

# Atlanta Region Plan 2040

## REGIONAL ASSESSMENT SUMMARY



ATLANTA REGIONAL COMMISSION



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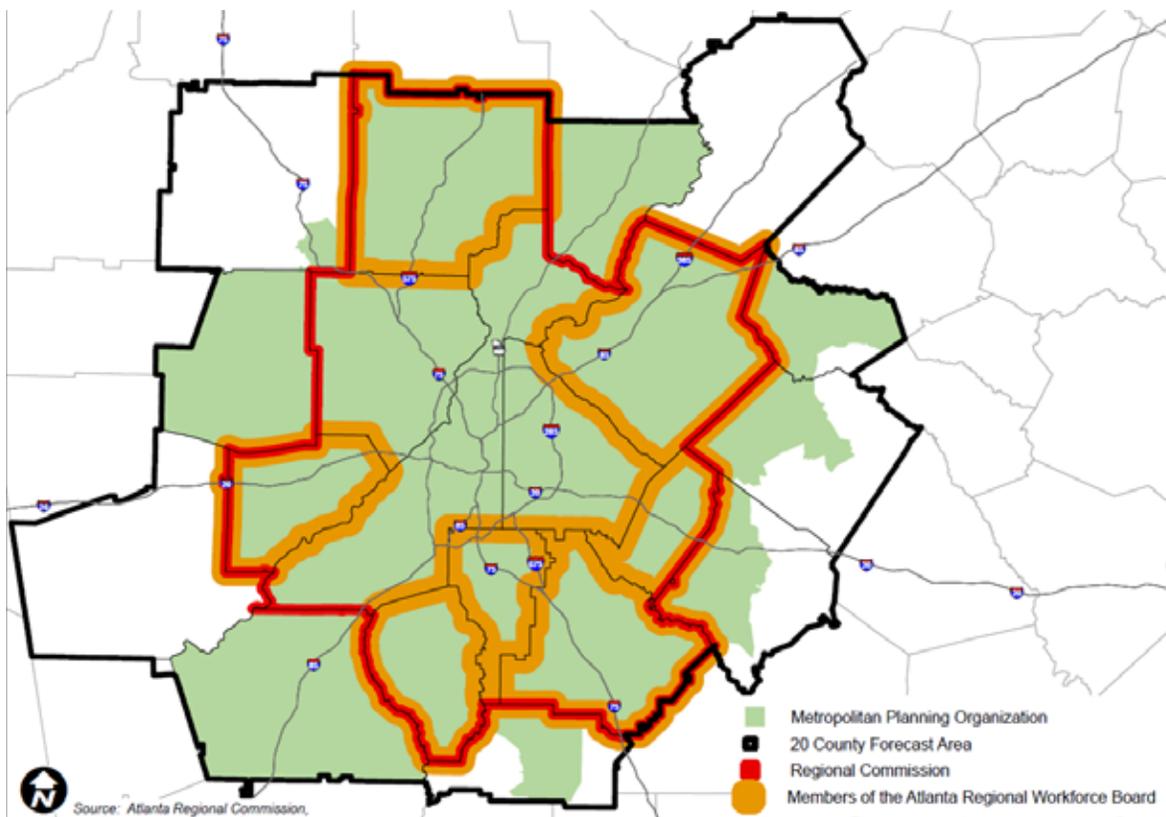


# Atlanta Regional Commission

The Atlanta Regional Commission (ARC) is the regional planning and intergovernmental coordination agency created by local governments in the 10-county Atlanta region pursuant to legislation passed by the Georgia General Assembly. ARC is not a government, but is the forum through which local governments confer to solve mutual problems and decide region-wide issues.

In addition, ARC is the transportation planning agency for the Atlanta region under federal law as the designated Metropolitan Planning Organization (MPO) for an 18-county area. ARC provides planning staff to the 15-county Metropolitan North Georgia Water Planning District (MNGWPD), serves as the administrative agency for the seven-county Atlanta Regional Workforce Board (ARWB) and provides aging services and policy guidance as the Area Agency on Aging (AAA).

Figure 1: Planning Areas of the Atlanta Regional Commission



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# Plan 2040

Plan 2040, ARC's new regional planning process, began in February 2009 with the adoption of a resolution by the ARC Board of Directors. The resolution directed ARC staff to develop a plan that would enable the Atlanta region to accommodate future population and employment growth in a sustainable manner.

The Board further directed staff “to incorporate and unify both regional and local growth policy.” It is anticipated that a commitment to addressing the challenges outlined in this Plan 2040 Assessment will require ARC to rethink how it addresses regional issues and delivers services to local governments and other stakeholders. The Regional Assessment serves as the beginning of this dialogue.

Plan 2040 is a planning process that links local and regional plans for land development, as well as transportation, land use, water and other issues. While developing Plan 2040, ARC must also meet federal and state regulations for planning. They will do so by creating the required long-range documents within Plan 2040:

- Transportation — As the MPO for transportation planning, ARC must develop a long-range transportation plan (RTP) and short-range transportation improvement program (TIP) that conform with federal guidelines and with the applicable State Implementation Plan (SIP) for air quality.
- Comprehensive Planning — ARC must prepare and adopt a Regional Plan (for land use) pursuant to the Georgia Planning Act of 1989 and consistent with minimum standards and procedures for regional planning developed by the Georgia Department of Community Affairs (DCA).

## Regional Assessment

While the recent economic downturn has created much uncertainty, the Atlanta region should be in a strong position during what is expected to be a gradual economic recovery. With its status of a leader among Sunbelt cities and as home of the world's busiest airport, Fortune 500 companies like Coca-Cola, Home Depot, UPS, Newell-Rubbermaid and a large collection of colleges and universities, metro Atlanta should continue to thrive.

However, each resident, both existing and new, places demands on infrastructure, public services and the region's natural systems. Metro Atlanta faces numerous challenges associated with its recent growth, as well as national and global challenges.

It should be noted that this assessment identifies and focuses on the region's needs, not its assets. Its findings will lay the groundwork for policy and program development over the next 30 years to address these needs and challenges, maintaining the Atlanta region's position of economic strength.

This document is a brief summary of the actual Plan 2040 Regional Assessment. The full document can be seen and printed at [www.atlantaregional.com/plan2040/documents](http://www.atlantaregional.com/plan2040/documents).

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# Primary Regional Challenges

The Atlanta region has been one of the fastest-growing regions in the nation in recent years, accommodating large amounts of growth in population and jobs. This growth has brought many benefits to the region, including a shift from a small regional center to a player in the international economy. And, despite this unprecedented growth, residents of metro Atlanta have continued to enjoy a low cost of living and an overall good quality of life.

That quality of life has remained because the Atlanta region's growth has been largely based on:

- National migration trends
- Federal policies encouraging highway construction and home ownership
- Access to Hartsfield-Jackson Atlanta International Airport
- The region's prominence as the economic center of the South
- Inexpensive land
- Low cost of living and doing business

The region has the opportunity to be well-positioned for economic growth in the future. Some of the economic assets in the region include Hartsfield-Jackson Atlanta International Airport, 11 Fortune 500 firms and numerous institutes of higher learning.

However, for the first time in its history, the region is experiencing a challenge to the fundamental conditions that propelled it to prosperity and growth over the last four decades. While a recovery from the national economic crisis is almost certain, the region's current unemployment rate is almost 10 percent. The region needs to leverage its many assets into new investments to attract employment growth, and it's likely that the region will need to find and/or create new avenues for sustainable growth in the future.

Metro Atlanta's infrastructure is under stress. Traffic congestion and a finite water supply threaten the region's status as the hub of the Southeast. There is uncertainty about how the federal government will invest in infrastructure in the future. Major shifts in federal programs and policies could have substantial impacts on how the region grows in the future.

Like the rest of the nation, the Atlanta region's population will soon be much older than it has been in recent memory. Currently, one in every 10 regional residents is over the age of 60. By 2030, that number will be one in five. Between senior citizens and youth under age 20, the Atlanta region will be home to more dependents than workers. How will this demographic shift affect the tax base, infrastructure and economy of the region?

The ARC Board gave clear guidance in its resolution that it wants all policy and planning recommendations from Plan 2040 to be based on the "triple bottom line" theory of economic, environmental and social sustainability, ensuring that the needs of today are not met at the expense of future generations.

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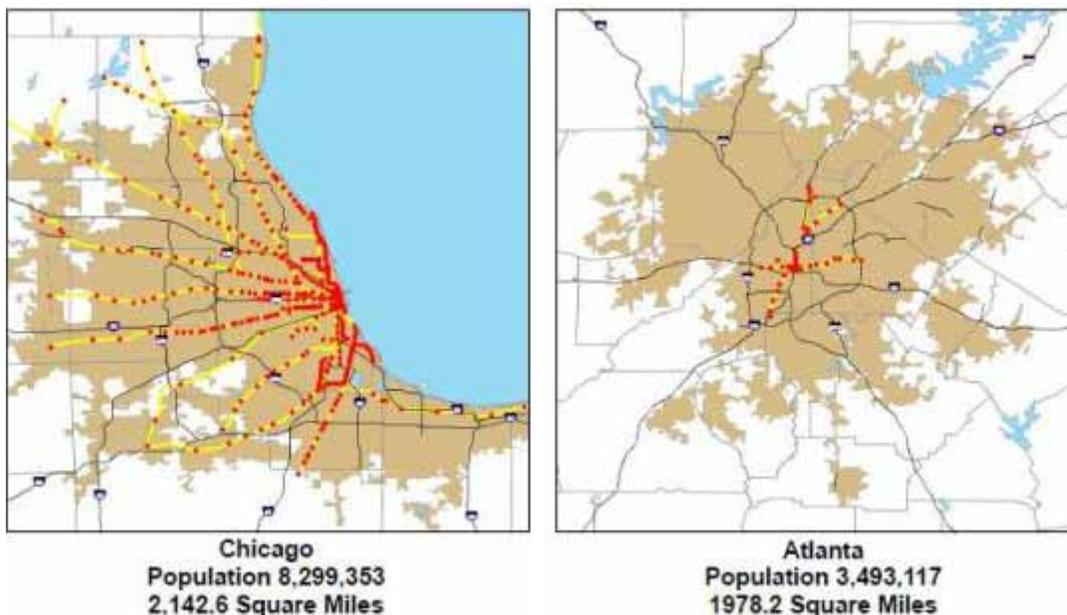
# Key Findings from Regional Assessment

## Urban Expansion of the Region Strains Infrastructure

Recent ARC population and land-cover analysis indicate that expansion of developed areas may be slowing. However, even minimal expansion can adversely affect the region's ability to meet current and future needs.

As seen in the maps below, metro Atlanta — as defined by the 2000 Census — consumes almost as much land as Chicago. However, the population of the Atlanta region is not close to that of the Windy City. In the unlikely event that the region continues expanding in its current pattern as the population grows, the region's land area would eventually extend into Alabama.

### 2: Comparison of Atlanta Region and Chicago Region



This development pattern has significant impacts on many services provided by local governments, including drinking water and wastewater systems, parks, libraries, fire and public safety services. The longer commutes also put a strain on the transportation network at both the local and regional level.

Counties on the exurban fringe of the region begin to lose their unique character, while at the same time struggle to generate enough funding to provide the infrastructure required by the new growth. For example, formerly rural two-lane roads see sudden increases in volume as more neighborhoods spring up around them. These new neighborhoods also require water and other utilities, adding stress to local governments and to the area's natural systems.

## Long-Term Success Linked to Water Availability

Due to the Atlanta region's relatively high altitude, it sits near the headwaters of the rivers that supply its water. And, because the ground underneath it is primarily made of rock (think Stone Mountain), metro Atlanta has very limited underground water sources. In fact, more than 99 percent of the water supply in the Metropolitan North Georgia Water Planning District consists of surface water from rivers and reservoirs.

Approximately 73 percent of the residential water comes from the Chattahoochee River basin. The region's use of this basin is in jeopardy from a 2009 judicial decision against the U.S. Army Corps of Engineers. Uncertainties like the court ruling and the possibility of an extended drought, along with the addition of three million new residents by 2040, present significant challenges to the long-term water supply of the region.

Figure 3: Location of Atlanta Region's Primary Water Supply



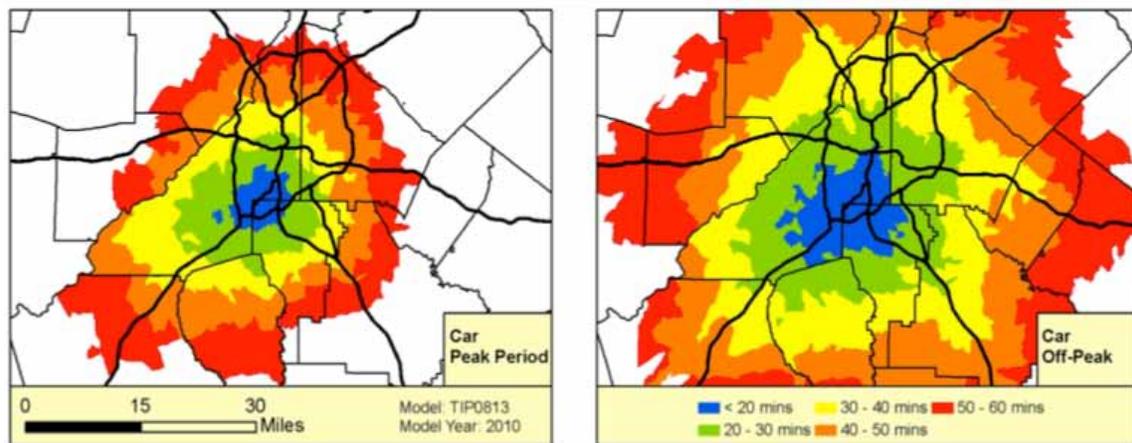
# Traffic Congestion

## Access to Job Centers Critical

Metro Atlanta has always been known for its busy airport and its southern hospitality. Unfortunately, in recent years, it has become known for its traffic congestion, too. Already, other Southeastern cities use the region's traffic woes against it when recruiting corporations and large manufacturers. If the Atlanta region is to remain the economic hub of the Southeast and maintain its high quality of life, something must be done to help residents get to and from employment centers more quickly.

The maps below are a demonstration of what traffic congestion means for residents of the Atlanta region. Developed through computer modeling programs, they show who can reach Hartsfield-Jackson International airport in one hour during peak traffic periods (left) and off-peak traffic periods. As you can see, in this model, drivers from northern Fulton and Gwinnett counties can reach the airport in an hour or less during off-peak times. During peak times, no one from Gwinnett would reach the airport in less than one hour, based on this model.

Figure 4: Impact of Congestion on Regional Travel to Hartsfield-Jackson



This is true for drivers trying to reach the region's other major job centers, as well. As the population continues to grow and funding for transportation continues to lag, the news is likely to get worse.

# The Face of Atlanta Is Changing

The Atlanta region has added more than one million residents in the last eight years alone, making it the second fastest-growing metropolitan area in the nation. As growth continues, at a slower pace, in future years, the region will see a major shift in the age of its residents.

As the graphs below demonstrate, in 2007, a large number of metro Atlanta residents were of working age (ages 20-64). That means they were filling jobs, creating new jobs, investing in their communities and, generally, paying more taxes than those in the older and younger age groups. By 2050, the working population (ages 20-60) will be outnumbered by children and senior citizens. Will the population require more and/or different transportation services? How will this affect education and the types of residential properties desired?

Figure 5: 2007 Age Pyramid

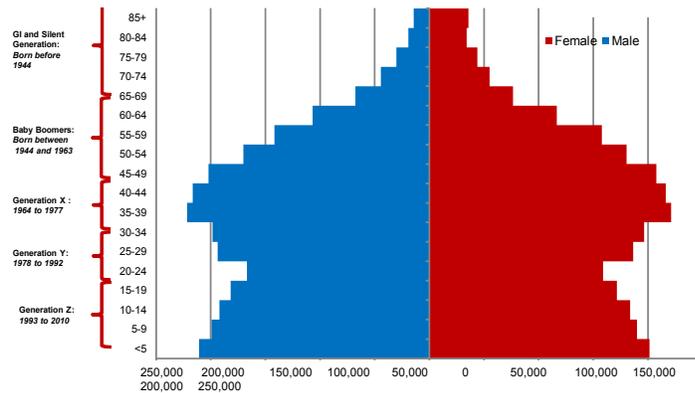
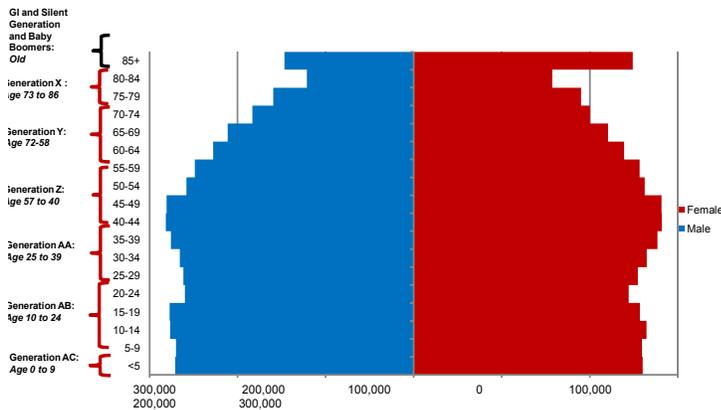


Figure 6: 2050 Age Pyramid



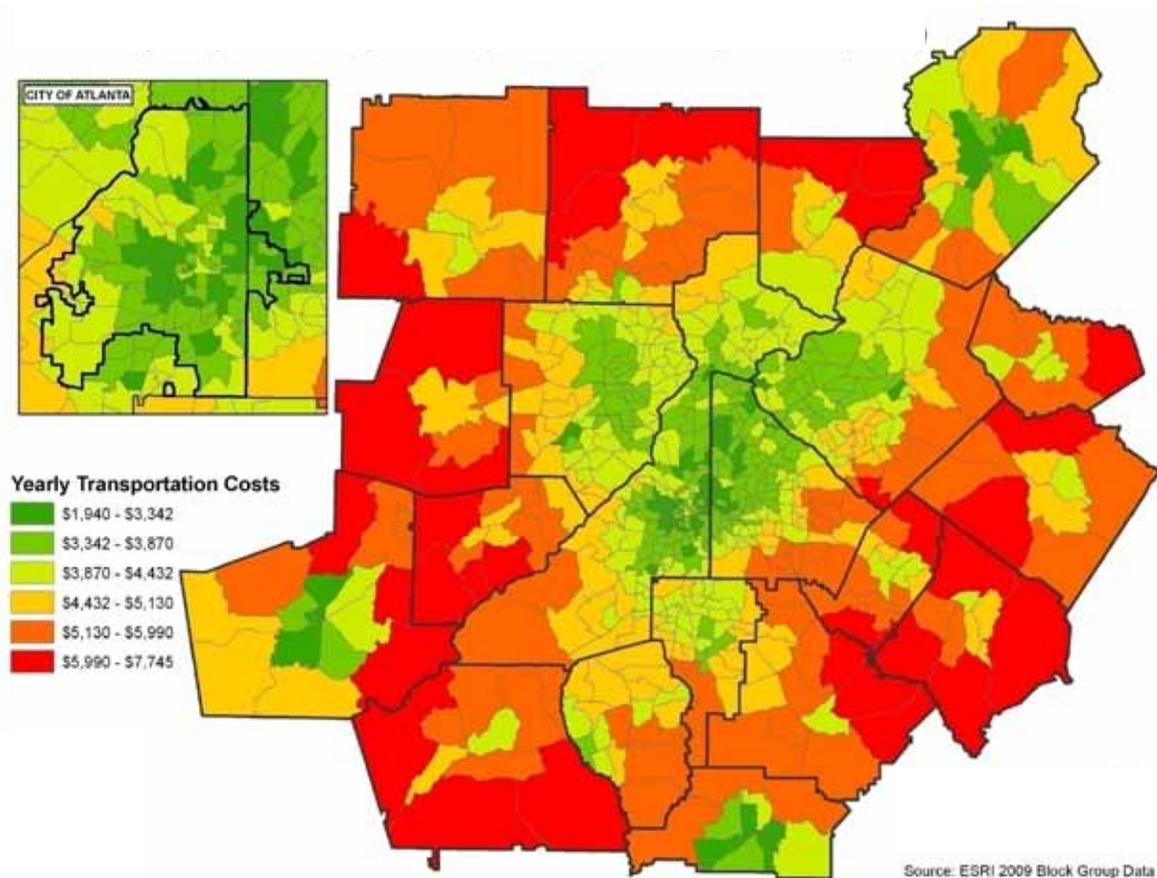
## Market Forces May Change Housing Demands

The vast majority of housing available in the Atlanta region has been built in the last 40 years. In fact, more than 20 percent of housing stock in the region was built between 2000 and 2007. It's uncertain, however, if the current supply is in line with what metro Atlanta's future residents will desire.

A majority of the region's households, like those around the nation, are home to two people or fewer. Thirty years ago, approximately half of the nation's households included children. Today, that number is considerably lower, and by 2030, it's expected to fall to 21 percent. With the population aging, the number of single and two-person homes will continue to rise in the near future. Will this population, much of it over the age of 65, still want large homes on large lots and all the maintenance that comes with that?

The aging population and the rising cost of transportation in the Atlanta region, due to congestion and rising fuel prices, suggest that more regional residents might want alternatives to single-family homes on large suburban lots. The map below shows the transportation costs of households from around the region.

Figure 7: 20-county Region Average Transportation Costs per Year, 2008



## Most of Region Has Limited Transportation Options

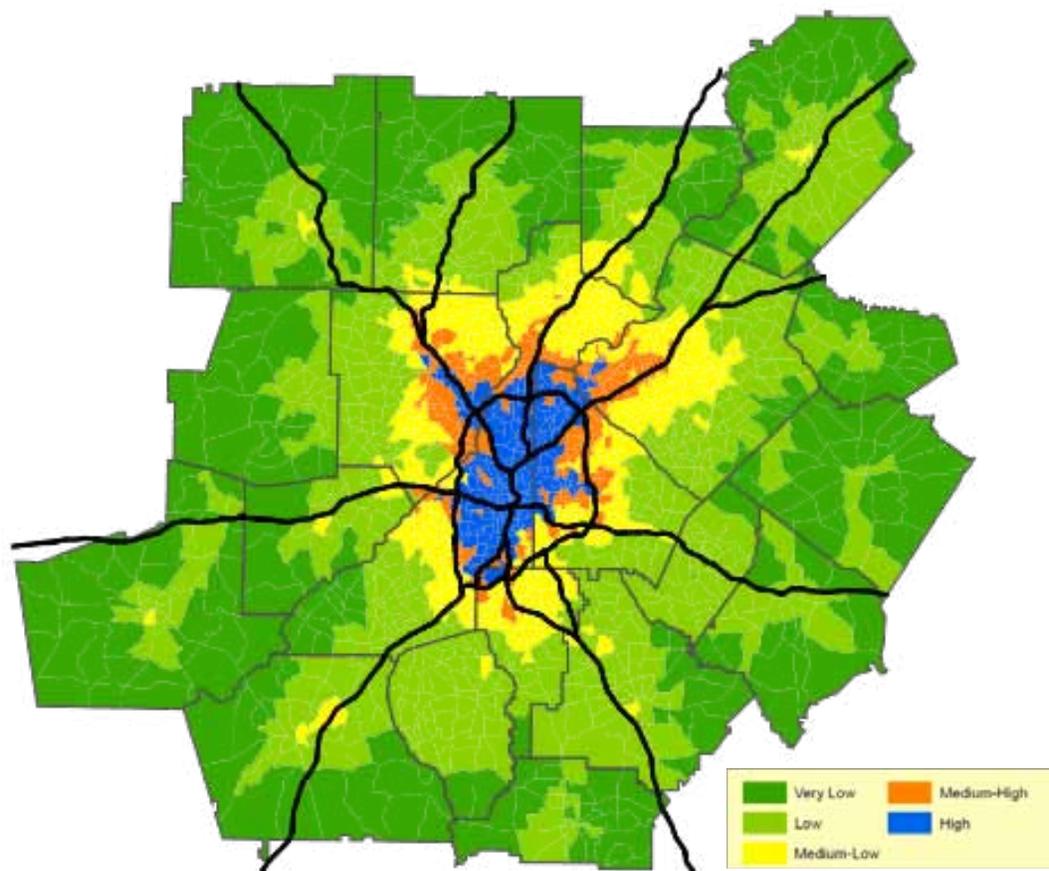
Thanks to a group of elected officials from around the region, metro Atlanta has an ambitious transit plan, commonly known as “Concept 3.” This plan would expand transit options, both rail and bus, in many urban and suburban areas, something most residents say they would support.

However, funding issues and a lack of political will at the state level have slowed the progress of Concept 3 considerably. With federal policy shifting toward more use of rail, some forward movement on transit might unlock funding from Washington, D.C.

The map below shows access to alternative modes of transportation throughout the region. These include transit and bicycle/pedestrian facilities.

Through its Livable Centers Initiative (LCI) program, ARC works with local governments and other bodies to support the design and development of activity centers that contain homes, jobs and amenities. These types of centers not only attract residents and visitors, but are also natural stops for transit services.

Figure 8: Access to Alternative Transportation Modes



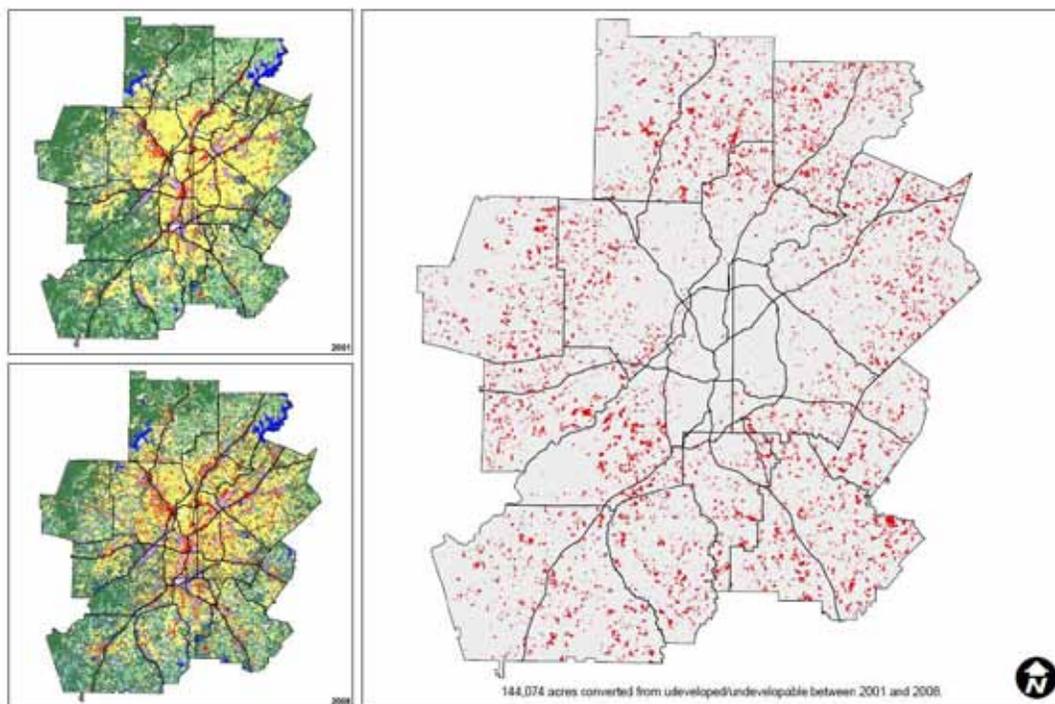
## Region Needs More Urbanization and More Conservation

The Atlanta region has experienced a dramatic loss in natural greenspace over the last 40 years as the population swelled and development targeted cheaper land further and further from the core. One way to conserve greenspace is to encourage more businesses and residents to move into existing activity centers and to encourage redevelopment of underutilized areas.

For example, strip shopping centers that are currently empty or near empty could be redeveloped as mixed-use communities with both commercial/office space and residential. Parking garages built above or below ground could also save acreage for more parks and natural areas. Creating urban areas with more people and activity can encourage the development of a transit system by putting more potential riders within walking distance of a stop.

Along with policies that slow the outward expansion of the region, local communities and their governments could also be more proactive in creating and preserving conservation areas. By developing policy to do this, communities could acquire, protect and manage lands that create a network of connected open space, parks and agricultural land.

Figure 9: Atlanta Region Land Conversion Map



The map above shows the land converted from undeveloped to any other development category between 2001 and 2008, illustrating both urban and suburban expansion. The two smaller maps on the left of the figure show existing land use in 2001 and 2008. The larger map displays just those areas that were converted from undeveloped lands. Areas at the central core of the region have also experienced growth, but in many instances the development reused existing development sites and was not converted from undeveloped.

## As Transportation Needs Increase, Funding Potential Decreases

The Atlanta region's ability to build and maintain large-scale transportation projects has decreased significantly in recent years. This is due to funding issues at the local, state and federal levels.

The current economic downturn has been, and will continue to be, deep and prolonged. This has caused local sales tax receipts to decrease dramatically. For example, the real-dollar value of both MARTA sales tax receipts and state motor fuel tax revenues are lower today than in 2000.

Coupled with less funding from state and local sales tax receipts is the challenge presented by the federal government. The federal Highway Trust Fund is depleted. It is temporarily being buoyed by money from the general fund. Obviously, that can't last forever. When new legislation is passed, it's possible that the local and state governments will be asked to foot more of the transportation bill.

Below are two charts. The first one shows the recent decline in MARTA sales tax revenues. The second shows the history of transportation funding from state motor fuel taxes.

Figure 10: Tracking MARTA Sales Tax Revenues this Decade

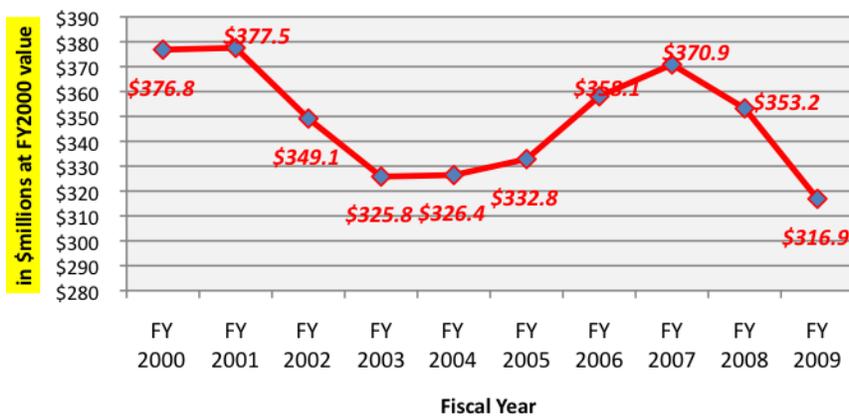
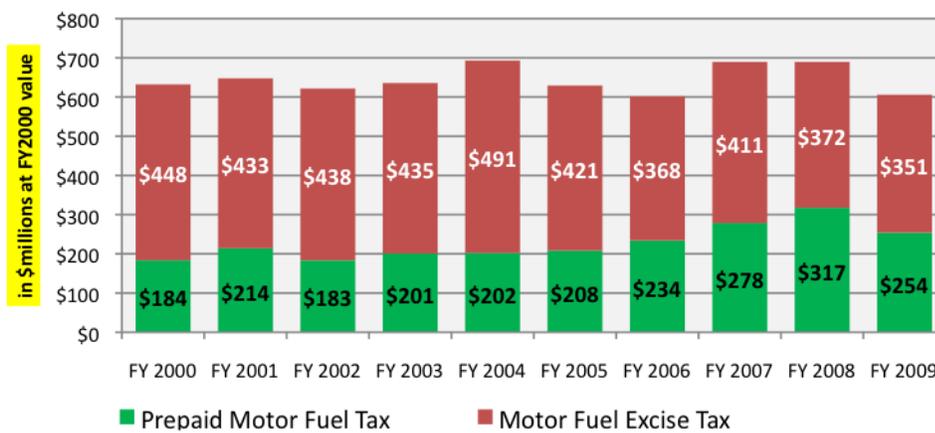


Figure 11: GDOT Motor Fuel Tax Receipts in 2000 \$



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# Working Together Is Key to Region's Success

During the next 30 years, the Atlanta region will face many changes. Different trends will alter our communities and our region as a whole, including changing demographics; diminishing resources at the federal, state and local levels; and the need to better conserve our natural resources.

At the same time, the Atlanta region possesses many strengths, including a diverse economy and strong communities throughout the 10-county region. While there are no one-size-fits-all approaches to planning for our region's future success, there are some foundational elements that we must all address together. These include a long-term water supply with progressive conservation measures, a transportation system that meets our mobility needs and offers more options and different and more sustainable approaches to how we develop and redevelop our communities.

How does this occur? Through communication and an understanding of the issues we can tackle together and those that each community must face on its own.

One thing is certain. The foundations on which metro Atlanta has grown will shift dramatically in the future. In particular, during the last 15 years the Atlanta region experienced a period of growth that is not likely to be witnessed again. As the region slowly recovers from the recent recession, it is up to regional leaders and residents to determine whether the region follows the same approach it did before, or if it embraces a "new normal" with a growth rate that is more manageable and an economy that is more sustainable.

## How To Participate in Plan 2040

Metro Atlanta residents can participate in ARC's Plan 2040 activities in several ways:

- Regularly visit the Plan 2040 Web site at [www.atlantaregional.com/plan2040](http://www.atlantaregional.com/plan2040) for the latest information about the planning process.
  - Check the "Get Involved" section of the site for discussions, meetings and other ways to share thoughts and ideas.
- E-mail comments to ARC at [plan2040@atlantaregional.com](mailto:plan2040@atlantaregional.com).
- Share ideas at ARC's group page on LENS on Atlanta at [www.lensonatlanta.org](http://www.lensonatlanta.org).
- Call ARC with comments or questions:
  - 404.463.3272
  - TTY number is 404.463.3272

the  $\mathbb{R}^n$  is a linear space over  $\mathbb{R}$  with the usual addition and scalar multiplication. The inner product is defined by

$$\langle x, y \rangle = x_1 y_1 + x_2 y_2 + \dots + x_n y_n \quad (1)$$

where  $x = (x_1, x_2, \dots, x_n)$  and  $y = (y_1, y_2, \dots, y_n)$  are vectors in  $\mathbb{R}^n$ .

The norm of a vector  $x$  is defined by

$$\|x\| = \sqrt{\langle x, x \rangle} = \sqrt{x_1^2 + x_2^2 + \dots + x_n^2} \quad (2)$$

The distance between two vectors  $x$  and  $y$  is defined by

$$d(x, y) = \|x - y\| = \sqrt{(x_1 - y_1)^2 + (x_2 - y_2)^2 + \dots + (x_n - y_n)^2} \quad (3)$$

The angle between two vectors  $x$  and  $y$  is defined by

$$\cos \theta = \frac{\langle x, y \rangle}{\|x\| \|y\|} \quad (4)$$

The orthogonal projection of a vector  $x$  onto a vector  $y$  is defined by

$$\text{proj}_y x = \frac{\langle x, y \rangle}{\|y\|^2} y \quad (5)$$

The orthogonal complement of a subspace  $W$  is defined by

$$W^\perp = \{x \in \mathbb{R}^n \mid \langle x, y \rangle = 0 \text{ for all } y \in W\} \quad (6)$$

The orthogonal decomposition theorem states that any vector  $x$  in  $\mathbb{R}^n$  can be written as the sum of a vector in  $W$  and a vector in  $W^\perp$ .

The orthogonal basis for a subspace  $W$  is a set of vectors  $\{v_1, v_2, \dots, v_k\}$  in  $W$  such that

$$\langle v_i, v_j \rangle = \delta_{ij} \quad (7)$$

where  $\delta_{ij}$  is the Kronecker delta. The orthogonal basis for  $\mathbb{R}^n$  is a set of vectors  $\{v_1, v_2, \dots, v_n\}$  in  $\mathbb{R}^n$  such that

$$\langle v_i, v_j \rangle = \delta_{ij} \quad (8)$$

The orthogonal matrix is a square matrix  $Q$  such that

$$Q^T Q = I \quad (9)$$

where  $I$  is the identity matrix. The orthogonal matrix  $Q$  can be used to transform a vector  $x$  into a vector  $y$  such that



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