2. These spalls should be sealed.

***STRUCTURE ID 121-5061-0 / LOCATION ID 121-00515X-001.01N**
CR 515, Jones Bridge Road over Line Creek
At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating. The precast concrete deck units are not properly bolted together, have separated as much as 2.25 inches and do not provide adequate load distribution. There is exposed reinforcement and broken strands in panels #4, #5 and #6. These panels should be repaired or replaced. ***If these units were properly bolted and grouted together, this bridge could be upgraded to a point where posting would no longer be required.***

STRUCTURE ID 121-5062-0 / LOCATION ID 121-00515X-003.24N
CR 515, Jones Bridge Road over Deep Creek

This bridge structure is in good condition. However, the deck joints throughout the structure have failed and should be cleaned and sealed.

***STRUCTURE ID 121-5064-0 / LOCATION ID 121-00518X-000.35N**
CR 518, Derrick Road over Deep Creek Tributary
At the present time, Post this structure for 19 Tons H-Truck; 19 Tons Type 3 Truck and 24 Tons Timber Truck.

This structure requires posting due to overstress caused by the extra dead load of a 3 inch asphalt overlay. Any upgrade of the load carrying capacity would require removal of this overlay. The following maintenance recommendations are provided to maintain this structure at the current rating. The pile encasements at bent #2 have been undermined and should be extended to a point 2 feet below the existing mud line. One bolt in span #2 is missing between panel #6 and #7 and should be replaced. ***If the excessive overlay is removed then this structure could be significantly upgraded.***

STRUCTURE ID 121-5211-0 / LOCATION ID 121-00519X-000.31W
CS 519, Armour Drive under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5135-0 / LOCATION ID 121-00519X-000.33W
CS 519, Armour Drive under Southern Railroad

This non-roadway structure was inspected for clearances only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

***STRUCTURE ID 121-5065-0 / LOCATION ID 121-00522X-000.19E**
CR 522, Red Mill Road over Banks Creek
At the present time, Post this structure for 11 Tons H-Truck; 14 Tons Type 3 Truck; 18 Tons Timber Truck and 20 Tons Type 3S2 Truck.

At the time of the inspection, this structure was improperly closed to traffic. Please note that all structures requiring closing must be properly closed in accordance with the attached methods. In addition, appropriate advanced warning signs and barricades should be used. Please reference the Manual on Uniform Traffic Control Devices, current edition. Also, advanced warning signs should be used at the last intersection prior to each end of the structure.

STRUCTURE ID 121-5310-0 / LOCATION ID 121-00539X-000.22S
CR 539, Ben Hill Road over Temple Grove Creek

This bridge culvert is in good condition. Silt building up at the inlet end should be removed to allow proper stream flow.

STRUCTURE ID 121-5068-0 / LOCATION ID 121-00552X-001.35E
CR 552, Scarbrough Road over Wolf Creek

This bridge structure is in satisfactory condition. The cap at bent #2 and the bottom of several of the panels are spalled and should be cleaned and sealed to protect the reinforcing bars within.

STRUCTURE ID 121-5283-0 / LOCATION ID 121-00559X-001.20E
CR 559, Hall Road over Line Creek Tributary

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5284-0 / LOCATION ID 121-00559X-001.28E
CR 559, Hall Road over Line Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5071-0 / LOCATION ID 121-00562X-001.77W
CR 562, High Point Road over Deep Creek

This bridge structure is in good condition. One bolt is missing in span #2 between panel #2 and #3 which should be replaced. The deck joints have failed and should be cleaned and sealed. The grout between the deck panels should also be replaced. The spalls in the cap at bent #3 and at the joint at the western abutment should be repaired.

STRUCTURE ID 121-5072-0 / LOCATION ID 121-00574X-000.37W
CR 574, Pleasant Hill Road over Cater Creek

This bridge structure is in good condition with the exception of the substructure which is in satisfactory condition. The pile encasement at pile #5 in bent #2 has begun to undermine and should be extended to a point 2 feet below the mud line. Erosion under the cap at the east abutment has exposed the piles. The piles should be covered to protect them from corrosion and the source of the surface water found and diverted.

STRUCTURE ID 121-5073-0 / LOCATION ID 121-00575X-000.03E
CR 575, Burdette Road over Morning Creek Tributary

This bridge structure is in good condition. The encasements at piles #1, #2 and #3 at the western abutment and pile #3 at the eastern abutment have undermined and should be extended to points 2 feet below the mud line. The bolts are missing in panels #1 and #2 and #4 and #5. These bolts should be replaced to properly distribute the loads.

STRUCTURE ID 121-5291-0 / LOCATION ID 121-00593X-001.69S
CR 593, Old Bill Cook Road over Morning Creek Tributary

This new bridge culvert is in good condition with no reported structural deficiencies. However, the channel at both ends should be excavated and the accumulated silt in barrels #2 and #3 should be removed. The settlement of the roadway should be monitored.

STRUCTURE ID 121-5076-0 / LOCATION ID 121-00607X-001.29N
CR 607, Mallory Road over CSX Railroad (638608X)

This bridge structure is in good condition with minor corrosion of the steel piles. The steel piles throughout the structure should be cleaned and painted. The spalls in the cap at the southern abutment and bent #2 should be sealed. The northern approach roadway has settled and should be leveled with the deck.

***STRUCTURE ID 121-5077-0 / LOCATION ID 121-00614X-001.02N**
CR 614, Oakley Road over Broadanax Creek

At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in good condition but was not constructed as designed. The precast concrete superstructure units are not properly bolted together, have separated as much as 4 inches and do not provide adequate load distribution. The spalling of the deck slab at the northern abutment should be repaired. ***If these units were properly bolted and grouted together, this bridge could be upgraded to a point where posting would no longer be required. At the time of the inspection, the posting sign was missing on the northern end. This sign is required and must be replaced.***

***STRUCTURE ID 121-5078-0 / LOCATION ID 121-00618X-000.59S**
CR 618, Peter Road over Broadanax Creek

At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in good condition but was not constructed as designed. The precast concrete superstructure units are not properly bolted together and do not provide adequate load distribution. The steel piling at bent #2 also exhibit signs of corrosion and should be cleaned and painted. ***If the concrte superstructure units were properly bolted and grouted together, this bridge could be upgraded to a point where posting would no longer be required. At the time of the inspection, the structure was improperly posted. The amounts for the Timber and Type 3S2 are too high and should be replaced. The Piggyback sign should be removed.***

***STRUCTURE ID 121-5079-0 / LOCATION ID 121-00621X-000.28E**
CR 621, Harris Road over White Water Creek Tributary
At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.

This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in satisfactory condition but was not constructed as designed. The precast concrete superstructure units are not properly bolted together and do not provide adequate load distribution. The cattle fence across the channel is catching drift. This fence should be removed. ***If the concrete superstructure units were properly bolted and grouted together, this bridge could be upgraded to a point where posting would no longer be required. At the time of the inspection, the posting sign on the western end was missing. This sign is required and must be replaced.***

STRUCTURE ID 121-5080-0 / LOCATION ID 121-00628X-000.16E
CR 628, Landrum Road over Trickham Creek

This bridge structure is in good condition with no reported structural deficiencies. Voids under the right end of the west abutment should be repaired. The pile encasements at bent #2 have undermined and should be extended to a point 2 feet below the mud line.

***STRUCTURE ID 121-5081-0 / LOCATION ID 121-00629X-000.01W**
CR 629, Johnson Road over Line Creek
At the present time, Post this structure for 09 Tons H-Truck; 10 Tons Type 3 Truck; 14 Tons Timber Truck; 16 Tons HS-Truck and 18 Tons Type 3S2 Truck.

This structure requires posting due to insufficient pile capacity of the timber substructure. Any significant upgrading of this bridge would require a complete replacement of the substructure. This bridge structure is in satisfactory condition with the exception of the timber substructure. All of the exposed timber piling in this structure exhibit signs of major decay and rot and have reduced capacities. ***Our records indicate that this structure is located on a school bus route. If this route is utilized by school bus traffic, this bridge should be upgraded to a 10 ton or better capacity. To accomplish this, the substructure should be replaced.***

STRUCTURE ID 121-5082-0 / LOCATION ID 121-00629X-001.32W
CR 629, Johnson Road over Shoal Creek

This bridge structure is in poor condition with rot and decay of the timber substructure. The timber piles should be monitored for signs of further deterioration. Voids beneath and behind both abutment caps should be filled. Properly designed bulkheads should be constructed to replace the rotting timber bulkheads. ***Due to re-evaluation of the structure, the posting capacity of this structure has been increased slightly. At the time of the inspection, this structure was posted with restrictive load limit signs. These signs are not required and may be removed at the discretion of the county.***

STRUCTURE ID 121-5308-0 / LOCATION ID 121-00629X-003.11W
CR 629, Johnson Road over Peeks Creek

This reinforced concrete bridge culvert is in good condition with no reported deficiencies.

STRUCTURE ID 121-5275-0 / LOCATION ID 121-00635X-000.25N
CR 635, Creekwood Road over Borum Springs Creek

This bridge structure is in good condition with no reported structural deficiencies. The steel piles and lateral bracing have surface corrosion due to not having a protective paint system. The members should be cleaned and painted. All concrete pile encasements at bent #2 have been undermined and should be extended to a point 2 feet below the existing mud line. The accumulated drift at bent #2 should be removed to reduce further accumulation and the possibility of scour.

*STRUCTURE ID 121-5086-0 / LOCATION ID 121-00637X-000.42E
CR 637, Mann Road over Line Creek

This bridge structure is not considered to be safe for live vehicular loading, and thus falls below standards as set forth in accordance with the Federal Law, Title 23, USC, and Federal Regulations, and should be closed until repairs or replacement can be made. A replacement structure is required to upgrade this structure to a point where posting is no longer required.

Please note that all structures requiring closing must be properly closed in accordance with the attached methods. In addition, appropriate advanced warning signs and barricades should be used. Please reference the Manual on Uniform Traffic Control Devices, current edition. Also, advanced warning signs should be used at the last intersection prior to each end of the structure.

At the time of the inspection, this structure was not properly closed according to the approved closing alternatives.

STRUCTURE ID 121-5087-0 / LOCATION ID 121-00641X-000.02N
CS 641, Brookridge Drive over Clear Creek

This all concrete earth filled arch is in satisfactory condition with the exception of the deck which is in satisfactory condition due to random cracking. These cracks should be sealed to prevent erosion of the earth fill within the arch section. Vegetation growing in the vicinity of the structure should be cut and removed.

STRUCTURE ID 121-5084-0 / LOCATION ID 121-00642X-001.91W
CR 642, Herndon Road over Bear Creek

This bridge structure is in good condition. Voids beneath the caps at both abutments should be repaired.

STRUCTURE ID 121-5088-0 / LOCATION ID 121-00647X-000.02E
CS 647, Park Drive over Southern Railroad

This concrete arch is in poor condition with general deterioration throughout the structure. Several spalls and cracks throughout the structure have exposed portions of the reinforcement steel. These cracks and spalls should be sealed to protect the reinforcement steel and to prevent further corrosion. The deck drains are clogged with debris which should be removed to allow proper drainage. ***At the time of the inspection this structure was posted with restrictive load limit signs. These signs are not required and may be removed.***

STRUCTURE ID 121-5317-0 / LOCATION ID 121-00647X-000.81W
CR 647, McClure Road Over Line Creek

This bridge structure is in good condition with erosion under the western approach. This erosion should be repaired.

*STRUCTURE ID 121-5274-0 / LOCATION ID 121-00650X-001.10N
CR 650, Ono Road over Bear Creek

At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.

This structure requires posting due to not being constructed as designed. The precast concrete superstructure units are not properly bolted together and do not provide adequate load distribution. If these units were properly bolted together and grouted, this bridge could be upgraded to a point where posting would no longer be required. This bridge structure is in good condition. The concrete encasements for piles #2, #3, #4 and #5 at bent #2 have undermined. These encasements should be extended downward to a point 2 feet below the existing mud line. A beaver dam at bent #2 should also be removed to allow proper stream flow beneath the structure.

STRUCTURE ID 121-5091-0 / LOCATION ID 121-00651X-001.66N
CR 651, Hobgood Road over Bear Creek

This bridge structure is in good condition with no reported structural deficiencies. The concrete pile encasements at piles #4, #5, and #6 at bent #2 have been undermined and should be extended to a point 2 feet below the existing mud line.

STRUCTURE ID 121-0457-0 / LOCATION ID 121-00655X-002.16N
CR 655, Johnson Ferry Road over Chattahoochee River

This bridge structure is in good condition but has corrosion of the steel superstructure bearings in the original portion of the structure. These bearings have slight section loss and should be cleaned and painted. The anchor bolts at the bearings exhibit signs of section loss and should be repaired. Settlement under the cap at the southern abutment has exposed the foundation piles resulting in corrosion and section loss. These piles should be cleaned, painted and covered to protect them from further corrosion. The deck joints throughout the structure have failed and should be cleaned and sealed. The accumulated debris at column #4 of bent #4 should be removed to reduce the further accumulation and the possibility of scour. The deck drains and catch basins are clogged with dirt and debris which should be removed.

STRUCTURE ID 121-5092-0 / LOCATION ID 121-00656X-001.04N
CR 656, Petersburg Road over Bear Creek

This bridge structure is in good condition with the exception of the substructure which is in satisfactory condition. Scour at bent #2 has undermined the encasements. The encasements should be extended to a point 2 feet below the existing mud line. The cracks in the concrete overlay should also be sealed.

STRUCTURE ID 121-5228-0 / LOCATION ID 121-00716X-000.92S
CS 716, Marietta Boulevard over CSX Railroad Spur

This bridge structure is in good condition. Cracks in the cap at the north abutment should be sealed. Voids beneath the cap of both abutments should be filled to protect the foundation piles from corrosion. These voids are the result of leaking deck joints, which have failed and should be cleaned and sealed. The catch basins at both ends of the bridge should be cleaned out to allow proper drainage.

STRUCTURE ID 121-5093-0 / LOCATION ID 121-00719X-000.19W
CR 719, Tanacrest Drive over Chattahoochee River Tributary

This bridge culvert is in good condition but has channel bed scour problems at both the inlet and outlet ends of the structure. The inlet scour is 2.0 feet in depth, and the outlet scour is 1.0 foot deep. These areas of scour damage should be repaired with rip rap before undermining of the structure can occur.

STRUCTURE ID 121-5179-0 / LOCATION ID 121-00747X-000.10S
CS 747, Kerry Circle over Proctor Creek

This bridge culvert is in good condition. Up to 3.0 feet of scour at the inlet and outlet ends is beginning to undermine the wingwalls and should be repaired with rip rap to prevent structural damage. An inlet wingwall is seperating from barrel #2 and should be stabilized. Drift at the inlet end should be removed to prevent further accumulation and additional scour.

STRUCTURE ID 121-5154-0 / LOCATION ID 121-00769X-000.40N
CS 769, Lotus Avenue over Proctor Creek Tributary

This bridge structure is in satisfactory condition with corrosion of the steel components. The steel beams and bearing assemblies throughout the structure should be cleaned and painted. A portion of the south western wing wall has failed and should be replaced.

STRUCTURE ID 121-5155-0 / LOCATION ID 121-00782X-000.02W
CS 782, Spring Street over Proctor Creek Tributary

This bridge culvert is in good condition. Drift at the inlet end should be removed to prevent further accumulation and possibile scour. Minor scour at the inlet end should be monitored for signs of further degradation.

STRUCTURE ID 121-5094-0 / LOCATION ID 121-00794X-000.04S
CS 794, Francis Place over Proctor Creek

This bridge structure is in satisfactory condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. Significant scour was observed at the south abutment which should be corrected with some type of rip rap.

STRUCTURE ID 121-5095-0 / LOCATION ID 121-00795X-000.13W
CS 795, Hortense Way over Proctor Creek

This bridge structure is in good condition. However, the deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-5238-0 / LOCATION ID 121-00809X-000.01E
FAP 212-1, CR 809, Capps Ferry Road over Chattahoochee River

This bridge structure is in good condition. Drift around bents #3, #4, and #5 should be removed to prevent scour and allow proper stream flow. Settlement at the eastern abutment has exposed the foundation piles. These piles should be covered to protect them from corrosion. The deck joints have failed and should be cleaned and sealed. Dirt and debris in the deck gutters should be removed to allow proper drainage.

STRUCTURE ID 121-5300-0 / LOCATION ID 121-00809X-005.71E
CR 809, South Fulton Parkway Over Cedar Branch

This all concrete bridge structure is in good with no reported deficiencies.

STRUCTURE ID 121-5181-0 / LOCATION ID 121-00813X-000.01W
CS 813, North Avenue under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5245-0 / LOCATION ID 121-00813X-000.13W
CS 813, North Avenue under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5246-0 / LOCATION ID 121-00876X-000.15E
CS 876, Mobile Street over Marta

This bridge structure is in good condition. The joints at both abutments are full of debris and should be cleaned out.

STRUCTURE ID 121-5099-0 / LOCATION ID 121-00928X-001.19N
CR 928, Roxburgh Drive over Big Creek Tributary

This bridge culvert is in fair condition with serious scour at both ends of the structure. This scour damage is approximately 2.4 feet deep with 1.2 feet of undermining of the culvert barrels and wingwalls. Scour at the inlet end of the structure may be due to a utility line crossing approximately 20 feet upstream from the structure. The left wingwall at the inlet end of the structure has separated from the culvert 2.5 feet. The scour at the outlet end is 1.5 feet in depth ***The scour and undermining should be immediately corrected, adequate aprons constructed at both ends, and the separated wingwall replaced. Trees growing behind the culvert wingwalls should be cut and removed.***

STRUCTURE ID 121-5182-0 / LOCATION ID 121-00961X-000.09N
CS 961, MARTA Under Fairfield Place

This non-roadway structure was inspected for clearances only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5100-0 / LOCATION ID 121-01024X-000.47S
CS 1024, Russell Drive over Rocky Creek

This bridge structure is in fair condition with corrosion of the steel substructure. The steel piles throughout the structure should be cleaned and painted.

STRUCTURE ID 121-5101-0 / LOCATION ID 121-01036X-000.22E
CR 1036, Greentree Trail over Wolf Creek

This bridge culvert is in good condition with no reported structural defects. Drift accumulated at the culvert inlet should be removed to allow proper stream flow through the structure and reduce the potential for channel bed scour.

STRUCTURE ID 121-5102-0 / LOCATION ID 121-01099X-000.55N
CR 1099, Kimberly Mill Road over Kimberly Creek

This bridge structure is in good condition with undermining of the concrete encasements. The pile encasements at bent #2 have been undermined and should be extended to a point 2 feet below the existing mud line The deck joints throughout the structure have failed and should be cleaned and sealed. The void underneath the cap at the south abutment should be filled. The spalling of the cap at bent #3 should also be repaired.

STRUCTURE ID 121-5212-0 / LOCATION ID 121-01170X-000.02E
CS 1170, Dill Avenue under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5213-0 / LOCATION ID 121-01170X-000.03E
CS 1170, Dill Avenue under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5204-0 / LOCATION ID 121-01170X-000.05E
CS 1170, Dill Avenue under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5214-0 / LOCATION ID 121-01191X-000.02E
CS 1191, Astor Avenue under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5215-0 / LOCATION ID 121-01191X-000.03E
CS 1191, Astor Avenue under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5205-0 / LOCATION ID 121-01191X-000.04E
CS 1191, Astor Avenue under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5206-0 / LOCATION ID 121-01194X-000.16N
CS 1194, Murphy Avenue over Astor Avenue

This bridge structure is in good condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. The deck joint at each abutment has failed and should be cleaned and sealed.

STRUCTURE ID 121-5156-0 / LOCATION ID 121-01219X-000.21W
CS 1219, Alison Street over South Utoy Creek Tributary

This bridge culvert is in good condition. Up to 2.0 feet of scour at the inlet end should be repaired with rip rap to prevent undermining. Drift at the inlet end shold also be removed to prevent further accumulation and increased scour.

STRUCTURE ID 121-5218-0 / LOCATION ID 121-01246X-000.81S
CS 1246, Brewer Blvd. over South River Tributary

This bridge culvert is in good condition with no reported deficiencies.

STRUCTURE ID 121-5103-0 / LOCATION ID 121-01277X-000.84N
CR 1277, Great Southwest Parkway over North Utoy Creek

This bridge structure is in fair condition with spalls and exposed reinforcement steel in the concrete superstructure which should be sealed. Piles #9 and #11 in bent #2 should be protected with reinforced concrete encasements that extend from a point 2 feet below the mud line to a point 2 feet above normal water. A void beneath the cap at the northern abutment should be filled. The deck joints have failed and should be cleaned and sealed. Spalls have exposed the reinforcing steel within the deck slabs. The reinforcing steel should be cleaned and covered to protect them from the environment.

STRUCTURE ID 121-5229-0 / LOCATION ID 121-01293X-000.20W
CS 1293, Joyland Place over South River Tributary

This bridge culvert is in good condition with no reported deficiencies.

STRUCTURE ID 121-5230-0 / LOCATION ID 121-01296X-000.32E
CS 1296, Thornton Street over South River Tributary

This bridge culvert is in good condition. Up to 2.0 feet of scour at the outlet apron should be repaired with rip rap to prevent undermining.

STRUCTURE ID 121-0591-0 / LOCATION ID 121-01321X-000.58E
CR 1321, Cumming Street over Big Creek Tributary

This bridge culvert is in good condition but has erosion of the roadway shoulder. This erosion has reached the wingwall and should be repaired to ensure the stability of the roadway and the wingwall.

STRUCTURE ID 121-5106-0 / LOCATION ID 121-01322X-000.79N
CR 1322, New Bullpen Road over Little River

This all concrete bridge structure is in fair condition with no reported deficiencies.

STRUCTURE ID 121-5157-0 / LOCATION ID 121-01350X-001.63W
CR 1350, Azalea Drive over Chattahoochee River Tributary

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5158-0 / LOCATION ID 121-01350X-003.05W
CR 1350, Willeo Road over Willeo Creek

This bridge structure is in satisfactory condition with corrosion of the steel substructure. The steel piles throughout the structure should be cleaned and painted. The precast concrete superstructure and the concrete substructure caps have cracks and spalls with exposed reinforcement steel in various locations throughout the structure. These spalls should be repaired to protect the reinforcement steel from corrosion.

STRUCTURE ID 121-5279-0 / LOCATION ID 121-01361X-000.51E
CS 1361, Tell Road over Camp Creek Tributary

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed. Dirt and debris in the deck drains should be removed to allow proper drainage.

***STRUCTURE ID 121-5109-0 / LOCATION ID 121-01390X-002.95E**
CR 1390, Barnes Road over White Oak Creek
At the present time, Post this structure for 10 Tons H-Truck; 12 Tons Type 3 Truck; 15 Tons Timber Truck and 18 Tons Type 3S2 Truck.
This structure requires posting due to the concrete deck slabs not being properly bolted together. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in satisfactory condition with corrosion of the steel substructure. The steel piling throughout the structure should be cleaned and painted. The piles at the east abutment should be further protected with reinforced concrete encasements extending from a point 2 feet below the existing mud line to a point 2 feet above normal water. The deck panels throughout the structure have cracks and spalls with exposed reinforcement steel which should be repaired to prevent corrosion of the reinforcement steel. The lack of railing on this structure should be addressed. ***If these units were properly bolted and grouted together, this bridge could be upgraded to a point where posting would no longer be required. At the time of inspection, the posting signs were missing and must replaced.***

STRUCTURE ID 121-5293-0 / LOCATION ID 121-01390X-003.42E
CR 1390, Rico Road over Moss Creek
This bridge structure is in good condition with no serious reported structural defects. However, erosion under the western abutment has exposed one of the steel H-piles. This erosion should be repaired.

STRUCTURE ID 121-5111-0 / LOCATION ID 121-01390X-004.32E
CR 1390, Rico Road over Longino Creek
This bridge structure is in fair condition, but the bolts connecting the precast concrete superstructure units are loose and should be tightened. Major scour located at the western abutment should be repaired with rip rap. Longitudinal cracks in all caps should also be sealed to protect the reinforcement steel from corrosion.

STRUCTURE ID 121-5112-0 / LOCATION ID 121-01392X-003.31N
CR 1392, Cochran Mill Road over Little Bear Creek
This bridge structure is in satisfactory condition, but the concrete pile encasements at piles #4, #5, and #6 at bent #2 are undermined and should be extended downward to points 2 feet below the existing mud line. Several of the bolts connecting the precast concrete superstructure units are missing and should be replaced.

STRUCTURE ID 121-5113-0 / LOCATION ID 121-01392X-003.44N
CR 1392, Cochran Mill Road over Bear Creek
This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5311-0 / LOCATION ID 121-01392X-005.28N
CR 11392, Cochran Mill Road Over Little Pea Creek
This bridge culvert is in good condition with no reported deficiencies.

***STRUCTURE ID 121-5114-0 / LOCATION ID 121-01392X-006.02N**
CR 1392, Cochran Mill Road over Pea Creek
At the present time, Post this structure for 06 Tons H-Truck; 13 Tons Type 3 Truck; 15 Tons Timber Truck; 11 Tons HS-Truck and 19 Tons Type 3S2 Truck.
This structure requires posting due to the low original design capacity of the structure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. The following maintenance recommendations are provided to maintain this structure at the current rating. The timber deck has an asphalt overlay. Pot holes in the asphalt overlay should be repaired.

***STRUCTURE ID 121-5115-0 / LOCATION ID 121-01483X-000.13N**
CS 1483, Woodland Road over Intrenchment Creek
This structure requires posting due to the low original design capacity. A replacement structure is required to upgrade the load carrying capacity to a point where posting is no longer required. The following maintenance is recommended to maintain this structure at the current rating. This bridge structure is in good condition. Minor scour at both abutments should be monitored for signs of further degradation.

STRUCTURE ID 121-5116-0 / LOCATION ID 121-01500X-000.44N
CR 1500, Bishop Road over Bear Creek
This bridge structure is in good condition with erosion of the stream banks which should be repaired with rip rap.

STRUCTURE ID 121-5117-0 / LOCATION ID 121-01505X-001.04S
CR 1505, Oakley Industrial Boulevard over Broadanax Creek
This bridge culvert is in good condition with no reported deficiencies.

***STRUCTURE ID 121-5118-0 / LOCATION ID 121-01527X-000.14E**
CR 1527, Porter Terry Road over Little Pea Creek
Post for 05 Tons, Type A Sign.

This structure requires posting due to the substantial scour and undermining under the caps at both abutments. A replacement substructure is required to upgrade this structure to a point where posting is no longer required. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in poor condition with scour and erosion at both abutments. This scour and erosion should be repaired with rip rap. Minor cracks and spalls with exposed reinforcement steel in the concrete superstructure deck panels should be repaired to prevent corrosion of the reinforcement steel. A soil riding surface was present on this structure which further reduces its live load carrying capacity and should be removed.

***STRUCTURE ID 121-5119-0 / LOCATION ID 121-01529X-002.14N**
CR 1529, Cochran Road over Deep Creek
At the present time, Post this structure for 10 Tons H-Truck; 10 Tons Type 3 Truck; 14 Tons Timber Truck; 12 Tons HS-Truck and 15 Tons Type 3S2 Truck.
This structure requires posting due to the low original design capacity of the structure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. This bridge structure is in poor condition with minor corrosion which should be monitored. ***Due to re-evaluation of the structure, the posting capacity of this structure has been increased slightly. At the time of the inspection, this structure was posted with restrictive load limit signs. These signs may be revised to reflect the adjusted loads.***

***STRUCTURE ID 121-5120-0 / LOCATION ID 121-01529X-002.96N**
CR 1529, Cochran Road over Camp Creek
Post for 09 Tons, Type A Sign.
This structure requires posting due to the low original design capacity of the structure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. This bridge structure is in satisfactory condition. ***Due to re-evaluation of the structure, the posting capacity of this structure has been decreased. At the time of the inspection, the posting signs were incorrect. These signs are required and must be corrected.***

***STRUCTURE ID 121-5231-0 / LOCATION ID 121-01536X-001.63N**
CS 1536, Forrest Park Road over Southern Railroad
At the present time, Post this structure for 13 Tons H-Truck; 12 Tons Type 3 Truck; 17 Tons Timber Truck; 14 Tons HS-Truck and 21 Tons Type 3S2 Truck.
This structure requires posting due to the low original design capacity. A replacement structure is required to upgrade the load carrying capacity to a point where posting is no longer required. The following maintenance is recommended to maintain this structure at the current rating. This bridge structure is in good condition. The steel beams and bearings are corroded and should be cleaned and painted. The deck joints have failed and should be cleaned and sealed.

***STRUCTURE ID 121-5210-0 / LOCATION ID 121-01638X-000.25E**
CR 1638, Stacks Road over CSX Railroad
At the present time, Post this structure for 20 Tons H-Truck; 19 Tons Type 3 Truck and 24 Tons Timber Truck.
This structure requires posting due to overstress caused by the extra dead load of the 3.0 inch asphalt overlay. Any upgrade of the load carrying capacity would require removal of this overlay. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in satisfactory condition with corrosion of the steel substructure. The steel piling throughout the structure should be cleaned and painted. The void that has resulted under the cap and under the approach roadway should also be filled.

***STRUCTURE ID 121-5121-0 / LOCATION ID 121-01767X-000.03E**
CS 1767, Bankhead Avenue over Southern & CSX Railroad

This bridge structure was closed to vehicular traffic at the time of inspection and should remain closed until replaced. According to our records this structure has been closed since 2003.

STRUCTURE ID 121-0410-0 / LOCATION ID 121-01790X-003.11E
CS 1790, Decatur Street over M-9180 Boulevard

This bridge structure is in satisfactory condition with corrosion of the steel superstructure. The steel beams in span #2 should be cleaned and painted.

STRUCTURE ID 121-5186-0 / LOCATION ID 121-01790X-004.26E
CS 1790, DeKalb Avenue under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5237-0 / LOCATION ID 121-01814X-000.10S
CS 1814, North Angier Avenue under Conveyor Belt

This non-roadway conveyor belt structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5219-0 / LOCATION ID 121-01853X-000.03E
CS 1853, Linden Street under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5187-0 / LOCATION ID 121-01865X-000.20S
CR 1865, Kingsport Drive over Long Island Creek

This bridge structure is in satisfactory condition with items in need of repair. The stream bank at bent #3 has scoured and should be repaired with rip rap. The void beneath the cap of the northern abutment should also be filled. A properly designed bulkhead should be constructed at the northern abutment to prevent further loss of roadway fill and the possibility of additional settlement of the roadway. Concrete spalls in the superstructure panels have exposed the steel reinforcement . These spalls should be repaired to protect the reinforcement from corrosion.

STRUCTURE ID 121-5188-0 / LOCATION ID 121-01877X-000.14S
CR 1877, Phipps Road over CSX Railroad

This bridge structure is in good condition. The steel beams and bearings are corroded and should be cleaned and painted. The deck joints have failed and should be cleaned and sealed. The catch basins at both ends of the structure should be cleaned out to allow proper drainage.

STRUCTURE ID 121-5136-0 / LOCATION ID 121-01903X-000.54E
CS 1903, Jones Avenue under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 11'-03". At the present time, the city should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner. It was noted at the time of inspection that the tracks had been removed from this structure, and it may be in the best interest of the City to negotiate with the railroad for the removal of this structure.

STRUCTURE ID 121-5139-0 / LOCATION ID 121-01916X-000.06E
CS 1916, Jett Street under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5189-0 / LOCATION ID 121-01923X-000.96S
CS 1923, Sunset Avenue under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5208-0 / LOCATION ID 121-02018X-000.02N
CS 2018, Crossover under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5161-0 / LOCATION ID 121-02020X-000.21W
CS 2020, Church Street under CSX RR (50403A)

This non-roadway structure has been inspected for clearances only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 10'-08". At the present time, the county should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5270-0 / LOCATION ID 121-02038X-000.29S
CS 2038, Forsyth Street over CSX Railroad and parking lot

This bridge structure is in good condition. The steel beams in spans #5 through #7 are starting to corrode and should be cleaned and painted. The deck joints have failed and should be cleaned and sealed.

STRUCTURE ID 121-5163-0 / LOCATION ID 121-02042X-000.08W
CS 2042, Wall Street over Lower Wall St. & Parking Lot

This bridge structure is in fair condition with age deterioration of both the superstructure and deck. The majority of the concrete deck exhibits signs of extensive cracking and efflorescence and is covered with a variable depth asphalt riding surface that ranges from 4 to 8 inches in depth. The deck drains are clogged with debris that should be removed to allow proper drainage of the deck. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-5255-0 / LOCATION ID 121-02043X-000.50W
FAP 212-1, CR 2043, South Fulton Parkway EBL over CSX Railroad

This all concrete bridge structure is in good condition. Debris accumulated in the bridge gutters should be removed to allow proper drainage of the deck.

STRUCTURE ID 121-5254-0 / LOCATION ID 121-02043X-001.67W
FAP 212-1, CR 2043, South Fulton Highway over Wolf Creek Tributary

This bridge culvert is in good condition with no reported structural deficiencies. The channel bed scour at both ends of the structure should be monitored for signs of further degradation.

STRUCTURE ID 121-5253-0 / LOCATION ID 121-02043X-004.35W
FAP 212-1, CR 2043, South Fulton Highway WBL over Deep Creek

This all concrete bridge structure is in good condition. However, the deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-5252-0 / LOCATION ID 121-02043X-004.36W
FAP 212-1, CR 2043, South Fulton Highway EBL, Over Deep Creek

This all concrete bridge structure is in good condition. However, the deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-5316-0 / LOCATION ID 121-02043X-004.55W
Federal Aid Primary Route 2121, CR 2043, South Fulton Parkway Over Bear Creek

This bridge structure is in good condition with no reported deficiencies.

STRUCTURE ID 121-5267-0 / LOCATION ID 121-02043X-006.60W
FAP 212-1, CR 2043, South Fulton Parkway WBL, Over Line Creek

This all concrete bridge structure is in good condition but has items in need of repair. A void beneath the cap of both abutments should be filled. The deck joints at both abutments have failed and should be cleaned and sealed. Debris accumulated in the deck gutters should be removed to allow proper drainage of the deck.

STRUCTURE ID 121-5266-0 / LOCATION ID 121-02043X-006.61W
FAP 212-1, CR 2043, South Fulton Parkway EBL over Line Creek

This all concrete bridge structure is in good condition but has several items in need of repair. The void beneath both abutment caps should be filled. The deck joints at both abutments have failed and should be cleaned and sealed. Debris accumulated in the deck gutters should be removed to allow proper drainage of the deck. The catch basin at the western end of the structure is clogged with debris and should be cleaned out to allow proper drainage of the roadway.

STRUCTURE ID 121-5265-0 / LOCATION ID 121-02043X-008.28W
FAP 212-1, CR 2043, South Fulton Parkway over Pea Creek

This bridge culvert is in good condition, but the construction joints approximately 50 feet into the culvert from each end are open from 2 to 3 inches. The fill behind the exterior walls is beginning to erode. This void should be filled and the construction joint sealed to prevent further loss of fill material.

STRUCTURE ID 121-5175-0 / LOCATION ID 121-02044X-000.40S
CS 2044, Pryor Street over CSX Railroad

This bridge structure is in fair condition with the exception of the superstructure which is in poor condition. Beam #12 in span #6 has incurred significant collision damage and has a 4 to 6 inch sweep with a major bend in the lower flange. Both the City of Atlanta and the Railroad are aware of this deficiency and it is our understanding that the City is negotiating with the Railroad for the repair of this damage. It is strongly recommended that this damage be repaired as soon as possible. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-5221-0 / LOCATION ID 121-02046X-000.07E
CS 2046, Brotherton Street Under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5164-0 / LOCATION ID 121-02051X-000.43S
CS 2051, Butler Street under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5165-0 / LOCATION ID 121-02051X-000.45S
CS 2051, Butler Street under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5250-0 / LOCATION ID 121-02051X-000.46S
CS 2051, Jessie Hill, Jr. Drive under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5233-0 / LOCATION ID 121-02059X-000.05N
CS 2059, Equitable Place under Pedestrian Overpass

This non-roadway pedestrian structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5166-0 / LOCATION ID 121-02062X-000.02E
CS 2062, Thornton Avenue under CSX RR (50401L)

This non-roadway structure has been inspected for clearances only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 11'-03". At the present time, the county should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5167-0 / LOCATION ID 121-02063X-000.58S
CS 2063, Grant & Hilliard under Norfolk Southern Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 13'-09". At the present time, the city should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5232-0 / LOCATION ID 121-02080X-000.02S
CR 2080, Krog Street under Convyer Belt

This non-roadway conveyor belt structure was inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 14'-02". At the present time, the city should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5148-0 / LOCATION ID 121-02080X-000.29S
CR 2080, Estoria Street under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 12'-03". At the present time, the city should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5190-0 / LOCATION ID 121-02103X-000.45E
CS 2103, Fulton Terrace Street under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-0624-0 / LOCATION ID 121-02233X-002.14E
CR 2233, Windward Pkwy EBL over Camp Creek

This bridge structure is in good condition. The steel piles throughout the structure should be cleaned and painted. The piles at bent #2 should be further protected with reinforced concrete encasements extending from a point 2 feet below the mud line to a point 2 feet above normal water. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-0298-0 / LOCATION ID 121-02233X-002.15E
CR 2233, Windward Parkway WBL over Camp Creek

This bridge structure is in good condition but has corrosion of the steel substructure units. The steel piling throughout the structure should be cleaned and painted. The piles at bent #2 should be further protected with reinforced concrete encasements extending from a point 2 feet below the mud line to a point 2 feet above normal water. Voids under the eastern abutment should be repaired to protect the foundation piles. The deck joints throughout the structure have failed and should be cleaned and sealed.

***STRUCTURE ID 121-0629-0 / LOCATION ID 121-02233X-003.02E**
CR 2233, Windward Pkwy EBL over Big Creek
At the present time, Post this structure for 12 Tons H-Truck; 12 Tons Type 3 Truck and 16 Tons Timber Truck.

This structure requires posting due to insufficient pile capacity of the steel substructure. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in poor condition with corrosion and section loss of the steel substructure piles. The piles throughout the structure should be cleaned and painted. The piles at bent #3 should be further protected with reinforced concrete encasements that extend from a point 2 feet below the mud line to a point 2 feet above normal water. The deck joints throughout the structure have failed and should be cleaned and sealed. Concrete spalls with exposed reinforcement steel in the superstructure panels of spans #1 and #4 should be repaired to protect the steel from corrosion. ***If structural pile encasements were added at bent #3, load limit posting could be upgraded significantly.***

***STRUCTURE ID 121-0630-0 / LOCATION ID 121-02233X-003.03E**
CR 2233, Windward Pkwy WBL over Big Creek
At the present time, Post this structure for 12 Tons H-Truck; 12 Tons Type 3 Truck and 16 Tons Timber Truck.

This structure requires posting due to insufficient pile capacity of the steel substructure. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in poor condition with corrosion and section loss of the steel substructure piles. The steel piles throughout the structure should be cleaned, cover plated in areas of section loss and painted. The piles at bent #3 should be further protected with reinforced concrete encasements that extend from a point 2 feet below the mud line to a point 2 feet above normal water. The deck joints throughout the structure have failed and should be cleaned and sealed. ***If structural pile encasements were added at bent #3, load limit posting would be significantly upgraded.***

***STRUCTURE ID 121-5286-0 / LOCATION ID 121-02233X-003.73E**
CR 2233, Windward Parkway over Big Creek Tributary
At the present time, Post this structure for 13 Tons H-Truck; 17 Tons Type 3 Truck and 24 Tons Timber Truck.

This structure requires posting due to the excessive unbraced length of the piles at bent #3. The piles in bent #3 have a maximum unsupported length of 17 feet. Adequately designed sway bracing should be added to this bent. These piles should be further protected with reinforced concrete encasements extending from a point 2 feet below the mud line to a point 2 feet above normal water. If adequately designed lateral bracing were added to the piles of bent #3, and concrete encasements were added to bent #3, load limit posting for this structure would no longer be required. The following maintenance recommendations are provided to maintain this structure at the current rating. The piles are corroded and should be cleaned and painted. The deck joints have failed and should be cleaned and sealed.

STRUCTURE ID 121-5207-0 / LOCATION ID 121-02353X-000.01S
CS 2353, Sylvan Road under Marta Rail Line

This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

*STRUCTURE ID 121-5123-0 / LOCATION ID 121-02407X-000.11W
CS 2407, Nelson Street over Southern Railroad & Parking Lot

This bridge structure was closed to vehicular traffic at the time of inspection and should remain closed until replaced. According to our records this structure has been closed since 1993.

STRUCTURE ID 121-5168-0 / LOCATION ID 121-02429X-000.10E
CS 2429, Glenn Street under Norfolk Southern Railroad

This non-roadway railroad structure has been inspected for clearance purposes only. The minimum vertical clearance is substandard and requires posting. Our records indicate the minimum vertical clearance to be 10'-08". At the present time, the City should verify this clearance and post this structure in accordance with the Manual on Uniform Traffic Control Devices (current edition) Low Clearance Sign. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5234-0 / LOCATION ID 121-02488X-000.45N
CS 2488, North Stratford Road over Nancy Creek Tributary

This bridge culvert is in good condition. Up to 2.5 feet of scour at the outlet end is undermining the remaining wing wall and should be repaired with rip rap to prevent structural damage. An inlet wing wall has seperated from barrel #2 and should also be stabilized and repaired.

STRUCTURE ID 121-5192-0 / LOCATION ID 121-02490X-000.41N
CS 2490, North Ivy Road over Nancy Creek Tributary

This bridge culvert is in good condition. Up to 2.7 feet of scour at the inlet end of barrel #2 should be repaired with rip rap to prevent possible structural damage.

STRUCTURE ID 121-5193-0 / LOCATION ID 121-02490X-000.61N
CS 2490, North Ivy Road over Nancy Creek Tributary

This bridge culvert is in satisfactory condition with up to 2.0 feet of scour at the inlet end. This scour damage should be repaired with rip rap to prevent possible structural damage.

***STRUCTURE ID 121-5235-0 / LOCATION ID 121-02499X-000.16E**
CS 2499, Mountain Way Road over Nancy Creek Tributary
At the present time, Post this structure for 17 Tons H-Truck; 17 Tons Type 3 Truck and 20 Tons Timber Truck.
This structure requires posting due to insufficient flexural capacity of the steel superstructure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in good condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted.

***STRUCTURE ID 121-5125-0 / LOCATION ID 121-02509X-000.06E**
CS 2509, Lakemoore Drive over Nancy Creek Tributary
At the present time, Post this structure for 15 Tons H-Truck; 14 Tons Type 3 Truck; 18 Tons Timber Truck and 22 Tons Type 3S2 Truck.
This structure requires posting due to insufficient flexural capacity of the steel superstructure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. This bridge structure is in satisfactory condition with no reported deficiencies.

STRUCTURE ID 121-5126-0 / LOCATION ID 121-02518X-000.29N
CS 2518, Rickenbacker Drive over Nancy Creek
This bridge structure is in good condition with corrosion of the steel superstructure. The steel beams throughout the structure should be cleaned and painted. The deck joints throughout the structure have failed and should be cleaned and sealed. Drift has collected on the utility lines on the upstream side of the structure. This drift should be removed. The tree growing out of the joint at the south western wing wall should be removed.

STRUCTURE ID 121-5194-0 / LOCATION ID 121-02798X-000.02N
CS 2798, Westland Boulevard under Marta Rail Line
This non-roadway MARTA structure was inspected for clearance purposes only. The minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5236-0 / LOCATION ID 121-02822X-001.34S
CR 2822, Peyton Road over North Utoy Creek
This bridge structure is in good condition. The steel beams are corroded and should be cleaned and painted.

STRUCTURE ID 121-5217-0 / LOCATION ID 121-02836X-000.10E
CR 2836, Coles Way over Chattahoochee River Tributary
This all concrete bridge structure is in good condition with no reported serious structural defects. However, the deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-5287-0 / LOCATION ID 121-02856X-000.46N
CS 2856, Brownlee Road over Utoy Creek

This bridge structure is in good condition. The deck joints have failed and should be cleaned and sealed. Debris in the bridge gutters should be removed to allow proper drainage.

*STRUCTURE ID 121-5169-0 / LOCATION ID 121-02992X-000.66S
CS 2992, Adams Drive over South Utoy Creek

This bridge structure is not considered to be safe for live vehicular loading, and thus falls below standards as set forth in accordance with the Federal Law, Title 23, USC, and Federal Regulations, and should be closed until repairs or replacement can be made. At the time of the inspection this bridge culvert was closed due to failure of one of the southern wingwalls and erosion of the approach roadway. The roadway erosion should be repaired. The failed wingwall should be replaced. The inlet scour damage is 1.5 feet in depth, and the outlet scour is 3.0 feet deep. The culvert outlet has begun to undermine. Concrete aprons should be constructed at both the inlet and outlet ends of the structure and the aprons should be further protected with rip rap. The accumulated drift at the inlet end of the structure should be removed to reduce the further accumulation and the possibility of additional scour. ***Our records indicate that this structure is located on a school bus route. If this route is utilized by school bus traffic, this bridge should be upgraded to a 10 ton or better capacity. To accomplish this, the above noted repairs must be made.***

Please note that all structures requiring closing must be properly closed in accordance with the attached methods. In addition, appropriate advanced warning signs and barricades should be used. Please reference the Manual on Uniform Traffic Control Devices, current edition. Also, advanced warning signs should be used at the last intersection prior to each end of the structure.

At the time of the inspection, this structure was properly closed according to the approved closing alternatives.

STRUCTURE ID 121-5128-0 / LOCATION ID 121-02997X-000.15S
CS 2997, Harbin Road over South Utoy Creek

This bridge structure is in fair condition. Erosion behind one of the south wingwalls should be repaired.

*STRUCTURE ID 121-5134-0 / LOCATION ID 121-03079X-000.55E
CS 3079, Oxbo Road over Hog Waller Creek
At the present time, Post this structure for 19 Tons H-Truck; 19 Tons Type 3 Truck and 24 Tons Timber Truck.

This structure requires posting due to overstress caused by the extra dead load of the 2.5 inch asphalt overlay. Any upgrade of the load carrying capacity would require removal of this overlay. The following maintenance recommendations are provided to maintain this structure at the current rating. This bridge structure is in good condition. However, the accumulated drift at bent #2 should be removed.

STRUCTURE ID 121-5130-0 / LOCATION ID 121-03114X-000.20E
CS 3114, Charles Place over Hog Waller Creek

This bridge structure is in satisfactory condition. However, the steel piles throughout the structure are corroded and should be cleaned and painted. The deck joints have failed and should be cleaned and sealed.

STRUCTURE ID 121-5249-0 / LOCATION ID 121-03120X-000.17W
CS 3120, Alpine Drive over Hog Waller Creek

This bridge culvert is in good condition with no reported structural defects.

STRUCTURE ID 121-5170-0 / LOCATION ID 121-03125X-000.66E
CS 3125, Oak Drive over South River Tributary

This bridge culvert is in good condition. A crack in an upsteam wing wall should be repaired.

STRUCTURE ID 121-5263-0 / LOCATION ID 121-03204X-000.01N
CR 3204, Jones Road over Willeo Creek

This bridge structure is in good condition but has corrosion of the steel substructure piles. The steel piles throughout the structure should be cleaned and painted. Erosion under span #3 should also be repaired.

***STRUCTURE ID 121-5133-0 / LOCATION ID 121-03337X-000.09E**
CS 3337, Old Holcomb Bridge Road over Big Creek
At the present time, Post this structure for 10 Tons H-Truck; 09 Tons Type 3 Truck; 14 Tons Timber Truck; 12 Tons HS-Truck and 15 Tons Type 3S2 Truck.

This structure requires posting due to the low original design capacity of the structure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. The following maintenance recommendations are provided to maintain this structure at the current rating. The steel beams are corroded and should be cleaned and painted. The deck joints throughout the structure have failed and should be cleaned and sealed. The accumulated drift under the bridge should be removed. Vegetation growing in the vicinity of the structure should also be cut and removed. ***Due to re-evaluation of the structure, the posting capacity of this structure has been decreased. At the time of the inspection, the posting signs were incorrect. These signs are required and must be corrected.***

STRUCTURE ID 121-5172-0 / LOCATION ID 121-03470X-000.04S
CS 3470, Richard Russell over Parking Lot & Southern Railroad

This bridge structure is in good condition with no reported serious structural defects. The steel beams and caps are corroded and should be cleaned and painted. The deck joints throughout the structure have failed and should be cleaned and sealed.

STRUCTURE ID 121-5281-0 / LOCATION ID 121-04187X-001.30N
CR 4187, Oakley International Boulevard over Trickum Creek

This bridge structure is in good condition with no reported structural defects. However, the deck joints through out the structure have failed and should be cleaned and sealed.

***STRUCTURE ID 121-5197-0 / LOCATION ID 121-05016X-000.44S**
CS 5016, Stonewall Drive over Dixie Lake Tributary

At the time of the inspection, this structure was closed to traffic. Please notify the Georgia Department of Transportation, Office of Maintenance when the repairs or replacement have been completed.

STRUCTURE ID 121-5268-0 / LOCATION ID 121-06351X-000.30N
CS 6351, Desert Drive over Camp Creek

This all concrete bridge structure is in good condition, but the concrete encasement of pile #1 at bent #2 has undermined. This encasement should be extended downward to a point 2 feet below the existing mud line. The accumulated drift on the upstream side should also be removed.

***STRUCTURE ID 121-5198-0 / LOCATION ID 121-07001X-000.03N**
CS 7001 over Camp Creek

At the present time, Post this structure for 14 Tons H-Truck; 14 Tons Type 3 Truck; 17 Tons Timber Truck; 16 Tons HS-Truck and 23 Tons Type 3S2 Truck.

This structure requires posting due to insufficient flexural capacity of the steel superstructure. A replacement structure is required to upgrade this structure to a point where posting is no longer required. At the present time, no maintenance repairs are required to maintain this structure at the current rating.

STRUCTURE ID 121-0600-0 / LOCATION ID 121-07116X-000.77S
CS 7116, East Main Street over Virginia Avenue

This all concrete bridge structure is in good condition. However, the deck joint at the northern abutment has failed and should be cleaned and sealed.

STRUCTURE ID 121-5216-0 / LOCATION ID 121-07134X-000.24E
CS 7134, Lee Street under CSX Railroad

This non-roadway railroad structure was inspected for clearance purposes only. The existing minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5222-0 / LOCATION ID 121-07134X-000.32E
CS 7134, Lee Street under Marta

This non-roadway MARTA structure was inspected for clearance purposes only. The existing minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5223-0 / LOCATION ID 121-07134X-000.34E
CS 7134, Lee Street under Marta

This non-roadway MARTA structure was inspected for clearance purposes only. The existing minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5224-0 / LOCATION ID 121-07134X-000.35E
CS 7134, Lee Street under Marta

This non-roadway MARTA structure was inspected for clearance purposes only. The existing minimum vertical clearance does not require posting. Inspection of the structural components is the responsibility of the owner.

STRUCTURE ID 121-5247-0 / LOCATION ID 121-08021X-000.17N
CS 8021, International Boulevard over Flint River Tributary

This bridge culvert is in good condition. Drift accumulated across the culvert inlet should be removed to prevent possible scour damage.

STRUCTURE ID 121-5323-0 / LOCATION ID 121-08022X-000.02S
CR 8022, North Commerce Drive Over Camp Creek

This bridge structure is in good condition with no reported deficiencies. The deck joint at bent #2 has failed and should be cleaned and sealed.

STRUCTURE ID 121-0473-0 / LOCATION ID 121-20065X-000.01N
CS 20065, Service Road To Omni over International Boulevard

This bridge structure is in good condition with the exception of the superstructure that is in satisfactory condition due to extensive corrosion. The steel beams and bearings throughout the structure should be cleaned and painted. Settlement at the southern abutment has exposed portions of the foundation piling. These piles should either be covered or painted to protect them from corrosion. The deck drains throughout the structure are clogged with debris and should be cleaned out to allow proper drainage of the deck.

STRUCTURE ID 121-0474-0 / LOCATION ID 121-20065X-000.02N
CS 20065, International Boulevard Viaduct at The Georgia Dome

This bridge structure is in fair condition with corrosion of the steel components. The steel beams and bearings should be cleaned and painted. A spall in the cap at bent #14 beneath beam #2 and at bent #15 beneath beams #2 and #3 should be repaired. The deck drains throughout the structure are clogged with debris and should be cleaned out to allow proper drainage. The deck joints throughout the structure have failed and should be cleaned and sealed. ***At the time of the inspection, a portion of this structure was under construction. Please notify the Georgia Department of Transportation, Office of Maintenance, when this construction is complete.***

APPENDIX D

Summary of Forecasts by Land Use Scenario

The quantity, location and type of growth that Milton will see from 2010 to 2030 is a key issue for the City of Milton's Transportation Plan. In order to inform the City's transportation choices, Bleakly Advisory Group considered population, household and employment estimates for 2030 for the City of Milton for five scenarios.

- Scenario 1 – Atlanta Regional Commission Growth Estimates
- Scenario 2 – Directed Growth
- Scenario 3 – No Growth
- Scenario 4 – Slow Growth
- Scenario 5 – Slow and Directed Growth

Purpose

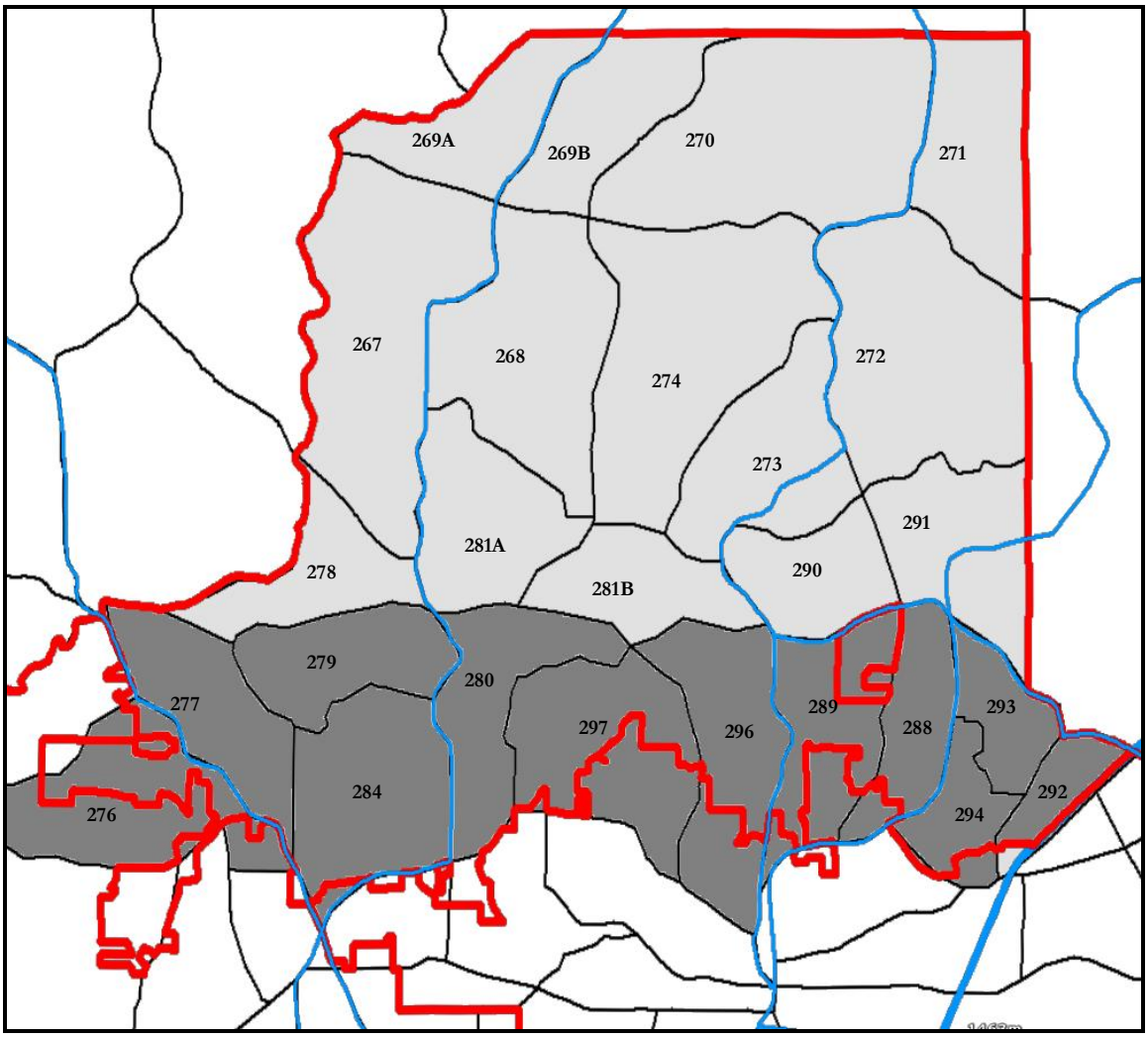
The purpose of this analysis was two-fold. The first purpose was to provide household, population and employment data to be used by the transportation model to determine future traffic patterns. The second purpose was to provide the City with an understanding of the potential growth that may be seen under several land use policies, and the impacts that growth would have on the location and density of households, population and employment in 2030.

Methodology

The following estimates are based on the Atlanta Regional Commission's forecasts by Transportation Analysis Zone (TAZ). The study area includes 24 Transportation Analysis Zones (TAZs) which are approximately equivalent to the designated project study area, all of which are in Fulton County. The study area is consistent with the area and methodology described in the Baseline Conditions Report.

267	280
268	281
269	284
270	288
271	289
272	290
273	291
274	292
276	293
277	294
278	296
279	297

For the purpose of this analysis, the City of Milton was divided into North Milton and South Milton. In the map below, South Milton is indicated by the darker shading. While both are defined by 12 TAZs, North Milton is considerably larger, containing 16,600 acres compared to 9,789 acres in South Milton.



D-1: City of Milton TAZs

The Atlanta Regional Commission has prepared estimates of Households, Population and Employment by TAZ for the years 2010 and 2030. For this analysis, 2010 was considered the base year. For the 2030 forecasts, five scenarios were analyzed:

Scenario 1 – Atlanta Regional Commission Growth Estimates
This scenario assumes that growth continues throughout the City of Milton at rates similar to the 1980s to 2000s and presents ARC growth estimates for population, households and employment for the year 2030.

Scenario 2 – Directed Growth
This scenario assumes that the City of Milton will enact land use policies designed to focus future growth in the southern portion of the City. It distributed 75% of the ARC growth estimates to the southern region of the City of Milton while the northern portion of Milton received 25% of this growth.

Scenario 3 – No Growth
This scenario assumes that there is no population, household or employment growth in the City of Milton and that the population, households and employment in the City of Milton will remain unchanged from 2010 to 2030. Because the ARC requires that their forecasted growth be accounted for, Milton's forecasted growth was redistributed to a Market Area defined as 103 TAZs surrounding Milton.

Scenario 4 – Slow Growth
This scenario assumes that the City of Milton enacts land use policies designed to slow growth significantly. Forecasted population, households and employment were calculated by applying a 1.08% compound annual growth rate to the ARC's 2010 estimates. (The 1.08% growth rate is based on the City of Milton Comprehensive Plan's forecasted population growth.) The remainder of the ARC projected growth for the Milton TAZs was redistributed to the market area surrounding Milton.

Scenario 5 – Directed Slow Growth
This scenario, a combination of Scenarios 2 and 4, assumes that the City of Milton enacts land use policies designed to slow growth significantly and to direct that growth in the southern portion of Milton. Forecasted population, households and employment were calculated by applying a 1.08% compound annual growth rate to the ARC's 2010 estimates. Then, 25% of this growth was distributed among the TAZs in north Milton and 75% of this growth wsa distributed among the TAZs in south Milton. The remainder of the ARC projected growth for the Milton TAZs was redistributed to the market area surrounding Milton.

The Impact of Land Use

ARC's 2010 Estimates
According to the ARC, in 2010 there will be an estimated 11,699 households in the City of Milton. Of these households, 5,247, or 44.8% are located in North Milton and 6,452, or 55.2% are located in South Milton. The ARC estimates that there will be 31,425 persons living in Milton in 2010, with 15,297 (48.7%) living in North Milton and 16,128 (51.3%) living in South Milton. In terms of employment, the ARC estimates that in 2010, there will be 16,965 jobs in Milton, with 3,860 jobs (22.8%) in North Milton and 13,105 jobs (77.2%) in South Milton.

In terms of density, these estimates indicate an overall density of 0.44 households per acre. North Milton has a density of 0.32 households per acre and South Milton has a household density of 0.66 households per acre. Overall population density is 1.19 people per acre with 0.92 people per acre in North Milton and 1.65 people per acre in South Milton. In Milton, 2010 employment density is estimated to be 0.64 jobs per acre, with 0.23 jobs per acre in North Milton and 1.34 jobs per acre in

South Milton. Overall, the jobs/housing balance in the City of Milton is 1.45 jobs per household. In North Milton the jobs/housing balance is 0.74 and in South Milton, the jobs/housing balance is approximately double, with 1.45 jobs per household.

D-2: Atlanta Regional Commission's 2010 Estimates by TAZ

Area	TAZ	Area (Acres)	Households	HH/ Acre	Population	Pop/Acre	Employment	Emp/Acre	Emp./ HH
North Milton	267	1,959	322	0.16	979	0.50	234	0.12	0.73
North Milton	268	1,522	293	0.19	994	0.65	102	0.07	0.35
North Milton	269	789	109	0.14	277	0.35	104	0.13	0.95
North Milton	270	2,118	538	0.25	1,544	0.73	245	0.12	0.46
North Milton	271	2,116	572	0.27	1,426	0.67	206	0.10	0.36
North Milton	272	1,836	720	0.39	2,235	1.22	160	0.09	0.22
North Milton	273	1,048	279	0.27	826	0.79	211	0.20	0.76
North Milton	274	1,976	448	0.23	1,348	0.68	297	0.15	0.66
North Milton	278	678	53	0.08	141	0.21	371	0.55	7.00
North Milton	281	952	150	0.16	460	0.48	46	0.05	0.31
North Milton	290	648	672	1.04	1,858	2.87	830	1.28	1.24
North Milton	291	958	1,091	1.14	3,209	3.35	1,054	1.10	0.97
South Milton	276	1,260	260	0.21	698	0.55	205	0.16	0.79
South Milton	277	824	239	0.29	745	0.90	72	0.09	0.30
South Milton	279	751	136	0.18	408	0.54	59	0.08	0.43
South Milton	280	862	172	0.20	480	0.56	404	0.47	2.35
South Milton	284	1,138	335	0.29	1,081	0.95	265	0.23	0.79
South Milton	288	592	126	0.21	347	0.59	1,237	2.09	9.82
South Milton	289	903	1,004	1.11	2,674	2.96	1,187	1.31	1.18
South Milton	292	339	30	0.09	69	0.20	368	1.09	12.27
South Milton	293	437	1,868	4.27	3,449	7.89	955	2.19	0.51
South Milton	294	429	226	0.53	441	1.03	5,076	11.83	22.46
South Milton	296	1,065	1,412	1.33	3,963	3.72	1,428	1.34	1.01
South Milton	297	1,189	644	0.54	1,773	1.49	1,849	1.56	2.87
North Milton		16,600	5,247	0.32	15,297	0.92	3,860	0.23	0.74
South Milton		9,789	6,452	0.66	16,128	1.65	13,105	1.34	2.03
Milton Total		26,389	11,699	0.44	31,425	1.19	16,965	0.64	1.45
Milton Market Area		166,363	99,610	0.60	277,506	1.67	176,209	1.06	1.77

Source: Atlanta Regional Commission/Bleakly Advisory Group

Scenario 1 - ARC's 2030 Estimates

Based on recent growth trends in the City of Milton and North Fulton County, the ARC forecasts that the City of Milton will grow by 5,763 households in the 2010 to 2030 period, from 11,699 households to 17,462 households, a CAGR of 2.0%. The ARC forecasts that the City will increase from a population of 31,425 to 44,906 over the same period, an increase of 13,481 residents and a CAGR of 1.8%. In terms of employment, the ARC forecasts, that the City's employment will increase from 16,965 jobs in 2010 to 33,702 jobs in 2030, an increase of 16,737 jobs or 3.5% per year.

D-3: Scenario 1 – ARC's 2030 Forecast Summary

	North Milton	South Milton	Total
Households 2010	5,247	6,452	11,699
Households 2030	8,733	8,729	17,462
Total Growth	3,486	2,277	5,763
CAGR	2.58%	1.52%	2.02%
Population 2010	15,297	16,128	31,425
Population 2030	24,031	20,875	44,906
Total Growth	8,734	4,747	13,481
CAGR	2.28%	1.30%	1.80%
Employment 2010	3,860	13,105	16,965
Employment 2030	8,255	25,447	33,702
Total Growth	4,395	12,342	16,737
CAGR	3.87%	3.37%	3.49%

The ARC forecasts that North Milton will grow from 5,247 households in 2010 to 8,733 households in 2030, an increase of 3,486 households or 2.6% per year. In South Milton, households would increase from 6,452 to 8,729, an increase of 2,277 or 1.5% per year. The ARC's forecast indicates that the population in North Milton would increase from 15,297 to 24,031, an increase of 8,734 or 2.3% per year while the population of South Milton would increase from 16,128 to 20,875, or 4,747 persons and a rate of 1.3% per year. The ARC forecasts that employment in North Milton will grow from 3,860 jobs in 2010 to 8,255 jobs in 2030, an increase of 4,395 jobs or 3.9% per year while South Milton will grow from 13,105 jobs in 2010 to 25,447 jobs in 2030, an increase of 12,342 or 3.4% per year.

In terms of density, this forecasted growth would result in an overall density of 0.66 households per acre in the City of Milton. Household growth would result in a density of 0.53 households per acre in North Milton and 0.89 in South Milton. The ARC's forecasted population growth would result in a population density of 1.70 in Milton overall, with a population density of 1.45 in North Milton and 2.13 in South Milton. In terms of employment, the growth forecasted by the ARC would result in 1.28 jobs per acre in the City of Milton, with a density of 0.50 jobs per acre in North Milton and 2.60 jobs per acre in South Milton. This forecasted growth would result in an overall jobs/housing balance of 1.93 jobs per household in Milton overall, with a balance of 0.95 in North Milton and 2.92 in South Milton.

D-4: Scenario 1 - Atlanta Regional Commission's 2030 Forecasts by TAZ

Area	TAZ	Area (Acres)	Households	HH/ Acre	Population	Pop/Acre	Employment	Emp/Acre	Emp./ HH
North Milton	267	1,959	624	0.32	1,761	0.90	552	0.28	0.88
North Milton	268	1,522	540	0.35	1,708	1.12	262	0.17	0.49
North Milton	269	789	218	0.28	526	0.67	268	0.34	1.23
North Milton	270	2,118	1,007	0.48	2,690	1.27	508	0.24	0.50
North Milton	271	2,116	1,251	0.59	2,923	1.38	393	0.19	0.31
North Milton	272	1,836	1,246	0.68	3,728	2.03	327	0.18	0.26
North Milton	273	1,048	511	0.49	1,423	1.36	451	0.43	0.88
North Milton	274	1,976	839	0.42	2,345	1.19	656	0.33	0.78
North Milton	278	678	111	0.16	264	0.39	801	1.18	7.22
North Milton	281	952	288	0.30	832	0.87	119	0.13	0.41
North Milton	290	648	815	1.26	2,152	3.32	1,730	2.67	2.12
North Milton	291	958	1,283	1.34	3,679	3.84	2,188	2.28	1.71
South Milton	276	1,260	494	0.39	1,243	0.99	380	0.30	0.77
South Milton	277	824	424	0.51	1,269	1.54	174	0.21	0.41
South Milton	279	751	267	0.36	733	0.98	144	0.19	0.54
South Milton	280	862	322	0.37	859	1.00	551	0.64	1.71
South Milton	284	1,138	615	0.54	1,832	1.61	558	0.49	0.91
South Milton	288	592	211	0.36	495	0.84	2,602	4.40	12.33
South Milton	289	903	1,225	1.36	3,108	3.44	2,669	2.96	2.18
South Milton	292	339	59	0.17	127	0.37	860	2.54	14.58
South Milton	293	437	2,274	5.20	3,924	8.98	1,934	4.43	0.85
South Milton	294	429	305	0.71	568	1.32	8,431	19.65	27.64
South Milton	296	1,065	1,703	1.60	4,563	4.28	3,119	2.93	1.83
South Milton	297	1,189	830	0.70	2,154	1.81	4,025	3.39	4.85
North Milton		16,600	8,733	0.53	24,031	1.45	8,255	0.50	0.95
South Milton		9,789	8,729	0.89	20,875	2.13	25,447	2.60	2.92
Milton Total		26,389	17,462	0.66	44,906	1.70	33,702	1.28	1.93
Milton Market Area		166,363	149,188	0.90	391,663	2.35	274,925	1.65	1.84

Source: Atlanta Regional Commission/Bleakly Advisory Group

Scenario 2 – Directed Growth

As stated above, Scenario 2 assumes that the City of Milton grows in accordance with the Atlanta Regional Commissions growth rates, but that the City enacts land use policies which direct growth to the South Milton TAZs. For the purposes of this analysis, it is assumed that these policies would result in 25% of Milton's growth to occur in North Milton and 75% of Milton's growth to occur in South Milton.

Under Scenario 2, the overall growth for the City of Milton would be the same as discussed in Scenario 1 above. Households would increase from 11,699 households in 2010 to 17,462 households in 2030, an increase of 5,763 households. The City would increase from a population of 31,425 to 44,906 over the

same period, an increase of 13,481 residents and a CAGR of 1.8%. Total employment would increase from 16,955 jobs in 2010 to 33,702 jobs in 2030, an increase of 16,737 jobs or 3.5% per year.

D-5: Scenario 2 – Directed Growth Summary

	North Milton	South Milton	Total
Households 2010	5,247	6,452	11,699
Households 2030	6,693	10,769	17,462
Total Growth	1,446	4,317	5,763
CAGR	1.22%	2.59%	2.02%
Population 2010	15,297	16,128	31,425
Population 2030	18,720	26,186	44,906
Total Growth	3,423	10,058	13,481
CAGR	1.01%	2.45%	1.80%
Employment 2010	3,860	13,105	16,965
Employment 2030	8,041	25,661	33,702
Total Growth	4,181	12,556	16,737
CAGR	3.74%	3.42%	3.49%

However, if the City takes an active approach in focusing growth in the southern portion of the City, the distribution of this growth will be significantly different than the ARC's forecast. Under Scenario 2, North Milton will grow from 5,247 households in 2010 to 6,693 households in 2030, an increase of 1,446 households or 1.2% per year. In South Milton, households would increase from 6,452 to 10,769, an increase of 4,317 households or 1.5% per year. In terms of population, North Milton would increase from 15,297 to 18,720 residents, an increase of 3,423 or 1.0% per year while the population of South Milton would increase from 16,128 to 26,186, or 10,058 persons and a rate of 2.5% per year. Under Scenario 2, employment in North Milton will grow from 3,860 jobs in 2010 to 8,041 jobs in 2030, an increase of 4,181 jobs or 3.7% per year while South Milton will grow from 13,105 jobs in 2010 to 25,661 jobs in 2030, an increase of 12,556 or 3.4% per year. (Because the ARC's forecast assumed that most employment growth would be in South Milton, Scenario 2 forecasts for employment are not significantly different than the ARC's growth estimates.)

In terms of density, this forecasted growth would result in an overall density of 0.66 households per acre in the City of Milton. Household growth would result in a density of 0.40 households per acre in North Milton and 1.10 in South Milton. Population density would be of 1.70 in Milton overall, with a population density of 1.13 in North Milton and 2.68 in South Milton. In terms of employment, the growth forecasted would result in 1.28 jobs per acre in the City of Milton, with a density of 0.48 jobs per acre in North Milton and 2.62 jobs per acre in South Milton. This forecasted growth would result in an overall jobs/housing balance of 1.93 jobs per household in Milton overall, with a balance of 1.20 in North Milton and 2.38 in South Milton.

D-6: Scenario 2 – Growth by TAZ

Area	TAZ	Area (Acres)	Households	HH/ Acre	Population	Pop/Acre	Employment	Emp/Acre	Emp./ HH
North Milton	267	1,959	425	0.22	1,204	0.61	386	0.20	0.91
North Milton	268	1,522	373	0.25	1,214	0.80	180	0.12	0.48
North Milton	269	789	156	0.20	364	0.46	183	0.23	1.17
North Milton	270	2,118	715	0.34	1,936	0.91	370	0.17	0.52
North Milton	271	2,116	798	0.38	2,107	1.00	281	0.13	0.35
North Milton	272	1,836	896	0.49	2,660	1.45	242	0.13	0.27
North Milton	273	1,048	359	0.34	1,011	0.96	356	0.34	0.99
North Milton	274	1,976	579	0.29	1,640	0.83	485	0.25	0.84
North Milton	278	678	74	0.11	177	0.26	559	0.82	7.55
North Milton	281	952	194	0.20	556	0.58	80	0.08	0.41
North Milton	290	648	819	1.26	2,164	3.34	2,182	3.37	2.66
North Milton	291	958	1,305	1.36	3,687	3.85	2,737	2.86	2.10
South Milton	276	1,260	495	0.39	1,273	1.01	448	0.36	0.91
South Milton	277	824	449	0.54	1,350	1.64	219	0.27	0.49
South Milton	279	751	278	0.37	795	1.06	180	0.24	0.65
South Milton	280	862	335	0.39	886	1.03	911	1.06	2.72
South Milton	284	1,138	630	0.55	1,902	1.67	696	0.61	1.10
South Milton	288	592	225	0.38	565	0.95	2,474	4.18	11.00
South Milton	289	903	1,609	1.78	4,186	4.64	2,469	2.73	1.53
South Milton	292	339	59	0.17	130	0.38	776	2.29	13.15
South Milton	293	437	3,002	6.87	5,396	12.35	1,920	4.39	0.64
South Milton	294	429	374	0.87	724	1.69	8,853	20.64	23.67
South Milton	296	1,065	2,261	2.12	6,183	5.81	2,918	2.74	1.29
South Milton	297	1,189	1,052	0.88	2,796	2.35	3,797	3.19	3.61
North Milton		**16,600**	**6,693**	**0.40**	**18,720**	**1.13**	**8,041**	**0.48**	**1.20**
South Milton		**9,789**	**10,769**	**1.10**	**26,186**	**2.68**	**25,661**	**2.62**	**2.38**
Milton Total		**26,389**	**17,462**	**0.66**	**44,906**	**1.70**	**33,702**	**1.28**	**1.93**
Milton Market Area		**166,363**	**149,188**	**0.90**	**391,663**	**2.35**	**274,925**	**1.65**	**1.84**

Source: Atlanta Regional Commission/Bleakly Advisory Group

Scenario 3 – No Growth

Under Scenario 3, the City of Milton would enact strict land use policies to limit growth. Therefore, Scenario 3 assumes that the population, household and employment estimates remain at the ARC's 2010 forecast level.

However, for the purposes of the transportation model, the growth that the ARC forecasted for Milton was distributed among the surrounding TAZs. This was necessary to keep the inputs of the transportation model consistent but is also reflects the idea that if growth is not allowed in Milton, market demand for Milton will most likely shift to the surrounding areas, to Roswell, Alpharetta and

Cherokee and Forsyth Counties. Therefore, this growth will still impact the City of Milton's transportation infrastructure and traffic, as demonstrated in Appendix A.

Scenario 4 – Slow Growth

The Comprehensive Plan prepared by the City in 2008 forecasts a significantly slower growth rate than the ARC. As discussed above, the ARC forecasts that the City of Milton's population will increase from 31,425 to 44,906 residents from 2010 to 2030, an increase of 13,481 residents and a CAGR of 1.80%. In the City's Comp Plan, the population is forecasted to increase from 25,422 persons in 2008 to 31,500 in 2028, an increase of 6,078 residents or 1.08% CAGR. (The Comp Plan does not have a forecast for households or employment.)

The Atlanta Regional Commissions higher forecasts are due to three factors:

1. The ARC numbers are based on TAZ geographies, some of which fall outside of the City and include areas outside of Milton, particularly parts of Alpharetta.
2. The ARC forecasts are for later years (2010 vs. 2008 and 2030 vs. 2028).
3. The ARC forecasts assume a faster rate of growth than the City of Milton.

D-7: Population Estimates from the City of Milton Comprehensive Plan

Population 2008	25,422
Population 2028	31,500
Total Growth	6,078
CAGR	1.08%

Source: 2008 City of Milton Comprehensive Plan

Therefore, Scenario 4 assumes that the City of Milton will grow at 1.08%, a slower rate than the ARC's forecast and one that is consistent with the Comprehensive Plan. However, it is assumed that this growth will continue to respond to market forces unencumbered by land use policy designed to direct growth and will be distributed throughout both North and South Milton.

Under Scenario 4, the City of Milton will grow by 2,797 households in the 2010 to 2030 period, from 11,699 households to 14,496 households. North Milton would grow by 1,254 households, to a total of 6,501 households while South Milton would grow by 1,543 households, to a total of 7,995 households in 2030. Using the same growth rate (1.08%), the City of Milton's population would increase from the ARC's 2010 estimate of 31,425 to 38,936 residents, an increase of 7,511. North Milton would grow by 3,656 residents, to a total of 18,953 in 2030 while South Milton would increase by 3,855 residents, to a total of 19,983. In terms of employment, a 1.08% growth rate would increase total employment in the City from 16,965 to 21,020, an increase of 4,055 jobs. Of this growth, 922 jobs would be located in North Milton, bringing the total employment in 2030 to 4,782 while 3,133 of these jobs would be located in South Milton, bringing the total employment to 16,238.

D-8: Scenario 4 – Slow Growth Summary			
	North Milton	**South Milton**	**Total**
Households 2010	5,247	6,452	11,699
Households 2030	6,501	7,995	14,496
Total Growth	1,254	1,543	2,797
CAGR	1.08%	1.08%	1.08%
Population 2010	15,297	16,128	31,425
Population 2030	18,953	19,983	38,936
Total Growth	3,656	3,855	7,511
CAGR	1.08%	1.08%	1.08%
Employment 2010	3,860	13,105	16,965
Employment 2030	4,782	16,238	21,020
Total Growth	922	3,133	4,055
CAGR	1.08%	1.08%	1.08%

In terms of density, this forecasted growth would result in an overall density of 0.55 households per acre in the City of Milton. Household growth would result in a density of 0.39 households per acre in North Milton and 0.82 in South Milton. This slower rate of population growth would result in a population density of 1.48 in Milton overall, with a population density of 1.14 in North Milton and 2.04 in South Milton. In terms of employment, Scenario 4 would result in 0.80 jobs per acre in the City of Milton, with a density of .29 jobs per acre in North Milton and 1.66 jobs per acre in South Milton. This forecasted growth would result in an overall jobs/housing balance of 1.45 jobs per household in Milton overall, with a balance of 0.74 in North Milton and 2.03 in South Milton.

D-9: Scenario 4 – Slow Growth by TAZ									
Area	**TAZ**	**Area (Acres)**	**Households**	**HH/ Acre**	**Population**	**Pop/Acre**	**Employment**	**Emp/Acre**	**Emp./ HH**
North Milton	267	1,959	398	0.20	1,213	0.62	290	0.15	0.73
North Milton	268	1,522	363	0.24	1,232	0.81	126	0.08	0.35
North Milton	269	789	135	0.17	343	0.43	129	0.16	0.96
North Milton	270	2,118	667	0.31	1,913	0.90	304	0.14	0.46
North Milton	271	2,116	709	0.34	1,767	0.84	255	0.12	0.36
North Milton	272	1,836	892	0.49	2,769	1.51	198	0.11	0.22
North Milton	273	1,048	346	0.33	1,023	0.98	261	0.25	0.75
North Milton	274	1,976	554	0.28	1,670	0.85	368	0.19	0.66
North Milton	278	678	66	0.10	175	0.26	460	0.68	6.97
North Milton	281	952	186	0.20	570	0.60	57	0.06	0.31
North Milton	290	648	833	1.29	2,302	3.55	1,028	1.59	1.23
North Milton	291	958	1,352	1.41	3,976	4.15	1,306	1.36	0.97
South Milton	276	1,260	322	0.26	865	0.69	254	0.20	0.79
South Milton	277	824	296	0.36	923	1.12	89	0.11	0.30
South Milton	279	751	169	0.23	506	0.67	73	0.10	0.43
South Milton	280	862	213	0.25	595	0.69	501	0.58	2.35
South Milton	284	1,138	415	0.36	1,339	1.18	328	0.29	0.79
South Milton	288	592	156	0.26	430	0.73	1,533	2.59	9.83
South Milton	289	903	1,244	1.38	3,313	3.67	1,471	1.63	1.18
South Milton	292	339	37	0.11	85	0.25	456	1.35	12.32
South Milton	293	437	2,315	5.30	4,274	9.78	1,183	2.71	0.51
South Milton	294	429	280	0.65	546	1.27	6,290	14.66	22.46
South Milton	296	1,065	1,750	1.64	4,910	4.61	1,769	1.66	1.01
South Milton	297	1,189	798	0.67	2,197	1.85	2,291	1.93	2.87
North Milton		**16,600**	**6,501**	**0.39**	**18,953**	**1.14**	**4,782**	**0.29**	**0.74**
South Milton		**9,789**	**7,995**	**0.82**	**19,983**	**2.04**	**16,238**	**1.66**	**2.03**
Milton Total		**26,389**	**14,496**	**0.55**	**38,936**	**1.48**	**21,020**	**0.80**	**1.45**
Milton Market Area		**166,363**	**152,154**	**0.91**	**397,633**	**2.39**	**287,607**	**1.73**	**1.89**

Source: Atlanta Regional Commission/Bleakly Advisory Group

Scenario 5 – Directed Slow Growth

Scenario 5 calculates the growth that could occur if the City of Milton enacted land use policies to restrict growth to the 1.08% CAGR rate used in Scenario 4 and discussed above, as well as land use policies designed to direct growth in the southern portion of Milton, as discussed in Scenario 2. Scenario 5 also assumes that the result of this directed growth would be that 25% of future growth would occur in North Milton while 75% of future growth would occur in South Milton.

As in Scenario 4 discussed above, Scenario 5 would result in the City of Milton growing by 2,797 households in the 2010 to 2030 period, from 11,699 households to 14,496 households. However, as a result of directed land use policies, 25% of this growth, or 699 households would occur in North Milton,

increasing North Milton's households from 5,247 in 2010 to 5,946 in 2030, an increase of 0.63% per year. South Milton would increase from 6,452 households in 2010 to 8,550 households in 2030, an increase of 1.42% per year.

D-10: Scenario 5 – Slow Directed Growth Summary

	North Milton	South Milton	Total
Households 2010	5,247	6,452	11,699
Households 2030	5,946	8,550	14,496
Total Growth	699	2,098	2,797
CAGR	0.63%	1.42%	1.08%
Population 2010	15,297	16,128	31,425
Population 2030	17,175	21,763	38,938
Total Growth	1,878	5,635	7,513
CAGR	0.58%	1.51%	1.08%
Employment 2010	3,860	13,105	16,965
Employment 2030	4,874	16,147	21,021
Total Growth	1,014	3,042	4,056
CAGR	1.17%	1.05%	1.08%

Under Scenario 5, the City of Milton's population would increase from the ARC's 2010 estimate of 31,425 to 38,938 residents, an increase of 7,513[1]. North Milton would grow by 1,878 residents, to a total of 17,175 in 2030 while South Milton would increase by 5,635 residents, to a total of 21,763 in 2030.

In terms of employment, the City of Milton would increase total employment in the City from 16,965 to 21,021, an increase of 4,056 jobs. (See footnote.) Of this growth, 1,014 jobs would be located in North Milton, bringing the total employment in 2030 to 4,784 while 3,042 of these jobs would be located in South Milton, bringing the total employment to 16,147.

[1] This is slightly different than Scenario 4 due to rounding.

D-11: Scenario 5 – Slow Directed Growth by TAZ

Area	TAZ	Area (Acres)	Households	HH/ Acre	Population	Pop/Acre	Employment	Emp/Acre	Emp./ HH
North Milton	267	1,959	365	0.19	1,099	0.56	295	0.15	0.81
North Milton	268	1,522	332	0.22	1,117	0.73	129	0.08	0.39
North Milton	269	789	124	0.16	311	0.39	131	0.17	1.06
North Milton	270	2,118	610	0.29	1,734	0.82	309	0.15	0.51
North Milton	271	2,116	648	0.31	1,602	0.76	261	0.12	0.40
North Milton	272	1,836	816	0.44	2,509	1.37	202	0.11	0.25
North Milton	273	1,048	316	0.30	927	0.88	266	0.25	0.84
North Milton	274	1,976	507	0.26	1,513	0.77	375	0.19	0.74
North Milton	278	678	60	0.09	158	0.23	468	0.69	7.80
North Milton	281	952	170	0.18	516	0.54	58	0.06	0.34
North Milton	290	648	762	1.18	2,086	3.22	1,049	1.62	1.38
North Milton	291	958	1,236	1.29	3,603	3.76	1,331	1.39	1.08
South Milton	276	1,260	345	0.27	942	0.75	253	0.20	0.73
South Milton	277	824	317	0.38	1,005	1.22	89	0.11	0.28
South Milton	279	751	181	0.24	551	0.73	73	0.10	0.40
South Milton	280	862	228	0.26	648	0.75	498	0.58	2.18
South Milton	284	1,138	444	0.39	1,459	1.28	327	0.29	0.74
South Milton	288	592	167	0.28	468	0.79	1,523	2.57	9.12
South Milton	289	903	1,330	1.47	3,608	4.00	1,463	1.62	1.10
South Milton	292	339	40	0.12	93	0.27	453	1.34	11.33
South Milton	293	437	2,475	5.66	4,654	10.65	1,177	2.69	0.48
South Milton	294	429	299	0.70	595	1.39	6,254	14.58	20.92
South Milton	296	1,065	1,871	1.76	5,348	5.02	1,759	1.65	0.94
South Milton	297	1,189	853	0.72	2,392	2.01	2,278	1.92	2.67
North Milton		**16,600**	**5,946**	**0.36**	**17,175**	**1.03**	**4,874**	**0.29**	**0.82**
South Milton		**9,789**	**8,550**	**0.87**	**21,763**	**2.22**	**16,147**	**1.65**	**1.89**
Milton Total		**26,389**	**14,496**	**0.55**	**38,938**	**1.48**	**21,021**	**0.80**	**1.45**
Milton Market Area		**166,363**	**152,154**	**0.91**	**397,631**	**2.39**	**287,606**	**1.73**	**1.89**

Source: Atlanta Regional Commission/Bleakly Advisory Group

Conclusion

As shown below, land use policies designed to control the rate and location of Milton's growth could have a significant impact on the future of Milton, particularly in regards to infrastructure needs like transportation. As the City of Milton continues to prepare its Transportation Plan, land use policies should be considered, in particular with regard to the following.

D-12: Summary of Forecasts by Land Use

Area	Area (Acres)	Households	HH/ Acre	Population	Pop/Acre	Employment	Emp/Acre	Emp./ HH
ARC 2010								
North Milton	16,600	5,247	0.32	15,297	0.92	3,860	0.23	0.74
South Milton	9,789	6,452	0.66	16,128	1.65	13,105	1.34	2.03
Milton Total	26,389	11,699	0.44	31,425	1.19	16,965	0.64	1.45
Scenario 1								
North Milton	16,600	8,733	0.53	24,031	1.45	8,255	0.50	0.95
South Milton	9,789	8,729	0.89	20,875	2.13	25,447	2.60	2.92
Milton Total	26,389	17,462	0.66	44,906	1.70	33,702	1.28	1.93
Scenario 2								
North Milton	16,600	6,693	0.40	18,720	1.13	8,041	0.48	1.20
South Milton	9,789	10,769	1.10	26,186	2.68	25,661	2.62	2.38
Milton Total	26,389	17,462	0.66	44,906	1.70	33,702	1.28	1.93
Scenario 3								
North Milton	16,600	5,247	0.32	15,297	0.92	3,860	0.23	0.74
South Milton	9,789	6,452	0.66	16,128	1.65	13,105	1.34	2.03
Milton Total	26,389	11,699	0.44	31,425	1.19	16,965	0.64	1.45
Scenario 4								
North Milton	16,600	6,501	0.39	18,953	1.14	4,782	0.29	0.74
South Milton	9,789	7,995	0.82	19,983	2.04	16,238	1.66	2.03
Milton Total	26,389	14,496	0.55	38,936	1.48	21,020	0.80	1.45
Scenario 5								
North Milton	16,600	5,946	0.36	17,175	1.03	4,874	0.29	0.82
South Milton	9,789	8,550	0.87	21,763	2.22	16,147	1.65	1.89
Milton Total	26,389	14,496	0.55	38,938	1.48	21,021	0.80	1.45

Atlanta Regional Commission Forecasts vs. City of Milton Comprehensive Plan

Both the City of Milton, through their Comprehensive Plan, and the Atlanta Regional Commission have prepared forecasts for the future population of the City of Milton. As discussed above, the Atlanta Regional Commissions higher forecasts are due to three factors:

1. The ARC numbers are based on TAZ geographies, some of which fall outside of the City and include areas outside of Milton, particularly parts of Alpharetta.
2. The ARC forecasts are for later years (2010 vs. 2008 and 2030 vs. 2028).
3. The ARC forecasts assume a faster rate of growth than the City of Milton.

Therefore, according to the ARC, the potential for growth in the City of Milton is significantly higher than that discussed in the City of Milton Comprehensive Plan. The City of Milton should analyze their zoning and land use control policies to ensure that the pace and location of growth is in accordance with the goals of the City of Milton and its citizens.

Residential Development in the Pipeline

It should be noted that according to the City of Milton Planning Department, there are currently 1,468 subdivided lots which could have residential units built in the near-term. This represents 25.5% of the ARC's projected household growth for the 20 year period. Assuming the households have 2.57 persons per household, these new residential units could increase the population of the City of Milton by 3,775 persons. This growth represents 28.0% of the ARC's population forecast and 62.1% of the City of Milton's Comprehensive Plan population forecast for the next 20 years.

Due to the current economic and real estate climate, determining the timeframe for actual build out of these residential units is very difficult. However, the City of Milton should keep these units in mind when considering the pace of potential future development, particularly in regard to the "slow growth" and "no growth" land use scenarios.

Transportation Impacts of "Slow Growth" and "No Growth"

Maintaining the unique rural nature of the City of Milton is an important goal for the City and its citizens. However, it is important to consider that limiting growth within the City of Milton will not prevent transportation problems within the City. The City's location, with quick access to regional transportation infrastructure and its proximity to employment centers will continue to be a draw for growth. If the City of Milton discourages growth within their borders, this growth will likely occur in the areas directly surrounding Milton and will continue to impact traffic and other transportation issues within the City of Milton.

Employment Growth in the City of Milton

The ARC's forecasts for the City of Milton estimate an annual growth rate for employment of 3.5% which is a significantly faster pace than their estimates for household or population growth, at 1.8% and 2.0%, respectively. This indicates that the ARC anticipates that the City of Milton could become an important employment center, increasing from 1.4 jobs per household in 2010 to 1.9 jobs per household in 2030. If the City of Milton's employment base doubles over the next 20 years, the City will need to accommodate the transportation needs of employees entering the City, both from GA 400 and from areas to northwest of the City. If this employment growth occurs, the City of Milton will no longer be a bedroom community, but an active employment center with different transportation considerations.

Conclusion

The City of Milton has the potential for strong growth in population, households and employment over the next 20 years. Despite the current economic downturn, long-term market demand will continue to exert development pressure on the City of Milton. In the long-term, growth in the City of Milton will not be limited by market factors but rather by land use policies and regulations. These land use policies have the potential to direct and limit growth in the City of Milton, impacting the future transportation

needs of the City. Therefore, investment in transportation improvements within the City needs to be influenced by land use policies and the City's plan for the location and quantity of future development within their borders.