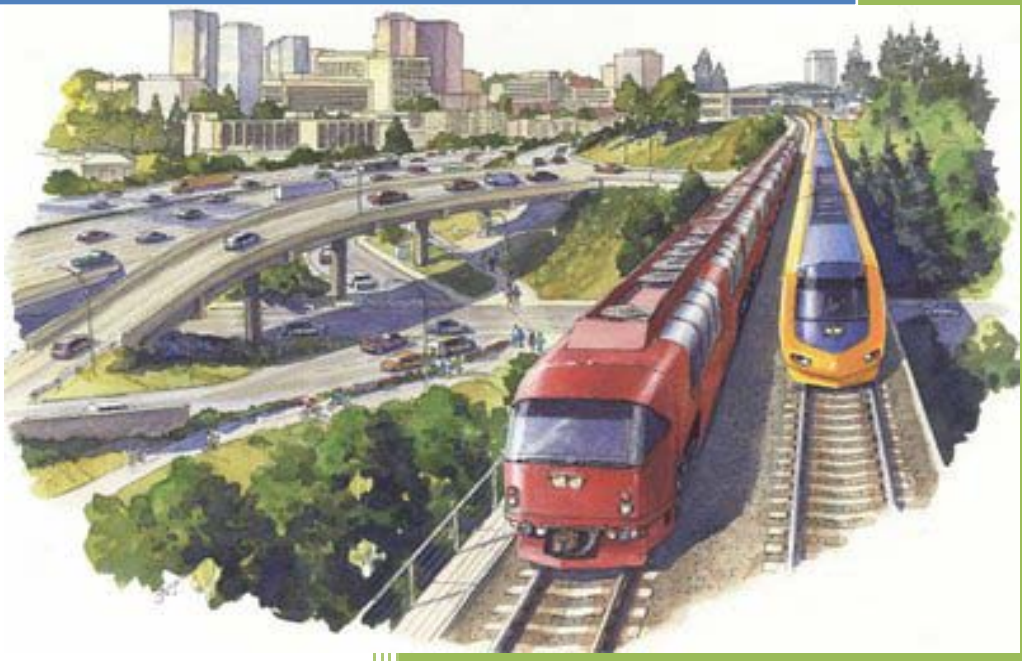
ATLANTA REGION PLAN 2040

Chapter 4 – Investing Strategically in Transportation



Contents

Strategically Investing

In crafting an investment program for the PLAN 2040 RTP, ARC considered a number of important, but often competing, questions:

- How much does the region invest in the maintenance, system efficiency and expansion of the regional transportation system when needs exceed available revenue?
- What are the trade-offs of investing in one transportation priority over another?
- How should ARC consider specific project performance characteristics in assembling a package of investments to address the plan's various goals?

PLAN 2040 must consider the trade-offs of investing in one transportation priority rather than another

As discussed in Chapter 3, ARC identifies the investment plan in a systematic way, starting with investment tradeoff discussions among transportation partners and stakeholders, followed by a performance assessment of individual projects. Chapter 4 presents PLAN 2040 RTP investment strategies, highlighting the vision of the individual programs and projects identified in Appendix A.

An effective investment strategy for the PLAN 2040 RTP identifies a transportation system that operates at a regionally significant scale and influences the region's long-term growth, development, and quality of life. These regional transportation systems are part of larger systems that connect to other parts of the nation, as well as part of local systems that provide access to community resources. A rational, coordinated, and clearly defined approach to funding and programming for regionally significant systems, across all levels of government and all modes of transportation, is essential to the implementation of PLAN 2040.

Financially Constraining the PLAN 2040 RTP and the Aspirational Vision

The PLAN 2040 RTP includes two elements:

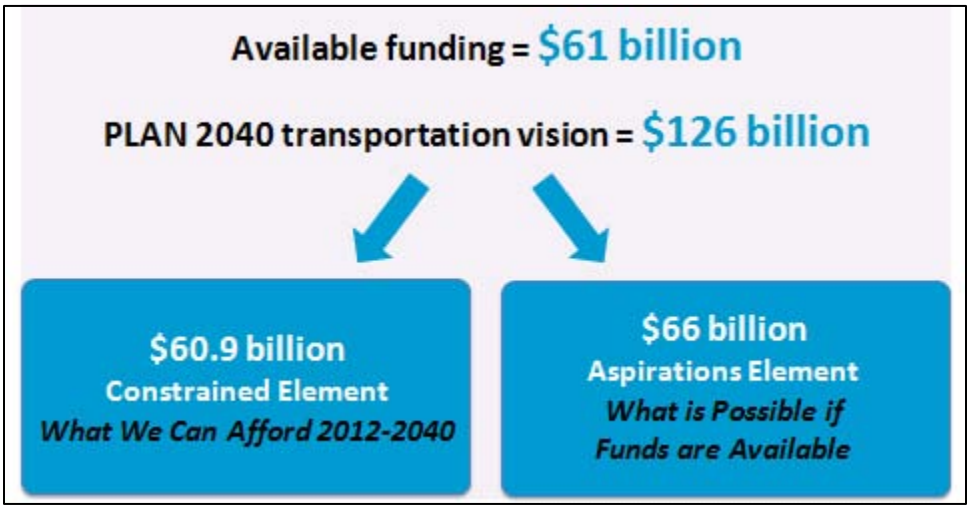
- The first, a financially constrained element, reflects the investments the region can afford between 2012 and 2040.
- The second element, the Aspirations Plan, includes other regional investments if funding were available by 2040. The Aspirations Plan helps the region and state understand the level of unmet needs while also providing a future transportation vision.

Federal planning requirements restrict projects in the RTP to only those that can be afforded within forecast revenue streams

As illustrated in Figure 4-1, the overall cost for the financially constrained RTP is approximately $60.9 billion (current year 2012 dollars). PLAN 2040's cost in year of expenditure (YOE) dollars is $83.6 billion. As rule, all costs in this Chapter are provided in current year 2012 dollars, unless indicated otherwise.

An additional $66 billion of major roadway and transit expansion projects, as well as roadway, bridge, and transit preservation and operating needs, are also included in the Aspirations Plan. The total cost of identified strategies in Plan 2040 is $126 billion (rounded).

Figure 4-1: Relationship between the Constrained Element and the Aspirations Element

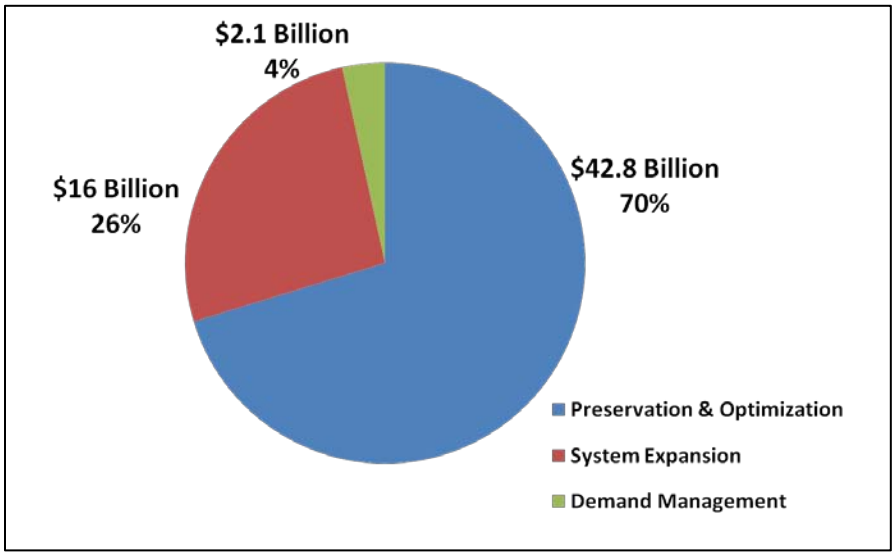


Implementing the PLAN 2040 RTP through Investment Priority Areas

For the financially constrained element of PLAN 2040, three priority areas, totaling $60.9 billion (current year 2012 dollars), are used to organize and present investment recommendations for the RTP (see Figure 4-2):

- Infrastructure Modernization – Infrastructure Modernization is the largest portion of PLAN 2040 investments at 70%, or $42.8 billion. These projects and programs maintain, operate, and improve the efficiency of existing infrastructure. Example projects include road and bridge resurfacing, replacement of buses and rail cars, and retiming of traffic signals. The region's policy makers, at a July 2010 retreat, directed ARC staff to increase this category's emphasis in PLAN 2040.
- Demand Management - The Demand Management category includes other plan elements, with the focused outcome to reduce and shorten vehicular trips within the region. Demand Management funding is $2.1 billion, or 4% of the RTP. Example Demand Management projects include bicycle and pedestrian facilities, employer services, ridesharing, and special studies.
- System Expansion – The System Expansion category comprises the second largest portion of PLAN 2040 investments at 26%, or $16 billion. The Atlanta region added the third most people of any region in the last decade, and is expected to add another 3 million by 2040, creating the need to respond to growth. Example projects in this category include roadway widening, reconstructed interchanges, managed lanes, and fixed-guideway transit expansions.

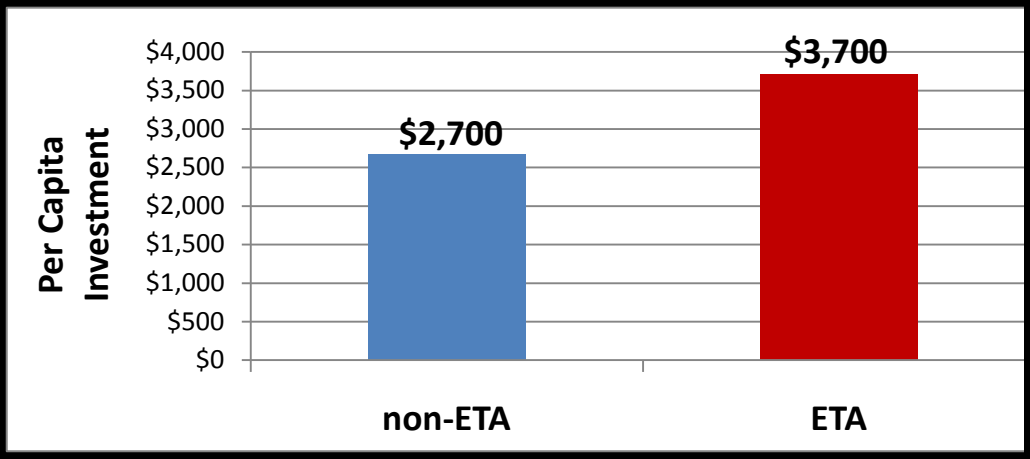
Figure 4-2: Investment Priority Areas



Appendix A identifies project-specific capital and operational projects. However, many expenses and costs associated with operations and maintenance do not lend themselves to listing as line items in a database. For example, per SAFETEA-LU planning requirements, PLAN 2040 must account for yearly maintenance costs to resurface regional roadways each year.

PLAN 2040 Supports Social Sustainability Objectives

PLAN 2040 provides an equitable strategy to address regional needs, with per capita investment in Equitable Target Areas (ETA) being higher than those in other areas. ETA's are locations in the region that are the most likely to have transportation disadvantaged residents.



Infrastructure Modernization

Modernizing transportation infrastructure requires the expenditure of 70% of total PLAN 2040 resources, an increase of 11% from the previous RTP, Envision6

PLAN 2040's highest regional priority is placed on Infrastructure Modernization. A major emphasis shift has evolved in PLAN 2040, with regional stakeholders recognizing the need to adequately maintain and operate existing transportation facilities. Examples of these project types include resurfacing roads and streets and operating the regional transit network.

At the July 2010 ARC Board retreat, regional policy makers instructed that additional funds be allocated to infrastructure modernization in PLAN 2040. Based on detailed infrastructure analysis, PLAN 2040 allocates sufficient funds to maintain 70% of roadway and bridges on the RSTS in good condition by 2040. The financially unconstrained aspirations plan maintains 95% of roads and bridges in good condition.

Infrastructure Modernization comprises 70% of the RTP, or $42.8 billion. Appendix A identifies specific maintenance and operational projects and program funding categories for specific maintenance and operational projects, serving as placeholders for the future projects for which PLAN 2040 does not currently identify. Future TIPs will depict actual projects funded out of the program ategories. System-wide maintenance and operational costs are in Appendix A.

Maintaining Systems in a State of Good Repair

The population and economic growth discussed in Chapter 2 was possible in large part because of the region's extensive roadway and transit network. This network is a tremendous resource for the region and is currently in excellent condition for roads and bridges. However, as this infrastructure ages, the cost of maintaining it will increase.

As more money is spent on maintaining existing roads and transit, there is less available for addressing other transportation needs. To better understand the financial implications of this aging infrastructure, ARC analyzed the physical conditions of the region's pavement, bridges, and transit infrastructure. While there are significant unknowns associated with projecting transportation infrastructure conditions into the future, this type of analysis informs the allocation of limited resources over the plan horizon.

Road and Bridge Infrastructure Modernization

$560 million of road and bridge modernization projects are in included in the FY 2012-2017 TIP. The amount of needs, however, greatly exceeds available revenues.

Currently, approximately 95 percent of RSTS pavement is in good condition. This condition level is well above the national average for roadways in urban areas. For example, in 2006 approximately 73 percent of pavements in urban areas throughout the U.S. met this definition of "good." In general, deficient pavements are noticeable by the traveling public and require significant work.

The deficient thresholds vary by roadway functional class. For example, the threshold used for this analysis for urban interstates is roughly equivalent to a GDOT Pavement Condition Evaluation System (PACES) rating of 68. PACES ratings are reported on a 100-point scale. GDOT recommends that a section of pavement be resurfaced when it reaches a PACES rating of 70.

Based on an analysis of bridges in the region, the current condition level is about 95 percent good. Again, this value is above the national average. In 2006, approximately 90 percent of all bridges in U.S. met this definition of good. "Good" condition is defined based on whether or not a bridge is classified as Structural Deficient (SD). Bridges that are not classified as SD are considered to be in "good" condition. An SD classification does not imply that a bridge is unsafe. Rather, it implies that a bridge has structural needs and requires substantial work.

Pavement conditions on the RSTS have been projected into the future using an FHWA tool called the Highway Economic Requirement System – State Version (HERS-ST). Bridge conditions in the region have also been projected into the future using an FHWA tool called the National Bridge Inventory Analysis System (NBIAS).

System preservation analysis conducted as part of PLAN 2040 indicates that $24 billion is needed to maintain roads and bridges at today's levels. PLAN 2040 increases infrastructure modernization funding to 70% of the total plan, providing $16.5 billion in road and bridge preservation. However, this funding level is inadequate to maintain existing condition levels. An additional $8 billion of road and bridge preservation programs are included in the financially unconstrained aspirations plan.

Fast Fact:

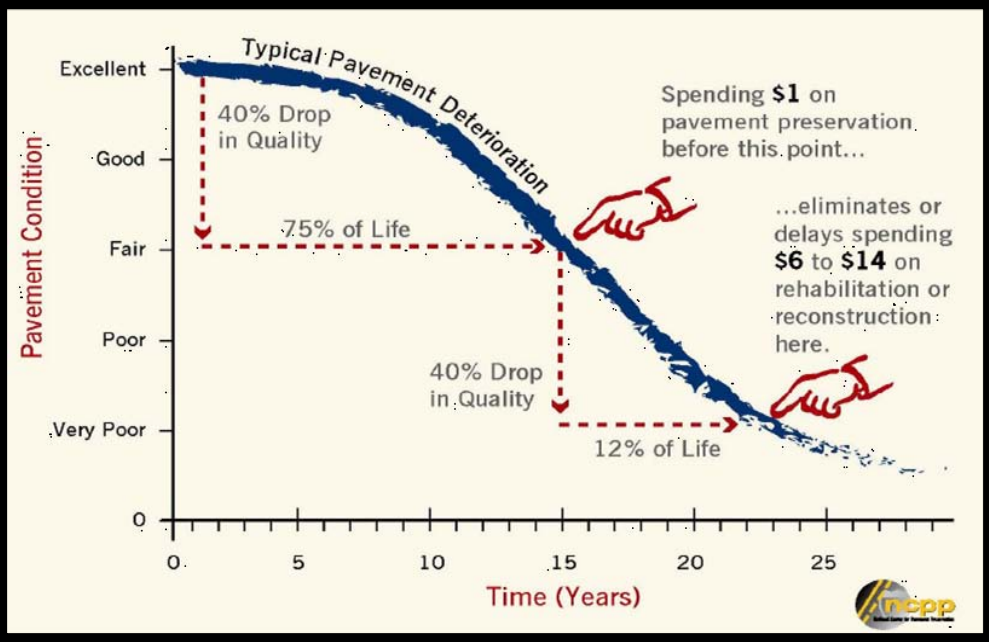
Percent of Pavement and Bridges in Good Condition

Today: 95%

PLAN 2040 Constrained: 70%

Why timely funding for infrastructure preservation is critical.

Deferring maintenance costs ultimately results in unnecessarily higher long-range costs to maintain facilities. For example, delays in maintaining pavement lead to higher costs. As illustrated in the figure, for each $1 spent before pavement quality drops below "fair" condition later saves from $6 to $14 dollars in major rehabilitation work. This example, while for road pavement, is applicable to other categories such as transit structures.



Transit Infrastructure Modernization

Maintaining the region's bus and rail systems in a State of Good Repair is essential if public transportation systems are to provide safe and reliable service to thousands of daily riders. Transit State of Good Repair includes measuring the condition of transit capital assets, prioritizing local transit re-investment decisions and preventive maintenance practices.

While roadway-related infrastructure has a longer history developing existing metrics, such as pavement ratings and bridge sufficiency, transit research is underway to identify similar metrics. FTA is leading national efforts to address the State of Good Repair

by collaborating with transit providers on needed research. MARTA is one of the nation's leaders in developing improved asset management systems, receiving a $1.3 million grant in 2010 to develop an asset management system to track the condition of the agency's fleet, facilities, and equipment.

Almost $240 million in federal rail modernization funds are included in the FY 2012-2017 TIP, supporting the region's existing transit infrastructure.

PLAN 2040 places continued emphasis on supporting roadway and transit preservation. $22.8 billion is provided to replace buses and rail cars, support operations, and upgrade supportive infrastructure. PLAN 2040 assumes that existing core transit services for MARTA and other transit systems will be maintained by meeting core funding needs. It also assumes that the 50-50 restriction for use of MARTA sales tax receipts (50 percent must be used for operations and the other 50 percent for capital) will continue to be lifted in the future, based on past action by the Georgia Legislature.

Over the past two years, regional transit operators have implemented cost efficiencies, including major service reductions. These actions have reduced operating costs, leading to a more sustainable financial structure.

An example of the increasing need to keep the transit system in good repair is the Brady Mobility Facility. Used to operate and maintain MARTA's paratransit fleet, it was built in 1974 and it has not undergone significant renovation since that time.

Maximizing System Performance through Technology

The Atlanta region is the 11th most congested region in the nation for travel delay, according to data compiled by the Texas Transportation Institute. The effects of this congestion on our daily lives — and on the overall regional economy — are significant and costly. Individuals pay with the time that is lost while stuck in traffic, and businesses lose productivity and revenues as their employees take longer and longer to travel to work.

PLAN 2040 focuses $3.6 billion in investment on programs such the Regional Traffic Signal Timing Program. Funding is provided to continue projects such as the signal timing program, which has upgraded over 80 traffic signal systems, consisting of over 900 signalized intersections, resulting in a benefit-to-cost ratio of 16 to 1.

Opportunities to relieve congestion are challenging, owing to several key factors. The Atlanta region's interstates are now a mature system, with capacity increases possible at only a limited number of locations – primarily congested interstate bottlenecks such as where two interstates come together. Finances in today's economy are constrained, and adequate funding for large transportation projects is often not available due to competing needs and rising construction costs. The challenge is to maximize system performance through innovative, cost-effective strategies, and thereby reduce the need for new, large-scale capital investments.

Regional management and operations strategies are targeted to optimize the performance of existing transportation infrastructure. These strategies include expansion of regional ITS systems, enhancing traffic incident management, and traffic signal coordination. These strategies improve mobility, improve access to information for travelers, reduce traveler delays, and enhance public safety and security.

Through $3.6 billion of investments, PLAN 2040 includes several important system optimization programs:

- ITS Operations and Support
- HERO Operations and Support
- Maintenance of ATMS Equipment
- ATMS: System Integration and Navigator Development
- Regional Traffic Signal Optimization Project

Keeping Goods Moving

The Atlanta region is a global leader in freight and logistics, forming a key component of the economy's economic base. The region is the business and distribution center of the Southeast, with the nation's fifth-largest concentration of supply chain employment and 103,000+ jobs. The region's freight industry supports economic development throughout the Southeast:

$75 million is invested in the freight improvement program in the FY 2012-2017 TIP. Freight movement is a critical component of the transportation network. In Austell, Norfolk Southern' Whitaker Intermodal Terminal is the largest intermodal yard east of the Mississippi.

- **Air** - Home to the world's most traveled airport, Hartsfield-Jackson Atlanta International, with more than 2,600 daily takeoffs and landings. Hartsfield-Jackson is ranked 12th in U.S. air cargo traffic.
- **Ground** - The region is one of five U.S. cities served by three major interstate highways. More than 80% of the United States' commercial and consumer markets can be reached within two truckload delivery days. The region is ranked 6th in ground freight movement in U.S.
- **Rail** - Access to the most extensive rail system in the Southeast is provided with 4,900 miles in Georgia. Georgia is ranked 6th in rail intermodal O & D traffic.
- **Sea** - The region benefits being only 250 miles to the Port of Savannah, the fastest growing and fourth-largest container port in the U.S.

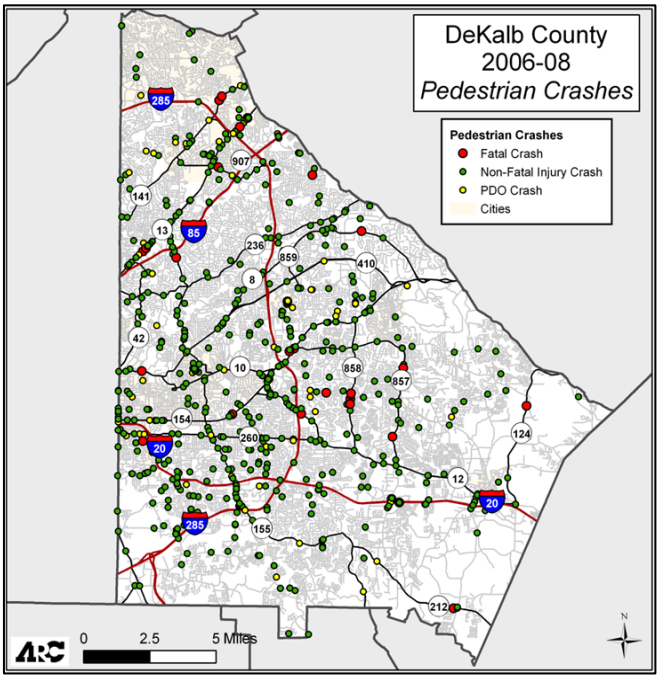
Freight is vital to the regional economy and is central to the Atlanta region's growth. ARC undertakes major transportation planning work in many areas including freight. The main objective of ARC's freight planning effort is to develop a framework for facilitating and enhancing freight mobility and goods movement in the region, improving the region's economic competitiveness, and minimizing environmental and community impacts. ARC completed the Atlanta Region Freight Mobility Plan and Atlanta Region Strategic Truck Route Master Plan, outlining a vision for freight.

PLAN 2040 includes a new funding program geared towards improving freight mobility in and through the Atlanta region through lower cost, quick fix improvements. Examples include improving intersections and railroad crossings, signal timing and other ITS, access management, and truck passing lanes. This program is funded at a minimum of $75 million between 2014-2017, with projects for this funding to be selected in 2012.

In addition, other improvements to roadways accomplished through preservation, optimization, and expansion also benefit the movement of goods in and through the Atlanta region.

Providing a Safe and Secure Transportation Network

Safety



State and local partners closely monitor the location of pedestrian crashes are to identify potential strategies. As illustrated in DeKalb County, these crashes tend to have specific patterns along major corridors.

A traffic accident takes place every 2.8 minutes across the MPO planning area, costing the region $4.7 billion a year, and contributing to more than half of traffic congestion. ARC closely coordinates with GDOT and the Governor's Office of Highway Safety to identify and fund needed safety projects.

ARC closely monitors collision hot spots and high-crash intersections to better understand the relationship between crashes and congested roadways. By closely monitoring how many, how severe, what kind and where motor vehicle crashes happen on the region's roadways, information can be used to help local, state and federal agencies pinpoint high-risk locations, identify contributing factors and determine roadway safety needs. Crashes involving pedestrians, bicyclists and commercial vehicles are also examined.

PLAN 2040 includes several dedicated funding program to address safety needs. These programs are designed to improve safety for all modes, including pedestrians, bicyclists, trucks, cars, and transit. A new PLAN 2040 program, the General Purpose Roadway Operations and Safety Program, will allow new projects to be funded starting in FY 2014 to address crash hot spots. Supplementing existing safety initiatives such as the Railroad & Highway Protection Device Program, a minimum of $50 million in additional funding will address regional needs.

Additional funding programs also improve the conditions of bicyclists and pedestrians. A new $50 million Last Mile Connectivity Program is included in the FY 2012-2017 TIP to fund projects that improve safety at high-crash locations. This program is focused on improving access to transit facilities.

The FY 2012-2017 TIP includes a $230 million roadway safety program funding to address high crash locations in the region.

PLAN 2040 supports the Georgia Strategic Highway Safety Plan.

Addressing safety needs is a core foundation of PLAN 2040. PLAN 2040 includes a variety of safety programs addressing all modes. The State of Georgia, through the planning activities of GDOT and the Governor's Office of Highway Safety (GOHS), has a coordinated approach to identifying safety needs and projects. PLAN 2040 supports the priority goals of the Highway Safety Plan (HSP). These goals establish outcomes for highway safety:

- Increase the rate of observed safety belt use from baseline 89.6% in 2008 to 91% by the end of FFY 2010 for drivers and front seat outboard passengers.
- Reduce the alcohol related fatality rate (BAC = .08+) from estimated 2008 baseline of 0.38 fatalities (416) per 100 million VMT to 0.37 (404) per 100 million VMT (based on 110,290 million VMT).
- Reduce the percentage of speed related fatal crashes from baseline 21% in 2008 to 19% by the end of FFY 2010.
- Reduce the percentage of pedestrian related fatal crashes from baseline 9.8% (146) in 2008 to 9.7% by end of FFY 2010.
- Continue implementation of the Strategic Highway Safety Plan with all roadway safety stakeholders in Georgia.

ARC closely works with GDOT to incorporate projects in the FY 2012-2017 TIP that support the HSP. Based on analysis of crash data, projects are selected for funding. Recognizing the need to respond to crash hot spots in the future, on-going funding programs are designed to meet future safety needs. These programs address all modes, including bicyclists and pedestrians.

Security

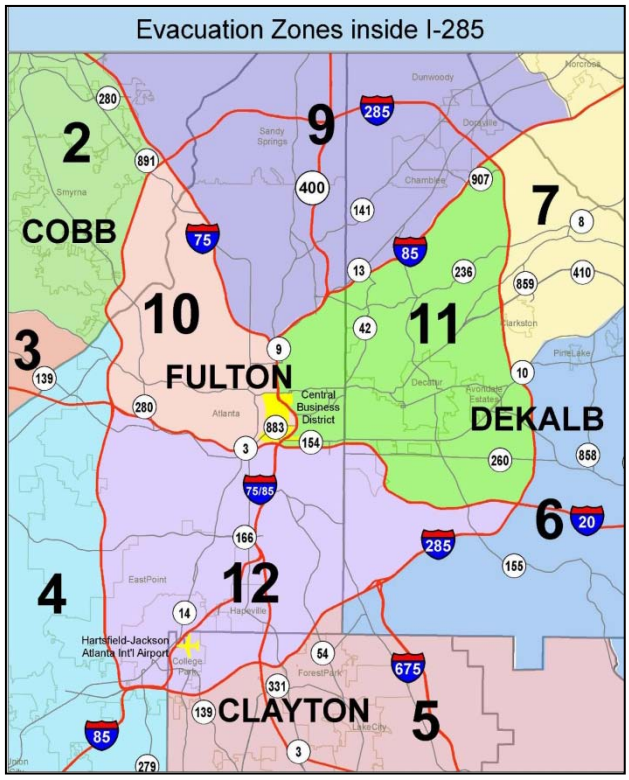
ARC considers security planning in many efforts, including the preparation of the Atlanta Regional Evacuation Coordination Plan.

Security planning, a relatively new federal planning requirement, is a central element of ARC's overall planning efforts. Since 2008, ARC and regional partners have developed working relationships to address regional security needs. Specific focus in on developing evacuation plans for the region, with a detailed evacuation plan prepared in 2009 and follow-up work underway.

As part of the Regional Evacuation Plan, ARC and regional partners identified evacuation zones and pinpointed at-risk populations, with the final outcome being development of regional evacuation routes. Regional policy makers provided guidance to this process, including identification of suitable facilities to address various evacuation scenarios.

A second phase of this security planning effort is underway, to better understand the transportation network enhancements needed to implement recommendations. This effort has been closely tied to the development of the Regional Thoroughfare Network, including coordination with implementing evacuation routes.

Evacuation Zones are identified to assist in security planning. Parts of the region, such as those inside of I-285, are assigned to an evacuation zone to guide decision-makers in the event of a security event.



Demand Management

Taking Bold Steps toward Focused Growth through Livable Centers

PLAN 2040 supports the Livable Centers Initiative program with $320 million in funding. Featured as Case Study on FTA's Livability Website, the LCI program contributes to reduced vehicle trips and emissions.

Capitalizing on the region wide momentum generated through a decade of support for livable communities and tighter integration of transportation and land-use planning, PLAN 2040 continues efforts to focus growth in established communities. ARC and other Regional Commissions within the 18 county MPO are updating regional growth visions, resulting in a new Unified Growth Policy Map and Development Guide, forming a regional blueprint that expresses growth desires for the Atlanta region.

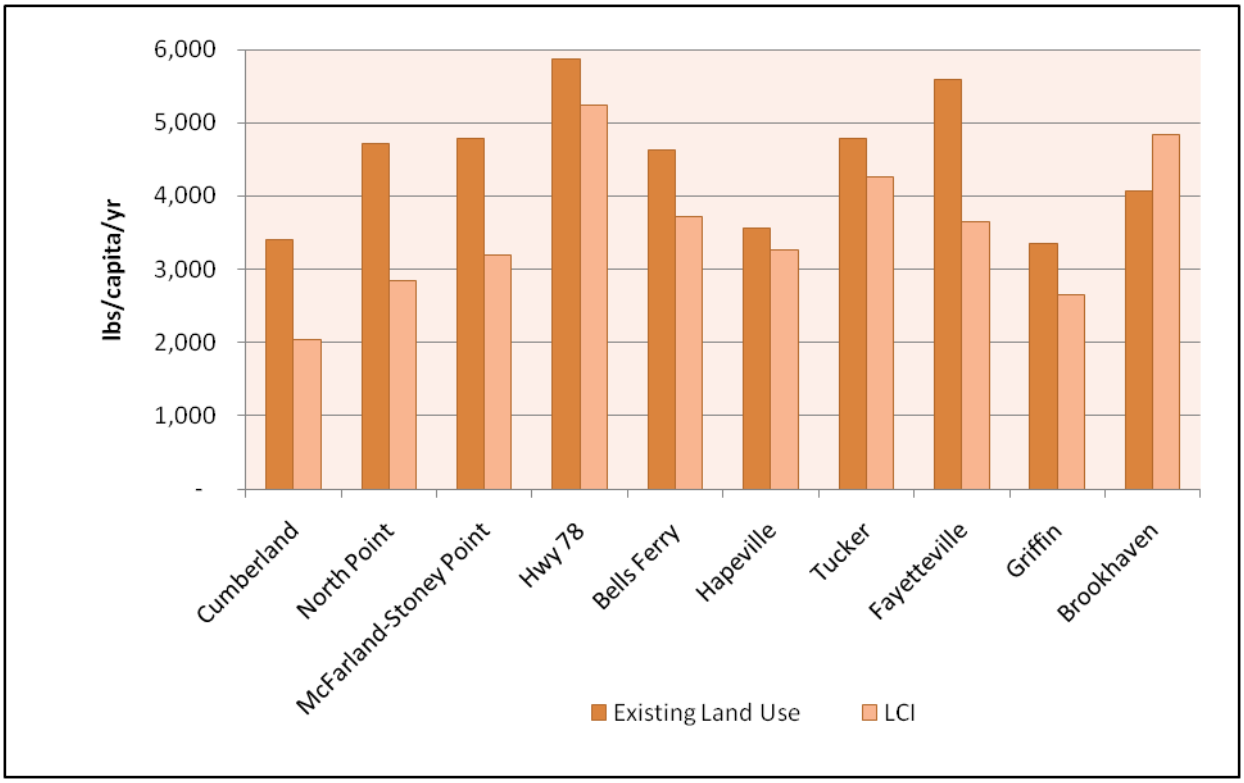
Planning Grants and technical assistance are available through the Livable Centers Initiative (LCI) program to assist local jurisdictions with the transformation of centers to those that can support transit, being well-planned complete communities. This incentive-based approach to regional planning has already been embraced through 91 LCI studies. More than $160 million in transportation projects are currently allocated for the preliminary engineering, right-of-way acquisition, and construction of 90 projects found in 56 LCI communities.

To help nurture LCI communities, PLAN 2040 provides $320 million, which supports multimodal travel, more livable neighborhoods, and the development of jobs and housing in existing town centers and near transit.

Encouraging future growth into LCI's increases transit ridership, promotes more bicycle and walking trips, and shortens the length of automobile trips, thus helping to reduce both vehicle miles traveled and emissions of carbon dioxide and other pollutants. People living in focused, compact neighborhoods of the type envisioned for LCI's travel fewer vehicle miles each day than those in other areas. This translates into a directly proportionate reduction in carbon dioxide emissions from personal travel. As illustrated in Figure 4-3, decreases in CO_2 emissions are apparent from the program.

LCI programs encourage local jurisdictions to plan and implement strategies linking transportation improvements with land use development strategies to create sustainable, livable communities consistent with regional development policies, many of which include new or enhanced streetscape improvements, and bicycle pedestrian facilities. More information on the LCI Program is available at www.atlantaregional.com/lci.

Figure 4-3: Impact of LCI Program on 2008 Vehicle GHG Emissions



Note: At the Bookhaven site, population increases more than employment resulting in higher VMT and CO_2.

Providing Equitable Access to Mobility

Mobility Management

A key PLAN 2040 strategy is to develop and implement mobility management — a centralized system that provides information about transportation options, and coordinates responses to requests for transportation services. By serving as a clearinghouse for information about transportation options, mobility managers can facilitate the most cost-effective solution or service for the traveler.

PLAN 2040 funds the examination of the feasibility of implementing a call center strategy. Depending on the results of this study, additional funding may be allocated in future RTPs and TIPs to support this objective.

$250,000 is included in the FY 2012-2017 TIP for a study to examine opportunities to conduct a regional mobility management call center study. Regional stakeholders indicate that this action will help improve the delivery of services to the region's transportation disadvantaged.

The main objectives of mobility management are to:

- Improve transportation options for the public, particularly low-income, elderly and disabled populations
- Reduce confusion about what transportation options are available by consolidating transportation information in one centralized location
- Improve coordination among all transportation service providers, enhancing commitments to delivering service
- Through coordination, provide cost-effective delivery of service, benefiting both customers and transportation providers

Human Services Transportation

PLAN 2040 supports a comprehensive Human Services Transportation (HST) program. HST includes a broad range of service options designed to meet the needs of the region's transportation disadvantaged including older adults, persons with disabilities and individuals with lower incomes.

These individuals have different needs and require a variety of transportation services to ensure quality of life. Planning and Coordinating HST helps to improve the efficiency of limited transportation resources, reduce duplication of services, and improve customer satisfaction.

In April 2010, the ARC adopted the Coordinated Human Services Transportation Plan, which provides a framework for the Atlanta region to improve mobility for the older adult, low income, and disabled populations. More information on the Coordinated HST Plan is available at www.atlantaregional.com/hstplan.

There are three Federal Transit Administration (FTA) HST Programs, the Section 5316 Job Access and Reverse Commute (JARC) program, Section 5317 New Freedom program, and Section 5310 Elderly and

$21million is included in the TIP to support HST programs such as New Freedom and the Job Access and Reverse Commute initiatives

Persons with Disabilities program.

ARC and MARTA administer the JARC and New Freedom programs for the Atlanta region while the Department of Human Services administers the Elderly and Persons with Disabilities program for the state of Georgia. The goals and objectives for the programs are documented in the region's Coordinated HST Plan.

Lifelong Communities

PLAN 2040 supports through policy and actions the continuation of the Lifelong Communities (LLC) Initiative. PLAN 2040 details a series of action to support Lifelong Communities in the Implementation Program. This program works with local communities to achieve three primary goals: promote housing and transportation options, encourage healthy lifestyles, and expand information and access. Rather than a top down prescription, strategies emerge from local community partnerships to form the region's response to the growing aging population.

The older adult population in the Atlanta region is growing at a tremendous rate. Most individuals over 60 have lived in the region for at least three decades and plan to stay for many more. However, our cities, counties, and neighborhoods are not designed for an aging population. Lifelong Communities are places where individuals can live throughout their lifetime; they provide a full range of options to residents, insuring a high quality of life for all.

Designing a Lifelong Community by definition requires that residents, planners, and elected officials make decisions not only for the current population but the residents who will live in the community well into the future. Urban design and land use issues must first be addressed before any site in the Atlanta region can adequately support the specialized programs, policies, and building types of a Lifelong Community.

Additional information about ARC's Lifelong Communities Initiative is available at www.atlantaregional.com/aging.

ARC is coordinating with the Toco Hills/ DeKalb County Livable Centers Initiative Plan currently underway to incorporate findings from the lifelong community charrette plan.

Making the Region Bikeable and Walkable

Beginning in 2014, the FY 2012-2017 TIP provides $12.5 million per year for a new bicycle and pedestrian mobility, accessibility, and safety program.

Bicycling and walking are important forms of transportation for shorter trips, access to transit, and within regional activity centers. As transportation costs and congestion increase, walking and bicycling continue to grow in importance. ARC promotes safe, functional, and regional bicycle and pedestrian planning and continues to update its process to address new needs and trends.

Each day in the Atlanta region, residents use their bikes and feet to take make trips that do not rely upon a car. Yet despite the already high number of cyclists and pedestrians going to work, school, shopping and elsewhere, more can be done to encourage these trips — and to make them safer and more convenient.

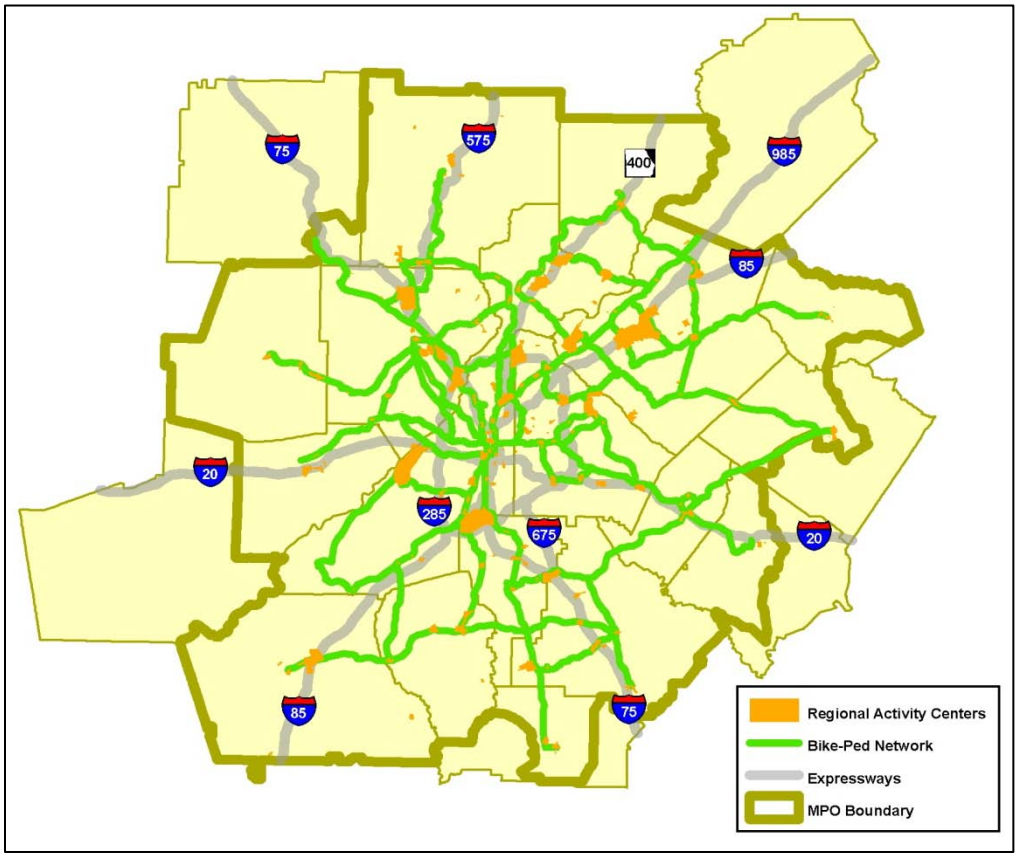
The 2007 Atlanta Region Bicycle Transportation & Pedestrian Walkways Plan (www.atlantaregional.com/bikepedplan) identified a network of regionally significant corridors and centers to focus federal funding investments for bicycle and pedestrian improvements. This network is illustrated in Figure 4-4.

A new funding program has been identified in the TIP at a minimum of $12.5 million a year, to build bicycle and pedestrian infrastructure in support of this network. Projects to be funded out of this program will be identified in 2012. Total funding for bicycle and pedestrian infrastructure in PLAN 2040 total $1.6 billion through the year 2040.

In addition, the LCI Program (discussed earlier in this chapter) provides extensive funding for pedestrian and bicycle infrastructure as part of its program focus to create live-work-play communities. PLAN 2040 continues funding for the LCI Program at $320 million.

PLAN 2040 provides $1.6 billion to implement regional bicycle and pedestrian projects in support of the Regional Bicycle and Pedestrian Network.

Figure 4-4: Regional Bicycle and Pedestrian Network



Encouraging Commute Options

RideSmart
Be Smart! Ride Smart.

Commute Options are intended to reduce traffic congestion and air pollution by eliminating SOV trips and/or decreasing the length of those SOV trips. Transportation Demand Management (TDM) encompasses a set of strategies to increase the use of commute options. According to the survey by the Center for Transportation and the Environment, 18% of all metro Atlanta commuters carpool, vanpool, use transit, bike, walk or telework three or more days per week.

Through the RideSmart program (www.myridesmart.com) and other partnerships with the Clean Air Campaign, PLAN 2040 provides over $80 million to support focused commute option

$20 million in the FY 2012-2017 TIP supports ridesharing and employer services that encourage commute options. This successful partnership program, including Employer Service Organizations and Transportation Management Associations, each day helps eliminate 1.4 million vehicle miles of travel from our roads.

programs:

- **Carpooling** – Encouraging opportunities for vehicles with at least 2 or more commuters to share the ride to and from work using their personal vehicles
- **Vanpooling** – Supporting the establishment of vanpools with a group of 7-15 people who share the ride to and from work
- **Transit** - Providing incentives for increased transit use.
- **Biking and Walking** – Encouraging bicycling and walking trips
- **Teleworking** – Reducing trips through working at home that increases productivity, reduces traffic congestion and improves air quality.
- **Flexible work schedules** – Reducing peak period trips through alternative work days and times

The successes of TDM programs, developed in strong partnerships with organizations such as the Clean Air Campaign, have had a significant impact on the region:

- Keeping 700 tons of pollution out of the air each day – the equivalent weight of 17 dump trucks
- Working with 1,600 employers and property managers that are partners of either The Clean Air Campaign or one of the Atlanta region's transportation management associations
- Helping businesses start and expand telework programs, more than 12,000 teleworkers have been impacted since 2005
- Creating an initiative to curb unnecessary diesel engine idling with 40 additional participating organizations across Georgia, ranging from industrial fleets to city government facilities

Protecting the Environment

PLAN 2040 allocates over $17 million to fund a program to reduce railroad-related emissions. Modern engines are fuel efficient and environmentally friendly.

PLAN 2040 supports the air quality program in several ways. The Atlanta region is in nonattainment for ground level ozone and fine particulate matter, two of the six pollutants regulated under the Clean Air Act. ARC provides support in meeting state and federal mandates for air quality.

Climate change impacts the regional planning process and many of programs that help to reduce greenhouse gas emissions also advance the goals of community livability, environmental sustainability, and decrease our dependence on foreign oil imports.

PLAN 2040 modernizes transportation infrastructure and pursues programs that reduce emissions, including those that encourage climate change mitigation. These initiatives cover a broad array of strategies to reduce emissions:

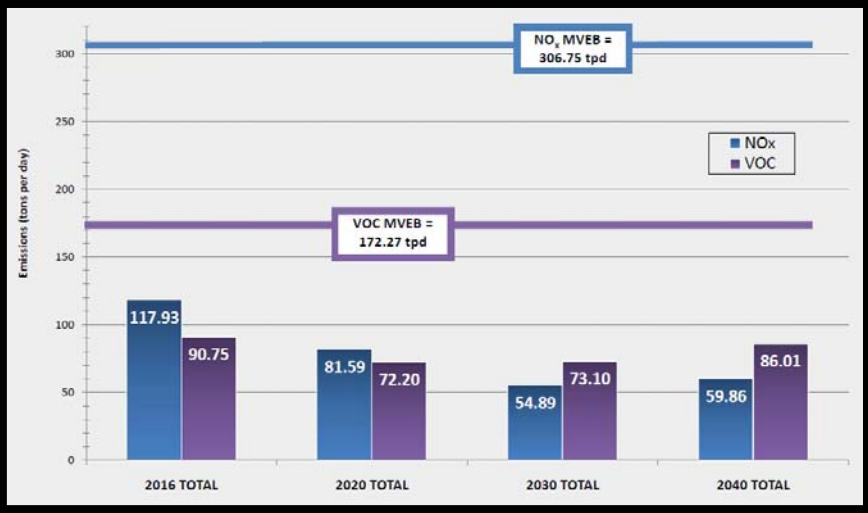
- Purchase of Clean Fuel Buses
- Transit System Modernization, Including Electrical System Upgrades
- Intelligent Operations Systems (ITS)
- Livable Centers Initiative
- Climate Change Scenario Planning
- ARC Green Communities Program
- Transportation Demand Management (TDM) Programs
- State/Local Policies
- Fifty Forward

Based on the results of emissions modeling for PLAN 2040, the region successfully meets federal air quality requirements. Additional detail on how PLAN 2040 meets federal air quality requirements can be found in Volume II – PLAN 2040 Conformity Determination Report.

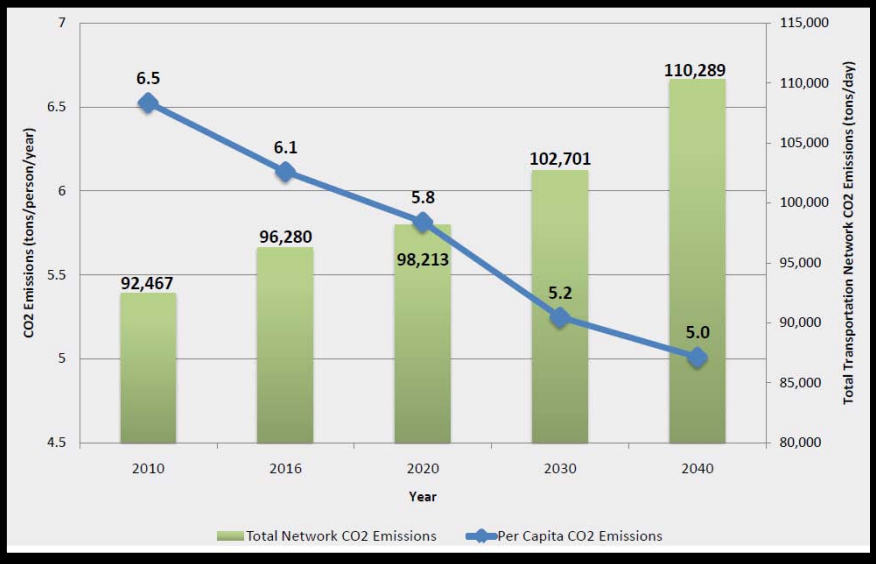
How Effective Is PLAN 2040 in Protecting the Environment?

A key PLAN 2040 sustainability objective is to protect the environment. One way Transportation does this is by limiting the emission of harmful substances that can damage the environment. PLAN 2040 strategies are leading to broad environmental improvements.

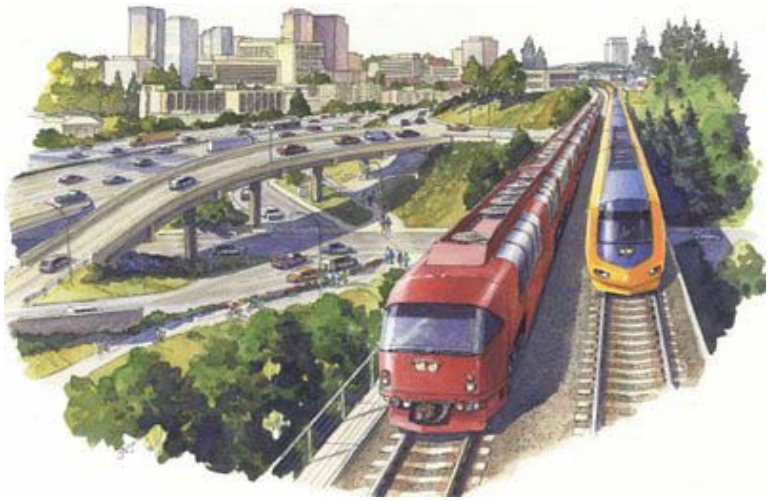
While the PLAN 2040 Conformity Determination has additional information on how federal air quality requirements are met, transportation-sector emissions fall well below federal particulate budgets, as well as ozone precursor budgets listed below:



The federal government is also concerned regarding the impact of transportation emissions on climate change. CO2 emissions, the primary contributor to greenhouse gases, are drastically reduced on a per capita basis in PLAN 2040.



System Expansion



To support the region's expected growth and improve the quality of transportation service to people and businesses, PLAN 2040 identifies capital investments expanding the capacity of Regional Strategic Transportation System.

These projects must be reflected in PLAN 2040 to be eligible to receive federal transportation funds or obtain federal approvals. It identifies the major transportation capital projects that will be pursued between now and 2040. These projects must meet the federal requirement of fiscal constraint and conform to air quality requirements.

Although these major capital projects account for only 26% of the total investment in transportation, they have been thoroughly investigated and evaluated in terms of how they support the regional vision. Due to the length of time required to develop major capital transportation projects, accurately identifying a system of improvements within the long-range plan promotes efficient, cost-effective implementation of these projects.

This subsection includes descriptions of high-priority major capital projects that the region should pursue between now and 2040; these include a balance of transit, highway, and multimodal projects, distributed throughout the region. Specific system expansion projects are identified in Appendix A.

The PLAN 2040 devotes 26% of RTP resources, or $16 billion, to system expansion projects. The largest system expansion category is general roadway capacity improvements at $7 billion. The managed lanes concept has experienced significant changes in comparison to the Envision6 RTP. These costs comprise $5.4 billion of the total system expansion costs. Transit expansion is constrained due to limited funding from the Federal New Starts funding program. $3.5 billion of transit expansion projects are included in PLAN 2040.

Evaluation results for individual projects are included in Appendix C. Note that these are high-level informational results, and ranking projects based solely on these results was not attempted. As projects proceed, they will require extensive additional detailed study and engineering. Project-level studies produce different results, appropriate to the level of detail needed for implementation. The results in the individual evaluations are intended to provide only a general idea of comparative benefits.

Pricing Highway Travel Demand through Managed Lanes

Over $2.1 billion of priced managed lanes projects are programmed in the FY 2012-2017 TIP, including major expansion on I-75/575 in Cobb and Cherokee Counties.

Managed lanes, also referred to as Express lanes or high-occupancy toll (HOT) lanes, are carpool lanes with the added benefit of allowing buses and high-occupancy carpools (3 or more people per vehicle) to use the lanes free of charge. Non-carpoolers are allowed to use available capacity in the lanes, too — for a price. In this way, express lanes provide travelers the option of a delay-free trip.

Regions' throughout the country are implementing managed lanes to better manage freeway systems, expand the choices available to travelers, and improve express bus service. The Atlanta region will open the first priced managed lane, on I-85 North, in the summer of 2011. National surveys show most managed lane travelers use the lanes just a few times a week, or even less.

PLAN 2040 creates a regional managed lane network. As demonstrated by GDOT's adopted Managed Lanes System Plan (MLSP), the pricing of freeway capacity can be an effective means of making progress toward performance objectives to reduce emissions, driving and delay. (For more information, see the MLSP at http://dot.ga.gov/informationcenter/programs/studies/managedlanes/Pages/default.aspx). An extensive listing of managed lane projects is in Appendix A.

The Atlanta region's managed lane network, which is founded on the principle of choice, will demonstrate the benefits of congestion pricing, and will act as a stepping-stone toward more comprehensive pricing strategies in the future. To keep express lane traffic flowing freely, toll rates will adjust dynamically to balance supply and demand based on data from roadway sensors used to monitor traffic conditions.

The managed lanes network also will ensure that the region has a priority system that functions as the number of carpools and buses grow in the future. Even if HOT lanes were not built, many regional HOV lanes will eventually become too crowded during peak commute periods, and travel time advantages for buses and carpools will diminish.

Fast Fact:

Number of Reliable Trips in Peak Travel Period

Today: 49,000

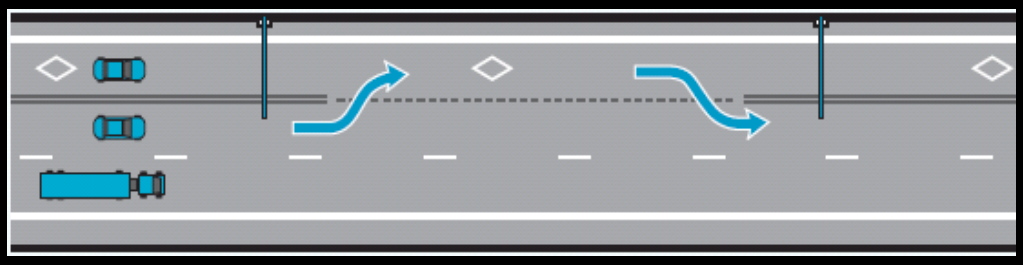
PLAN 2040 Constrained: 127,000

PLAN 2040 Vision: 366,000

The initial segments of the priced managed lanes network open in late summer 2011 with the conversion of 16 miles of existing High Occupancy Vehicle (HOV) lanes to High Occupancy Toll (HOT) lanes on I-85 from Chamblee Tucker Road, just south of I-285, to Old Peachtree Road. The new HOT lanes will take the place of the existing HOV lanes. Other priced HOT lanes will open on I-75 South in Clayton and Henry County in 2014 and on I-75/I-575 in Cobb County and Cherokee County in 2015.

How High-Occupancy Toll (HOT) Lanes Work

- Non-carpool drivers with a windshield mounted toll tag can choose to pay a toll and use the express lane.
- Transit vehicles, eligible carpools (3+), and vanpools can use the express lane at no charge.



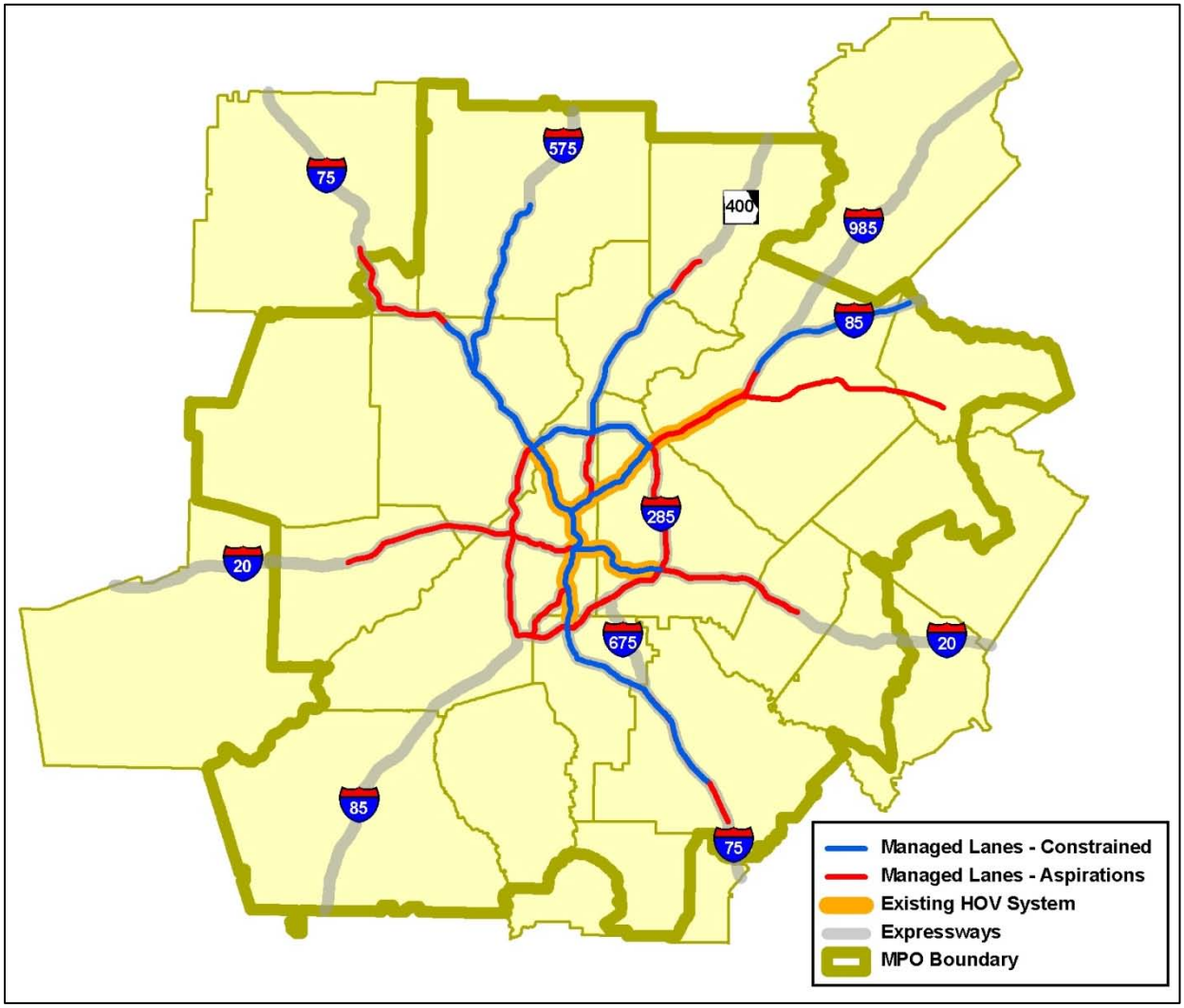
1. Double yellow lines separate the express lane.
2. Electronic signs will display the current toll for solo drivers.
3. The toll will vary based on the level of congestion in the express lane and will be adjusted to maintain a minimum speed.
4. Signs and lane striping at access points will provide drivers safe entry and exit.
5. For non-carpool drivers who choose to use the express lane, an overhead antenna will read their windshield mounted toll tag and the correct toll will be applied to their account.

Figure 4-5 illustrates PLAN 2040 recommendations for the managed lanes system, building off the work of GDOT's adopted Managed Lanes System Plan. The constrained RTP includes $5.4 billion and 151 miles of the network that can be built by 2040. Private investment is a key component to paying for these managed lanes. The total 374 mile, $16.5 billion vision (shown in red and blue), will also leverage private resources through public-private partnerships.

This concept also creates synergy with future Express Bus and Bus Rapid Transit expansions allowing those transit services to provide reliable trip times.

While the exact design concept (number of lanes and use restrictions) for each facility will be finalized during project design and engineering, the initial concept is for most of these facilities to have two managed lanes in each direction. Pricing assumptions are finalized during the design of each project.

Figure 4-5: Managed Lane Network



Delivering the Next Generation of Transit

Over $100 million is included in the FY 2012-2017 TIP to begin transit expansion, including design and purchasing right of way for the Atlanta Multimodal Passenger Terminal

Transit is vital to the Atlanta region. It provides mobility alternatives, supports the regional economy, improves environmental sustainability, and offers reliable trip opportunities. Transit provides a vital function within the regional transportation system:

- 40% of transit riders do not own or have access to a car
- 3 out of 4 transit riders are employed
- 45% of transit riders use it to get to work

The 2008 adoption of Concept 3 marked a major milestone in regional transportation history. Developed through a collaborative, multi-year effort led by the Transit Planning Board, a predecessor to today's Regional Transit Committee (RTC), Concept 3 is a long-term, multifaceted strategy for pursuing priority transit expansion projects. Because it signifies a firm consensus on this important issue, Concept 3 allows the region to focus its advocacy in Washington, D.C., to deliver the next generation of transit expansion for the Atlanta region. This vision serves as the transit element of the Aspirations Plan of the RTP.

Fast Fact:

Percent Increase, over Today's Levels, in Peak Hour Access to Employment within 45 Minutes

PLAN 2040 Constrained: 13%

PLAN 2040 Vision: 72%

While several major transit expansions are planned for the later years of PLAN 2040's financially constrained element, with an extensive vision also included in the aspirations element.

PLAN 2040's transit expansion vision includes $20 billion in new projects, with $3.5 billion included in the financially constrained element. Many future expansions are similar to the downtown Atlanta streetcar project opening in late 2012.

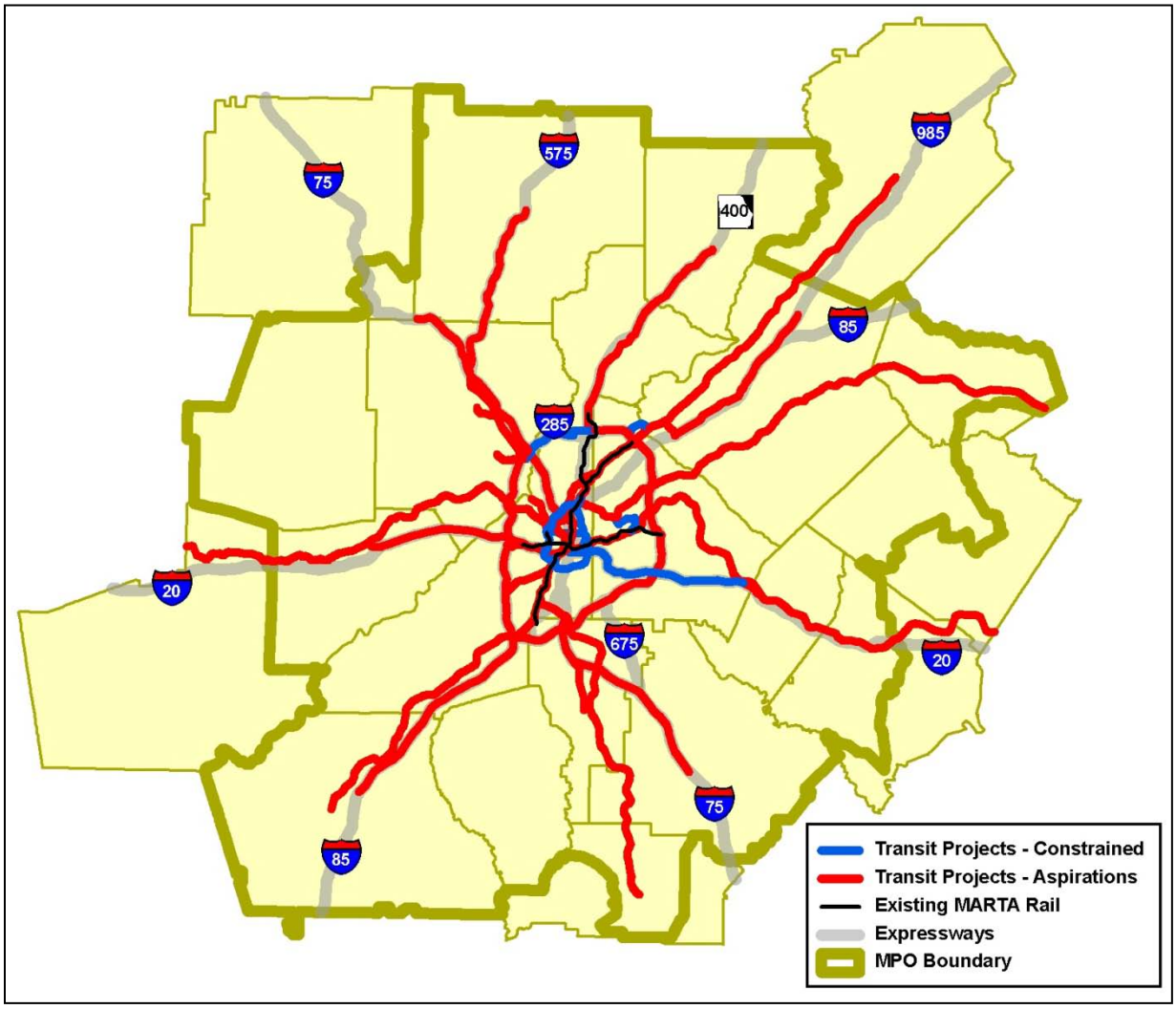
As illustrated in Figure 4-6, Concept 3's $20 billion capital expansion plan includes extensive expansion transit to all regional counties, with the exception of Fayette County. PLAN 2040's financially constrained transit expansion plan consists of $3.5 billion, including:

- Alternatives analysis for light rail projects in Cobb and Gwinnett Counties
- Multimodal Passenger Terminal in Atlanta
- I-20 East Corridor from downtown Atlanta to the Stonecrest Mall area in DeKalb County
- Clifton Corridor from Lindbergh to Emory to Decatur
- Beltline and Streetcars in Atlanta

Why is funding for transit expansion limited?

Federal planning requirements limit the amount of projects in the financially constrained element to the funding expected to be available. Transit operators have limited funds for expansion and the state of Georgia's motor fuel taxes is limited to roads and bridges. Federal funds for major transit expansions are limited and very competitive, restricting the region's capacity to significantly expand transit without the aid of additional funding resources.

Figure 4-6: Regional Transit Expansion Vision



Implementing Strategic Roadway Capacity Enhancements

Over $400 million is included in the FY 2012-2017 TIP to improve congested interstate bottlenecks, such as the $25 million improvement of I-75 and Jodeco Road in Henry County.

Interchanges

The region's interstates and freeways are impacted by population and employment growth. Interstates and freeways currently accommodate a significant percentage of the region's peak period travel. A focus of PLAN 2040 is to address regional bottlenecks through interchange projects. An extensive listing of interchange bottleneck relief projects is available in Appendix A.

A core strategy of PLAN 2040 is to address these locations to improve safe access to employment centers and major roadways. Investments may include upgrades to existing interchanges or building new ones (see Figure 4-7).

- The constrained plan includes 29 interchange projects totaling $1.5 billion.
- This full $2.4 billion vision of over 50 interchanges (shown in red and blue), improves access to key regional centers.

Addressing bottlenecks at interstate interchange locations is an important need to address based on the Regional Assessment and the work associated with the Atlanta Region Freight Mobility Plan. Important interchange improvements included in the overall RTP strategies address these bottlenecks in the region (examples):

- I-285 (numerous locations)
- I-85 / Poplar Road (Coweta)
- I-20 / SR 138 (Rockdale)
- I-20 / I-285 (west – Fulton County)
- I-20 / I-285 (east – DeKalb County)

Due to the heavy traffic flow on regional interstates, many interchange projects are also coordinated with other mainline capacity projects – including Managed Lanes. Interchange design is coordinated with proposed interstate project cross-sections. Many studies are underway to reevaluate regional interstates and update RTP concepts, where necessary.

Fast Fact:

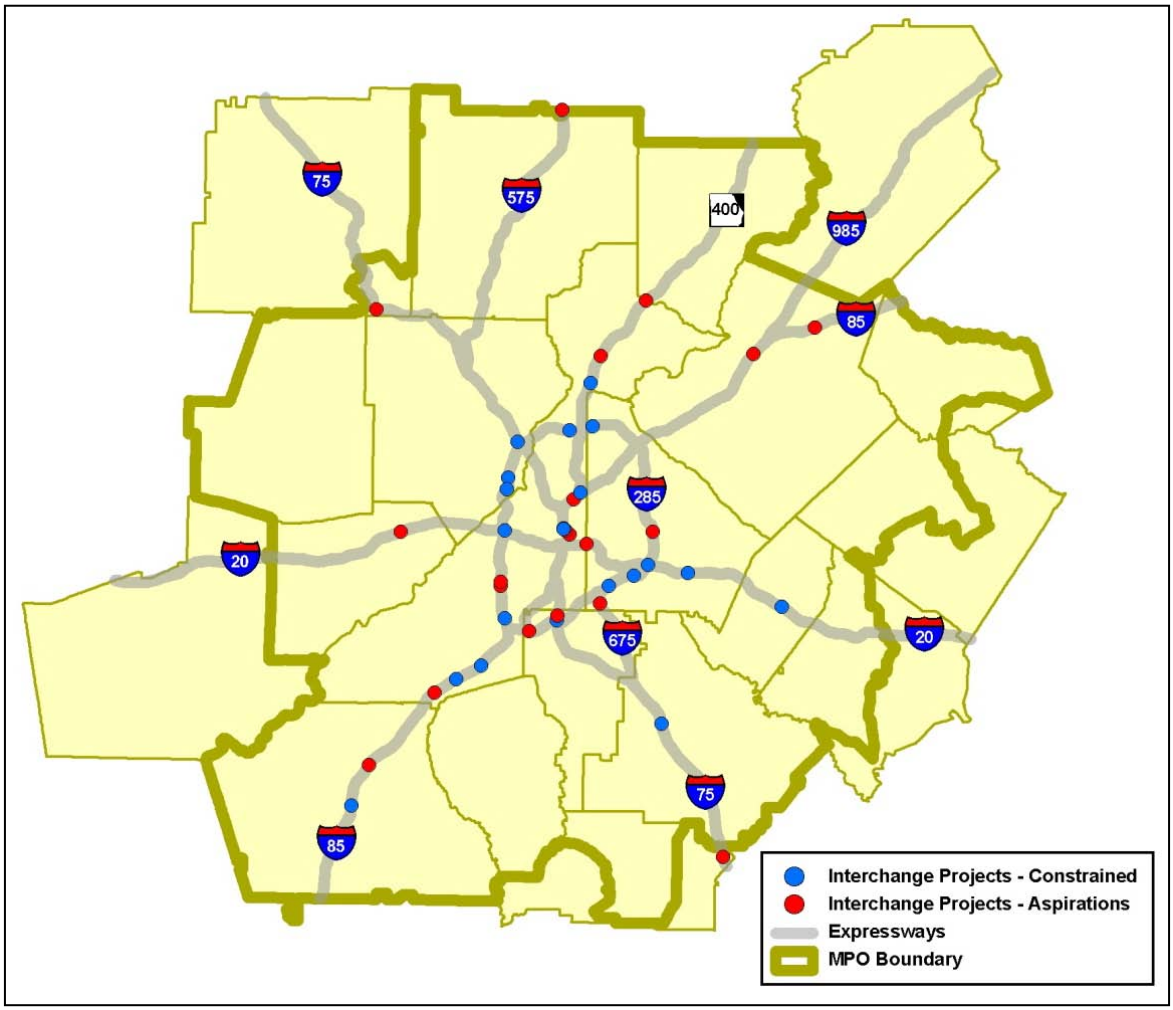
Annual Congestion Cost Per Person

Today: $1,270

PLAN 2040 Constrained: $3,460

PLAN 2040 Vision: $2,530

Figure 4-7: Interchange Projects



Why do congestion costs increase in the future, even after investing $60.9 billion in PLAN 2040?

While the total cost of PLAN 2040 is $60.9 billion, only $15.9 billion is for large-scale expansion projects. The Atlanta region currently has the 11th worst congestion in the nation – and is expected to add another 3 million people by the year 2040. This base level of congestion and added growth, with limited funding to address needs, is insufficient to "move the needle" in regard to congestion.

Recognizing this challenge, PLAN 2040 recommends enhanced land use strategies to encourage growth patterns that increase transit use. Ultimately, congestion relief will closely be tied to the region's success in changing growth patterns vs. depending on expensive transportation capacity projects.

Arterials

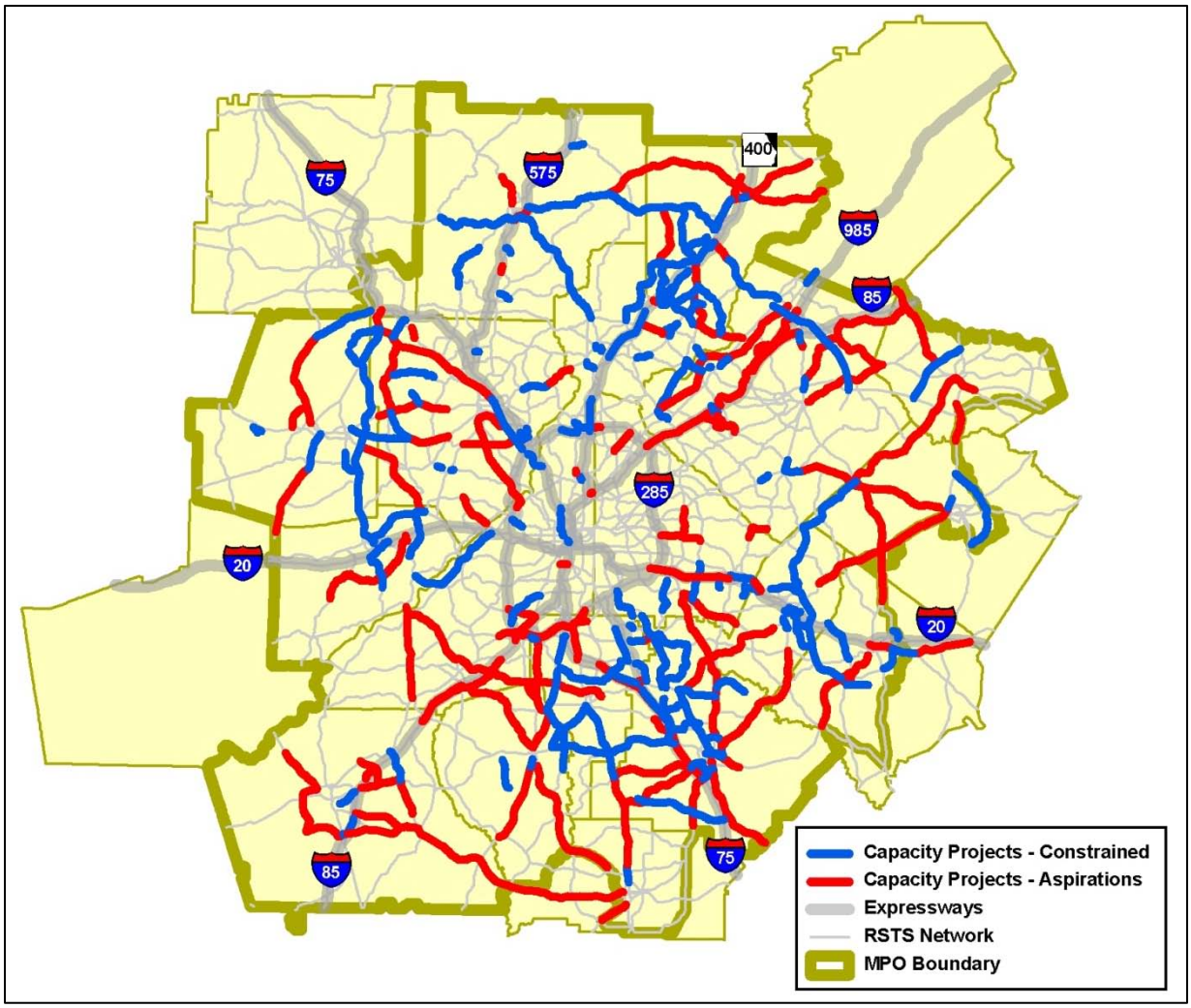
The people of the Atlanta region utilize our major roadways (or arterials) every day, whether by car, bus, truck, bike, or on foot. The Regional Strategic Transportation System and Thoroughfares Network are systems of the major roadways across the region that connect our communities and activity centers, move high volumes of traffic, and are key to goods movement. It is critical that these roadways function efficiently, and sometimes that requires adding capacity to them or building brand new roads.

The constrained PLAN 2040 RTP arterial program includes over 516 miles totaling more than $5.8 in investments to widen or build new roadways in our region (see Figure 4-8). The entire vision for adding roadway capacity to our transportation system includes 1,370 miles totaling $14 billion (shown in red and blue).

Included in this strategy to add roadway capacity is to do it in a way that meets the needs of all users and modes – also known as Complete Streets. When we plan to widen a road, we must also include things like amenities to support transit services along those corridors, provide pedestrian and bicycle facilities, safe crossings and intersections, and take into consideration the needs of all users young and old, driver and non-driver. This policy is key to providing safe access to community resources for all residents and helps to create a healthy community.

$1.9 billion of arterial capacity projects are programmed in the FY 2012-2017 TIP. Many of these projects, such as $33 million to construct the SR 92 project in Douglasville, improve safety and congestion at major road-railroad bottlenecks.

Figure 4-8: Roadway Capacity Projects



How is the Congestion Management Process Used in Developing Single-Occupant Vehicle (SOV) Capacity Project Recommendations for PLAN 2040?

As a nonattainment area exceeding 200,000 population, the Atlanta region must meet special federal planning requirements to expand roadway capacity. These regulations require a Congestion Management Process (CMP) be in place that Identifies congestion management strategies and identifies single-occupant vehicle (SOV) projects. PLAN 2040 uses the CMP in several ways to develop recommendations:

Identifying the location and magnitude of congestion. ARC monitors conditions on the transportation network to identify congested locations. These locations are evaluated and ranked according to severity.

Consultation with stakeholders on possible solutions. Regional stakeholders evaluate the source of the congestion. This evaluation occurs through mechanisms such as the CMP and special studies, including Comprehensive Transportation Plans (CTPs).

Evaluation of Alternatives. Before implementing a capacity project, non-capacity adding alternatives are explored. If these alternatives are not appropriate, capacity-adding projects may be implemented.

Due to the severe congestion on most regional arterials, the CMP also focuses on ranking congested facilities in order to focus the expenditure of limited funding resources. ARC prepares congestion rankings for use of regional stakeholders in making funding decisions. Additional information on the CMP is available at www.atlantaregional.com/cmp.