Regional TDM Inventory Baseline Report

Regional Transportation Demand Management Plan

Deliverable 2-1

December 28, 2012

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Executive Summary

Project Purpose

The primary objective of this project is to provide planning support and technical analysis to produce a long-range strategic Transportation Demand Management (TDM) Plan for the Atlanta region. The TDM Plan is intended to serve as an implementation tool to help stakeholders leverage and build on the existing plans and concepts within PLAN 2040, the region's long-range comprehensive plan. The goal of the Regional TDM Plan is to define a strategic framework for developing and integrating TDM strategies into planning, project development, and system operations and investment decision-making.

The purpose of this inventory report is to summarize baseline conditions, policies, and support for implementation of TDM in the Atlanta region. The key objectives of the inventory report are:

1. Document existing baseline conditions, policies, programs and services related to the delivery of TDM**+** in the Atlanta region.
2. Establish a common understanding of the existing conditions in the region to better inform future tasks.
3. Benchmark the existing programs, policies and services to those in similar regions across the country.

The baseline inventory is informing the assessment of existing programs and services as well as the development of recommendations for implementation.

Defining TDM+

While traditional definitions of TDM focus primarily on employer-based programs, the Atlanta Regional TDM Plan will consider strategies within a broader context. Known as **TDM+**, it expands the traditional view of TDM strategies as employer-based commute trips by making the connection between traditional TDM (employer-based rideshare, vanpools, and telework programs) with livability, sustainability, transit, walking and biking, systems operations, transportation planning, economic development, climate change, healthy communities, and active aging. It supports a comprehensive regional vision, with primary objectives of reducing single-occupant-vehicle trips (at any time of day), increasing transportation choice, reducing household transportation costs, and transporting people and goods more efficiently by maximizing the efficiency of existing investments. In any region, operating TDM as stand-alone traditional commuter and employer-based ridesharing programs limits its reach and effectiveness.

Report Definitions

The following terms and definitions are used throughout the report.

Transportation Demand Management is defined by as "…helping people change their travel behavior to meet their travel needs by using different modes, traveling at different times, making fewer or shorter trips, or taking different routes."

(Source: cutr.usf.edu/programs-1/transportation-demand-management-2/)

Views on TDM have evolved over time and come to include a variety of different strategies. To account for different approaches, in this report, TDM is referred to in two categories: 1) Traditional TDM and 2) TDM+.

Traditional TDM or the conventional approach, has typically been focused on commuter-based programs, often telework, ridesharing, van-pooling and employer-focused efforts.

TDM+ encompasses a broader view of strategies by expanding traditional TDM to address trips beyond those for work commutes. It makes the connection between traditional TDM (employer-based commuter programs) with livability, sustainability, transit, telework, walking and biking, systems operations, transportation planning, economic development, climate change, healthy communities, and active aging.

TDM+ expands the reach of conventional TDM by making the connection to travel demand (by influencing mode and destination choice), traffic demand (by influencing time of day and route choice), and facility and network demand (by influencing land choice). Although the Atlanta region in already embodies many of these broader TDM+ concepts in several different programs that are not currently seen as part of a TDM strategy, the Regional TDM Plan will focus on more formally making the connections between TDM and broader objectives to improve sustainability, economic development, and healthy and active communities.

Methodology

The inventory is based on a literature review of reports and data, best practices analysis, and interviews with stakeholders. To develop a detailed inventory of existing programs, policies and services related to TDM+ in the Atlanta region, numerous state, regional, and local reports were reviewed. To supplement the inventory research, a series of interviews were conducted with stakeholders, including a broad representation of Employer Service Organizations (ESOs), Transportation Management Associations (TMAs – which are also ESOs and will be called ESOs throughout this document, *see definitions in sidebar*) and TDM Service Providers, Community Improvement Districts (CIDs), vanpool operators, employers, and federal, state, regional and local agencies. Finally, to benchmark the TDM programs in the Atlanta region, several programs from around the country were reviewed.

Inventory Key Findings

Based on the interviews, input from the TDM Plan's Technical Advisory Committee (TAC) and detailed document review, some trends and issues facing TDM in the Atlanta region were identified:

- **Growing population and auto-centric development patterns have heightened the need for new approaches towards travel options and congestion management – making TDM+ more important now than ever.** The region is projected to grow to more than 8 million people by 2040, adding increasing demand to the existing transportation system. Past roadway construction projects have largely determined the development patterns in the region.
- **While TDM has a long history in the region, the regional planning process does not currently address the vision and strategic direction for TDM.** The Atlanta region has a successful track record with broad TDM service coverage throughout the region dating back to the 1999 Framework for Cooperation to Reduce Traffic Congestion and Improve Air Quality. Although a self-organized group provides structure and leadership through the Employer Services Committee, the region is lacking central formal and accountable leadership responsible for setting the region's TDM goals and vision.

Report Definitions

The following terms and definitions are used throughout the report.

Employer Services Organizations are groups that work with businesses and employers to provide employees with alternatives to single occupant vehicle (SOV) travel. In the Atlanta region, there are eight ESOs, including ASAP+, Buckhead Area TMA, Central Atlanta Progress, Clifton Corridor TMA, Commuter Club, Midtown Transportation Solutions, Perimeter Transportation and Sustainability Coalition and the Clean Air Campaign. The Clean Air Campaign is also responsible for statewide TDM coordination.

Transportation Management Associations are defined in the GDOT SSTP as "organizations that address the transportation needs of a particular service area. TMAs are often started as public-private partnerships in response to business concerns with mobility or accessibility. TMAs may provide vanpool or carpool formation, transit discounts, bicycle and pedestrian programs or shuttle services. "While most ESOs are TMAs, ASAP+ and the Clean Air Campaign are not identified as TMAs.

The MPO programs the funds to support many of the TDM programs, but TDM vision, policy and decision-making is currently not made through the regional planning process.

- **The region has benefitted from a wealth of resources and partners in support of TDM at the local, regional and state level, many stakeholders expressed a lack of clarity on roles and responsibilities within the broader TDM community.** There is greater interest across the region in better defining roles and expectations for service providers and partners involved in all elements of the TDM program, and particularly with vanpooling.
- **There is strong private sector and employer support for TDM in Atlanta.** The region benefits from a broad range of both active and engaged partners, with some providing significant financial support for programs like vanpools. Partners include universities and technical colleges, the Centers for Disease Control and Fortune 500 companies.
- **Regional partners have shown additional interest in framing TDM beyond its traditional definition.** Stakeholder interviews expressed concern that many TDM programs are seen within a silo and not well integrated more broadly into other complementary programs and services. PLAN 2040 has set the stage to increase the reach of TDM with the plan's broader objectives of increasing mobility options, fostering a healthy, educated population, promoting accessible places to live, improving energy efficiency, and pursuing economic development.
- **There is interest in better linking program evaluation to programming and policy decisions.** With the new emphasis on performance measurement in MAP-21, there will be a growing focus on transparency and accountability that will likely support investments in cost-effective transportation strategies such as TDM.

Benchmarking Key Findings

The **TDM+** benchmarking analysis expanded on traditional components of employer-based TDM programs to include broader objectives such as livable and healthy communities and integrated transportation system operations. Based on a review of several major programs around the country that were comparable to Atlanta, the following key themes for Atlanta were identified:

- **Program Organization:** Although each program reviewed had some nuances related to its organizational structure, the success of an organizational model depends more on cooperation and clear definition of roles than the type of structure it actually follows (whether it is MPO-based, contracted, etc.) The Atlanta region benefits from a variety of supportive partners and organizations invested in TDM, including but not limited to transit agencies, walking and biking organizations, and employer services organizations. However, compared to other regions, there is a lack of formal regional decision-making that provides a clear strategic direction to guide the coordination and cooperation between those partners.
- **Programs and Services:** Although many programs around the country still deliver traditional TDM programs (employer-focused ridesharing), there are also many expanding into more innovative services, including real-time, dynamic ridesharing and regional trip planners, customized or centralized call centers for one-stop sources of information about all travel choices, coordination with transit , walk and bike programs, and telework implementation assistance. The Atlanta region

has successfully delivered innovative services beyond traditional employer-based programs and continues to pursue new programs and services. However, not all programs are as well integrated in the Atlanta region and some services, such as vanpool, are operated in a silo rather than fully integrated into the broader TDM program. Although some integration occurs on an informal level through the coordination of the self-organized Employer Services Committee and its subcommittees, there is no formal coordination of programs and services or coordinated policy level decisions.

- **Outreach and Marketing:** While many programs have struggled with the issues of how and when to market locally versus regionally in order to best deliver TDM messages, there are best practices that demonstrate success in both approaches. Across those programs reviewed, the approaches varied. Currently, several brands/messages and marketing strategies exist in the Atlanta region with little integration, which is an issue that has been raised by the community and verified by CTE surveys. However, the Atlanta region is in a prime position to address this challenge with GDOT's new statewide re-branding approach. Known as Georgia Commute Options, the new marketing and branding approach evolved out of the awareness of issues associated with multiple brands and is intended in part to alleviate commuter confusion cause by these competing brands.

- **Promotions and Incentives:** Incentives can play a significant role in enlisting participation in non-SOV commute modes; the Atlanta region has demonstrated how successful it can be with its Cash for Commuters program. While other programs have used similar strategies, the Atlanta region's program excels with its associated surveying to track its effectiveness.

- **Land Use, Accessibility, Healthy Communities and Active Transportation:** Land use practices are critical to fostering the creation of communities that are healthy, accessible and provide a range of transportation choices. Within cities in the Atlanta metropolitan area, 93.6% of jobs are in neighborhoods with public transit service, more than half, 52.6%, of the entire Atlanta metropolitan area jobs are transit accessible,[1] and the region has effectively promoted transit-oriented development through its Livable Centers Initiative program. Although the region is making significant strides in livability, Atlanta is expected to continue to build upon existing efforts through PLAN 2040's emphasis on healthy, active communities.

- **Parking Pricing and Management:** The Atlanta region has struggled with differences in parking management policies throughout its urban and suburban employment centers and residential areas. Parking facilities in the Atlanta region are primarily owned and maintained by private entities, however, a smaller share are maintained by municipalities. Coordination for parking pricing strategies and policy is challenged since policy and planning entities have little input in how private property owners manage their parking investments. Other regions have innovatively addressed parking management through pilot programs on demand-responsive parking and mobile applications, for both public and private facilities. The Atlanta region TDM community has long recognized the problems with current parking policies and has made several attempts in the past to identify a potential pilot project but has been unsuccessful to date.

- **Transportation Systems and Operations, Traveler Information and Intelligent Transportation Systems (ITS):** More states are beginning to take advantage of the link between travel

[1] http://www.brookings.edu/transitandlabor

options/choices and ITS by linking rideshare information to their traveler information systems, including New York and California. Although the Atlanta region has several managed lanes (high occupancy toll [HOT], high occupancy vehicle [HOV], and toll roads) to better manage congestion, there remain a number of unconstructed elements in those networks. With the Federal Highway Administration's growing emphasis on active transportation demand management, the link between ITS and TDM is likely to continue.

- **Performance Measurement and Evaluation:** Performance measurement is critical for identifying the impact of TDM programs and activities. The Atlanta region has a strong history of data collection through GDOT's contract with Center for Transportation and the Environment (CTE). Although its use of surveys surpasses those evaluation activities in other parts of the country, stakeholders have indicated that the region can better link its data collection to programing and policy decisions.

The key inventory findings combined with the results of the benchmarking will drive the development of preliminary recommendations for the Regional TDM Plan.

Moving Forward – Assessment and Strategy Development

Building on the key findings from the inventory, an assessment of Strengths, Weaknesses, Opportunities and Threats (SWOT) of TDM in the Atlanta region will be finalized. Many of these have already been uncovered through interviews with stakeholders and review of program documents. A focus group will also be held with stakeholders to vet the SWOT analysis.

A series of regional strategies will then be developed to leverage existing strengths and build on opportunities, as well as respond to challenges or weaknesses in the region. Using a forward looking approach, preliminary strategies will be identified for action plans and implementation.

1. Regional TDM Plan – Purpose and Background

The primary objective of this project is to provide planning support and technical analysis to produce a long-range strategic Transportation Demand Management (TDM) Plan for the Atlanta region. The TDM Plan is intended to serve as an implementation tool to help stakeholders leverage and build on the existing plans and concepts within PLAN 2040, the region's long-range comprehensive plan. The goal of the Regional TDM Plan is to define a strategic framework for developing and integrating TDM strategies into planning, project development, and system operations and investment decision-making.

1.1. Inventory Report - Objectives

The purpose of the inventory report is to outline baseline conditions, policies, and support for implementation of TDM in the Atlanta region. The **key objectives** of the report are:

1. Document existing baseline conditions, policies, programs and services related to the delivery of TDM**+** in the Atlanta region.
2. Establish a common understanding of the existing conditions in the region to better inform future tasks.
3. Benchmark the existing programs, policies and services to those in similar regions across the country.

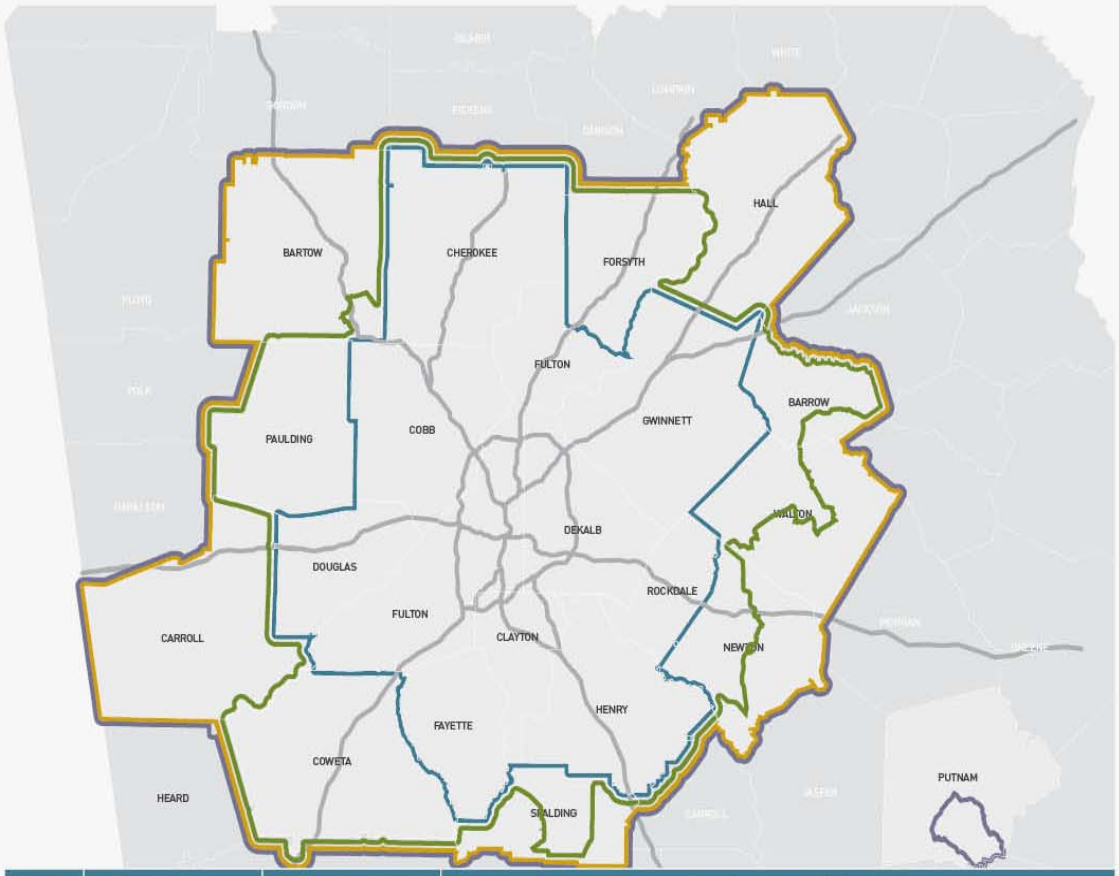
The baseline inventory will inform the assessment of existing programs and services as well as the development of recommendations for implementation.

Defining the Region's Boundaries

The Regional TDM Plan will address the Atlanta Metropolitan Planning Organization (MPO) area. This area includes all or parts of the following eighteen (18) counties: Barrow, Bartow, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, Rockdale, Spalding, and Walton. [2]

[2] The Regional TDM Plan is an MPO-produced plan driven by the goals of better integrating TDM into the MPO planning process and allocating funds in the region's transportation plans. While air quality is measured by the MPO for the non-attainment area (20 counties), the MPO does not set policies or allocate funds for those areas outside the MPO. Therefore, the Regional Plan addresses TDM for only the 18 counties in the MPO area.

Figure 1: Planning Area of Atlanta Regional Commission



Boundary	Boundary Name	# of Counties Included	Planning Responsibilities
	Regional Commission (RC)	10 counties	ARC is the State-designated Area Planning & Development Commission (APDC) , it is assigned the responsibilities of an RC, one of 12 in the State. Every county in the state must be a member of an RC and pay membership dues. RCs facilitate intergovernment coordination and provide comprehensive planning assistance and other services to constituent jurisdictions. Prior to April 2004, this boundary was also the Atlanta MPO boundary.
	Previous Ozone Non-Attainment Area (1 hour standard)	13 counties	The Clean Air Act requires that regional transportation plans help non-attainment areas achieve clean air standards. The 10 counties within the RC area, as well as three others, were designated as an one-hour ozone nonattainment area. On 6/14/05, EPA determined that attainment had been reached; on 6/15/05, EPA officially withdrew the one-hour regulations.
	Metropolitan Planning Organization (MPO)	All of 13 counties; parts of 5 counties	The 2000 census identified an expansion of the Atlanta urbanized area that encompassed portions of 19 counties (red). MPOs develop transportation plans for the current and future urbanized areas. ARC serves as the MPO for all or part of these 18 counties. A small portion of the Atlanta urbanized area falls within Hall County. By agreement, planning for that area is conducted by the Gainesville-Hall MPO.
	Ozone Non-Attainment Area (8 hour standard)	20 counties	In April 2004, EPA implemented a new eight-hour standard for ozone. ARC has coordinated since that time with GHMPO's planning efforts to demonstrate conformity for the entire non-attainment area. USDOT, in consultation with USEPA, made an initial conformity determination for this nonattainment area on 12/21/04, a second determination on 3/30/06, a third on 10/10/07 and the most recent determination on 6/10/09.
	Particulate Matter ($PM_{2.5}$) Non-Attainment Area	All of 20 counties; parts of 2 counties	EPA designated this nonattainment area in December 2004. In early 2006, ARC performed a technical analysis for the 20+ county nonattainment area, which demonstrates conformity to PM 2.5 requirements. USDOT, in consultation with USEPA, made an initial conformity determination for this nonattainment area on 3/30/06, and a second determination on 10/10/07.

1.2. Defining Transportation Demand Management

TDM is defined by the Center for Urban Transportation Research (CUTR) as "…helping people change their travel behavior to meet their travel needs by using different modes, traveling at different times, making fewer or shorter trips, or taking different routes."[3]

TDM can help people change their travel behavior by enhancing or expanding the following choices:

- **Travel choice** – identifying whether travel is necessary, as technology advances and lifestyle practices change;
- **Mode choice** – shifting demand from single occupancy vehicles to other modes of transportation such as transit, carpools or vanpools, bicycling, or walking;
- **Time choice** – shifting travel times to reduce peak period congestion;
- **Location choice** – reducing the distance of required travel through land use planning and urban design strategies; and
- **Route choice** – helping travelers to choose less congested facilities by providing real-time information.

It is important to note that views of TDM have evolved over time and come to include a variety of different strategies. Some programs still take more traditional or conventional views of TDM while others have begun to see TDM in a broader context. To account for different approaches, in this report, TDM is referred to in two categories: Traditional TDM and TDM**+**.

Figure 2: Defining TDM: Traditional vs. TDM+

Traditional TDM	**TDM+**
• Traditionally focused more narrowly on commuter-based work trips, through employer strategies, such as ridesharing and telework. • Traditionally focused on increasing rideshare applicants as key objectives • Less often linked to broader objectives for livability, economic development, public health, etc.	• Broadens the view of TDM strategies by expanding TDM to address trips beyond those for work commutes. • Seeks to address broader objectives for livability, sustainability, transit, walking and biking, systems operations, transportation planning, economic development, climate change, healthy communities, and active aging.

TDM**+** strategies within consideration include:

- Ridematching programs and support for vanpooling and carpooling
- Transit information and integration
- Financial incentives and pricing
- Services, such as carsharing and bicycle sharing

[3] CUTR, cutr.usf.edu/programs-1/transportation-demand-management-2/

- Walking, biking, and transit access programs
- Marketing, education, and outreach
- Telecommuting and other alternative work arrangements
- Parking management
- Road and parking pricing
- Land use, livable communities, and smart growth programs
- Active living, active aging, and healthy communities
- Regional one-click transportation system
- Human services transportation, voucher systems, travel training
- Freight strategies to shift time, mode or route choice of goods movement
- Traffic management, work zone management, and special events management strategies to influence travel choice and demand
- Traveler information systems

While the Atlanta region is already pursuing many TDM**+** strategies, the ARC Regional TDM Plan will focus on formalizing a TDM**+** approach on a regional level. The Regional Plan will seek to leverage the success of existing TDM**+** strategies within the region, such as:

- ARC's Livable Communities Initiative (LCI) and Lifelong Communities program
- Various transit and mobility management activities aimed at expanding travel options and choices, reducing trips during the peak period and increasing the efficiency of the existing transportation system.
- The inclusion of public health in TDM activities, including Emory's public health community's participation and CDC participation in the Clean Air Campaign Board.
- TMA involvement in land use decisions, such as BATMA's close coordination with Buckhead CID. Both groups work very closely with property owners to address their sites and fund a lot of their own studies and infrastructure projects.
- Use of TDM for construction projects, such as the successful 14th Street Bridge Project.
- ESO promotion of biking and walking.

CDC employee commuting to work

Well-known for regional and local livability and sustainability initiatives, ARC and its partners have expressed the intent to build this TDM framework on the adopted PLAN 2040, which focuses on livability and sustainability goals. Although the term TDM**+** is not currently part of PLAN 2040, ARC envisions the Regional TDM Strategic Plan as an implementation tool for TDM concepts within PLAN 2040.

Figure 3: Examples of TDM+

What does TDM+ Look Like? Examples include:

- **Mobile applications** are being developed to help travelers make real time travel choices between multiple modes of transportation. For example, **Caltrans** provides a Quickmap app that allows users to determine the best mode and route to take to their destination, as well as providing information about traffic incidents, lane closures, and other factors that affect transportation decisions. The **ParkPGH** app provides Pittsburgh drivers with real-time availability, pricing, and reservations for downtown cultural district parking.
- The **East Bay Greenway Health Impact Assessment**, which recognized the **link between TDM and public health** and the potential for TDM to create healthier and safer communities.
- **TDM reducing the impacts on travelers of major construction projects**. An example of this is **Caltrans' Fix I-5 program**, which provides alerts to travelers about the times of impact and alternative travel options.
- **Closing the last mile gap with vanpools** - **Pace,** the suburban bus operator for six counties surrounding Chicago, has addressed the issue of travelers driving for an entire commute because of poor connectivity between the travelers' final transit stop and ultimate destination, through its Vanpool Incentive Program, which makes the cost of making both transit and vanpooling competitive compared to the cost of driving.
- **Mobility management** through connecting various transportation modes and networks, such as **I-way in Idaho**, which is statewide and comprehensive.

TDM+ in the Context of Multiple Objectives

A TDM+ strategy includes multiple objectives besides just reducing congestion. TDM+ can be used to support livability and smart growth, sustainability, improved air quality, additional travel choices, stronger economic vitality, reduced GHGs, improved public health, increased mobility, and increased transportation system efficiency and capacity. Some specific examples include TDM+ in the context of:

Transportation choice and land use patterns

TDM**+** broadens the definition of TDM to address not only mode choice, but the choice to travel, choice to link trips, time choice, location choice, and route choice. Land use patterns, transportation infrastructure, and transit availability influence individual decisions to choose alternatives to non-single occupant vehicle (SOV) trips and therefore should be part of the TDM equation. Additionally, the coordination, marketing and expansion of transit service can enhance economies of scale for human services programs and those that cater to less-mobile and non-automotive populations, offering more mobility and travel choices.

Transportation infrastructure and systems operations

TDM**+** helps to maximize the value and efficiency of existing infrastructure investments. Adjusting incentives to discourage SOV-trips and coordinated operational improvements can play a strong role in maximizing the effectiveness of existing infrastructure and ensuring that the entire system operates as smoothly and cost-

effectively as possible. Most important in considering additional capacity projects is the degree of connectivity between modes, and coordinated information about using each mode.

Air quality, environment and healthy communities

According to the 2010 Atlanta Regional Commuter Survey, 82 percent of Atlanta region workers commute by driving alone. Single occupant vehicle usage contributes to traffic congestion and worsens the air quality. In many areas of the state, as much as half of smog-forming emissions come from the tailpipes of cars and trucks.[4] Reducing SOVs in the region can con tribute to better air quality and lessen traffic congestion. SOV reduction is the core of TDM programs. Additionally, TDM**+** provides clear links between travelers and their ability to reduce their carbon footprint and create more breathable air. Land use patterns that encourage the expansion of active transportation choices include creating more walkable and bikeable communities, making them not only conducive to physical activity and use of transit but also more accessible to both young and elderly populations. Evidence suggests that there are numerous health benefits to living and working in a walkable community. Studies have shown that walking or biking as part of travel is as effective as structured workouts for improving health. [5]

Economic development

TDM**+** examines how TDM can promote economic development by improving timely and reliable access to employment centers and delivery of goods. TDM can also help to reduce the impact of major construction projects on businesses and ensure that transportation systems can accommodate special revenue-generating events. Considering that traffic congestion costs the region's employers $2.9 billion a year in lost time and productivity, reducing congestion will also contribute to the economic vitality of existing businesses.[6]

1.3. Background: Why Develop a TDM Plan?

TDM has been used in the Atlanta region for many years, but a regional plan to coordinate TDM planning, programs, and operations has not yet been adopted. With congestion continuing to increase and limited funding to add additional roadway and transit capacity, there is a great need now, more than ever, to develop a regional TDM plan that coordinates established TDM programs and sets a regional vision for TDM. In addition, a regional plan would help facilitate cooperation and buy-in to further establish TDM in the regional transportation planning process.

Within the TDM community, TDM**+** concepts have progressed through, for example, the piloting of bike and pedestrian programs, aging initiatives, TDM concepts tied to livability and sustainability initiatives, and transportation planning and economic development, to name a few. Incentive programs have also helped raise awareness and participation in alternative commuting choices. These initiatives have strengthened

[4] According to Clean Air Campaign - http://www.cleanaircampaign.org/Your-Air-Quality-Transportation/State-of-the-Commute and based on mobile source emissions data from the Georgia Environmental Protection Division

[5] Dunn, A., et al. 1999. Comparison of lifestyle and structured interventions to increase physical activity and cardiovascular fitness: a randomized trial. Journal of the American Medical Association, 281: 327-34.

[6] According to http://www.cleanaircampaign.org/Your-Air-Quality-Transportation/State-of-the-Commute and 2010 Urban Mobility Study for Atlanta, Texas Transportation Institute

TDM in the region, though there is a lack of regional cohesion, specifically with policy-makers, and regional messaging that addresses both traditional and more contemporary understandings of TDM+.

Brief History of TDM in Atlanta Region

The region has a long history of TDM service delivery. The snapshot below provides the foundation upon which the Regional TDM Plan will be built.

Figure 4: TDM Timeline

Year	Milestone
1984	**Constitutional Basis for ESOs established** with an amendment to the state Constitution, expanding the function of CIDs to include services for public transportation, allowing them therefore to create and operate ESOs.[7]
1994	**Commute Connections program established** by ARC to reduce vehicle trips and emissions. It initiated work the following year with area employers to help them operate more efficiently while providing their employees with more commuting options to and from work.
1996	**The first ESO was formed in Georgia** – the Commuter Club affiliated with Cumberland CID.[8] Additionally, during the **1996 Olympics**, Commute Connections offered direct technical assistance to the Atlanta Committee for the Olympic Games. Following the Olympics, the program continued to work toward helping improve air quality and reduce traffic congestion in the Atlanta region. The program grew substantially as gas prices and the region's population continued to soar. Additionally, **Clean Air Campaign was formed** following the Olympics initiatives by Atlanta region business, civic, environmental, and political leaders to reduce traffic and air pollution during the 1996 Olympics.
1997	**The Voluntary Ozone Action Program (VOAP)** was formed by the Division of Environmental Protection within the Georgia Natural Resource Department with the main target of reducing driving. This program developed ozone alerts to tell residents of Atlanta the severity of ozone levels for the following day and were distributed through freeway traffic signs and local newspapers.
1998	**The Partnership for a Smog Free Georgia** came out of the VOAP as a state-sponsored program to reduce the number of days that ground-level ozone exceeded the national ambient air quality standards (NAAQS) in metro Atlanta. This partnership provided federal and state subsidized commuting alternatives for local employees. Also by this year, **Georgia had five ESOs formed**, many of which were beginning to form in Georgia and around the country in response to significant population growth and traffic

[7] Transportation Management Associations: Prospects and Problems for Public Administration, Morcol and Zimmerman, International Journal of Public Administrators, page. 1105.

[8] Transportation Management Associations: Prospects and Problems for Public Administration, Morcol and Zimmerman, International Journal of Public Administrators, page. 1102.

Year	Milestone
	congestion. Those formed by this time included Commuter Club, Buckhead Area TMA, Perimeter Transportation Coalition and Clifton Corridor TMA. [9]
1999	**Georgia Regional Transportation Authority was formed** at the urging of metro Atlanta's business community to improve mobility, air quality and land use practices. The Georgia Regional Transportation Authority Act of 1999 created and gave GRTA significant power over transportation policy in counties that fail to comply with the Clean Air Act. The Act also gave GRTA the power to build and operate or force local governments to operate public transportation systems. Additionally, **the Framework for Cooperation to Reduce Traffic Congestion and Improve Air Quality was developed.** Several organizations receiving CMAQ funds and their stakeholders met to identify ways to improve the efficiency and effectiveness of the aggregate programs. The group developed the Framework to represent a set of guiding principles that defined a strategic direction for coordination of efforts to accomplish their goals. Also in this year, t**wo more ESOs were formed:** Hartsfield Area TMA and Cobb Rides.
2001	**The Clean Air Campaign merged with the Partnership for a Smog Free Georgia (PSG)**. The merge moved PSG from providing just education and air quality awareness to providing direct services to employers and commuters, ultimately moving the combined organizations to the center of regional efforts to reduce traffic congestion and improve air quality. Also by this year, **two more ESOs were formed**: Downtown TMA and Midtown Transportation Solutions.
2004	**Commute Connections became 1-87-RIDEFIND.**
2008	**RideSmart replaced 1-87-RIDEFIND** which had originally stemmed from the Olympics Commute Connections
2012	**Regional Transportation Referendum** for the 10-county Atlanta metro area did not pass. The 1 percent sales tax, estimated to generate $8.47 billion over the ten year period, would have been allocated to fund 157 projects considered regionally significant and identified in an investment list by the Atlanta Regional Roundtable. While the project list was not specifically TDM-focused, this defeat has placed a new emphasis on efficiency in transportation since large funds for the numerous capacity-adding projects will not be available through this source.

What Can a TDM Plan Do for the Atlanta Region?

A coordinated, regional, and comprehensive TDM plan and strategy can help deliver the following benefits to the Atlanta region, if it is implemented:

- Serve as an implementation tool for **PLAN 2040** and the **Statewide Strategic Transportation Plan.**
- Maximize the value of existing transportation infrastructure.

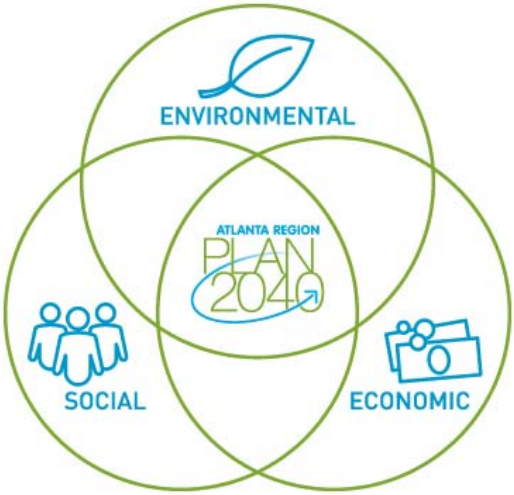
[9] Transportation Management Associations: Prospects and Problems for Public Administration, Morcol and Zimmerman, International Journal of Public Administrators, page. 1103.

- Better integrate travel planning with transportation planning, system operations, economic development and healthy communities.
- Achieve cost savings through coordination of existing efforts.
- Support transit, walking and biking, and activity center redevelopment investments.
- Establish a framework for funding decisions and identify long term strategies tailored specifically to the region.
- Support regional job and population growth and the expansion of new and existing industries.
- Support connection of the human services transportation system to the fixed-route transit system and other mobility options.

The Atlanta region's TDM Plan will go above and beyond traditional TDM plans by incorporating broader concepts, including: livability, sustainability, transit, walking and biking, systems operations, transportation planning, economic development, climate change, healthy communities, and active aging.

TDM+ as a Tool for PLAN 2040

TDM+ activities, when implemented in a coordinated manner, will work to simultaneously achieve many of the goals and objectives outlined in PLAN 2040. Not only will TDM+ achieve transportation, livability, and air quality goals, but it also has the potential to have significant economic impact on the region, by maximizing the value of existing infrastructure and alleviating the need to invest in costly roadway and transit capacity expansions, in some cases.



The following are the five objectives of PLAN 2040 and an explanation of the mechanisms through which TDM+ activities will help achieve them.

1. Increase mobility options for people and goods:

By providing incentives for residents of the Atlanta region, particularly commuters, to use non-SOV alternative modes of travel, TDM will work toward assuring the preservation, maintenance, and efficient operation of the existing transportation system. PLAN 2040 calls for the implementation of cost effective improvements to maximize existing assets and TDM activities ranging from installing new bicycle and pedestrian infrastructure to implementing managed lanes. Although new infrastructure for non-SOV travel

such as bike lanes is a supply-side activity, these infrastructure improvements allow increased use of non-SOV modes of travel, thus decreasing congestion, which will further enhance the mobility of people and goods throughout the region. A recent FHWA primer identified effective strategies to integrate management and operations with TDM to support livability and sustainability initiatives.[10] It recommended that some activities traditionally seen as infrastructure or capital investment can also be considered operational and TDM improvements, such as walking, bicycling and complete streets improvements and network connections, transit access, roundabouts (which replace signals), and parking management (such as re-striping to add parking and reduce lane widths).

2. Foster a healthy, educated, well trained, safe and secure population:

TDM**+** land use recommendations and activities support the creation of walkable communities with pedestrian and bicycle infrastructure to encourage healthy and active lifestyles. Studies have shown that riding transit is significantly safer for travelers than driving, and greater numbers of pedestrians on the street at various times of the day has the ability to increase public safety when supported by safe crossings and other pedestrian improvements. TDM+ integrated outreach, education, and marketing can support enhanced safety across multiple programs.

3. Promote places to live with easy access to jobs and services:

TDM and TDM**+** policies and programs such as employer-provided shuttles that improve accessibility to transit hubs, mixing land uses to allow employees to live close to their work sites, livable communities strategies to enhance existing downtowns and business districts, and incentives for employers to locate in transit-accessible areas can all help to accomplish this goal of PLAN 2040.

4. Improve energy efficiency while preserving the region's environment:

Automobiles account for a large portion of greenhouse gases and other pollution emitted in the Atlanta region, and emissions are exacerbated when congestion results in the idling of vehicles. Use of non-SOV transportation modes significantly reduces fuel use and GHG emissions on a per capita basis, improving air quality. TDM**+** strategies and services can complement integrated transportation and land use strategies that promote compact, walkable communities.

5. Identify innovative approaches to economic recovery and long-term prosperity:

TDM**+** not only furthers PLAN 2040's calls for focusing financial resources and public investments in existing communities, but specifically aims to ensure that resources and public investments are employed in the most cost-effective manner possible. Between 1985 and 2005, Georgia's investments in transportation infrastructure as a proportion of state GDP lagged behind that of other states; reinvestment in cost effective modes of transportation not only will achieve the goals above, but may also create thousands of jobs. Reducing congestion through implementing TDM strategies can also contribute to economic growth through reduction of the current $874 lost to congestion through wasted fuel and increased travel time for every resident in the entire region. Reducing the burden of transportation costs on households in the Atlanta

[10] "The Role of Transportation Systems Management & Operations in Supporting Livability and Sustainability: A Primer" Federal Highway Administration, 2012. http://www.ops.fhwa.dot.gov/resources/news/news_detail.asp?ID=802

region will also increase the resources these households have to invest and spend, stimulating the economy and creating jobs.

By addressing all five of PLAN 2040's objective areas, TDM will help the region achieve results that meet the "triple bottom line," by enhancing economic growth while producing environmentally friendly results and achieving key social goals of enhancing opportunity and access for residents of all income levels.

Atlanta Region Bike to Work Day Event

Source: CDC

2. Sources and Methodology

Compiling a robust inventory of all TDM activities in the Atlanta region requires review of several data and information sources. Review of reports and data, an assessment of best practices and interviews with key stakeholders were the three main sources of information for this report, each of which is discussed in detail below.

Reports and Data

Reports and available data were the initial sources of information for this inventory report. Numerous state, regional, and local reports related to transportation in the Atlanta region were reviewed; information from these reports and plans served as the foundation for the research. These documents included:

- ARC regional plans and documents, such as the ARC Strategic Plan; PLAN 2040 Regional Assessment, Regional Transportation Plan, Regional Agenda, and 2012 Unified Planning Work Program.
- Program/mode-specific documents, such as 2007 Atlanta Region Bicycle Transportation and Pedestrian Walkways Plan, 2010 Transit On-Board Survey, Concept 3 Regional Transit Vision, Atlanta Regional Strategic Truck Route Master Plan; commuter rewards regional incentive program survey findings technical report (GDOT), 2010 Atlanta Region Vanpool Rider Survey Technical Report (GDOT), The Clean Air Campaign Cash For Commuters Program Survey Technical Report; and the 2009 Atlanta Regional Commission RideSmart Placement Survey Findings Technical Report.
- Other relevant documents, such as ARC Congestion Management Process, Strategic Thoroughfares Plan, Coordinated Human Services Transportation Plan, 2011 Household Travel Survey, Lifelong Communities Framework and Handbook; Statewide Strategic Transportation Plan; 2010 Regional Commuter Survey Technical Report (GDOT) and community and local Comprehensive Transportation Plans and LCI plans, respectively.

Best Practices

Additional existing research was leveraged from National Cooperative Highway Research Program (NCHRP), Federal Highway Administration (FHWA), state departments of transportation, and other academic research on transportation and TDM-related policies, including those from organizations and agencies such as the Brookings Institution, US Environmental Protection Agency (EPA), Transit Cooperative Research Program (TCRP), the Victoria Transport Policy Institute, the Institute for Transportation and Development Policy, the Texas Transportation Institute, the European Commission, and many others. These reports provided context for the research and much of the information in the benchmarking analysis. Data available from local sources, organizations listed above, and the US Census Bureau's decennial census and American Community Survey have furthered the understanding of the household and population dynamics that have significant implications for TDM in the region.

Interviews

Interviews were conducted with a variety of stakeholders to gather information on existing practices and programs and build a platform for coordination and cooperation amongst the partners. A selection of the TDM Plan's TAC members were invited to participate in in-person interviews and focus groups, including

representation from Employer Service Organizations (ESOs) TDM Service Providers, Community Improvement Districts (CIDs), vanpool operators, employers, and federal, state, regional and local agencies.

Figure 5: TAC Partners

- Atlanta Regional Commission (ARC)
- Atlantic Station Access + Mobility Program (ASAP+)
- Buckhead Area TMA (BATMA)
- Clean Air Campaign (CAC)
- Cumberland CID
- Center for Transportation and the Environment (CTE)
- Central Atlanta Progress (CAP)
- Clifton Corridor TMA (CCTMA)
- Cherokee Area Transportation System (CATS)
- Douglas County Rideshare
- Enterprise Rideshare
- Georgia Department of Transportation
- Georgia Power
- Georgia Regional Transportation Authority (GRTA)
- Midtown Alliance
- Perimeter Transportation & Sustainability Coalition (PTSC)
- vRIDE

Additional partners will be contacted for interviews throughout the development of the TDM Plan.

3. Federal, State, Regional and Local Context

The context for ARC's Regional TDM Plan inventory is rooted in federal, state and regional legislation and policies. Details on each are included below.

3.1. Federal Legislation and Programs

MAP-21

The passage of the Moving Ahead for Progress in the 21st Century Act (otherwise referred to as "MAP-21") in July 2012 marked a number of changes to federal transportation policy, many of which have implications for TDM planning and investments. Among other changes, MAP-21 significantly expanded definitions and eligibility for federal funding to take a more system-level, multimodal approach to transportation planning; active transportation, demand management, traveler information services, and parking management are now all eligible for federal funding. Additionally, the definition of "carpool" has been amended to include real-time and dynamic ridesharing projects, which recognizes the increasing innovation in the field.

Key Changes in Federal Transportation Policy from MAP-21 Expected to Impact TDM in Metro Atlanta

- Expanded eligibility for CMAQ funds for telecommuting, ride- and car-sharing, alternative work hours, and pricing projects.
- Public sector agencies that contract for vanpool services can use revenue as local match for federal funds supporting the expansion of vanpool programs.
- No local match requirement for the establishment or expansion of rideshare programs.
- MAP-21 gives states authority to convert existing HOV lanes into HOT lanes as long as HOVs are not charged a toll, which continues to encourage ridesharing.
- Changes in definition to expand "carpool" to include real-time and dynamic ridesharing projects.

As was the case under previous transportation legislation (SAFETEA-LU), CMAQ improvement projects will require a 20 percent match of local funds, although there are some exceptions. The legislation has redefined CMAQ eligibility to include telecommuting, ridesharing, car-sharing, alternative work hours, and pricing projects (all important parts of most TDM programs) while maintaining the prohibition against using CMAQ funds for general capacity expansion (except for managed lanes projects). More specifically, the definition of Transportation Management and Operations (TM&O) changed to now include active transportation and demand management, traveler information services, parking management, and coordination of highway, rail, transit, bicycle and pedestrian operations. CMAQ funds may also be eligible for areas that are not or have never been designated for non-attainment if they are eligible under the Surface Transportation Program.[11] MAP-21 also consolidated a number of smaller programs, though greater flexibility in remaining programs and relatively flat funding may minimize the impact of these changes.

MAP-21 has significantly increased the focus on performance measures in the transportation planning and programming process. The Secretary of Transportation will identify specific performance measures in safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality,

[11] http://www.nctr.usf.edu/wp-content/uploads/2012/07/Jason-Pavluchuk-on-MAP-21.pdf

environmental sustainability, and reduced project delivery delays. Within three to four years, states (working with MPOs) will be required to adopt performance targets for each measure and report their progress toward achieving the targets to the federal government. The increased transparency and accountability associated with performance-based transportation planning are likely to support policies that focus resources toward investments in cost-effective transportation strategies such as TDM.

FTA funds are also used subsidize TDM programs within the state. FTA 5307 (urbanized areas) funds are used to support vanpools in the Atlanta region, while FTA 5311 (rural areas) funds are used to support vanpools in rural areas of the state. Surface Transportation Program (STP) funds are also being used for TDM and are considered the most flexible category that can supplement CMAQ and FTA funds. STP-Urban funds are used to support the LCI, bicycle and pedestrian infrastructure, and roadway and freight management as well as operations programs.

Livability and Sustainability

Although many livability and sustainability initiatives are seen at the local and regional level, there has been a long history of federal support for creating more sustainable communities. A sample of some current federal policies supportive of livability and sustainability are included below:

HUD-DOT-EPA Partnership for Sustainable Communities is a partnership between EPA, US Department of Transportation (DOT), and the US Department of Housing and Urban Development (HUD) that aims to enhance livability by improving access to affordable housing, transportation options, and lower transportation costs while protecting sensitive lands and air quality. One example of a coordinated effort that has resulted from this partnership was HUD and DOT's joint $75 million competitive grant program that provided funding for projects that link transportation improvements with housing development.

Transportation Investment Generating Economic Recovery (TIGER) grants, awarded by the US DOT, included reviews by an interagency team that evaluated the impacts of proposed projects on accessibility to jobs and housing. Starting with the second round of TIGER grants, award decisions were coordinated with award decisions made by HUD through its Challenge grant program for accessible affordable housing.

FHWA's Livability Initiative has developed several guidebooks and other resources to incorporate livability into transportation projects and programs. These include the *Livability in Transportation Guidebook* (which highlighted ARC's Livable Centers Initiative), a *Creating Livable Communities* primer, and a primer on *The Role of Transportation System Management and Operations in Supporting Livability and Sustainability*. This includes strategies to integrate TDM with system management and operations.

Federal Transit Administration (FTA) Livable Communities Initiative uses design concepts such as transit-orientation to strengthen linkages between transit and community centers. Any public body that plans and/or constructions transit projects is eligible, and recipients are encouraged to partner with nonprofit, community, and civic organizations.

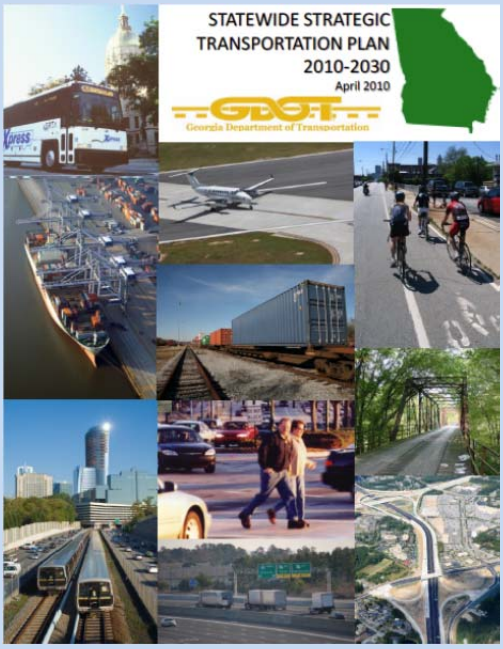
EPA's Smart Growth Implementation Assistance (SGIA) provides competitive grants to state, local, regional, and tribal governments that need assistance in incorporating smart growth techniques and elements into their future development plans.

3.2. State Context

Key TDM players at the state level include **GDOT** and **GRTA**. GDOT develops and approves the **Statewide Transportation Improvement Program (STIP),** including program funding portions. GDOT also manages funding resources as well as provides oversight and accountability for the Employer Service Program. Contracted through GDOT is **The Center for Transportation and the Environment (CTE)**, which leads the GDOT measurement and evaluation of TDM programs in the Atlanta region as well as some other areas of the state. Through evaluation, CTE provides recommendations to assist GDOT program managers and other TDM decision-makers to make appropriate decisions for funding, program focus, and resource allocations. GRTA also participates in regional TDM program management by offering vanpool and Xpress bus services within its 13 county Atlanta metro jurisdiction.

State Plans that Support Implementation of TDM+

The **Statewide Strategic Transportation Plan (SSTP)**, completed in 2010, links transportation and economic goals.



FAST Forward, the 6-year, $15.5 billion statewide congestion relief program aims to relieve congestion while creating jobs and accelerating existing projects. FAST Forward would add capacity to Georgia's highways, and TDM+ can ensure that the additional capacity is used in the most efficient way possible through management of lanes and other support strategies.

Statewide Strategic Transportation Plan

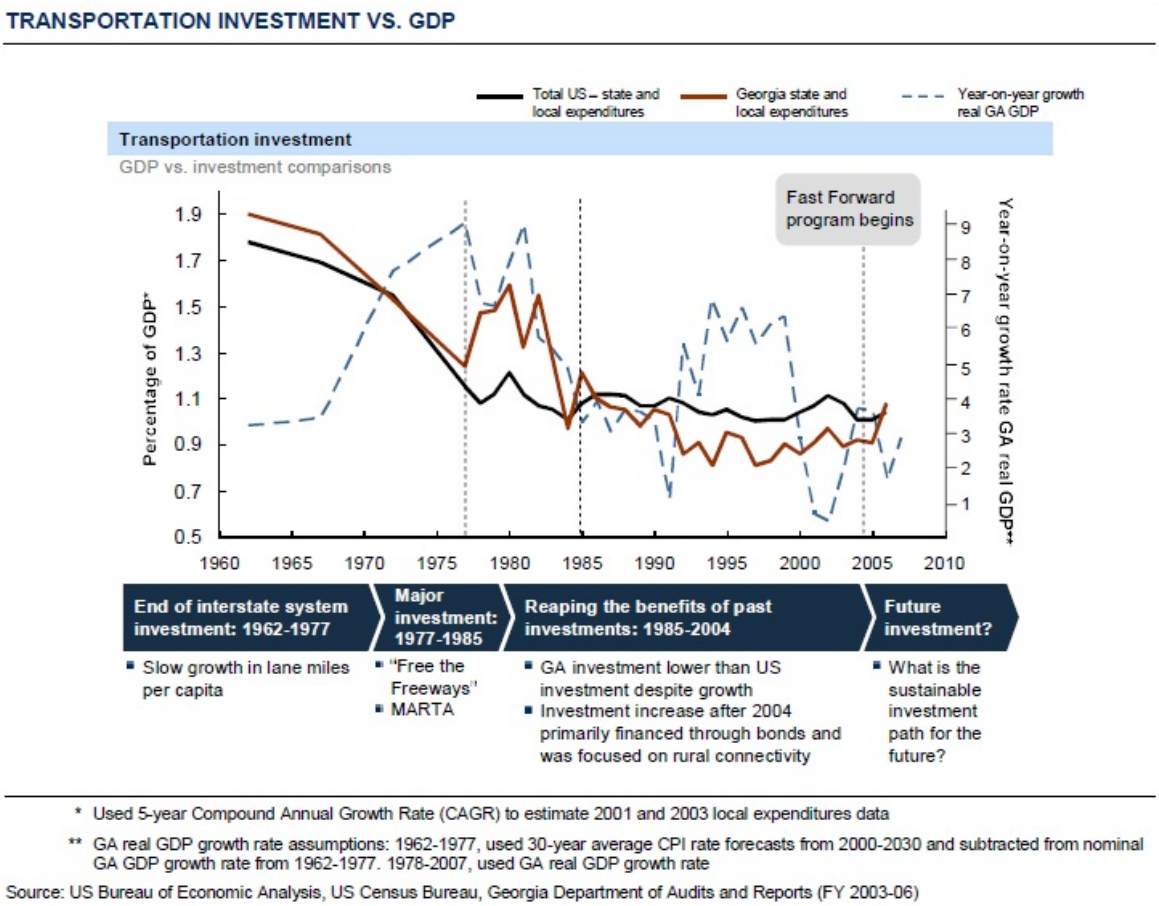
The Statewide Strategic Transportation Plan (SSTP) was completed in 2010 and identifies a strategy to transform Georgia's transportation to support GDP growth and increase jobs across the state. This planning document replaced the collaborative effort called Investing in Tomorrow's Transportation Today (IT3) between the State Transportation Board and Governor Perdue. Transportation investment in Georgia was ahead of the curve between 1960 and 1980. During this time Georgia consistently spent a larger proportion of its GDP on transportation investment and infrastructure than other states throughout the country, which created and improved assets such as the following:

- Port of Savannah, the fourth-largest and fastest growing US port,
- Supporting rail network and intermodal facilities, including the largest rail network in the Southeast,
- Hartsfield Jackson International Airport, the world's busiest airport,
- Improvements and expansion to the Interstate system, and
- The MARTA rail system, which is now the 9th largest transit system in the country.

Georgia's population and economy grew rapidly over the past few decades, which can be largely attributed to the decision to invest and create this world-class transportation network. Georgia has a unique location that allows it to thrive on these transportation assets. For example, "cargo in Georgia is always within two days of

80 percent of the US industrial and commercial centers."[12] However, Georgia's long-standing investment in this infrastructure slowed dramatically between approximately 1985 and 2005, when its transportation investments (as a proportion of state GDP) fell well below the national average. The SSTP notes that this time period relied "on past-investment success rather than actively preparing for the future."[13]

Figure 6: Transportation Investment vs. GDP



By 1990 congestion was a common challenge for the counties surrounding Atlanta. Due to a decline in air quality, 1998 brought a federal freeze on funding for capacity-adding projects as the Atlanta region battled air quality non-conformity status. The SSTP notes the return of substantial transportation investment per the launch of Governor Perdue's Fast Forward Program in 2005. However, "fully addressing the scope of the state's 20-year legacy of under-investment on a sustainable basis will require a long-term strategic plan" that includes multimodal approaches, demand management, and policies that support investment.[14]

[12] SSTP, p. 21

[13] SSTP, p. 21

[14] SSTP, p.22

The SSTP called for a new investment strategy that would focus primarily on the following three broad categories: statewide freight and logistics, people mobility in metro Atlanta, and people mobility in the rest of the state.[15]

SSTP Investment Strategies

1. **Statewide freight and logistics.** By investing $15 billion over the next 20 years in new limited access bypasses, rail capability improvements, **Governor's Road Improvement Program (GRIP)** corridors that align with high-volume freight routes, and improvements that address the worst bottlenecks and connectivity gaps on the network, the state could generate $100-115 billion in additional GDP growth and 90,000 new jobs.

2. **People mobility in metro Atlanta.** In metro Atlanta, the formula for reducing congestion costs, improving trip reliability, and addressing "shrinking talent pools" for employers has three equally important components: demand management; supply expansion focused on employment centers and reliable modes; and better matching the supply and demand by coordinating transportation investment with future development patterns. The reliable modes with the highest return for the state have a "dual purpose" infrastructure, like managed lanes. Dual-purpose investments are those that can be used by both car drivers (90+ percent of all commuters in any region-wide scenario) and transit users (e.g., Bus Rapid Transit, express bus, and vanpools).

   Managed lanes are lanes where drivers pay tolls in exchange for a reliable minimum travel speed. In some of the major employment centers, transit ridership is very high and is critical to their continued growth. As a result, the strategy for Atlanta also includes rail transit and emphasizes the following priorities: first, keep the core rail system operating efficiently; then expand "short haul" lines that connect to the core (e.g., streetcars, trolleys, short-distance light rail "loops"); finally, as resources become available, add longer-haul rail (e.g., (e.g. suburban light rail, commuter and intercity rail) selectively to transform the network over time. The investment required in new capacity is between $29 and $36 billion, with between $8 and $11 billion coming from tolls and other user fees (such as parking fees). This will produce benefits of approximately 250,000 jobs and $170 billion in GDP growth.

3. **People mobility in the rest of the state.** People mobility in rural areas and medium-sized cities is well supported by the current network, though continued investment to fund the long-range plans is critical. New capacity and safety needs are estimated at $14 billion over the next 20 years. In the 7 urban areas, demand management and coordinating transportation investment with development patterns will also be critical adding 30-50 percent additional impact for every dollar invested. Taken together, these investments and policy enhancements result in 89,000 additional new jobs and $49 billion in GDP.

[15] SSTP page 6

Statewide, Georgia employs many programs to improve asset utilization and reduce the need to invest in new transportation infrastructure. One pricing strategy the SSTP envisions is an expansive managed lane program for metro Atlanta with variable or congestion pricing (which could support vanpooling and carpooling use). However, the SSTP also notes non-pricing strategies and programs that are equally important for demand management. Some of these strategies go beyond traditional TDM strategies, particularly ITS and Traffic Incident Management Enhancement. While these may not seem critical to TDM, these technologies facilitate traffic flow, improve operations, and provide motorists and transit users with real time information to make more knowledgeable decisions rather than getting stuck idling in traffic.

Georgia's reputation and potential for continued growth has been negatively affected by the lack of investment in transportation and related infrastructure. This is particularly true in the Atlanta region, where congestion, air quality, and other traffic-related concerns are notorious throughout the United States. The SSTP has been integrated with long-range plans developed by MPOs and local counties, including the Atlanta region.

In metro Atlanta, the formula for reducing congestion costs, improving trip reliability, and addressing "shrinking talent pools" for employers has three equally important components: demand management; supply expansion focused on employment centers and reliable modes; and better matching the supply and demand by coordinating transportation investment with future development patterns." – IT3

Other Initiatives by the Governor's Office

On September 6, 2012, Governor Nathan Deal issued an Executive Order that initiated the Georgia CommuteSmart Program. This program mandates that all state agencies implement one or more form(s) of the following flextime options:

- **Alternative Hours –** allow employees to arrive and depart at set times that facilitate non-rush hour commutes;
- **4-Day Workweek** – allow employees to work extended days, fulfilling work obligations within four days;
- **Teleworking –** allow employees to work from home, typically for some prescribed portion of the workweek; and
- **Commute Alternatives –** encourage and facilitate carpooling and transit.

The Executive Order also requires that participating agency heads submit a simple annual Efficiency and Service Levels Survey verifying that Georgia CommuteSmart is being implemented effectively.

3.3. Regional Context

PLAN 2040 Regional Transportation Plan (RTP)

ARC is required by U.S. DOT to produce a long-range Regional Transportation Plan (RTP) that covers a minimum 20-year time span. It helps guide the prioritization and funding of transportation investments for the region and must be updated every four years in air quality nonattainment areas. ARC has chosen to have the long-range plan go beyond minimum requirements to serve as both the regional transportation plan and regional comprehensive plan to define both transportation and land use policy and investment strategies to address regional needs.

One aspect of the PLAN 2040 RTP that stands out is the inclusion of sustainability as an overarching concept. It aims to foster mobility and access for people and goods, efficient transportation system performance and preservation, as well as quality of life. The three goal statements below help articulate the desired end product of the PLAN 2040 process and tie into the PLAN 2040 vision statement.

PLAN 2040 Goal Statements

1. **Lead as the Global Gateway to the South**. The Atlanta region is one of the nation's primary centers of commerce and culture. Maintaining this position of preeminence is critical to the region's future. This goal articulates the region's ambition to lead the State to future prosperity, sustaining existing assets while creating new competitive advantages for the future.
2. **Encourage Healthy Communities**. The region's most important asset is the people that reside here, with supporting healthy communities a centerpiece of PLAN 2040. Without a healthy population, the region's economic and social sustainability outcomes cannot be achieved.
3. **Expand Access to Community Resources**. An important function of the transportation system is to connect people with community resources. PLAN 2040 seeks to expand access by providing reliable travel alternatives to regional centers. Expanding access to community resources will be increasingly important in the future. The region's population makeup is changing, older and young population shares are increasing while becoming more diverse.

There are additionally five objective statements with principles to assist the articulation of the process. These specific objectives help define how PLAN 2040's Vision and Goals will be achieved and will help focus subsequent program development and project evaluation activities for the RTP.

PLAN 2040 Vision Statement:

"Visionary leadership for sustainable growth by balancing environmental responsibility, economic growth and social needs while maximizing benefits to all"

Figure 7: PLAN 2040 Objectives and Principles

Objectives	Principles
Increase mobility options for people and goods	• Assure the preservation, maintenance, and operation of the existing multimodal transportation system. • Continue to implement cost effective improvements such as sidewalks, multi-use trails, bicycle lanes and roadway operational upgrades to expand transportation alternatives, improve safety and maximize existing assets. • Maintain industrial and freight land uses at strategic locations with efficient access and mobility. • Maintain and expand infrastructure to support air and rail travel and transport. • Strategically target roadway capacity improvements to serve regionally significant corridors and centers.
Foster a healthy, educated, well trained, safe and secure population	• Build communities that encourage healthy lifestyles and active living for all ages, with provisions for healthcare, education, recreation, cultural arts and entertainment opportunities. • Promote a regional community that embraces diversity – age, ethnicity, and lifestyle – as its strength. • Promote access to quality schools, career training, and technology literacy to provide a workforce that can support economic opportunity. • Promote public safety efforts to create vibrant and safe 24-hour communities.
Promote places to live with easy access to jobs and services	• Build compact development in existing communities with integrated land uses that will minimize travel distances and support walking, cycling and transit. • Increase housing, services, and employment opportunities around transit stations. • Provide a range of housing choices to accommodate households of all income levels, sizes, and needs and to ensure that workers in the community have the option to live there. • Protect the character and integrity of existing neighborhoods while also meeting the needs of the community.
Improve energy efficiency while preserving the region's environment	• Conserve and protect environmentally-sensitive areas and increase the amount and connectivity of greenspace. • Continue to enhance stewardship of water resources throughout the region. • Promote energy-efficient land development and infrastructure investments that foster the sustainable use of resources and minimize impacts to air quality. • Encourage appropriate infill, redevelopment and adaptive reuse of the built environment to maintain the regional footprint and optimize the use of existing investments.
Identify innovative approaches to economic recovery and long term prosperity	• Focus financial resources and public investments in existing communities. • Establish a region-wise economic and growth management strategy that includes federal, state, regional and local agencies, as well as non-governmental partners. • Enhance and diversify economic development activities to include sectors like life sciences, logistics and transportation, agribusiness, energy and environmental technology, healthcare and eldercare, aerospace technology and entertainment and media production. • Leverage the diversity of the region – people, places and opportunities – to continue to attract business and residents.

PLAN 2040 Funding

The PLAN 2040 RTP has two elements of funding: constrained and aspirational. The constrained element considers projects that could be completed within funding projections; this portion totals $60.9 billion and is broken down into three investment priority areas. The three areas are infrastructure modernization (road resurfacing, replacement of buses, retiming traffic signals), demand management (bicycle and pedestrian facilities, employer services, ridesharing), and system expansion (roadway capacity, managed lanes, and transit expansions). Under these breakdowns, the demand management area receives less than 4 percent of the $60.9 billion allocation (with traditional TDM less than 1%), but a closer look at funding by project type shows that TDM and related programs are a part of the system modernization and system expansion allocations; this includes funding for transit system modernization and expansion, as well as managed lanes expansion. Based on this expanded view of TDM and complementary strategies, TDM+ related funding could be seen as comprising closer to 55 percent of the PLAN 2040 Constrained Element. It is important to note that most of these related programs and investments would not be under the control of a TDM program, but that the y would be supportive of each other.

Figure 8: PLAN 2040 Funding for Major Program Areas in Current Year (2012) Dollars, Accounting for Funding for TDM+ Related Programs

Project Types	Funding Sources (Billions)					Percent of Total
	Federal	State	Local	Private	Totals	
System Modernization						
Transit	3.297	0.355	19.184	-	22.836	37.5%
Roadway/Bridge Preservation	8.884	5.189	2.333	-	16.406	
System Optimization and Safety	1.504	0.231	1.819	-	3.554	
Demand Management						
Bicycle and Pedestrian	0.911	0.006	0.666	-	1.583	2.6%
Other Programs/Initiatives	0.468	0.011	0.094	-	0.573	0.9%
System Expansion						
Managed Lanes Expansion	0.994	1.181	-	3.177	5.353	8.8%
Transit Expansion	0.999	0.305	2.035	0.150	3.490	5.7%
Roadway Expansion	4.670	1.047	1.456	-	7.173	
Totals	$ 21.727	$ 8.325	$ 27.587	$ 3.327	$ 60.968	100%
TDM-Related Totals	$ 6.669	$ 1.858	$ 21.979	$ 3.327	$ 33.835	55.5%
TDM-Related by Funding Source	30.7%	22.3%	79.7%	100.0%		

PLAN 2040 Focus Areas, Plans and Documents

The application of PLAN 2040's Vision Statement as well as the Goals, Objectives and Principles rely on more detailed plans that promote and reinforce sustainable land use supported by transportation systems, programs, and projects. The overall plan development process includes the following focus areas, plans and documents.

Figure 9: PLAN 2040 Focus Areas, Plans and Documents

Document	About
Regional Development Guide and Unified Growth Policy Map (UGPM)	The Regional Development Guide provides direction to accommodate the region's anticipated growth in a sustainable fashion. It is based on the Unified Growth Policy Map. The UGPM is comprised of Areas, which describe predominant land use patterns, and Places, which provide greater detail within areas and reflect concentrated uses within generally defined boundaries.
Livable Centers Initiative (LCI)	The LCI program began in 2000 and awards planning grants on a competitive basis to local governments and non-profits to prepare plans consistent with regional development policies for the enhancement of existing centers and corridors. The goals of the program are to spur more sustainable growth, reducing driving, and improve livability and air quality. LCI study areas must fall under one of the following categories: town centers, activity centers, corridors, or "emerging" regional centers or corridors. A 2009 study found that two-thirds of grant recipients had successfully passed special LCI zoning districts and over 80 percent had design guidelines to ensure livable, walkable environments.[16]
Regional Strategic Transportation System (RSTS)	It is ARC policy to only fund roadway and transit capacity expansions on RSTS facilities. Strategic focus on critical regional transportation systems including the RSTS as well as the networks described below will articulate regional priorities for future investments and establish policy for implementation of PLAN 2040.
Regional Thoroughfare Network (RTN)	Similar to the RTST, the RTN further refines the definition of critical regional transportation systems to focus on thoroughfares – transportation corridors that serve multiple ways of traveling including walking, bicycling, driving, and riding transit. The consideration for the network of thoroughfares is important to plan for the maximization of effectiveness for the system as a whole rather than as individual segments in order to connect people and goods to important places in the region. This requires special traffic control strategies and suitable land development guidelines in order to maintain travel efficiency, reliability, and safety for all thoroughfare users.
Concept 3 Transit Vision	Concept 3 is the Atlanta region's official long-range vision for transit. It was officially adopted in 2008 and continues to serve as the transit element of the Aspirations Plan of the RTP.
Atlanta Strategic Truck Route Network (ASTRoMaP)	Freight mobility is a valuable component of the Atlanta region and its economy. However, the region has discontinuous routes serving freight traffic with many routes that compete with local and regional traffic. The supporting transportation system must take steps to meet the challenges of growing traffic volumes and plan for the efficient movement of both people and goods. ASTRoMaP provides policies, guidelines and design strategies to align with the Freight Mobility Plan and to help maintain traffic flow throughout the region while mitigating impacts on both vehicular and truck traffic.
Regional Bicycle	The Atlanta Region Bicycle Transportation and Pedestrian Walkway Plan has

[16] http://www.iscvt.org/what_we_do/climate/case_studies/atlanta_lci.php[17]
http://www.atlantabike.org/category/Topics/about-us

Document	About
and Pedestrian Network	identified a strategic bicycle and pedestrian network of regionally significant corridors that connect to town centers, major activity centers and LCI communities. The increase of bicycle and pedestrian trips remains a top priority for TDM strategies, as these trips both are the definitive 'clean commute.' They also help support vanpool, rideshare, and transit trips.
Lifelong Communities	ARC's Lifelong Communities initiative is working to create communities that provide an array of housing types that appeal to individuals both young and old; opportunities for healthy living, including parks and outdoor spaces; and ways to get around, including meeting the needs of individuals who do not drive, safe sidewalks, and convenient access to shopping, recreational opportunities, and basic services. The Initiative is focused on three goals of promoting housing and transportation options, encouraging healthy lifestyles, and expanding access to services to create communities for all ages and abilities.

With the identified critical networks, guides and planning areas described above, the PLAN 2040 RTP ties into a performance framework that connects the Goals and Objectives into a coherent decision-making process. This process includes key decision points such as program level scenario analyses to discuss available funding across various transportation programs, policy filters to ensure consistency with PLAN 2040 policies, project evaluation using performance measures that align with the strategic direction of PLAN 2040, and finally project selection based on funding constraints impacting ranked and tiered projects. In general, funding priorities are broken down into:

- 70 percent ($42.8 billion) for preservation and optimization,
- 26 percent ($16 billion) for system expansion, and
- 4 percent ($2.1 billion) for demand management.

However, as mentioned above, preservation and optimization as well as system expansion contain complementary components related to transit and managed lanes projects, and when combined with the demand management portion, add up to approximately 55 percent of the overall budget for TDM+ and related projects.

Congestion Management Process

A Congestion Management Process (CMP) plan is intended to recommend strategies and or actions for key corridors and areas, which is a critical area where TDM can make a difference. It is a federal requirement to provide a CMP. The CMP is a systematic process for defining what levels of congestion are acceptable to a community. The CMP specifically monitors system performance measures such as daily congested hours, total vehicle delay, free-flow travel times and congest travel times for immediate past years, current year and also for projections into the future; in general these performance measures can be grouped into three categories: intensity, duration and extent. The CMP supports the SSTP by integrating the Process into the ARC adopted Federal Funding Decisions Framework to prioritize projects for federal transportation funding. Quantifying economic benefits is an important component of the CMP and SSTP, and it ties into project prioritization and the evaluation of corridor investments. Historically, the CMP updates have relied on the region's travel demand model outputs, but in accordance with new federal guidance, ARC is in the process of

shifting to greater field-based data rather than solely the model. The use of field-collected travel time and traffic data will improve upon the quality of data and analysis.

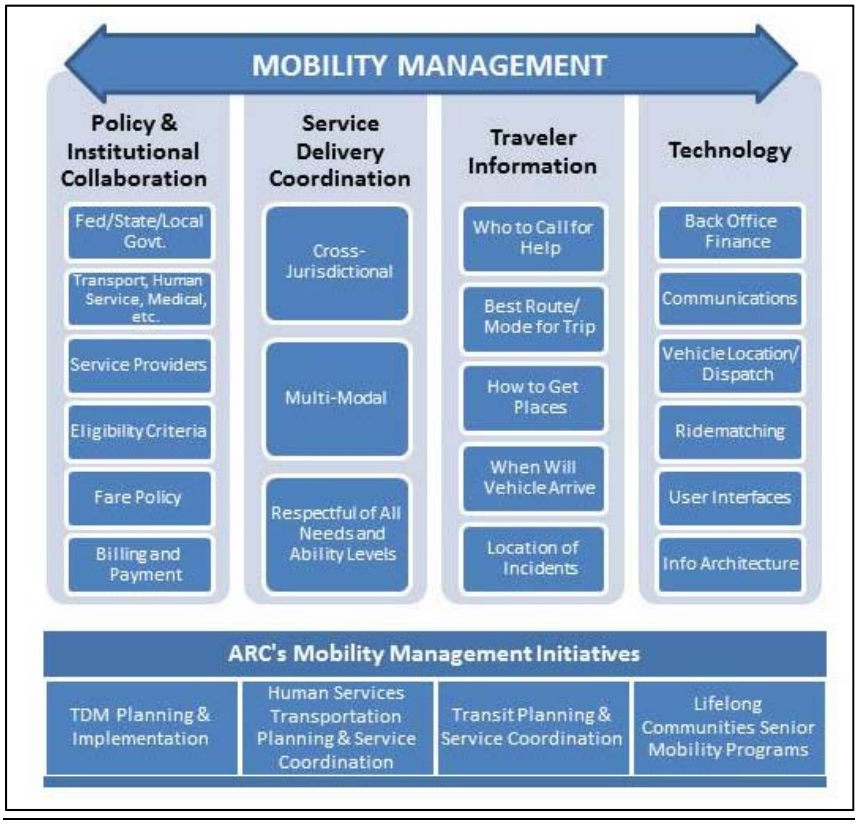
Mobility Management

A key PLAN 2040 strategy is to develop and implement mobility management – described by ARC as a centralized system that provides information about transportation options and coordinates responses to requests for transportation services. ARC's vision for its mobility management approach (shown below) fits well with a broader TDM+ strategy; they would be mutually supportive.

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.

Figure 10: ARC's Mobility Management Approach



3.4. Local Context

There are multiple definitions for the Atlanta region boundaries including anywhere from 10 core counties (Regional Commission boundary), to 18 counties (MPO boundary)). Within the core 10 counties, the region is made up of 68 incorporated municipalities, comprising 39.2 percent of the core region. In the Atlanta region, counties and cities have not typically provided commuter services considered as traditional TDM; however, Douglas County has been operating vanpool services for many years, while Cherokee County offers incentives for those riding vanpools. Counties do, however, have Human Services Departments, which serve the transportation needs of the elderly and disabled.

Based on a review of several Comprehensive Transportation Plans and Livable Centers Initiatives, local governments in the Atlanta region have traditionally focused on implementation of transportation infrastructure projects, not TDM related programs. Very few local governments have formalized TDM programs or policies that are directly communicated to the private industry and development community. These programs have traditionally been administered by the hands of local ESOs, CIDs, and the Clean Air Campaign with minimal coordination with local governments.

One good example of regional coordination at the local level is the Green Communities Program. ARC created and oversees this voluntary certification program that can be implemented by jurisdictions in the 10-county Atlanta region in an effort to encourage local governments to become more sustainable. The ARC Green Communities Program focuses on leadership in environmental sustainability by encouraging energy, water, and fuel conservation, investment in renewable energy, reducing waste and protecting and restoring the community's natural resources. One component of this program's initiatives focuses specifically on transportation and air quality, considering commute options, and facilities that encourage biking and walking.

Employer Service Organizations and Community Improvement Districts

Employer Service Organizations (ESOs) support and promote TDM programs and include both Transportation Management Associations (TMAs) and other organizations, such as the Clean Air Campaign. TMAs are ESOs that specifically target transportation management services under the employer services umbrella. All TMAs, by definition, are ESOs, but CAC, for example, is an ESO that is not specifically a TMA. For that reason, in this report, all TMAs will be called out under the umbrella of ESO.

TMAs are an even more local jurisdictional structure that exists within many counties and cities; they are often started as public-private partnerships in response to business concerns with mobility or accessibility. These groups consist of citizens, firms, and employers that organize to address transportation issues in their immediate community by promoting TDM programs and the use of transit.

Most ESOs receive CMAQ funds to carry out programs to serve their missions and to reduce vehicular emissions. Eight ESOs are located within the Atlanta region, including: ASAP+, Buckhead Area TMA, Central Atlanta Progress, Clifton Corridor TMA, Commuter Club, Midtown Transportation Solutions, PTSC, and the Clean Air Campaign, which also administers TDM to the rest of the state outside of TMA boundaries.

Community Improvement Districts (CIDs) are quasi-governmental entities that are created pursuant to the Georgia Constitution and are self-taxing districts that allow commercial property owners to raise revenue to address community improvement solutions (typically aimed at transportation) by conducting planning

studies and funding construction. Many TMAs receive large portions of their funding from and are affiliated with local CIDs, whereas the Clean Air Campaign as a statewide ESO receives funding from state programs as well as other sources that are not immediately available to more localized ESOs.

A comprehensive list of the ESOs and CIDs within the Atlanta Metropolitan Area is shown below. It should be noted that all of the CIDs listed in Figure 11 do not provide/fund TDM specific programs. However, CIDs (even those without ESOs) have the potential to offer additional support for TDM initiatives through investments in walking, biking and transit access.

Figure 11: Employee Service Organizations and Community Improvement Districts

Organization	Organization Type	Area Served
Atlantic Station Access + Mobility Program (ASAP+)	ESO	Atlantic Station
Braselton Community Improvement District	CID	Town of Braselton
Buckhead Community Improvement District and Buckhead Area Transportation Management Association (BATMA)	CID and ESO	Buckhead
Clifton Corridor TMA	ESO	Clifton Road Corridor
Cumberland CID and Commuter Club	CID and ESO	Cumberland
Atlanta Downtown Improvement District and Central Atlanta Progress	CID and ESO	Downtown Atlanta
Evermore CID	CID	Evermore
Fulton Industrial CID	CID	Fulton
Gwinnett Place CID	CID	Gwinnett Place
Gwinnett Village CID	CID	Gwinnett Village
Lilburn CID	CID	Lilburn
Midtown Improvement District and Midtown Transportation Solutions	CID and ESO	Midtown
North Fulton Community Improvement District	CID	North Fulton
Fulton & DeKalb Perimeter CIDs and Perimeter Transportation & Sustainability Coalition	CID and ESO	Perimeter
Stone Mountain CID	CID	Stone Mountain
South Fulton CID	CID	South Fulton
The Clean Air Campaign	ESO	Non-Attainment Areas State (except local TMA areas)
Town Center Area CID (previously associated with the former ESO, Local Zoom)	CID	Town Center

Not-for-Profit Organizations and Advocacy Groups

Non-profit organizations also have significant influence regarding encouragement of TDM in the Atlanta region. Grass roots efforts enhancing communities where people can walk, bicycle and take transit are currently being led by groups such as the Atlanta Bicycle Coalition (ABC), Pedestrians Educating Drivers on Safety (PEDS), Citizens for Progressive Transit (CfPT), and the Livable Communities Coalition. There is a

common belief within all of these groups that every citizen has an interest in making the Atlanta region a better place to live both now and in the future as it grows. These organizations provide advocacy and support, but also in some cases directly support TDM+ and related activities by conducting studies, raising funds for infrastructure improvements, providing training and educational programs, as well as providing, for example, bicycle valet services for special events.

Both PEDS and ABC have missions to make Atlanta more safe and accessible to pedestrians and bicyclists, respectively, to increase walking, biking and pedestrian supportive infrastructure. Likewise, CfPT has a mission to support the use and expansion of quality public transportation in Atlanta. Each of these specific advocacy groups believes that walking, biking, and taking transit benefits more than just those who utilize these alternative modes; they believe that promoting and using these clean commute alternatives can create a higher overall quality of life through improved public health, cleaner air, less congestion, and stronger communities. [17]

The Livable Communities Coalition combines a diverse network of leaders, citizens, organizations, institutions and businesses with the common determination to work together to achieve quality growth for the Atlanta region. Smart growth is a guiding concept for the Coalition and includes four principles:

- Support greater densities and mixed use developments in appropriate areas, especially in our region's centers and transportation corridors
- Integrate transportation investments with appropriate land use
- Increase housing choices by removing barriers that artificially restrict the market
- Guide how greenfield land is developed, promoting a sense of community, provide more housing choices, leverage existing infrastructure, and conserve natural resources. [18]

Adhering to smart growth principles can provide better choices for citizens as well as businesses, reduce traffic, help recycle underutilized and blighted properties, enhance efficiency in the use of public infrastructure, and save green space.

Land Use Patterns

Land use patterns have a major impact on peoples' tendency to participate in TDM options, whether through incentive programs or through making location choices that allow them to bike, walk, or take transit. Historically, investments in the state highway system, interstates and arterials had great impact on land use patterns in Georgia, whether intended or not. These investments, coupled with a general lack of coordinated planning and zoning policies helped fuel suburban migration to vacant land accessed by highway improvements, with walkability, bikability and transit access typically left out of the equation. The Atlanta region has experienced firsthand the results of loosely tied land use policies and transportation infrastructure spending. While counties and cities within ARC's boundaries do have certain guidelines to maintain eligibility for state and federal funding, they also have a great deal of independence on their own local policies and many of their policies address their own locale without linking to an overall regional vision

[17] http://www.atlantabike.org/category/Topics/about-us

[18] http://www.livablecommunitiescoalition.org/aboutus/whatwestandfor.cfm

Many counties, cities, and CIDs are implementing zoning changes through overlay districts. These districts have more stringent development regulations that typically support walkable, transit oriented development patterns. MARTA also has Transit Oriented Development (TOD) guidelines which provide guidance for private development that occurs near their existing rail stations in order to assist and encourage the use of alternative modes. At a regional scale, large projects that meet certain thresholds are reviewed by ARC and GRTA through the Development of Regional Impact process, through which ARC and GRTA have some authority to impact land use. MARTA's TOD Guidelines and the DRI process are both discussed further in Chapter 6.2. Funding for development patterns supporting TDM can be generated at the local level in many ways. For instance, local CIDs and Tax Allocation Districts (TAD) have been formed to create additional tax revenue which can be applied to local projects, including TDM**+** and related projects.

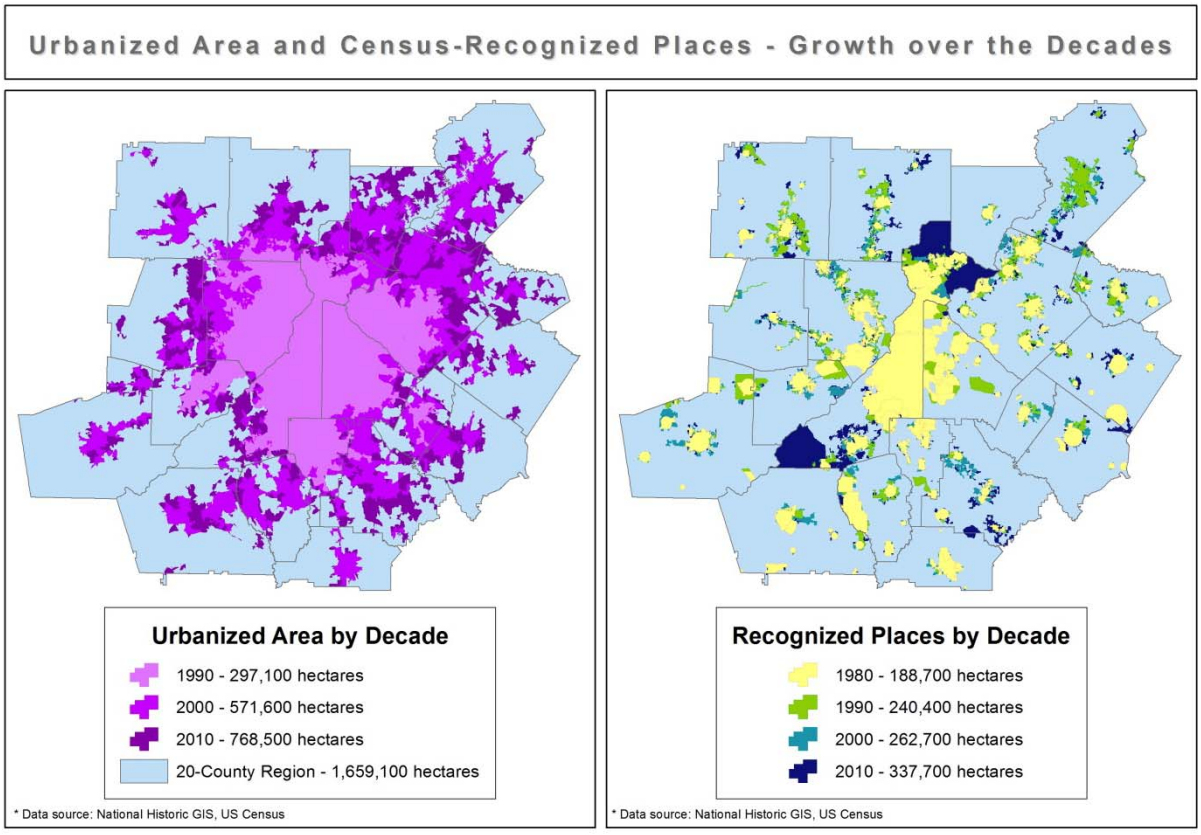
Lindbergh TOD, located in the Buckhead Community, is considered one of Atlanta's earliest successful planned TODs.

4. Regional Trends, Data and Growth[19]

4.1. Population Growth Projected to Expand to 8.25 Million by 2040

The Atlanta region grew by 1 million people from 2000 to 2010, and is projected to grow to 7.37 million in 2030 and 8.25 million in 2040. Most of the growth from 2000 to 2010 occurred in suburban areas of the region. Most notably, Gwinnett County was the 18th fastest growing county in the United States. [20] A growing population leads to increased stress on the existing transportation system, especially when most of the growth is in suburban areas. The map below shows the spread of urbanized areas as well as population growth into newly incorporated communities, demonstrating the dramatic shift into suburban and exurban communities.

Figure 12: Urbanized Area and Census-Recognized Places – Growth over the Decades[21]

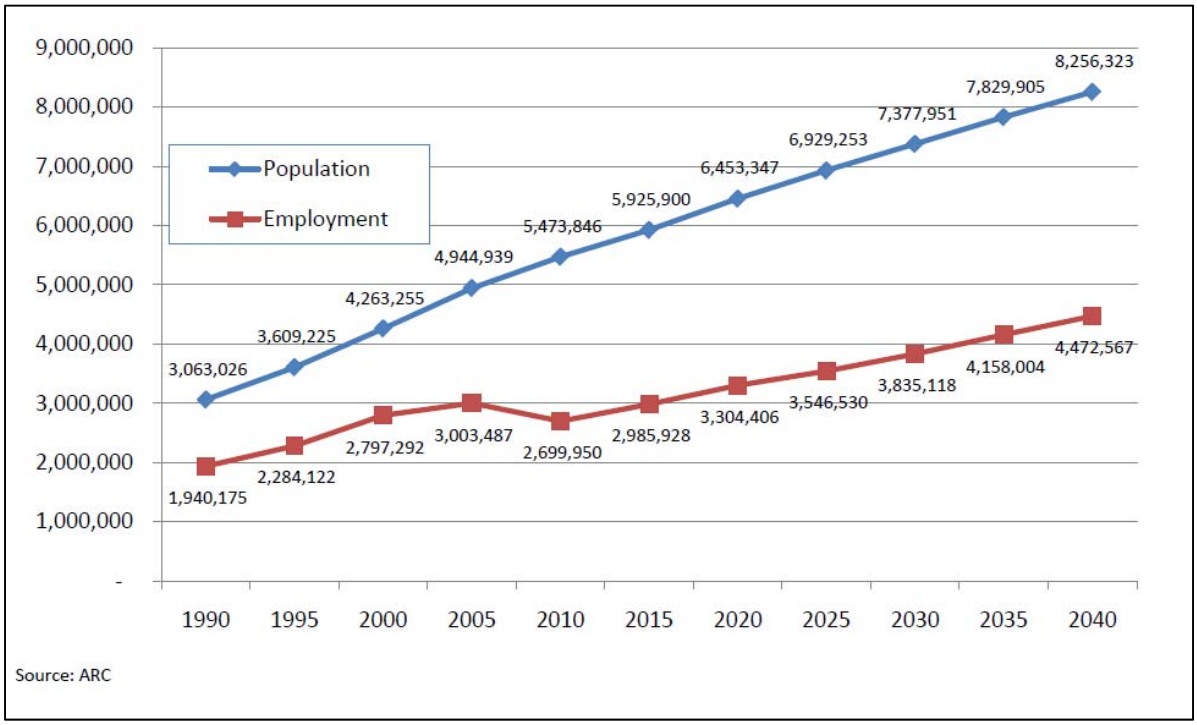


[19] Additional regional data to be presented in the Regional Travel and Commute Report, expected to be released by ARC in spring 2013.

[20] ARC Regional Snapshot: Nov/Dec 2011

[21] Data sources: National Historic GIS, US Census

Figure 13: Population and Employment Growth[22]



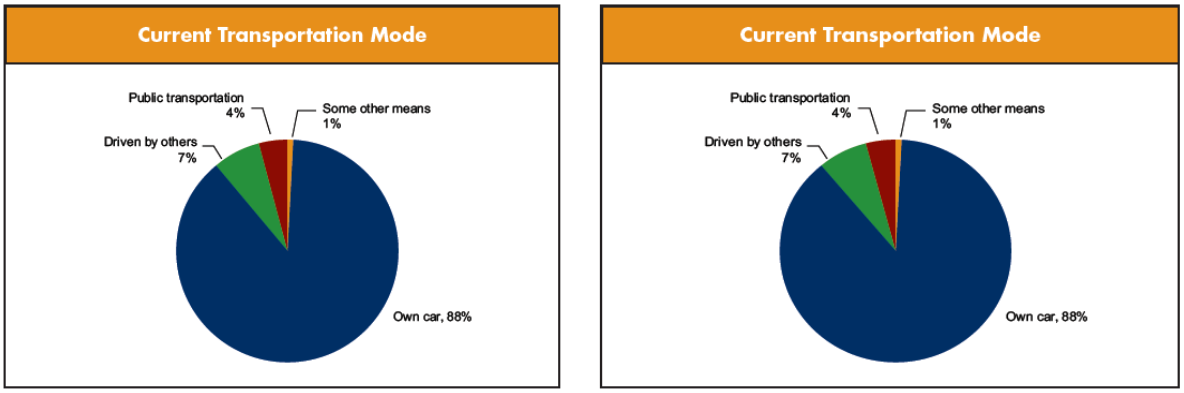
Currently, there are 1.3 million adults aged 49-65 in the Atlanta region, and by 2030, 20 percent of the region's population is projected to be over the age of 60. The vast majority of older adults want to live in their community as long as possible (aging in place). Currently, 88 percent of older adults use their personal vehicle for primary transportation, and 15 percent report having trouble getting where they need to go.

The older adult population in the Atlanta is experiencing massive growth. This segment of the region's population doubled between 1970 and 2000, will double again through 2015, and as early as 2030 twenty percent of residents will be over the age of 60.[23] The region will experience a shift between a dominant age group in their working years to a region with a larger share of older adults. The massive growth of the senior population will be particularly noticeable in suburban communities built for the baby boomer generation and unaccustomed to housing older people. This generation tends to hope to age in their communities and plan to do so, which may pose a challenge as driving is the only option in the vast majority of communities where current and future older adults live.

[22] PLAN 2040 Appendix: Demographics and Population, p. 1

[23] http://www.atlantaregional.com/aging-resources/demographic-data

Figure 14: Older Adults Current Transportation Mode versus Forecasted Future Transportation Mode[24]



A growing population adds stress to existing infrastructure, and an aging population increases demand for transportation options as older adults adjust for their future when their current car based transportation becomes more difficult or unavailable. Transportation will need to evolve with the overall growth of the regional population and the increase of the older adult demographic.

However, the millennial generation makes up the current largest age group in the region. The population that is currently between the ages of 10 and 29 number almost 1.5 million as of 2010 and account for approximately 28 percent of the 20-county region.[25] Older adults are not the only population that may be limited in housing choices. The following list of consumers may be limited in housing choices:

- Older adults
- Persons with disabilities
- Individuals and families on fixed incomes
- Single parent families or small families
- Individuals seeking to live in mixed-use or transit supported housing
- Employees in low-paying retail, service sector and entry level jobs[26]

It will be important to remain competitive nationally in order to maintain employment and housing needs of the younger population. Employer access to labor by transit is emerging as an important need for large metropolitan areas. A study conducted by the Brookings Institute found that over three quarters of all jobs in the 100 largest metropolitan areas are in neighborhoods with transit service. Improving transportation connections to employment enhances the efficiency of labor markets both for employers and workers. Metropolitan transportation networks are, thus, critical for a region's competitiveness. The study noted that the suburbanization of jobs obstructs transit's ability to connect employers with local labor pools and workers with opportunities. Even while the roadway network may be robust and ensure that essentially

[24] Older Adults in the Atlanta Region: Preferences, Practices and Potential for the 55+ Population (ARC), p. 12

[25] Regional Snapshot September 2011: *The Graying of Atlanta: A Look at the Latest 2010 Census Data*

[26] PLAN 2040 RA, p. 29

every job is accessible by vehicles that use it, there is no guarantee that the trip will be easy for individuals in the labor pool, which would certainly call for other transportation alternatives.[27]

4.2. Development Patterns Reflect Rapid and Auto-Centric Growth

The Atlanta region has experienced most of its growth following the advent of the automobile. For this reason, the region's development patterns have largely followed major new roadway construction projects. As an example, the North part of the region has experienced tremendous levels of growth due to the construction of the GA-400 corridor, which extends from the City of Atlanta north to Dahlonega in Lumpkin County. A look at census data in North Fulton County reflects the impact the corridor has had on development patterns north of the city. Exponential growth has been aided by the construction of the GA-400 corridor. The growth in population in North Fulton County has exceeded 580% over a period of 30 years, and is an indication of how the Atlanta Region has grown with a sprawling development pattern. The region's other major highways have also aided and encouraged similar growth patterns.

Figure 15: Growth in North Fulton: GA-400 as a Snapshot of Growth in Response to Road Construction[28]

A Snapshot of Growth in North Fulton

1970s (Approx. 50,000 population)

Portions of GA-400 open as two-lane roadway

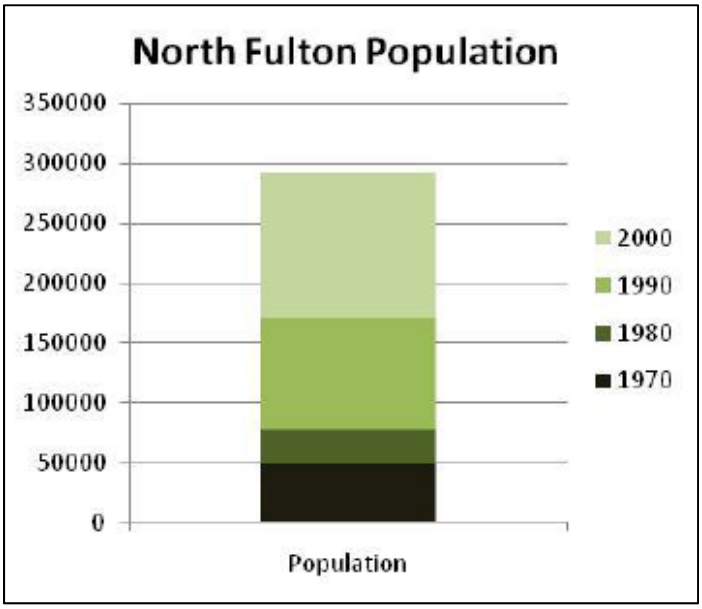
1980s (Approx. 80,000 population)

GA-400 from I-285 north converted to grade separated freeway

1990s (Approx. 170,000 population)

Final section of GA-400 completed, connecting I-285 to City of Atlanta

2000s (Approx. 290,000 population)



Housing and Land Use Patterns

The patterns of the past do not, however, necessarily predict the patterns of the future. A fundamental shift in the real estate market has been noted through the dramatic transformations of urban neighborhoods across the country. Residential housing is replacing parking lots, underutilized commercial and formal industrial sites. Permit data shows that in several regions, there has been a dramatic increase in new construction within central cities and older suburbs. This has led to future development trends suggesting a strong residential market near mass transit stops, infill areas in suburban markets with existing traffic

[27] http://www.brookings.edu/transitandlabor

[28] North Fulton Comprehensive Transportation Plan

problems, and mixed-use construction in urbanizing suburban nodes. ARC's Livable Centers Initiative, through implemented by local governments and private developers, has helped focus mixed-use development and transportation improvements in city and activity centers throughout the region. This also suggests that outer-ring suburbs and exurban areas may experience greater losses as market demand continues to shift towards infill neighborhoods.[29]

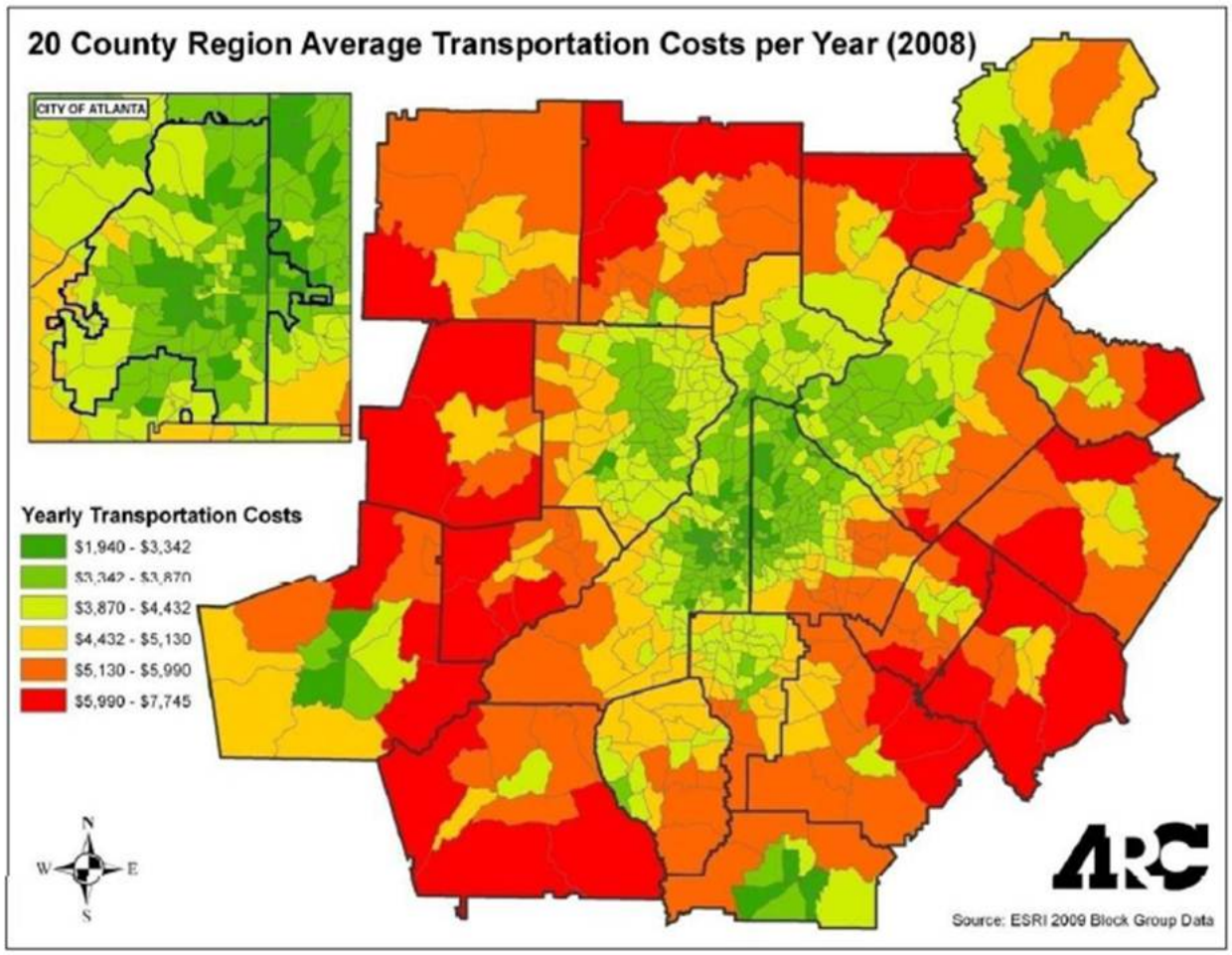
The past 40 years has produced the vast majority of available housing in the Atlanta region. More than 20 percent of the housing stock was built between 2000 and 2007. While the development community has worked within the local government regulatory environment and has done a remarkable job of delivering substantial quantities of housing, it is uncertain if this supply is aligned with future consumer needs. National research suggests that the nation as a whole is experiencing a fundamental shift in the typical household and family unit. While one in two households thirty years ago had children, national expectations project only 21 percent to have children in 2030. In Atlanta, a majority of households currently consist of two persons or fewer. The share of households with more than two people is expected to continue to decline over the course of the next thirty years. With such strong growth in the region's suburban counties, previous household development patterns may suggest a mismatch between current housing stock and the needs of future households, particularly when considering household budgets that may become strained by rising fuel costs and congestion.[30]

Figure 16 and Figure 17 below show the 20-county region's average annual transportation costs at a tract-level analysis and median occupied housing costs from the American Community Survey (ACS) based on the financial characteristics tables. It is clear that transportation costs increase dramatically from the urban core to suburban and exurban areas. Transportation costs can only increase as fuel prices and the number of residents and subsequent vehicle use proliferates. However, while transportation costs may be significant, other factors weigh into residential choice location. The cost of housing is a major factor, and schools may be a significant consideration for families with school-aged children. While typically housing costs are lower outside urban cores, the ACS data on median housing occupied by either renters or homeowners suggests that this statement is an oversimplification for the Atlanta region, and in fact, housing costs may be higher outside of the urban core. The region's housing supply limits options to reduce these costs through individual household location choices.

[29] PLAN 2040 RTP, p. 2-14

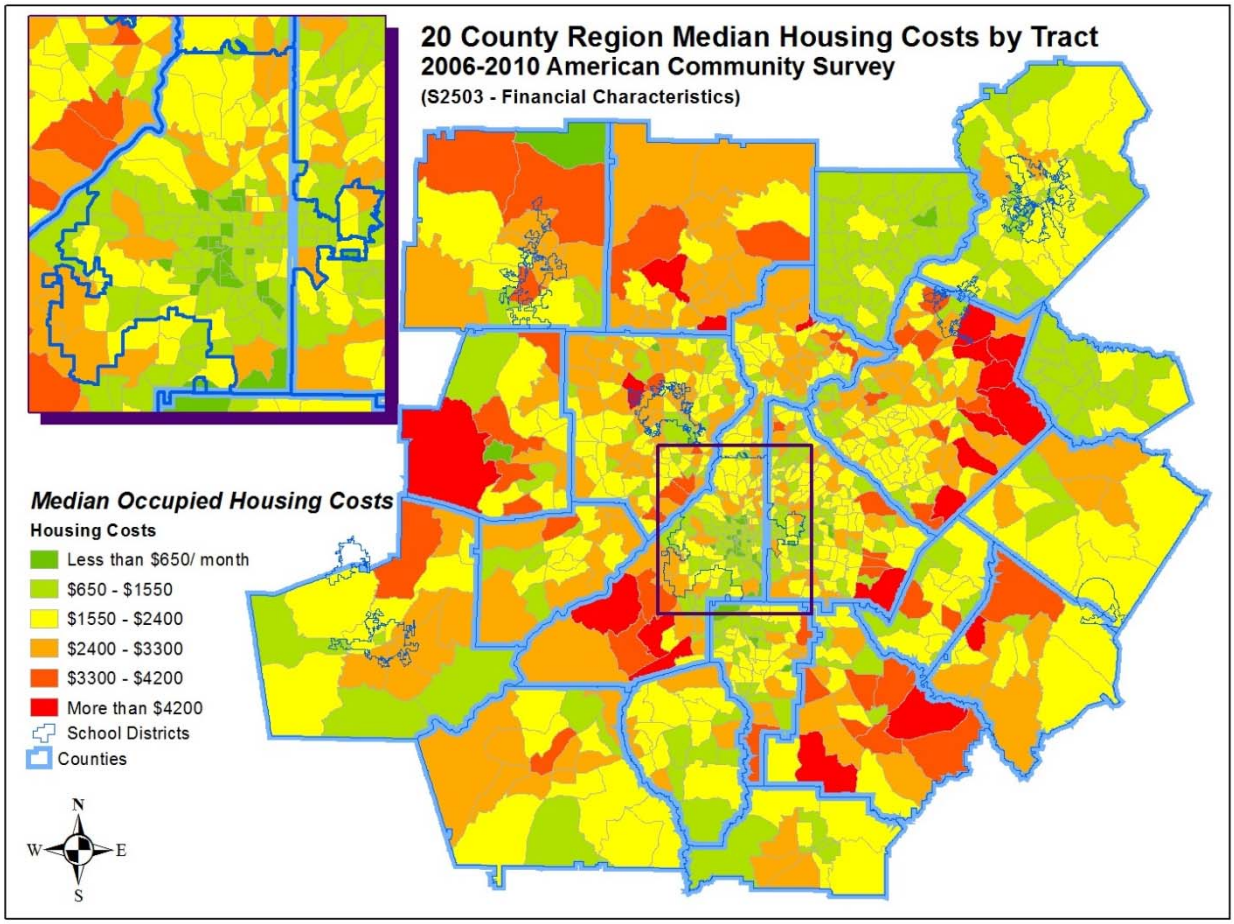
[30] PLAN 2040 RTP, p. 2-13

Figure 16: Yearly Transportation Costs[31]



[31] PLAN 2040 RA, p. 12

Figure 17: Median Monthly Housing Costs by Tract



4.3. Progress in Expanding Transportation Choices

In 2000, there were commute alternative options in the Atlanta region to SOV travel, but they were not being promoted to the degree that they are today, or to the degree that commute alternatives were heavily promoted during the Olympics in 1996. Regional transit services today cover parts of twelve counties within the metro region, and commute alternatives are promoted by the ESOs. The Regional Commuter Surveys, conducted in 2002, 2007 and 2010 have shown some marked increases in commuter-reported mode splits. In particular, teleworking accounted for 8% of weekly commutes reported in 2010 compared to 4% in 2007 and transit increased its mode split of weekly commute trips by 1% during the same period.[32]

However, travel by SOV remains by far the dominant mode for most Atlanta region residents. The following mode splits as reported in PLAN 2040 demonstrate the travel patterns within the region, which will be constrained further as the region's population and employment grows:

- In general, home to work trips remain predominantly SOV. Even the Central Business District has nearly 64 percent of its home based work trips arrive via SOV.

[32] Regional Commuter Surveys, 2007 and 2010.

- Regional transit usage represents only a small share of trips, approximately 5%. In the Central Business District, approximately 25% of home based work trips use transit.[33]

The following (noted in the PLAN 2040 Regional Assessment) are successes as well as new and continued challenges that will result from the increasing share of trips taken by non-SOV modes.

Figure 18: Providing Safe, Affordable, and Efficient Transportation Choices

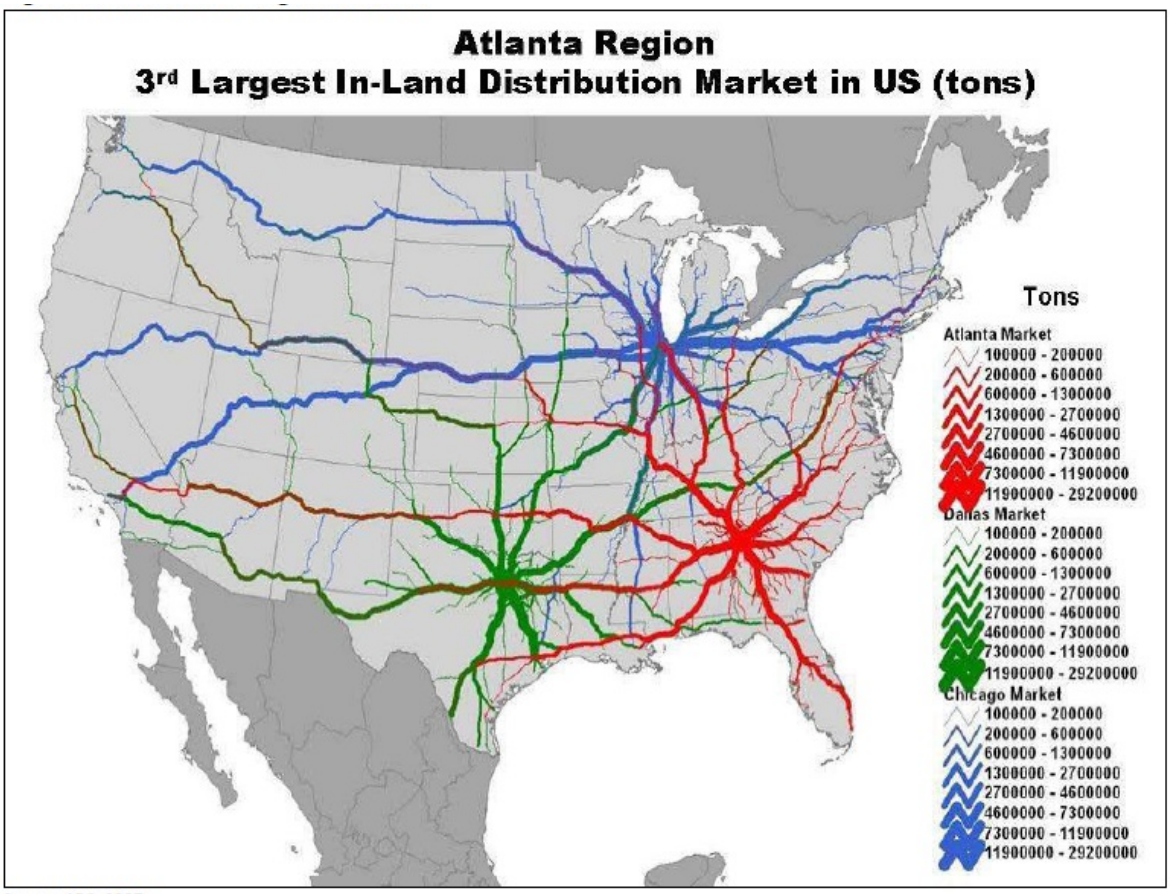
Successes	Challenges
• The regional transit fleet has increased to 400 buses and vans, and transit miles traveled increased from 780 million in 2000 to over 911 million in 2007. • Since 2002, total vanpool services have increased from 178 to 482 in 2009. • A decrease in VMT per capita since its peak in 1998 can be attributed to more transportation choices among other factors. • In March of 2000 the ARC approved funding for LCI, which enhances the value of existing facilities by linking transportation improvements with development and encourages integration of transportation and land use planning. LCI projects enhance safety for pedestrians, bicyclists, and motorists. • Where implemented, high occupancy vehicle lanes (HOV) have provided reliable trip times for express bus transit services and provided additional incentives for car- and vanpooling. • Total vehicle crashes have fallen 13 percent from 2005 to 2008. • Vouchers for older adults and persons with disabilities have provided mobility options, since 2006, including 800-900 persons served in 2011 through the voucher program.	• Ambitious project scheduling, and changing priorities have contributed to unreliable and delayed implementation of projects. Delays can compound costs due to inflation and compounded delay of subsequent linked projects. • The inability to complete comprehensive HOV concepts, such as from the *2025 RTP*, has caused a setback for the region's ability to harness the potential of large investments in regional express bus services and bus rapid transit (BRT). • The Regional Transportation Referendum, which would have added an extra 1% sales tax in the metro region (projected to $7.2 billion), was voted down on July 31, 2012, resulting in uncertainty about how the region will pay for necessary transportation projects and services. • Tightening air quality standards faced with regional population growth will prove to be a challenge for the future. • Suburban areas are still expanding into exurban areas, which strains the existing transportation infrastructure in those areas • More than 3 million people can access downtown Atlanta in 40 minutes or less today, but this decreases to only 1.3 million able to access downtown in the same time frame during peak periods. As population grows, the number of vehicles on the road will have to be mitigated to avoid dramatically shrinking the ability to reach employment centers within a reasonable commute time.

[33] PLAN 2040 RTP 2-7.

4.4. Freight Market is 3rd Largest In-Land Distribution Market

Since its beginnings as a terminus in the cotton trade, Atlanta has been the center of freight markets in the southeast. Georgia has the third largest Class 1 freight-rail assets in the country, and the Atlanta region is the third largest in-land distribution market. Congestion on trucking corridors throughout the Atlanta region leads to losses in supply chain efficiency, which is a consideration for business when thinking of relocation destinations. If the region is to continue to be a hub of trade related activity, it will have to contend with the inefficiencies in the highway system.

Figure 19: National Freight Patterns[34]



Source: ARC, 2007

As the region grows, freight will also grow. Planning for freight growth concurrent with other development growth is essential to meet overall transportation and quality of life goals. Freight uses the same corridors as other modes of transportation, so if its growth is not planned for, it could negate many of the positives achieved by an efficient transportation plan.

[34] P2040 RA, p. 93

4.5. Driver Behavior and Trends

National Trends

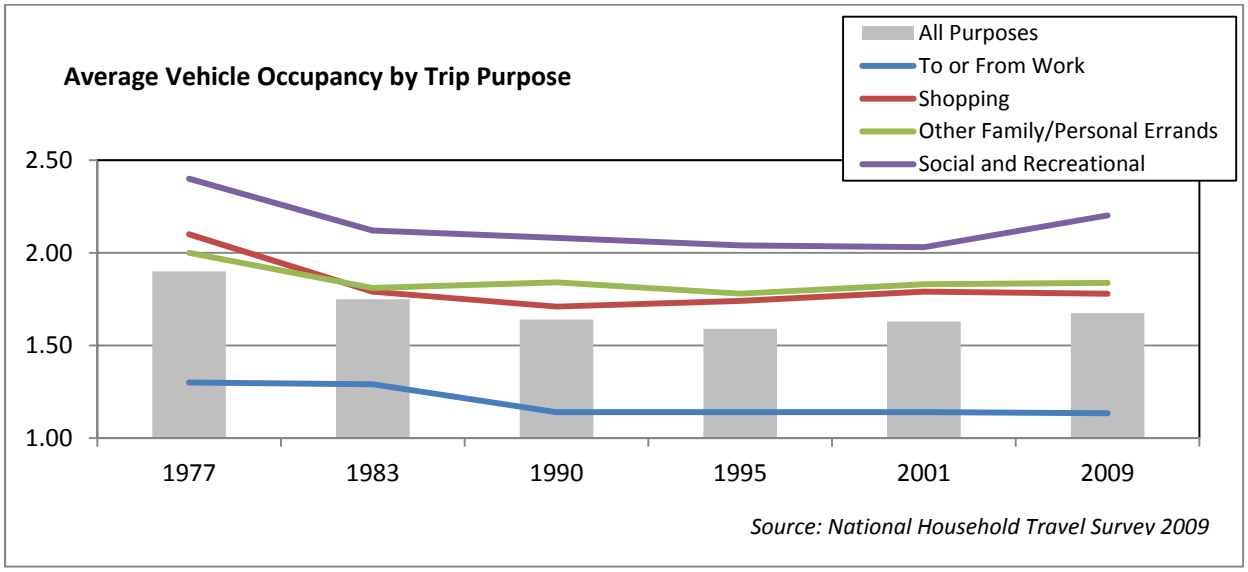
While the private automobile has been the most common form of transportation since 1960, it is also the mode that has experienced the largest growth in number of trips. This translates to an ever increasing share of private automobile use over all other modes.[35]

76.1% of all American workers drove to work alone (including 81.5% of suburban workers drove alone and 72% of workers living inside a metro area drove alone).

Vehicle Occupancy[36]

Vehicle occupancy, however, can depend greatly on the trip purpose. SOV travel is highly connected to work-trip travel, and shopping, family and personal errand, as well as social and recreation trips are much more likely to fill the vehicle with additional travelers.

Figure 20: National Household Travel Survey Trend: Average Vehicle Occupancy by Trip Purpose[37]



[35] The US Census Bureau document *Commuting in the United States: 2009* with information from the American Community Survey was used to extrapolate national commuting trends for this section of the report. The American Commuter Survey (ACS) captures changes in socioeconomic, housing, and demographic characteristics of communities. Information from the National Transit Database was also analyzed in this section using the 2010 National Transit Database Highlights document. Information in this document comes from the National Transit Database and other national data collectors such as the Bureau of Labor Statistics and the Energy Administrations.

[36] The *National Household Travel Survey* (NHTS) conducted in 2001 and 2009 provides a continuation of the *Nationwide Personal Transportation Surveys* (NPTS) conducted in 1969, 1977, 1983, 1990 and 1995. The NHTS/NPTS serves as the nation's inventory of daily travel and is collected over a 24-hour period in order to quantify daily travel behavior and characterize travel characteristics of related travel behavior to demographics and travel over time. Average vehicle occupancy was collected by general trip purpose starting in 1977 and provides some insight into multiple versus single occupant vehicle use.

[37] NHTS, p. 33

Travel Time to Work

According to the report, *Commuting in the United States: 2009*, travel times for workers have risen from an average of about 22 minutes in 1980 to approximately 25 minutes in 2009. The amount of time workers spend commuting is an important indication of shifts in the spatial distribution of workers' home and work locations as well as roadway congestion. Travel time can also indicate other shifts such as workforce participation rates as well as changes in the availability and usage of different transportation modes. Commute travel times can make an impact on commute mode decisions. Currently, private automobile use is likely a much more attractive option when compared to public transit as can be seen by average commute travel times collected for the *2009 National Household Travel Survey*.

Figure 21: Metro Areas with the Longest and Shortest Commutes: 2009[38]

Metro Areas With the Longest and Shortest Commutes: 2009

(In minutes. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see *www.census.gov/acs/www/*)

Metropolitan statistical area	Mean travel time to work[1]	Margin of error[2] (±)
Ten Longest Commutes		
New York-Northern New Jersey-Long Island, NY-NJ-PA	34.6	0.1
Washington-Arlington-Alexandria, DC-VA-MD-WV	33.4	0.3
Poughkeepsie-Newburgh-Middletown, NY	32.2	1.0
Bremerton-Silverdale, WA	30.8	1.4
Chicago-Naperville-Joliet, IL-IN-WI[3]	30.7	0.2
Winchester, VA-WV	30.3	2.1
Atlanta-Sandy Springs-Marietta, GA	30.1	0.3
Riverside-San Bernardino-Ontario, CA	30.0	0.4
Stockton, CA	29.8	1.2
Baltimore-Towson, MD	29.7	0.3
Ten Shortest Commutes		
Great Falls, MT	14.2	0.8
Lewiston, ID-WA	14.7	1.5
Grand Forks, ND-MN	15.1	1.1
Lubbock, TX	15.5	0.8
Missoula, MT	15.8	1.0
San Angelo, TX	15.9	1.3
Cheyenne, WY	15.9	1.8
Midland, TX	16.0	0.7
Lawton, OK	16.0	0.8
Decatur, IL	16.5	0.9

[1] Workers 16 years and over who did not work at home.

[2] This number, when added to or subtracted from the estimate, represents the 90 percent confidence interval around the estimate.

[3] The mean travel time for workers in the San Juan-Caguas-Guaynabo, Puerto Rico metropolitan area was 30.8 minutes, the fifth highest among metropolitan areas in the United States and its territories.

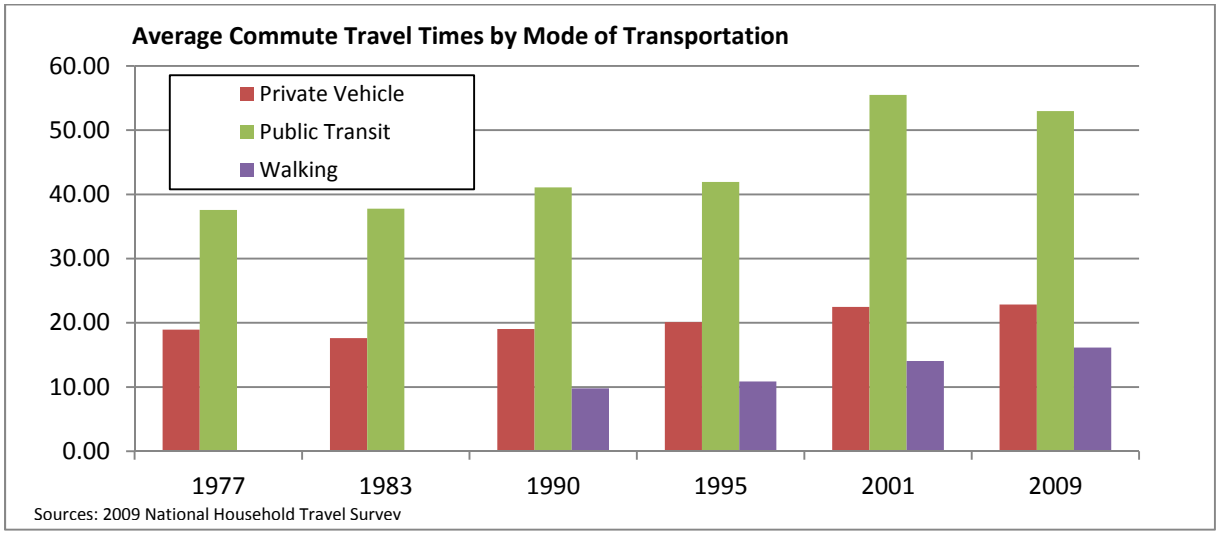
Note: Because of sampling error, the estimates in this table may not be significantly different from one another.

Source: U.S. Census Bureau, American Community Survey, 2009.

[38] ACS Commuting in the United States-2009, p. 16

While average commute travel time alone is not the only indication of a particular mode's speed, travel by public transit in many cases is not as quick or as convenient as driving a personal vehicle. However, there are methods to make public transit a priority on the roadway network, such as adding managed lanes that give multi-occupant vehicles priority, as well as transit-only lanes, fixed-guideway transit lines, and traffic signal prioritization that enable transit vehicles to traverse the roadway network more quickly than vehicles, or get a head start when the light turns. These strategies are particularly effective in places such as the Atlanta region, where traffic congestion has become a particular challenge. According to the report, *Commuting in the United States: 2009*, Atlanta ranks with the top ten longest commutes, with a mean travel time to work just over 30 minutes.

Figure 22: National Household Travel Survey Trends: Average Commute Travel Times by Mode[39]



Transit Ridership

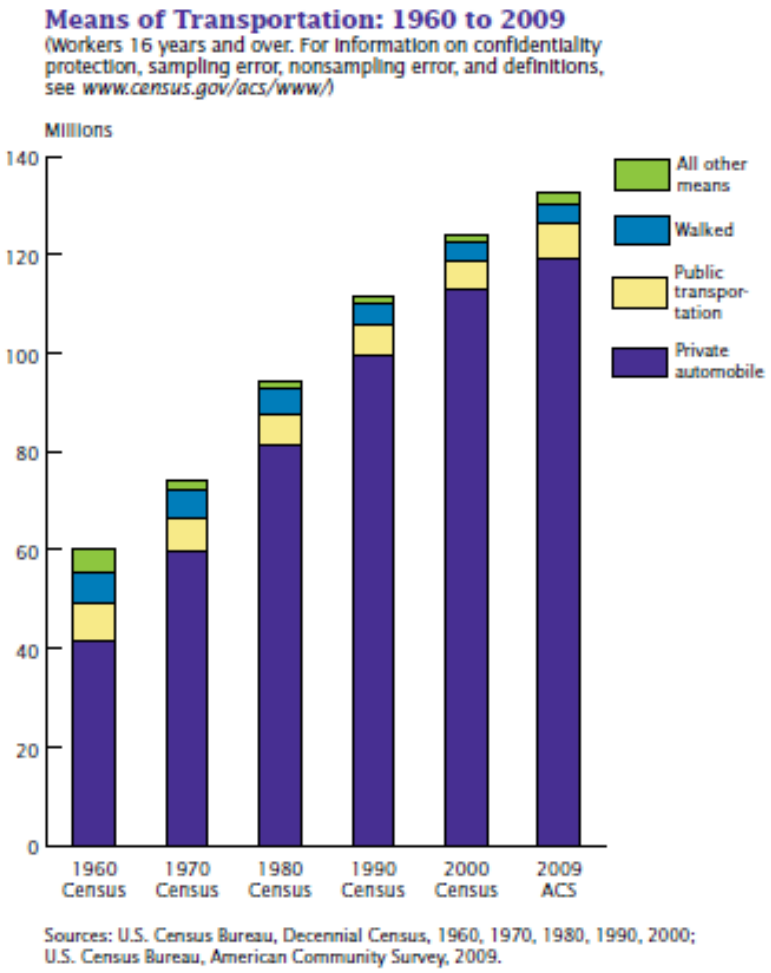
Use of transportation mode alternatives instead of SOVs is not increasing nearly as quickly as the share of travel by private automobile. Over time, the number of trips made by public transportation and walking have remained fairly consistent, but compared to the share of overall trips taken, have dramatically decreased as a share of trips. The figure below shows the trend of transportation means from 1960 to 2009 below.

The rate of public transportation use varies depending on the metro area, but overall about 5 percent of Americans use public transportation to commute to work, and 3 percent walk to work.

Nationally, transit ridership has been trending upward through the downturn of the economy. Data from the National Transit Database suggests, however, national transit ridership is not solely based on employment but also the cost of gasoline. As gasoline prices per gallon rise higher nationally, so does the amount of transit ridership.

[39] NHTS 2009, p. 48

Figure 23: Means of Transportation: 1960 to 2009[40]



[40] ACS-Commuting in the United States, p. 3

Atlanta Regional Trends

2011 Transportation Fact Book[41]

The Transportation Fact Book is published annually by the ARC and presents a summary of the most current data for the transportation system in the 10-to-20 county Atlanta region. The Fact Book provides information about the existing regional transportation infrastructure and travel patterns, as well as other transportation-related issues. A few of the highlights from the Fact Book are listed below.

- Even while population booms and vehicle miles traveled (VMT) is increasing, VMT per capita has generally decreased since approximately 1998.
- However, Atlanta region ozone standard daily exceedances increased from 14 in 2009 to 24 in 2010; while weather plays a significant role in the number of exceedances, and 2010 had a particularly hot summer, the overall increase in population and concurrent increase in VMT is still a challenge for future air quality concerns.
- In 2009, there were 435 crash-related fatalities in the region, which is 93 fewer than 2008 despite an average annual population growth of 96,828 people each year from 2000-2010.
- Total weekday rail station entries went up by 4.6% (8,446 entries) from 2009 to 2010.

The PLAN 2040 Regional Transportation Plan

The PLAN 2040 Regional Transportation Plan examines the region's transportation needs through the year 2040 and provides a framework to address anticipated growth through systems and policies. This document provides a comprehensive statement of the regional future transportation needs as identified by local jurisdictions, the state, and other stakeholders. A few of the highlights from this document are listed below.

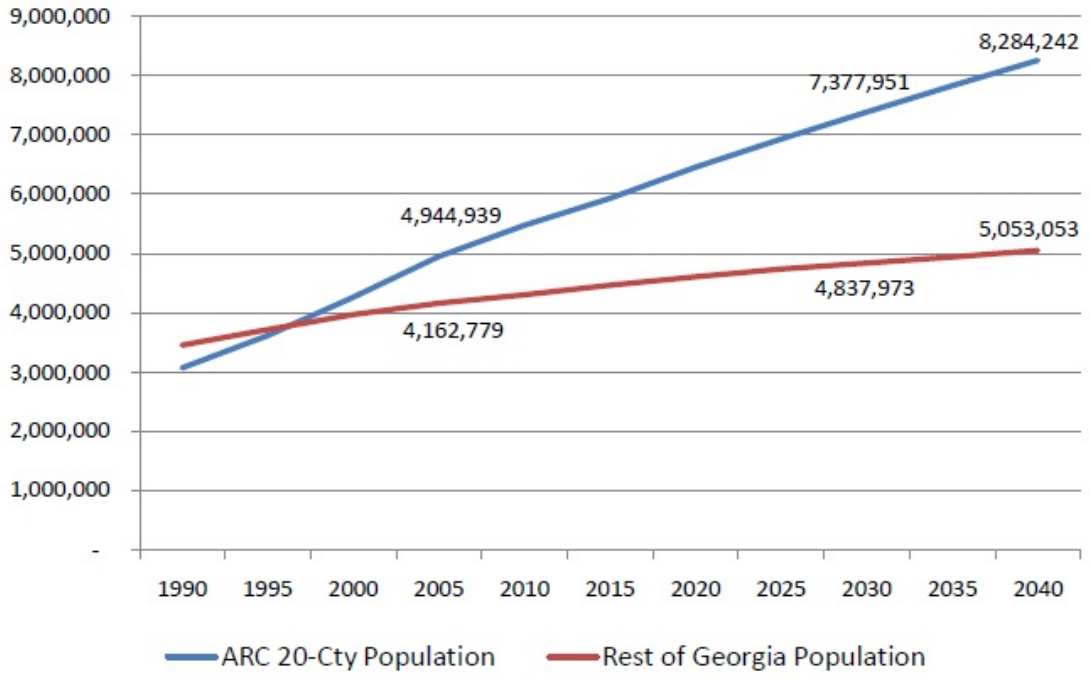
- According to a survey by CTE, currently, 18% of all metro Atlantans carpool, vanpool, use transit, bike, walk, or telework three or more days per week[42]
- Most Atlantans travel through multiple counties each day, and are expected to continue this trend.

The Atlanta region is growing much more quickly than the rest of Georgia. In fact, the Atlanta 20-county region's population exceeded that of the rest of Georgia before 2000 and is projected to be just over 62 percent of the state's total population in 2040.

[41] Additional data to be provided in ARC Regional Travel and Commute Report.

[42] PLAN 2040 RTP, p. 4-18

Figure 24: PLAN 2040 Regional Assessment Trends: ARC 20-County vs. Rest of Georgia Population



Source: ARC Initial Plan 2040 Forecast

Employment in the state also is centered in the Atlanta 20-county region. Moreover, employment growth in the Atlanta region appears to be growing at a much quicker rate than employment throughout the rest of the state. It will be important to consider how state budgets impact the growing population and employment opportunities and to be sure that future state budgets prepare for the influx and expansion of the needed infrastructure to sustain both the population and employment projections for the Atlanta Region.

2010 Regional Commuter Survey Key Findings and Technical Report

The 2010 Regional Commuter Survey Key Findings and Technical Report was produced by CTE and reveals a portrait of typical commute behaviors from August through September 2010 of employed commuters in the Atlanta region. This survey is used to assess general trends in awareness, attitudes, and use of alternative forms of transportation for commuters. Below are some key trends that were highlighted in the report.

- In 2010, 82% of metro Atlantans commuted by driving alone, which is down 3% from 2007.
- The average one-way commute in the region is 17.5 miles.
- Of the 53% of commuters who said they worked for an employer who offered some type of commuter service, 61% had the opportunity to telework, which is up from 53% in 2007.
- For those commuters who do use alternatives to SOV commuting, 40% telework, 30% carpool or vanpool, 15% take the train, 13% ride the bus, and 2% walk or bike.

5. TDM Administrators, Programs and Initiatives

The TDM programs are operated within the context of state, regional and local programs and policies. The following sections describe those TDM programs in more detail.

5.1. TDM+ in the Atlanta Region

TDM**+** expands upon strategies that increase travel choices and support the efficient use of the region's transportation infrastructure system. The ability to choose whether or not to travel or telework, to utilize an alternative mode, to plan trips around peak-hour traffic, or even to follow a route less commonly traveled can help both individuals and the region better address concerns related to transportation and traffic. On a regional level, land use planning, urban design strategies, and zoning can improve residence, retail, and employment location choices in order to reduce required trip distance and improve connectivity with alternative modes in order to provide citizens with greater trip-making alternatives.

There are several major TDM**+** players in the Atlanta region as well as some organizations that provide programs and initiatives on a smaller scale, although they do not use the integrated TDM+ term.

Figure 25: Existing TDM Services and Infrastructure in Atlanta region

Service	About
Ridesharing/ Ridematching	Ridematching is a way for commuters who travel similar routes to and from work to link together travel more efficiently. Commuters enter their information into a database that is then analyzed for similar travel routes, times, and expectations, to allow them to rideshare to adjacent destinations. Ridematching can assist those wanting to carpool or vanpool as well as those wanting to bicycle with a partner or group. In Atlanta, ridematching is done through the ARC with a program called RideSmart, which covers the entire region. Ridematching is also done through the private vanpool operators in the region, vRide and Enterprise, as well as internally within some major employers, institutions and organizations.
Vanpooling	Vanpooling is similar to carpooling, where commuters with similar routes and destinations all ride together to make their trips more efficient. Vanpooling is different from carpooling because the vehicle is not a personal vehicle, and usually carries more riders than an ordinary carpool. Vanpool riders also do not independently pay for the vehicle's insurance or maintenance/repair of the vehicle, but instead pay a fee to be a part of the vanpool that covers those items. Vanpooling is provided region-wide by GRTA through vRide and Enterprise, and also in Cherokee and Douglas counties.
Transit	Transit in the Atlanta region is provided by several operators, with MARTA operating the core service. MARTA operates heavy rail, local bus, and paratransit in Fulton and DeKalb Counties. Other regional transit services are provided through Cobb Community Transit (CCT), Gwinnett County Transit (GCT), Cherokee Area Transportation System (CATS) and other, more localized shuttles, or commuter travel via GRTA Xpress bus system. The Breeze Card is a reusable fare care that can be used for MARTA, CCT,

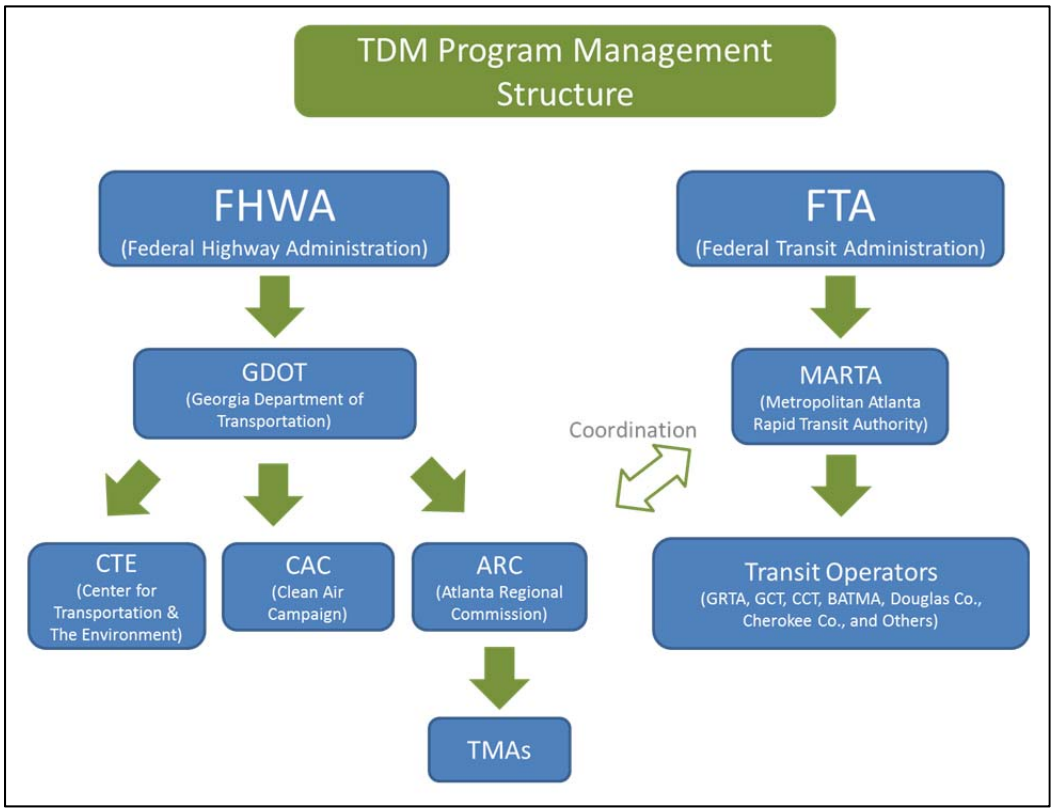
Service	About
	GCT, and GRTA Xpress and allows for free transfers onto the MARTA system from the other three systems. MARTA's Partnership Program provides up to a 10% discount for the unlimited calendar month pass to ESOs and businesses that purchase passes in bulk for employees.
Bicycle and Pedestrian	The Atlanta region is augmenting its bicycle and pedestrian facilities, both on- and off-road, especially in the more urban areas. Walking and bicycling facilities connect many parts of the region and are accessible through the systems such as the PATH Foundation trails and linear parks, Beltline project, Silver Comet Trail, public parks, and local street sidewalks and bicycle infrastructure. Through Commuter Rewards, clean commutes such as bicycle and pedestrian commutes can be logged daily online. Each clean commute that a participant logs is added to a monthly drawing for $25 prepaid visa rewards. In 2011, the region participated in the National Bike to Work Week program in May. In October, 2012 the Commuter Rewards program sponsored a Bike to Work Challenge. Bicycle ridematching is also an option in the region.
Telework/ Alternative Work Arrangements	Telework and other alternative work arrangements are becoming more and more common. ESOs in the Atlanta region promote these arrangements where they may be possible for certain employers and specific employees. Alternative work arrangements often center on standard work hours and allow employees to arrive and depart at times that facilitate non-rush hour commutes. Teleworking can allow an employee to work from home, avoiding travel entirely on the days that teleworking is feasible for both the employee and the company. The state of Georgia provides tax incentives to companies that engage in telework and meet certain requirements.
Guaranteed Ride Home	To support TDM-related commutes, Guaranteed Ride Home programs are provided through ARC's RideSmart database as well as through the Clean Air Campaign. These programs provide qualified commuters who carpool, vanpool, walk, bike, or take transit to work with up to five annual free rides from work to their home or to car if an unscheduled or unexpected event occurs. These support programs are in place for times when a commuter's normal mode of transportation cannot be used to get home from work.
Senior Mobility Program	The Senior Mobility Program is a menu of option that communities can choose from to best meet their needs and fill the gaps of public and private transportation services. The program provides low-cost, efficient transportation tailored to older adults and comprises Five Mobility Options: transportation voucher, volunteer drive, travel training, SeniorPool, and walkable community assessments.
Regional Mobility Management One-Click System	ARC is the recipient of the FTA Veterans Transportation and Community Living Initiative (VTCLI) grant. ARC is using the funds to develop software that will help lay the foundation for a regional one-click center to link veterans, older adults, persons with disabilities and limited income with more transportation options in the region.

TDM Program Management, Operations and Coordination

The following flowchart represents the current structure for TDM program management:

- GDOT receives FHWA funding and guidance and then passes funds and directives to the Clean Air Campaign, CTE, and ARC.
- ARC is able to pass funds to regional ESOs (with the exception of the Clean Air Campaign, which receives money directly from GDOT) to support TDM programs through employer services.
- Transit-specific funding flows from FTA through the region's designated recipient, MARTA (in consultation with ARC which helps allocate the funds), with MARTA in turn allocating transit funding to operators such as GRTA, GCT, CCT, Douglas County, Cherokee County and BATMA (which operates a shuttle). All counties within the MPO boundaries are offered FTA funds; however, some choose to return the funds to the regional FTA funding pool.
- GRTA contracts with vanpool operators/vendors (Enterprise Rideshare and vRide) to operate the majority of vanpools in service. Cherokee County also contracts with vRide and Douglas County operates its own vanpool program.

Figure 26: Organizational Structure of TDM in Atlanta metro area[43]



[43] *Note: The chart refers to TDM program specific funding. Regarding overall transportation funding, not all FHWA funding flows through GDOT and not all FTA funding flows through MARTA.*

Contracts

Contracts are executed between organizations that distribute and receive funds. Contracts exist between the following organizations:

- GDOT contracts with ARC for the purposes of managing the regional database and GRH program.
- GDOT contracts with ARC for TDM program administration (regional ridematching and funding of ESOs other than CAC)
- ARC contracts with ESOs for TDM program administration
- GRTA contracts with vanpool operators/vendors (Enterprise Rideshare and vRide)
- GDOT contracts with CAC for TDM program administration (in areas not served by local ESOs)
- GDOT contracts with CTE for TDM measurement and evaluation

Contracts between the organizations are renewed on different intervals, some on a yearly basis, with others on a three year basis.

Policy Approach

In 1999, several organizations receiving CMAQ funds and their stakeholders met to identify ways to improve the efficiency and effectiveness of the aggregate programs. As a result, the group developed the Framework to represent a set of guiding principles that defined a strategic direction for coordination of efforts to accomplish their goals. The guidance is known as The Framework for Cooperation to Reduce Traffic Congestion and Improve Air Quality.

The Framework included three core activities:

- Service to individual commuters;
- Communications and outreach; and
- Employer services.

The Framework document has never been updated, nor did the original address many of the broader concepts and funding sources that have been more recently seen in isolated ESO initiatives in the Atlanta region as well as in metro and regional TDM plans and programs around the country. Currently, there is no regional-decision making for policy approach that is formalized for TDM, and TDM is not incorporated into the regional planning process in any formalized way (before this current TDM Plan).

Marketing Approach

TDM marketing programs have historically occurred at many different levels with minimal integration. Groups that actively market TDM programs include GDOT, GRTA, ARC, ESOs (which includes the Clean Air Campaign), and vanpool operators/vendors. The ESOs have traditionally conducted the majority of the marketing efforts, with support from The Clean Air Campaign. The Clean Air Campaign supports the efforts of the ESOs by providing print and electronic media targeted toward TDM programs. ESOs then refine the material to tailor messages to their constituents. This approach resulted in sometimes competing brands and messages and marketing strategies that caused confusion within the community. The challenges associated with limited integration of brands and messages have been raised by the community and verified by CTE surveys.

To address these issues, GDOT launched a series of focus groups and marketing studies to determine a new branding approach. The new brand, Georgia Commute Options, is intended to offer commuters everything they need in one place about making a switch from driving alone. The effort is meant to simplify the way the region's services are marketed, so that resources can be found more easily and all in one place. The new brand is a bundling of services under one name to better describe what the program does.

New Brand for Georgia Commute Options

Georgia Commute Options is a new program from The Clean Air Campaign, GDOT, the Atlanta Regional Commission and metro Atlanta TMAs. It combines the region's alternate commute resources - incentive programs, ridematching, employer services, telework consulting and more.

These services, some of which were previously offered through different organizations, are now bundled together under one umbrella as a free resource for Atlanta commuters and employers.

Media Planning Committee

The Media Planning Committee (MPC) is a partnership of organizations that together work on metro Atlanta TDM issues, convened quarterly by CAC to discuss and make decisions on mass messaging and communications strategies that support commute options programs for the region.

MPC participants include representatives with communications expertise from:

- State and regional entities, including GDOT, GRTA, Georgia Environmental Protection Division (EPD), MARTA and the Atlanta Regional Commission's TDM division.
- Measurement and evaluation partners, including CTE.
- Non-governmental partners and communications experts, including representatives from ESOs

The MPC was originally formed over a decade ago when TDM in the Atlanta region was based around a large television advertising campaign and a significant public relations effort. Because the advertising and PR

campaign was designed to support many partners, including CAC, the TMAs, ARC, GDOT, GRTA, and EPD among others, the committee was formed to make decisions regarding the structure of the campaign. The meetings were hosted by the advertising agency and all decisions regarding all radio and television ads were made by the MPC. After CTE performed a quantifiable evaluation of the media campaign, the MPC revised the media campaign based on radio advertising, solid public relations, and developing materials to support employer outreach with unified messaging that all ESOs could use. The MPC continues to be active today in the Atlanta region. MPC actions are communicated to the ESC via regular updates.

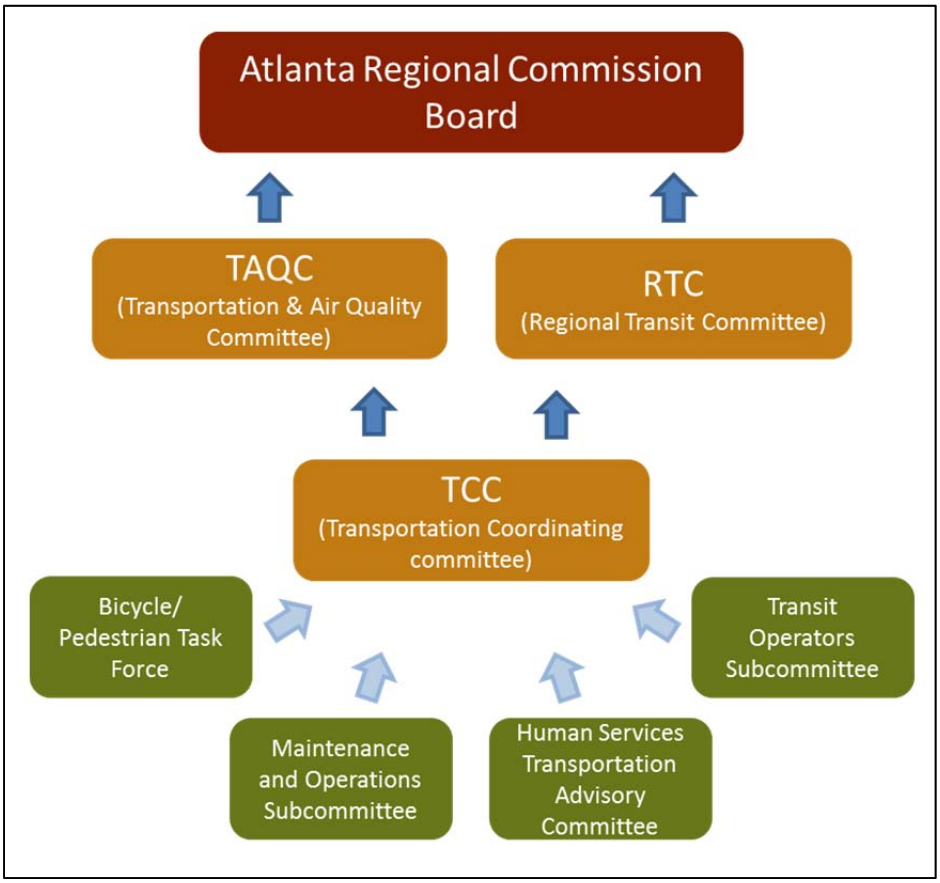
Committee Structures

Several committees and subcommittees currently exist that guide direction of TDM programs and policies within the Atlanta region. Some of these committees exist within a governmental organization, while others have little affiliation with policymaking entities. Ultimately, federal funding for TDM activities must be included in the region's TIP/RTP, which is created and adopted by ARC as the region's MPO. The MPO committee structure is shown below. While ARC does not have any TDM-specific committees, there are modal and program-specific subcommittees that relate to TDM. These include:

- The Bike/Ped Task Force
- Maintenance and Operations Subcommittee
- Human Services Transportation Advisory Committee, and
- Transit Operators Subcommittee.

These subcommittees provide recommendations up to the Transportation Coordinating Committee (TCC, also considered the MPO technical committee) for their consideration. The TCC, in turn, reports to the Transportation and Air Quality Committee (TAQC, also the MPO policy committee), as well as the Regional Transit Committee (RTC). Finally the TAQC and RTC report to the ARC Board.

Figure 27: Atlanta Regional Commission Committee Structure for TDM and Related Activities[44]



The Employer Services Committee (ESC) represents a partnership of organizations that provide TDM services to employers, property managers, and individuals in the Atlanta region. The ESC is not an ARC subcommittee, and thus does not have a formal mechanism for recommending changes to the MPO on funding and policy for TDM and related activities. The ESC is an advisory committee which was originally intended to make recommendations to the TDM Policy Group (which is now defunct) regarding policies on:

- A unified process to provide TDM services to employers, property managers, and individuals in the Atlanta region,
- A coordinated procedure to determine partnership levels and apply standards to employer and property manager programs throughout the region,
- A consistent set of reporting procedures to be used by ESOs participating in TDM programs,
- A viable regional incentive program to be available through ESOs and to individuals served by members of the ESC, and
- Other issues as directed by state and regional agencies.

[44] Please note that there are many other ARC committees and subcommittees that do not directly relate to TDM are not included in Figure 27.

When the TDM Policy Group was active, it was responsible for recommending funding levels to support TDM activities; establishing and communicating policies for regional TDM activities; overseeing the process for contracting with ESOs to implement TDM programs; and monitoring and evaluating the results of TDM programs. The group provided major guidance on the use of CMAQ funds in regard to various TDM program offerings during the late 2000s, but has since dissolved. No organization has officially or unofficially taken the place of the TDM Policy Group.

Membership of the ESC consists of ESOs, University members (Clayton State University and Georgia Tech) as well as advisory participants such as federal, state, and local agencies, and consulting firms that they engage. Current advisory participants include ARC, CTE, Georgia Environmental Protection Division (EPD), GDOT, and GRTA. Other non-ESO participants on the ESC include Douglas County Rideshare, Enterprise Rideshare, and vRide.

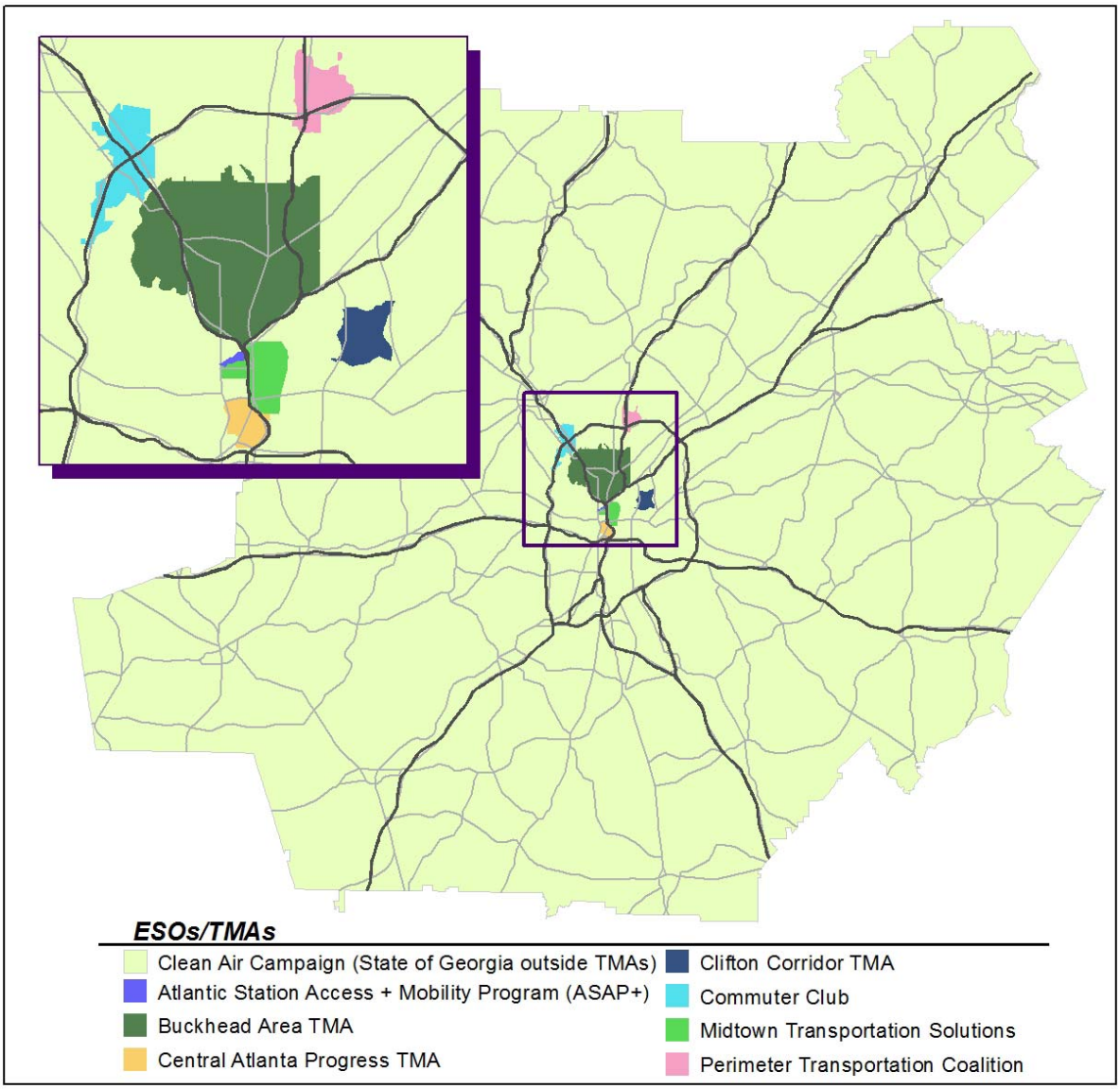
The ESC is comprised of several subcommittees, which meet on a regular basis. Current committees include the Regional Incentives Subcommittee, Partner Levels Subcommittee, and Vanpool Subcommittee. Ad hoc committees include CommuteTrak© Subcommittee and the PACE regional award ceremony committee that recognizes employers with outstanding Commute Options programs on an annual basis.

While the ESC is designed as a partnership of organizations receiving federal funds (mostly ESOs) and collaborating to provide employer services, the Media Planning Committee (MPC) coordinates all messaging and media purchases for the regional TDM program by pooling media and public relations resources in order to provide better education and behavioral change impacts.

TDM+ Policy and Program Administrators – Organization Snapshots

A number of partners and organizations are involved in the delivery of TDM services in the Atlanta region.

Figure 28: ESO Boundaries within the Atlanta Region[45]



[45] Data Source: ARC GIS Department

The tables below present a brief description of each organization, services offered, service area, funding sources, and innovative strategies or services.

Georgia Department of Transportation (GDOT)	
Description	The Georgia Department of Transportation is in charge of developing and maintaining all state and federal roadways and has a limited role in developing public transportation and general aviation programs in Georgia. GDOT also manages the statewide TDM program.
TDM Services offered	• Provides oversight and accountability (monitoring and evaluation) for Employer Service Program • Board develops and approves STIP which includes program funding • Requests project authorizations • Operates managed lanes • Manages funding resources
Funding sources	Federal CMAQ funds to distribute and State taxes; Responsible for all FHWA fund categories; however must work in consultation with non-attainment areas and other agencies for CMAQ funds.
Innovative TDM strategies or services	• GDOT contracts with CTE to research the impact of TDM strategies on transportation in the state • Undertaking a statewide branding campaign • Use of focus groups and pilot programs to test new approaches and strategies • GDOT's Traffic Management Center has become a national model for traffic flow management, strengthened by campaigns to increase 511 system usage and message alerts to geographic areas where traffic delays are occurring.[46]
Website	http://www.dot.state.ga.us

Atlanta Regional Commission (ARC)	
Description	The Atlanta Regional Commission is the Atlanta MPO and is responsible for long-range planning initiatives for the Atlanta metropolitan area. ARC demonstrates forward looking leadership to ensure sustainable growth and competitive advantage by focusing and balancing Environmental Responsibility, Economic Growth and Social Needs.
TDM Services offered	• Develops and programs federal funding for inclusion in the regional transportation improvement program TIP and RTP. • Responsible for STP-Urban funding decisions. • Although ARC does not have any TDM-specific committees, there are modal and program-specific subcommittees that relate to TDM. • Manages and maintains the RideSmart commuter ridematching database and the region's Guaranteed Ride Home (GRH) program • Sets regional policies regarding land use and transportation • Contracts with ESOs for delivery of TDM services in the region's key employment/activity centers and oversight

[46] http://www.schapirogroup.com/Success-Stories.aspx

Service area	Atlanta Metropolitan Region
Funding sources	Primary TDM funding received in the form of CMAQ dollars allocated by GDOT
Innovative TDM strategies or services	• Mobility management strategy • Pursuit of stakeholder-based Regional TDM Plan • LCI, which provides planning grants to create more livable, walkable, and transit-oriented communities, has achieved transportation and environmental benefits • Exploring how to better link active aging/lifelong communities and travel options • Regional Mobility Management One-Click System
Website	www.atlantaregional.com

Georgia Regional Transportation Authority (GRTA)	
Description	Georgia Regional Transportation Authority is a government agency that addresses mobility, air quality, and land use as well as how each relates to the transportation needs of metro Atlanta. GRTA monitors the performance of the region's existing transportation system and compares it to statewide transportation vision. GRTA additionally manages the regional vanpool program as well as the regional express bus system, GRTA Xpress.
TDM Services offered	• GRTA provides a regional commuter coach service for weekday commutes within the 13 metro counties GRTA serves • GRTA provides subsidies that benefit vanpool riders within its service area and oversees a regional vanpool program
Service area	13-County Metro Atlanta Region
Funding sources	State general funds; FTA Section 5307 funds allocated by the region's designated recipient, MARTA.
Innovative TDM strategies or services	• Provides Xpress bus services on 33 routes serving the Downtown, Midtown, and Buckhead areas of Atlanta, and the Perimeter Center areas • Manages Regional Vanpool Program contracts, contracting to Enterprise and vRide
Website	http://grta.org/

ASAP+	
Description	Atlantic Station Access +Mobility Program (ASAP+) provides commute options, information, and incentives for office and retail commuters. ASAP+ works with building managers and business owners to integrate transportation strategies into their business plans in the Atlantic Station development.
TDM Services offered	• Marketing of commuter program and incentives • Carpool matching services • Bike share program • Promotes free shuttle to/from Arts Center MARTA station • Preferential parking for carpools

	• Informal alternative work arrangement programs at employer level • Promotes Zipcar
Service area	Atlantic Station development in the City of Atlanta
Funding sources	CMAQ dollars allocated from ARC and local funding from Manager-Owner Association (MOA)
Innovative TDM strategies or services	• Implement and fund bike share programs and promote preferential parking. • Promotes free electric vehicle charging stations onsite provided by the property owners. • Promotes shuttle for use by employees/visitors from Atlantic Station to the Arts Center MARTA station.
Website	http://asap-plus.com

Buckhead Area Transportation Management Association (BATMA)	
Description	Buckhead Area Transportation Management Association (BATMA) is a partnership of private businesses, public agencies, residential and civic associations within the Buckhead community with a mission to provide relief to commuters, residents, and visitors traveling to and within Buckhead.
TDM Services offered	• Marketing of commuter program and incentives • Carpool and Vanpool partner • Additional incentives/buy down for vanpool participants • Funding for planning and implementation of transportation infrastructure projects • Funds and operates a local shuttle called “the buc”
Service area	Buckhead area, including portions of Peachtree Road and Lenox Road
Funding sources	• CMAQ dollars allocated from ARC • Buckhead CID • Other grants
Innovative TDM strategies or services	• Provides additional vanpool subsidies • Involved in infrastructure improvements through CID
Website	http://www.batma.org

Central Atlanta Progress	
Description	Formerly known as Atlanta Downtown Transportation Management Association, CAP was founded in 1941, is a private nonprofit community development organization providing leadership, programs and services to preserve and strengthen the economic vitality of Downtown Atlanta. CAP is comprised with a board of directors of Downtown’s top business leaders.
Services offered	• Marketing of commuter program and incentives

	• Funding for planning and implementation of transportation infrastructure projects
Service area	Area bounded on the north by North Ave, on the south by I-20, on the east by Piedmont Ave and Connector, and on the west by Northside Dr
Funding sources	• CMAQ dollars allocated from ARC • Atlanta Downtown Improvement District • Other federal grants
Innovative strategies or services	• Provides targeted transit outreach • Lead a parking management study
Website	www.atlantadowntown.com

Clean Air Campaign (CAC)	
Description	The Clean Air Campaign is under contract with GDOT to deploy cost-effective transportation demand management programs and services to Georgia employers, commuters, and schools mitigate traffic congestion and improve air quality in Georgia ozone and particulate matter nonattainment, maintenance, and attainment areas (as identified by GDOT) throughout the eligible statewide service area. The objectives of the CAC's contract with GDOT center on creating a sense of urgency that traffic congestion and air pollution are statewide problems that demand action today. Some sample actions are providing the public with information about air quality and traffic congestion, communicating the importance of TDM programs and their successes, increasing participation in the use of commute alternatives, and supporting statewide initiatives such as the EPDs anti-idling strategy through identification and pursuit of relevant opportunities. Furthermore, CAC supports and helps develop outreach related activities and financial incentives programs as well as improve measurement capabilities to help continue to strengthen the Commute Options program and its partners.
TDM Services offered	• CAC offers assistance to employers for commute option programs, offers targeted incentives to commuters and employers, provides smog alert notifications, promotes reduction of traffic and cleaning the air to schools, commuters, employers alike • Manages statewide Guaranteed Ride Home program outside of the metro Atlanta Guaranteed Ride Home program that is managed by ARC's RideSmart program • Manages CommuteTrak© database which allows commuters to log daily commute activities and access a commuter summary that notes mode split and a savings summary including VMT reduced, pollution reduction, and fuel and maintenance cost savings based on the estimated cost per mile to operate a vehicle.
Service area	• Statewide service area, works with a variety of employers and elementary, middle, and high schools • Generally does not provide service within local ESO boundaries.
Funding sources	Federal CMAQ dollars allocated by GDOT, private funding through corporate and foundation grants and other federal grants
Innovative TDM strategies or	• Provides daily air quality updates • Created and manages regional Commuter Rewards program

services	• Telework Campaigns and Mass Marketing campaigns • Pool to School program helps schools create custom carpool programs to promote sharing the ride to and from school
Website	http://www.cleanaircampaign.org

Clifton Corridor Transportation Management Association (CCTMA)	
Description	Clifton Corridor TMA provides services to employees along the Clifton Road Corridor in DeKalb County in order to help mitigate congestion and air quality concerns.
TDM Services offered	• Marketing of commuter program and incentives • Operation and management of the Cliff bus system
Service area	Clifton Road from Briarcliff to the North Decatur area
Funding sources	• CMAQ dollars allocated from ARC • Emory University • Non-profit organizations
Innovative TDM strategies or services	• Cliff shuttle system • Partnered with MARTA to produce the Clifton Corridor Transit Initiative Update
Website	http://cctma.com/
Contact info	Adele Clements, Executive Director adele.clements@emory.edu, (404) 727-3104

Commuter Club	
Description	Commuter Club of the Cumberland CID offers assistance with ridesharing, facilities and land-use, and work schedule arrangements. Assistance is provided free of charge and many services rendered are heavily subsidized by the CID and through outreach services provided by The Clean Air Campaign.
TDM Services offered	• Information on rideshare, carpool-vanpool arrangements, facility and land use assistance, teleworking, and work schedule arrangements for both commuters and businesses • Marketing of commuter program and incentives • Additional incentives/buy down for vanpool participants
Service area	Cumberland/Galleria office market (I-75/I-285 in Cobb County)
Funding sources	• Cumberland CID • Other federal grants
Innovative TDM strategies or services	• Provides additional vanpool subsidies • Involved in infrastructure improvements through CID
Website	http://commuterclub.com

The Center for Transportation and the Environment (CTE)	
Description	The Center for Transportation and the Environment is a nonprofit that measures and evaluates commuter behavior and the efficiency and effectiveness of TDM programs. CTE contracts with GDOT for the evaluation and measurement of Georgia commute options and TDM programs to measure the effectiveness of the state's transportation demand management efforts aimed at reducing traffic congestion and improving air quality.
TDM Services offered	• Performance data collection relating to level of activity within ESOs • Programmatic data collection through surveys to measure program outcomes and impacts • Regional commuter survey collection to measure attitudes and awareness of programs as well as regional commute behavior
Service area	CTE's efforts are largely focused within the Atlanta nonattainment area, as this area represents the most mature TDM programs in the state; CTE does occasionally have the opportunity to consider areas outside the 20-county region for rural applications and commuters that come from outside the nonattainment area.
Funding sources	CTE contracts through GDOT and is a recipient of CMAQ funds for the measurement and evaluation of TDM and related activities.
Innovative TDM strategies or services	• Objective approach and independent evaluation (most other state TDM evaluation programs are self-administered). • Inception in December 1999 makes the CTE/GDOT contract one of the longest running TDM evaluation programs in the country.
Website	http://www.cte.tv

Midtown Transportation Solutions (MTS)	
Description	Midtown Transportation Solutions promotes a balanced transportation system to improve mobility by working with employers and property managers to extend commute options and benefits programs to office building tenants.
TDM Services offered	• Marketing of commuter program and incentives • Discounted transit passes • $10 monthly incentive for 20+ daily bike and/or walk trips • Alternative commute planning
Service area	Area bounded on the north by Brookwood AMTRAK station, on the south by Ralph McGill Boulevard, on the east by Monroe Drive, and on the west by Northside Drive
Funding sources	• CMAQ dollars allocated from ARC • Midtown Alliance • Other federal grants
Innovative TDM strategies or services	• Customized commute options to Midtown employers and property managers • Monthly $10 gift card for 20+ daily bike and/or walk trips

Website	http://www.midtownalliance.org

Perimeter Transportation & Sustainability Coalition (PTSC)	
Description	Perimeter Transportation and Sustainability Coalition encourages and rewards transit use, ridesharing, bicycling, walking, alternative work arrangements, and more in order to reduce demand on Central Perimeter roads. PTSC partners with employers and property managers to raise awareness of commute options to shift commuter behavior away from single-occupant vehicles.
TDM Services offered	• Marketing of commuter program and incentives • Discounted transit passes • Information regarding alternative work arrangements, transit, and walking routes • REI partnership for walk and/or bike incentives/prizes
Service area	I-285/GA 400 area in Fulton and DeKalb Counties
Funding sources	• CMAQ dollars allocated from ARC • Fulton CID • DeKalb CID • Other federal grants
Innovative TDM strategies or services	• Pool to school ride matching • Information on walking routes
Website	http://perimetergo.org

Metropolitan Atlanta Rapid Transit Authority (MARTA)	
Description	Metropolitan Atlanta Rapid Transit Authority - in service since 1970s and provides bus, rail and paratransit service. It has increasingly taken more of a role in community development and sustainability.
TDM Services offered	• Heavy rail lines and operation • Bus routes and operation • Paratransit services • Special event shuttles (Braves shuttle, etc.)
Service area	Services Fulton and DeKalb Counties
Funding sources	• Federal Transit Administration • Sales tax • Fare collection
Innovative TDM strategies or services	• Developed guidance on development standards adjacent to rail stations (TOD)
Website	http://www.itsmarta.com/

Private Sector and Other TDM+ Policies and Programs

The region is filled with employers and organizations that make a difference through implementing TDM strategies. Employees in any organization can qualify for employer-sponsored incentives, and tax benefits, if the employer chooses to offer incentives. All commuters in the region are eligible to participate in the Commuter Rewards program, but some employers and/or ESOs provide additional benefits to commuters for choosing commute alternatives to travel between home and work.

As of 2011, over 1,600 employers and organizations that participate in TDM have chosen to be part of the regional employer partner program. The rules for employer status and partner levels changed in 2010. There are now two levels of participation for this program – Partner and Platinum Partner. Partner organizations actively educate employees and tenants about available commute options programs. These organizations also must have an on-going recruitment process and have one or more persons acting as employee transportation coordinators. Platinum Partners qualify for elevated status by achieving a minimum of 20 percent of employee trips through alternative commuting options. Platinum Partner property managers must provide a minimum of five specific amenities that benefit tenant employees who use commute alternatives, such as preferred parking for carpools and vanpools, shower facilities for bicycle commuters, a no-idling policy for vehicles on premises, etc. There were 130 Platinum Partners recognized in 2011.

Some specific TDM activities that have been initiated by organizations in the region include:[47]

- Campus bus, trolley, shuttle, and paratransit routes (university campuses, large employers)
- Private Shuttles (individual or multiple employers run a shuttle for employees from worksite)
- Full or partial subsidies/ pre-tax benefits – vanpool, transit, etc. (individual employers)
- Worksite shower facilities for bicyclists and pedestrians (individual employers)
- Bicycle racks/ lockers for bicycle commuters (individual employers)
- In-house carpool and vanpool matching services/ preferential parking (individual employers)
- Telework and alternative work schedules – including telework competitions between divisions to motivate sustained program participation (individual employers)
- Employer-based Guaranteed Ride Home (individual employers)
- Access to alternative mode(s) through location choice (individual employers)
- Infrastructure improvements to provide better access to alternative modes (individual employers)
- Partnerships with Zipcar (individual employers)
- Pool to School programs (schools/ school districts)

This is only a selection of potential TDM**+** strategies being employed today in the Atlanta region. There are likely many more small ways that employers in the region assist employees with congestion relief and alternative mode usage.

[47] portions of this list taken from 2011 PACE award recipient details

University and Higher Education TDM+ Policies and Programs

The metro area is home to 48 accredited degree-granting colleges and universities serving more than 176,000 full-time students.[48] Junior/technical colleges, colleges and universities, both public and private, are centers for education, employment, entertainment and extracurricular activities. Whether traffic is generated from students, staff, and faculty commuting to campus during the week, or from special events that draw people to campus, places of higher education can greatly impact transportation in their surrounding areas. Some of the larger colleges in the region include:

- Georgia State University
- Kennesaw State University
- Georgia Institute of Technology
- Emory University
- University of West Georgia
- Clark Atlanta University
- Morehouse College
- Spelman College
- Morris Brown College
- Southern Polytechnic State University
- Life University
- Georgia Gwinnett College
- Clayton State University
- Reinhardt College
- Oglethorpe University
- Agnes Scott College
- Savannah College of Art and Design – Atlanta

Many use TDM as a part of campus life and transportation strategies. Most University TDM strategies fall into one of two categories: on-campus and commuter-based. On-campus TDM consists of campus circulator shuttle routes, bicycle and pedestrian facilities, and parking management. Commuter-based TDM is oriented more towards off campus students, staff, and faculty, and consists of park and ride shuttles, bicycle commute programs, preferential parking spots for carpoolers, and vanpool subsidies and matching services. Some highlights include Georgia State's PantherExpress Shuttle, Georgia Tech's Stinger Shuttle and Tech Trolley, Emory's Cliff Shuttles, Kennesaw State's Big Owl Bus, and the Atlanta University Center's Robert W. Woodruff Library Shuttle.

Other innovative ideas are Emory's Occasional Parking Permit and Georgia Tech's Smart Park that allow alternative commuters the flexibility of being able to park when they need to drive to campus. Emory and Georgia Tech both have innovative bicycle incentive programs. Emory has partnered with Fuji bicycles and Bicycle South to offer discounts to students. This partnership also brings a bicycle repair shop to campus once

[48] PLAN 2040 Regional Assessment, p. 33

a week, and a bicycle share program where students can rent bicycles by the day. Georgia Tech also has a bike share program, but stands out in their Starter Bikes collaborative project with the Atlanta Bicycling Coalition. These starter bikes are inexpensive bicycles that have been refurbished and are in reliable working condition. Starter Bikes also sells inexpensive safety equipment and has volunteers on hand to teach bicycle repair.

University TDM Services	
Description	Universities in the Atlanta area provide a variety of TDM services for students, faculty, and staff. Often, transit services are open to the public.
TDM Services offered	• Carpool and Vanpool matching services; (Georgia Tech, Emory, Kennesaw State, Southern Polytechnic) • Bike share program; (Georgia Tech, Emory, Georgia State, Agnes Scott) • Free shuttle around campus, to grocery stores, and other student destinations (Georgia Tech, Atlanta University Center, Emory, Georgia State, Kennesaw State, Southern Polytechnic) • Free shuttle around campus and/or to/from MARTA; (Georgia Tech, Atlanta University Center, Emory, Georgia State, SCAD) • Preferential parking for carpools; (Emory) • Partner with Zipcar; (Georgia Tech, Emory, Georgia State, Southern Polytechnic, Agnes Scott, Morehouse College, Clark Atlanta University, Spelman College) • Discounted GRTA passes (Emory, Georgia Tech, Georgia State)
Service area	Generally each university serves the campus and the community around campus.
Funding sources	• Student fees
Innovative strategies or services	• Emory's Occasional Parking Permit allows cyclist's to have the option of driving during times of inclement weather • Emory has a mobile bicycle repair center that visits campus once a week, and also has a partnership with a local bicycle store that gives students discounts • Starter Bikes at Georgia Tech allows students to purchase refurbished bicycles at a low cost, and provides free access to tools for repairs • Georgia Tech and Emory provide a direct shuttle in between the two campuses • Georgia State provides a free bicycle rental program that can be used for up to three days in a row, has a bicycle shop on campus, and maps area bicycle racks
Website	http://www.gsu.edu/transportation/index.html, http://shuttle.auctr.edu http://pts.gatech.edu/ride/routes_schedules/Pages/routes_schedules.aspx http://transportation.emory.edu/transportation/index.html http://www.spsu.edu/universitytransportation/index.html http://www.scad.edu/life/transportation-parking.cfm

5.2. TDM in State and Local Context

Some TDM+ initiatives occur outside of the regional-scale TDM+ programs and policies. Safe Routes to School (SRTS) is a national initiative that is carried out by each state individually, for example. In Georgia, there is a review process for large-scale and certain types of developments called Developments of Regional Impacts (DRI); while the review process for DRIs is carried out at the regional level, this process is part of a statewide enactment and must align with statewide goals. At a smaller scale, Special Public Interest districts (SPI) provide customized zoning rules for specific areas of the City of Atlanta that can replace or modify existing zoning regulations. The Georgia DOT has adopted a Complete Streets design policy for all transportation projects managed by the DOT, which follows many localities that had previously adopted Complete Streets design guidelines for their communities as well. MARTA has created a TOD program with the goals to increase transit ridership, generate new revenues, act as a catalyst for new development near transit, and provide new services and amenities to MARTA's customers.

Safe Routes to School

Safe Routes to School is a national partnership with the mission to advocate for safe walking and bicycling to and from schools as well as in daily life to improve the health and well-being of America's children and to foster the creation of livable sustainable communities. In these manners, SRTS aligns very well with TDM+. The Georgia SRTS Resource Center assists schools and communities with education, encouragement, enforcement, evaluation, planning and other non-construction related activities to empower communities to make walking and bicycling to school a safe and routine activity. The Resource Center specifically provides funding to local governments to improve walking and bicycling conditions to schools and offers support for school-based SRTS programs through partnerships. GDOT previously received funds through SAFETEA-LU

Safe Routes to School Program in Atlanta Region

from the Federal Safe Routes to School program and was tasked with funding infrastructure projects.[49] Infrastructure projects consist of 70-90 percent of SRTS funding; the Georgia SRTS Resource Center manages the remaining 10-30 percent on non-infrastructure programs.

The SRTS program remains eligible for federal funding under MAP-21 in the more comprehensive funding category, Transportation Alternatives. The funding structure for Transportation Alternatives requires a 20% match of local dollars for all programs except SRTS, which can be 100% federally funded. Allocation of funds will flow through both GDOT and ARC within the MPO, providing potential for the MPO to become more involved in SRTS.

Clean Air Schools

The Clean Air Campaign started an action-based learning program to reduce air pollution and traffic while educating pre-kindergarten, elementary, middle and high schools on sustainability, air quality and transportation. The program, which started in 2004, has helped over 300 schools throughout Georgia to create safer and healthier campuses while engaging the pupils and their families. There are five programs specifically created for the Clean Air Schools program:

- **No-Idling Program** to encourage parents and school bus drivers to turn off vehicles while waiting for students
- **Pool to School** to help schools with the organization and promotion of carpooling to school
- **Ride the Bus! For Clean Air** to get more students on the bus and out of cars that contribute to traffic on and around school grounds
- **Breathe Easy** is the education component of the Clean Air Schools program which is meant to empower a classroom, club, or entire school to help champion a Clean Air Schools program
- **Get There Green** is catered specifically to high school students and lets the students take the lead on creating a transportation plan that is entered in a competition with other schools

The programs can be supplemented by partnerships and specific events that Clean Air Schools promotes including the Safe Routes to School program, the statewide Air Quality Awareness Week, the program's yearly Young Lungs at Work Art Competition, and a variety of lesson plans and resources available to supplement any program.

Developments of Regional Impact

Developments that are likely to have an impact beyond a host local government's jurisdiction are subject to review as DRI under the Georgia Planning Act. The review process intends to improve communication among governments on large-scale and certain types of developments to provide a means of identifying and assessing potential impacts before conflicts relating to them arise. The state's Department of Community Affairs historically set thresholds by size and type of development to determine project qualification as a DRI. A new set of DRI Rules was adopted July 1, 2012 that provides regional flexibility in the administration of the DRI program. In the Atlanta region, the ARC has developed a new set DRI thresholds based on PLAN 2040's

[49] Under MAP-21, SRTS is part of the Transportation Alternatives program and is no longer a stand-alone program. There may not be specific funding in this category going forward, although flexible funding can be used for SRTS programs.

Unified Growth Policy Map. These higher thresholds are meant as an incentive to develop within existing communities and activity centers rather than in areas that more sparsely populated. Continued development within urbanized areas can help provide the density needed to support the mixed-use developments that include residences, retail, and offices and have supporting infrastructure to enable the area to become a lifelong community.

In addition to incentivizing development in existing communities and activity centers, ARC can also help determine whether or not the development is in the best interest of the region, or if there are conditions that need to be met in order for the development to be locally as well as regionally successful without straining existing resources. ARC also has the ability to affect certain attributes of a project through the performance measures outlined in the DRI Checklist. There are three general categories within the checklist: Regional Consistency Assessment, Local Impacts Assessment, and Quality Development Assessment, which are all weighed based on the section's relevance to Envision6 policies as well as other ARC adopted plans and policies. Each item within the three assessment areas is scored in order to determine if the overall project is "in the best interest of the Region and therefore of the State."

GRTA is involved in the DRI process for the thirteen counties that it has jurisdiction over. Within these counties, GRTA is able to place responsibilities on the local government to fulfill conditions that need to be met in order for the DRI to be successful. Typically conditions are worked-out between the locality and developer, but GRTA has the ability to withhold future funding from a locality if DRI-related conditions are not met. As a result of the DRI program, many enhancements have been required of new development that could have otherwise been unaddressed, such as mixed-use development, consideration of infrastructure as is supportive of transportation alternatives, and connectivity concerns.

Special Public Interest Districts

Special Public Interest (SPI) Districts are generally areas that are officially designated as having special and substantial public interest. They provide customized zoning rules for specific areas of the city. SPI districts have the ability to modify requirements, regulations and procedures that already apply in existing districts or districts that are created after SPI districts are superimposed. SPI districts must have a Statement of Intent that documents the extent that it will supplant or modify existing district regulations. The special and substantial public interest typically is in the protection of existing or proposed character, or protection of surrounding buildings or grounds to protect the buildings and their visual environment, or for the accomplishment of special goals that would require modification of existing zoning regulations or the repeal and replacement of such regulations. To be designated as a SPI districts, the district must provide a framework to identify rezoning efforts and typically includes economic development planning. However, all SPI intents still must fall within the comprehensive development plans and other officially adopted plans of the city as well as encourage land use and development that aligns with overarching plans.

Complete Streets

On September 20th, 2012, GDOT's governing body, the State Transportation Board, voted unanimously in favor of a Complete Streets design policy for all transportation projects managed by the DOT. The primary strategy for implementing Complete Streets will be to incorporate bicycle, pedestrian, and transit accommodations into transportation infrastructure as a means for improving access, mobility, and safety for the traveling public. While the Georgia DOT Complete Streets program is new as an official state program, it

follows complete streets concepts included in PLAN 2040 and many localities that had already adopted such design standards. The City of Decatur led the region in adopting complete streets policies in 2007. The Cities of Roswell and Suwanee followed in 2009 along with Cobb County and Douglas County. More recently, the Cities of Dunwoody and Clarkston adopted policies in 2011, and the City of Atlanta currently has a pending complete streets policy. Complete Streets are designed and operated to enable safe access for all users, and to place the focus of streets on all users, not only those in automobiles. Complete Streets considers balancing the needs of each mode in a context sensitive manner appropriate for the type of roadway and the conditions within the project and surrounding areas in order to emphasize safety, mobility and accessibility for all modes of travel including pedestrians, bicyclists, transit riders and motorists.

MARTA's Transit Oriented Development Program

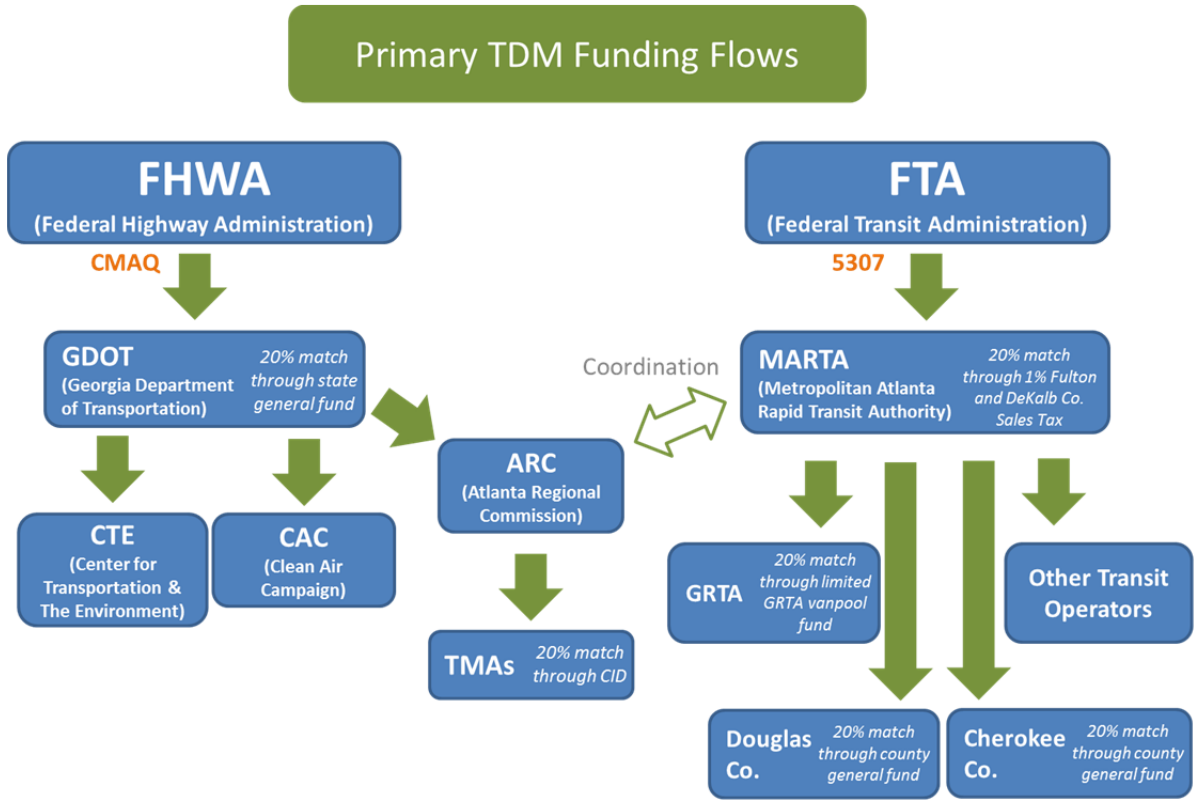
Transit Oriented Development is development that is physically connected or functionally related to a transit facility. MARTA's Office of Transit Oriented Development and Real Estate is responsible for encouraging TOD-related development for real estate activities that connect or relate to MARTA-owned transit infrastructure. TOD's generally consist of mixed-use development including multi-family housing, retail, office and/or hotel components designed in conjunction to generate significant transit ridership and reduce the need for a regularly used personal vehicle. TOD can be considered both an impetus to increase ridership in an area as well as acting as a catalyst for new development near transit.

While TOD encourages high transit utilization, it does not exclude vehicles and the need for parking. However, a defining character of TOD is that it requires less parking than similar development due to shared parking, and compact development that encourages trip-chaining by walking among the mixed-uses once arriving at a TOD location. MARTA's TOD guidelines draw extensively on other significant TOD and related initiatives such as the ARC Livable Centers Initiative and Regional Development Guide, the City of Atlanta's Special Public Interest Overlay Districts, Atlanta Beltline, and Quality of Life zoning programs as well as DeKalb County's Brookhaven-Peachtree Overlay District, MARTA's own past TOD efforts, as well as best practices from other metropolitan areas in the United States and Canada. While MARTA provides guidance for TOD, individual developers and property owners have no binding requirements to implement the guidelines, which may leave some station areas lacking in transit-oriented design.

6. Current TDM Funding Structure

Transportation demand management in the Atlanta Region is funded in various ways. Funding sources can primarily be broken into two groups, public funding and private funding. Public funding has been the main source of money used historically, but as trends show federal funds not keeping up with population growth, more creativity is helping to attract private money to fund TDM programs and initiatives.

Figure 29: TDM Funding Structure



Public Funding

Public funding for TDM in the Atlanta Region primarily comes from two sources, FHWA and FTA. GDOT leads and manages the statewide TDM program and provides funding and oversight to ARC and CAC on TDM programs in the metro Atlanta region. This program is funded by federal CMAQ improvement funding, which supports approximately 80% of all operating budgets for Atlanta region TDM programs. The CMAQ funds are coupled with a 20% state match and administered to the ARC (which allocates portions to most of the Atlanta area ESOs) and the Clean Air Campaign (which manages the Statewide TDM program, with the exception of local ESO boundaries). Currently, ridematching services are funded at 100%.

In 2009, a federal audit was conducted on ESOs under contract with ARC which resulted in restrictions on how CMAQ money can be used for TDM activities in the Atlanta region. In general, CMAQ funds can now only be applied to labor directly associated with TDM program management, not on supplies, equipment, or other activities to support the region's various programs. For this reason, some ESOs ceased requesting

CMAQ funds in order to avoid what they feel is complicated accounting and a lack of flexibility to make use of the funds worth their pursuit.

The FTA also provides funds (primarily 5307, 5310, and 5311) to state agencies and transit operators. The State of Georgia was awarded $25.4 million in 5307 (Urbanized Area) funds, $21.5 million in 5311 (Non-Urbanized Area) funds, and $3.4 million in 5310 (Elderly and Individuals with Disabilities) funds. MARTA is the designated recipient for the Atlanta region's 5307 funds, and is in charge of the distribution of these funds to local transit operators and counties for local transit service and planning. Some of these recipients, including GRTA, Douglas County, and Cherokee County utilize some of their 5307 allocation to support vanpool programs. MARTA, GRTA, Cobb County, Gwinnett County, and Cherokee County use 5307 funding to support their fixed-route transit services.

CMAQ funds are provided through FHWA. GDOT administers and oversees the disbursement of CMAQ funds to ARC and to the CAC. The state of Georgia was authorized to receive an apportionment of $72.5 million in CMAQ funds for the latest available budget.

Private Funding

TDM programs and initiatives are also funded in various capacities through private funding. Primary sources of private funding include corporations and health care organizations, CID local tax revenue, and higher education institution transportation fees.

Many corporations and individuals take advantage of commuter tax benefits offered by the Internal Revenue Service by paying for parking, transit passes, vanpool, and bicycle commuting expenses for their employees through a subsidy, employees receive pre-tax payroll deductions, or employees receive a combination of pre-tax payroll deduction and employer subsidies. Employers save on payroll related taxes while employees save on federal income taxes. The following allowances, which all have the potential to encourage reduction of single occupant trips, are currently in place:

- Transit - $125/month
- Vanpool - $125/month
- Parking - $240/month
- Bicycle Commuting - $20/month

It should be noted that trends in federal funding aim at decreasing transit allowances and increasing parking. For instance, transit and vanpool benefits were reduced from $230 to $125 in 2012, while the parking benefit increased from $230 to $240 in 2012. Furthermore, consideration was made to apply additional reductions to the transit and vanpool benefits as part of MAP-21; however, these amounts were ultimately kept the same for the near term.[50] It is also worth noting that federal guidelines prohibit students from taking advantage of these benefits.

CIDs are self-taxing districts that primarily fund infrastructure improvements in concentrated commercial areas throughout the region. Most CIDs exist in areas served by an ESO and fund portions of ESO's budgets.

[50] As of January 2013, HR 8 restored parity between parking and transit and vanpool benefits at $240/month through 2013.

Most of this funding is applied to transportation infrastructure improvement projects that represent more TDM+ related initiatives which encourage the use of transit, walking, and biking.

Universities are a prime example of productive use of private funds. Most local universities charge a transportation fee to students and sometimes staff. Depending on the school, these fees are used to pay for roadways and parking on campus, sometimes local transit service, and passes for regional transit service.

7. Current TDM Performance Measures

Performance Measurement serves a valuable purpose for any program, policy or service. Tracking, evaluation and assessment offers a critical feedback loop that can further improve upon those programs, plans or services.

7.1. Program-Level Performance Measures Continuum

CTE developed and implemented a Performance Measures Continuum in 2001 to represent the range of impacts achieved by the TDM programs in the state. It is intended to show the relationships of the various programs and how each contributes to the ultimate goal of generating travel and emission reductions. The Performance Measure Continuum covers a progression of desired behavioral changes. At the far end of the continuum are the travel and emission reductions. Preceding these impacts (and at the beginning of the continuum) are other "precursor" behavioral changes commuters typically make before permanently adopting a commute alternative.

Performance Measure Continuum

- Increase **Awareness** –refers to resident and business leader ***Awareness*** of TDM programs. Measures include awareness of media campaign marketing messages, the problems/issues surrounding the need for commute alternatives, the commute alternatives available, and the commute resources and assistance services available to them.
- Change **Attitudes** – refers to the ***Attitudes*** residents and business leaders have about TDM programs. Key measures include how residents in the region perceive the severity of traffic problems, whether commuters or employers view the use of alternative commute modes as a solution, and whether they personally view themselves as part of the solutions (i.e., changing their commute modes now or in the future).
- Encourage Program **Participation**/Facilitate Arrangements – refers to residents and business leaders ***Participation*** in a desired action, such as a program that will facilitate their use of commute alternatives or adoption of commute assistance programs.
- Ensure **Satisfaction** – refers to a user's level of ***Satisfaction*** with TDM programs and assistance. The actions measured can include the speed with which assistance is delivered, the user's satisfaction with the assistance, and the user's perceived value of the program.
- Encourage Alternative Mode **Utilization**/Maximize Alternative Mode Use – refers to encouraging residents to try commute alternatives and to shift to these alternatives on a continued, permanent basis. Utilization impacts are determined first by determining the population base of a program and then by calculating the number of users placed in a commute alternative as a result of the program. These users are referred to as commute alternative "placements."
- Generate Travel and Emission **Reductions** – refers to reducing vehicle trips, vehicle miles of travel or VMT, and emissions in a cost-effective manner. This is the ultimate goal of TDM programs. Travel and emission reductions are calculated by measuring the vehicle trips and miles and emissions reduced by the alternative mode "placement."

CTE uses a variety of data collection techniques to measure the progression of behavioral change, including regional surveys to document changes in awareness and attitudes, collection and compilation of performance measure data submitted through ESO activity reports to document participation, and program level surveys

to document participation, satisfaction, and utilization. Figure 30 below highlights the performance measures and data collection used for the various stages of behavioral change.

Figure 30: Program Level Evaluation Performance Measures, Populations, and Data Collection Sources

Performance Category	Performance Measure	Population of Interest	Information Sources/Tools
Awareness	• Media Messages • Problems/Issues/ Solutions • Commute Alternatives • Programs Offered • Assistance Outlets	Commuters and Employers	• Regional Awareness and Attitudes Survey • Regional Business Leader Survey • Employer Partner Employee Travel Survey • Target Incentive Program Surveys
Attitudes	• Problems/Issues/ Solutions • SOV Use • Commute Alternatives • Programs Offered • Assistance Outlets	Commuters and Employers	• Regional Awareness and Attitudes Survey • Regional Business Leader Survey • Target Incentive Program Surveys
Participation	• Commuter Contacts (e.g., web site hits, transportation fair contacts, rideshare applications, GRH registration) • Employer Contacts (e.g., employer calls, employers assisted/employer partners, employers with TDM Programs)	Commuters, Employers and Program Users	• Regional Awareness and Attitudes Survey • Regional Business Leader Survey • Regional Rideshare Database Employer Partner Employee Travel Survey • Target Incentive Program Surveys • Partner Performance Measure Reports
Satisfaction	• Satisfaction characteristics (e.g., time to obtain assistance, program convenience, accuracy and quality of information, usefulness of information)	Commuters, Employers and Program Users	• Regional Business Leader Survey • Regional Rideshare Database Placement Survey • Transit Pass User Survey • Vanpool Rider Survey • Target Incentive Program Surveys
Utilization	• Program User Mode Split and Alternative Mode Placements • Employer Partner Employee Mode Split and Alternative Mode Placement	Program Users	• Employer Partner Employee Travel Survey • Regional Rideshare Database Placement Survey • Transit Pass User Survey • Vanpool Rider Survey • Target Incentive Program Surveys
Travel and Emission Reductions	• Vehicle trips reduced • VMT reduced • Emissions reduced • Energy and consumer savings • Program cost-effectiveness	Program Users	• Employer Partner Employee Travel Survey • Regional Rideshare Database Placement Survey • Transit Pass User Survey • Vanpool Rider Survey • Target Incentive Program Surveys

7.2. Current Approach to Performance Measurement in Atlanta Region[51]

Currently in the Atlanta region, data is captured in a variety of ways, including several databases in use in the region, often making it difficult to collect and analyze data consistently. These include ARC RideSmart database, Clean Air Campaign's Commuter Rewards database, and several vendor databases.

Performance measurement is conducted by CTE through detailed data collection and analysis, as well as surveys. Although significant amounts of data are being collected, there is room for improvement in how the data and measures are linked across organizations to influence policy or decision making for the future direction of the program. Performance measurement is critical for evaluating and informing policy decisions, providing guidance on the future direction of programs, and ensuring adequate funding allocations to support programs with stated goals. Performance measurement for the TDM programs and services is needed to better inform the regional planning process through the MPO. Additionally, with MAP-21, performance measurement is going to become an even more critical element of transportation programs and services. The sections below describe current performance measurement related to TDM as it appears in IT3, PLAN 2040, ESO Reporting, CTE Evaluation, GRTA's Transportation MAP Measures and ARC's Transportation Fact Book.

SSTP Evaluation

An aggressive demand management strategy is critical to reaping the full benefits of investing in and building the region's transportation infrastructure. The following performance measures for the State of Georgia and some specifically for the Metropolitan Atlanta area were called out in the Statewide Strategic Transportation Plan, which is the official planning document for IT3.

Figure 31: Performance Measurement in IT3

Goal	Objective	Performance Metric
1 Supporting Georgia's economic growth and competitiveness	Improved access to jobs, encouraging growth in private-sector employment, work force	• Average number of workers reaching major employment centers by car in 45 minutes* • Average number of workers reaching major employment centers by transit in 45 minutes*
	Reduction in traffic congestion costs	• Annual congestion cost*
	Improved efficiency, reliability of commutes in major metropolitan areas	• Average commute time* • Number of people taking reliable trips per day (peak hour)*
	Efficiency and reliability of freight, cargo, and goods movement	• Travel times between Georgia "gateways" and key origins and destinations • Supply-chain costs by corridor (cost of congestion + direct inventory cost + obsolescence cost)
	Border to border and interregional connectivity	• Interstate share of vehicle miles traveled (VMT) • % of population within 20 miles of a 4-lane highway
	Support for local connectivity to statewide transportation network	• % of state transportation funding spent on local roads
2 Ensuring safety and security	Reduction in crashes resulting in injury and loss of life	• Number of traffic fatalities
3 Maximizing the value of Georgia's assets, getting the most out of the existing network	Optimized capital asset management	• % of state highways with pavements that meet or exceed minimum standards • % of state bridges that meet or exceed minimum standards • % of transit assets in "Good Repair"
	Optimized throughput of people and goods through network assets throughout the day	• Peak-hour freeway VMT* • Peak-hour freeway speed: managed lanes, HOV vs. general purpose* • Freeway accident clearance time* • Peak-hour mode split (total/markets served by transit) • Operating cost per unlinked passenger trip by mode • Operating cost per passenger mile by mode
4 Minimize impact on the environment	Reduce emissions, improve air quality statewide, limit footprint	• Exceedances of federal 8-hour ozone standard

*This metric is obtained for Metropolitan Atlanta only.

[51] Additional summary data to be provided in the Regional Travel and Commute Report, expected to be released by ARC in spring 2013.

ARC Program Measurement

Currently, ARC addresses performance measurement related to TDM programs through PLAN 2040 and the regional planning process, ESO Monthly Reporting and Mid-Year Reviews, and the RideSmart Databases.

PLAN 2040

An initial concern with the previous iteration of ARC's regional plan was ensuring that TDM visions, goals, objectives, decision making, investment strategies and measures would be addressed in the RTP. TDM now plays a significant part in a number of PLAN 2040 goals, including the plan's 5 objectives:

- Increase mobility options for people and goods
- Foster a healthy, educated, well trained, safe and secure population
- Promote places to live with easy access to jobs and services
- Improve energy efficiency while preserving the region's environment
- Identify innovative approaches to economic recovery and long term prosperity.

TDM activities on the part of ESOs and other regional and local partners should be addressed through the lens of PLAN 2040's overarching objectives. ARC has sought to create a performance framework to better link goals and objectives into coherent decision making processes and guidelines. ARC seeks to monitor PLAN 2040 through:

- Periodic assessments of communities to measure their progress on meeting the local performance standards
- Use of an online dashboard or other methods to communicate the key points of implementation
- Surveys of regional leaders regarding the degree of the plan's implementation
- Annual reports on accomplishments

ARC plans to measure the plan's impacts and evaluate success based on the following measures, some of which will be captured through GRTA's Annual MAP Measures or the Transportation Fact Book Measures. Additionally, as part of the Regional TDM Plan, ARC and its partners will work to better define the measurement of TDM objectives within PLAN 2040, with a focus on an objectives-driven, performance-based approach to incorporating TDM into the transportation planning process.

Figure 32: Performance Measurement in PLAN 2040

PLAN 2040 RTP Emphasis Area	RTP Plan Management Measure	GRTA Annual MAP Measure	ARC Transportation Fact Book Measure
Mobility	• Peak period travel time, sample roadway monitoring network	• Freeway travel time index • Planning time index • Buffer time index • Daily vehicle miles traveled (VMT) per person or driver • Transit passenger miles traveled • Annual transit passenger boardings	• Average daily VMT • Registered drivers per household • Commuters registered with ridesmart • Number of vanpools • Employees in Employer Service Organization areas • HOV lane volumes • ITS inventory • Metro signal performance
Connections and Access	• Population within 45 minute travel time (road or transit) of key activity and employment centers	• Population and employment within walk distance to transit • Transit revenue service hours • Passenger trips per transit service hour • Number of vanpools	• Average weekday transit boardings and rail station entries • Average weekday park and ride lot, MARTA lot usage
Safety	• Number of injury and fatal crashes per 100M VMT (at regional level for all crashes)	• Traffic Crash Fatalities • Bike/Ped Fatalities • Roadway Clearance Time	• Crash rate (vehicle, bike, ped) • Fatality rate (vehicle, bike, ped)
Economic Growth	• Jobs		• International airport freight movement • International airport passenger and operations
Community/ Environment	• Air quality violations • VMT per capita	• Daily Vehicle Emissions	• Bike/ped facility miles • Bike/ped mode share • Bike count • Air quality violations • LCI transportation projects by county and type
State of Good Repair	• Roadway condition rating (pavement and bridge) • Transit condition rating	• Pavement condition rating	

Some TDM+ related measures that appear in PLAN 2040 include:

- Reduce and shorten vehicular trips within the region (through bicycle and pedestrian facilities, employer services, ridesharing and special studies)
- Encourage the future growth of LCIs – decrease of CO_2 from decrease in VMT
- Several metrics associated with RideSmart, including:

  - Current commute mode (including length of commute, non-standard work schedules, alternative mode characteristics, use of alternative mode, mode changes, and number of days worked per week and work hours)
  - Guaranteed Ride Home (awareness and usage of program)
  - Awareness and Usage of Commuter Assistance Resources (including internet ridematching, financial incentives, and awareness/use of database enrolment, hotline calls and web visits)

- LCI Program monitoring and evaluation measures include the following:
  - Development tracking to determine which LCI developments are complete, under construction, or planned and to determine the degree to which projects are moving forward.
  - Tracking code changes to summarize how LCI communities are changing local land use policies and regulations to allow new development as a result of LCI plans.
  - Survey of community attitudes towards livability to summarize if and how local staff can see community attitudes changing on 14 livability-related questions that include quality of life, housing choices, transit service, pedestrian-friendliness, and community events.

The results will be reported in the Annual Regional Transportation Plan Management Report.

ESO Reporting

Each ESO that has a contract with ARC is charged with providing outreach and education to employers, property managers, employees and commuters; there are currently six ESOs contracting with ARC. Although some goals are negotiated within each contract, not all objectives have specific, measurable goals associated. For instance, a certain number of site visits/fairs may be listed, but a measurable/quantifiable goal is not set for increasing or maintaining participants in the rideshare databases. For instance, one contract deliverable is to "Increas[e] the number of employees who participate in alternatives to driving alone program as measured by combined enrollment in the regional incentives programs and the regional rideshare program." However, no specific goal is established.

Contracted ESOs must complete a monthly report and submit to ARC and CTE as part of its contract. The report includes:

- Number of inbound and outbound calls by category (such as GRH inquiry calls, match list request calls, Cash for Commuters payment questions)
- Mass mailing details (quantity and open, bounce and unsubscribe rates)
- Number of applications received (by organization and type – ridematch or GRH)

Additional items in the report include the following which are pulled from respective databases:

- Number of active users in databases (by organization)
- Number of deactivated users in database
- Number of commuters enrolled in GRH
- Number of rides paid for GRH

Each report includes a detailed vanpool report section, including:

- Assistance to commuters (number of commuter inquiries regarding vanpooling, total number of vanpool related meetings, total number of commuters attending those meetings, number of new vanpools formed, and number of commuters placed in existing vanpools)
- Disbanded vans (including reason why)
- Change in vendor (including reason why)
- List of all current vanpools

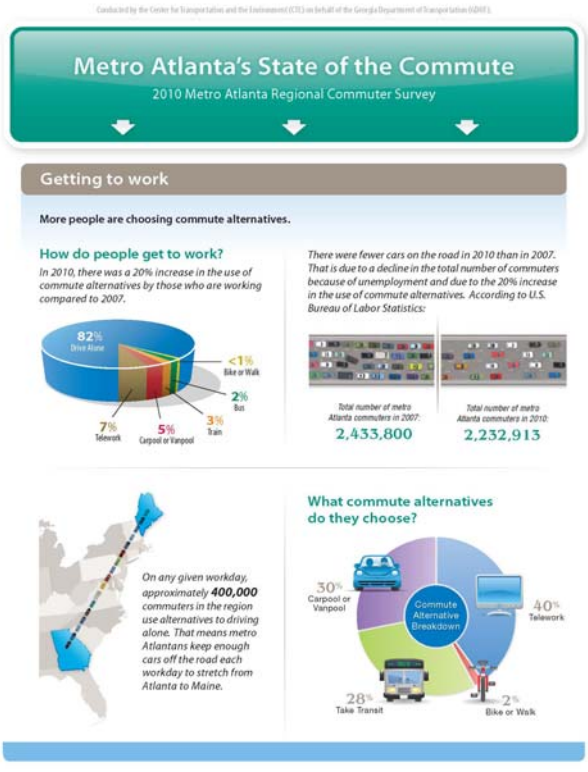
The contracted ESOs must also participate in a mid-year review. During the review, the ESOs each present the highlights of their programs for the first six months of the year, talk about their strengths and weaknesses, review performance measurement with CTE and talk about next steps in the year. Examples discussed include:

- Employers are beginning to show lack of interest in transitioning to formal telework programs – how can we better incentivize this?
- Interest in metrics to know how and if people are using the GRH program
- Interest in additional ESO's follow up with commuters that are interested in the programs
- How to better show vanpool retention activities in vanpool performance measurement
- Parking continues to be a challenge in getting mode switches
- Continued interest in consolidating databases

Additionally, Clean Air Campaign, an ESO that is not under contract to ARC, provides monthly reports to GDOT on measures related to advertising, public relations and education progress.

CAC also produces a State of the Commute Report each year (last released in 2010). The report is largely a compilation of data from the GDOT/CTE Regional Commuter Survey. It provides visually engaging information related to commuting patterns, such as how people get to work, how many commuters use alternatives to driving, the growth and trends in the use of alternatives to driving, the frequency of alternative commute modes, and the average commute times.

Sample State of the Commute Report - 2010



GRTA Vanpool Performance Measurement and the Transportation MAP

Additionally, GRTA conducts performance measurement specific to the vanpool program. GRTA has been working on developing vanpool success measures through coordination with the vendors and GDOT. Success measures were evaluated by GRTA in fall 2011 with support from vRide and Enterprise. Elements of analysis included:

- Number of vanpools initiated by each vendor.
- Vanpool vehicle miles traveled, vanpool passenger miles, VMT reduced and emissions savings on an annual basis.

Although GRTA does track ridership to look for trends in changes, an official Annual Report has not been done in recent years. However, GRTA does account for vanpool metrics in its agency-wide Transportation MAP report. The Transportation Metropolitan Atlanta Performance (MAP) Report is a snapshot of Atlanta's transportation system performance prepared by GRTA on an annual basis. For instance, in the 2010 MAP report, GRTA notes a significant decrease in vanpool ridership in 2009 and attributes it to a variety of factors, including contractual issues, transfer of vanpools between the private providers, and a price increase for vanpool seats.

As a part of MAP, GRTA incorporates vanpool measurement by linking the number of vanpools to a measure of transit accessibility. It additionally reports the number of vanpools (as attributed to the various providers) on an annual basis, comparing as far back as 1997 to 2009. However, additional measures of effectiveness are not included in the annual transit report.

A ridership requirement was implemented in 2010 in an effort to better monitor the effectiveness of the program and the investments. Fifty percent of the seats must be filled at least 16 days a month in order to be determined a "successful" vanpool. Otherwise, if the vanpool drops below the 50% ridership, it risks losing its funding subsidy. GRTA is currently looking into other options to address ridership since sometimes riders are pursuing other alternative modes (such as telework) or travelling out of the region on the days they are not riding in the van. In this sense, GRTA has linked programming and funding decisions to direct, measurable metrics. With the increased emphasis on performance measures expected in MAP-21, GRTA and other vanpool partners recognize the value of performance measures and complying with federal requirements. Moreover, GRTA currently focuses on travel time reliability as a measurement, which will be useful in the development of additional TDM measures to align with MAP-21.

GDOT and CTE Performance Measurement

GDOT has a contract in place with CTE to collect, compile and report data. CTE has been working in support of GDOT since the 1999 Framework. GDOT contracts with CTE to provide recommendations and assist GDOT program managers and other TDM decision makers in the region in making appropriate decisions for funding, program focus, and resource allocation. Although the contract is statewide, CTE's efforts are largely focused within the Atlanta non-attainment area.

CTE develops and evaluates TDM strategies that have measurable results, including but not limited to:

- Calculating the qualitative and quantitative impacts of program areas such as media/marketing campaigns, employer and commuter outreach services, and regional programs and services.
- Establishing consistent regional evaluation protocols and reporting procedures.
- Developing and implementing structured evaluation plans including enhanced data collection tools, methodologies, and performance measures resulting in more rigorous and inclusive assessment of TDM effectiveness.

CTE's evaluation approach is based on the following overall evaluation principles:

- Directly identify the contribution of ESO programs on shifting individuals to non-drive alone modes, retaining alternative mode users, and motivating employers to adopt commute option programs.
- Be inclusive in the programs that should be included in the TDM evaluation, but be conservative in measuring the impact.
- Assess qualitative (awareness, attitudes, participation) and quantitative (commute alternative placement and travel and emission reductions) impacts of programs.
- Use program user surveys to assess travel and emission reductions: identify "new" users who are placed into a commute alternative after receiving assistance from an ESO and "retained" users who maintain use of a commute alternative as a result of an ESO program.
- Use regional surveys of metro Atlanta residents and employers to assess awareness of and attitudes about the problems related to driving alone, the potential solutions to problems, and the commute programs available to assist them.

Evaluation efforts are focused in three main areas: Performance Measures; Programmatic Surveys; and Regional Surveys. Additionally, CTE collects information based on:

- Performance data which is reflective of the level of activity of the ESOs; this is received through monthly/quarterly reporting.
- Programmatic data which is reflective of program outcomes and impacts; this is collected through the programmatic surveys.
- Regional data which is reflective of attitudes and awareness of programs as well as regional commute behavior; this is collected through the regional surveys.

CTE collects data necessary to complete the annual air quality impacts calculations and provides this report to GDOT. In addition, CTE collects performance measure data from the ESOs (this data is included in the ESO monthly reports to ARC as well as data CTE pulls directly from the CommuteTrak© site). The ESO reports are based on the reporting requirements outlined in the ESO's contract with ARC. CTE analyzes the data and prepares presentations on the regional metrics for use in the ESO mid-year reviews. In the past, CTE also prepared similar presentations for Year-End Reviews as well. However, ARC has not conducted a year-end review since 2009. CTE also receives comparable data from CAC.

CTE prepares a document of preliminary highlights as well as technical reports for each survey effort. The purpose of the preliminary highlights documents (top-lines) is to distribute relevant survey data to the ESOs and other TDM stakeholders as quickly as possible to help them more effectively manage their TDM programs. The technical reports document the findings from the surveys, and when applicable, compare to previous survey finding. CTE also uses data from the programmatic surveys to calculate the standard factors

used in the impact calculations (e.g., placement rates, VTR factors, trip distance, and SOV access). CTE may prepare other supporting documentation upon request and with approval from GDOT. For example, CTE prepared a memo responding to questions posed by The Clean Air Campaign regarding findings from the Commuter Rewards Survey.

8. TDM+ Best Practices and Benchmarking

8.1. Benchmarking TDM+

Comparative benchmarking helps a program determine where it may improve and areas where it may continue to leverage existing successes. A cursory benchmarking was conducted to better inform the development of an analysis of the strengths, weaknesses, opportunities and threats to TDM in the region, which will be produced subsequently. TDM in the Atlanta region was examined and compared and contrasted to TDM in four other metropolitan areas. Although not an exhaustive benchmarking, additional best practices and benchmarking analysis will be incorporated into the strategy development for the broader Regional TDM Plan.

In order for the benchmarking analysis to meaningfully measure the Atlanta region's TDM activities in the context of its size, character, and region, four benchmarking metro areas were chosen for comparison and analysis. Although a variety of other cities were considered, including Charlotte, Raleigh-Durham, Dallas, Phoenix, Nashville and Seattle, a subset of four were selected in order to meaningfully compare the regions in depth. Additional best practices from all of these cities and others will be incorporated in the strategy development and action plans for the TDM Plan.

- **Washington, District of Columbia**: The Washington, DC area is known for implementing innovative TDM practices and experimenting with new techniques for reducing SOV-demand. Like Atlanta, the DC area has significant residential segregation, which has resulted in underinvestment in some areas and influences housing and commuting patterns. Despite having sprawl characteristics in many of its suburbs, the DC area has experienced significant growth, particularly in transit-accessible areas, in recent decades.
- **San Francisco, California**: The Bay Area is known for implementing innovative TDM practices and is widely considered a leader in pioneering new TDM activities.
- **Houston, Texas:** The Houston region is comparable to the Atlanta region in size, density, and character in terms of transportation infrastructure. Like the Atlanta region, the Houston region has experienced rapid population growth since 1950 and shares some regional characteristics as well.
- **Birmingham, Alabama**: Birmingham is a Southern city with similar regional characteristics to the Atlanta region. Although the two regions are not the same size, they compete in the business and economic development arena and share cultural and political similarities.

Throughout the benchmarking analysis, successful strategies were noted related to overall system design, predictability and consistency, clear expectations of all involved, coordination and cooperation amongst all involved, and a clear leader/owner of the program's success and accountability.

Moving Forward

The best and most innovative TDM practices from around the country will be identified, analyzed, and incorporated into the TDM strategy, but the formal analysis of whether and how these practices can be applied in the context of the Atlanta region will occur during the SWOT analysis phase and incorporated into deliverables that build off the content from the SWOT analysis.

Program Highlights

CommuteSmart – Birmingham, Alabama	
About	CommuteSmart is a marketing, outreach and traveler information program that aims to improve air quality, reduce traffic congestion, and offer smarter transportation choices.
Service area	Services cover Jefferson and Shelby Counties.
Services offered	Ridesharing, vanpool, emergency ride home, bike and walk information, and employer outreach
Program Management	• As of 2009, managed and operated by the Regional Planning Commission of Greater Birmingham (RPCGB). • Formerly had been operated by a contractor from 2006-2009.
Partners	Alabama DOT, Alabama Partners for Clean Air, EPA
Website	http://commutesmart.org/

Commute Solutions – Houston, Texas	
Description	Commute Solutions is a one-stop alternative transportation resource in the Houston-Galveston area for both commuters and businesses.
Services offered	Ridesharing, vanpool, schoolpool, telework, guaranteed ride home, transportation fairs, employer outreach programs, and traveler information
Service area	13 counties in Houston-Galveston region.
Program Management	H-GAC (MPO) contracts out some services. The Houston region's Commute Solutions program is administered by Houston-Galveston Area Council in partnership with the region's transit agency, METRO, Texas DOT, and a few other smaller regional transit agencies and ESOs.
Partners	H-GAC, Metropolitan Transit Authority (METRO), TxDOT, Brazos Transit System, Colorado Valley Transit, Gulf Coast Center, City of Galveston Island Transit and four TMOs – Bay Area Transportation Partnership (BayTran), Central Houston "Downtown in Motion," North Houston Association and TREK
Website	http://www.commutesolutionshouston.org/

511 SF Bay – San Francisco, California	
Description	The 511 Regional Rideshare Program (511 Rideshare) is operated by the Metropolitan Transportation Commission (MTC) and features rideshare and traveler information, ridematching services for carpools and vanpools, and employer outreach. One stop phone and web source for up to the minute Bay Area traffic, transit, rideshare and bicycling information.
Services offered	Ridesharing, carpooling and vanpooling, commuter rewards incentive program, employer outreach, and traveler information
Service Area	Bay Area, including Alameda, Contra Cost, Marin, Napa, San Mateo, Santa Clark, Solano and Sonoma Counties, as well as San Francisco
Program Management	Metropolitan Transportation Commission (MTC) – MPO-managed; local services and outreach by ESOs
Partners	MTC, FHWA, California Highway Patrol, California Department of Transportation and Bay Area Air Quality Management District
Website	http://rideshare.511.org/

Commuter Connections – Washington, District of Columbia	
Description	Commuter Connections is a regional network of transportation organizations coordinated by Metropolitan Washington Council of Governments (MWCOG) and includes both commuter and employer services to help find “A Smarter Way to Work.”
Services offered	Ridesharing, GRH, traveler information on telework, bicycling, walking, and transit information
Program Management	Managed by MWCOG and National Capital Region Transportation Planning Board; local implementation by ESOs and local partners/employers
Website	http://www.mwcog.org/commuter2/

High-level Benchmarking Analysis

In order to compare the Atlanta region's TDM programs and performance to those of the four benchmark regions, the status of how Atlanta and the other regions are doing with respect to several topic areas and performance measures was analyzed, including:

1. Program Management, Operations, and Coordination
2. Programs and Services
3. Outreach, Marketing, Promotions and Incentives
4. Land Use, Healthy Communities and Active Transportation
5. Parking Pricing and Management
6. Transportation Systems and Operations, Traveler Information and ITS
7. Performance Measurement and Evaluation

Program Management, Operations and Coordination

About: The structure, organization, and management of a TDM program are fundamental in determining its effectiveness. There are several organizational models for TDM programs and activities, all of which can be successful if responsibility for key tasks is formally assigned and accountability is expected. Given that federal and state agencies typically fund at least a portion of TDM programs and that activities are implemented at the local level, coordination and cooperation are key determinants of desired outcomes.

Figure 33: Organizational Structures for TDM Programs

	Centralized	**Contracted**
State-led	**State Centralized** • State makes policy • State provides policy guidance and funding • Implementing agencies are local and report to the state	**State Contracted** • State makes policy • State provides policy guidance and funding • State contracts to agencies, which work with but do not directly fund local implementing agencies • Local implementing agencies report to the state
MPO-led	**MPO Centralized** • State provides funding and oversight • MPO makes policy and is accountable to state through boards and committees that approve budget and policies • Implementation conducted by agencies at local level	**MPO Contracted** • State provides funding and oversight • MPO makes policy and is accountable to state through boards and committees that approve budget and policies • MPO contracts services to agencies that are accountable to the MPO through reporting, budgets • Implementation occurs at local level and is overseen by both MPO and contractors

The success of any organizational model, regardless of the level at which service are delivered, typically includes the following components:

- Cooperation and clear definition of roles
- Predictable funding
- Accountability to funding agency
- Accountability to policy makers
- Current and realistic program goals
- Effective evaluation
- Effectiveness and cost-effectiveness.

Strategies: In general, the organizational structure of a TDM program fits one of the following models: State centralized, state contracted, MPO centralized, MPO contracted, or a combination. In each case, TDM programs and activities may be implemented at the local level; differences arise in the ways in which resources and guidance reach local implementing agencies.

Figure 34: Organizational Models - Examples

Program	Organizational Model	Partnership with ESOs	Use of Contractors
Atlanta	Combination of State-Centralized/Contracted and MPO-Centralized/Contracted	Yes	Yes
Birmingham	MPO-Centralized	No	Yes
Houston	MPO-Centralized and contracted	Yes	Yes
Washington DC	MPO-Centralized and contracted	Yes	Yes
San Francisco	MPO-Centralized and contracted	Yes	Yes

Benchmarking: Each program reviewed had some nuances to its approach, but had general similarities in being either centralized or contracted at the MPO level. Birmingham and Washington, DC generally follow the MPO centralized model, while Houston's and San Francisco's programs more closely align with the MPO contracted model. Previous TDM research[52] suggests that the organizational structure or model is less important in influencing outcomes than the clear delineation of responsibility, accountability, and coordination between stakeholders. Under any of the models, it is possible to ensure that responsibility and accountability are important features of TDM programs. In Houston, for example, HGAC contracts out many of its services to transportation management organizations (TMOs), which must be self-sustaining and

[52] Commuter Connections Strategic Review, Maryland Department of Transportation, Office of Planning and Capital Programming, November 2004.

compete for contracts based on past performance and willingness to pioneer new strategies and ideas to achieve TDM objectives. Additionally, in Washington D.C., the Commuter Connections program is overseen by a Transportation Planning Board within the regional MPO. The Board has representation from all 18 major jurisdictions in the region and has a subcommittee that meets monthly to discuss the program's challenges and possible cooperative solutions.

The Atlanta region is unique since its TDM activities involve both state centralized/contracted and MPO centralized/contracted management and organizational structures. For instance, ARC oversees the funding for employer outreach services in the contracted ESO service areas; CAC provides employer services in all other areas in the region not covered by the contracted ESOs. CAC is also responsible for the regional marketing strategy and implementation. However, all planned strategies, scripts, and ads are presented to the MPC to provide and incorporate any changes prior to being implemented. Additionally, the vanpool program is contracted at the state level, with the exception of Douglas and Cherokee counties. Other programs have either state- or MPO-set policies and programs to guide the delivery of services and set expectations.

Programs and Services

About: Traditional TDM programs include employer outreach, ridematching and marketing. More innovative program offerings include real-time, dynamic ridesharing and regional trip planners, bike trip planners, customized/centralized call centers for one-stop sources of information, and telework implementation assistance services. The programs and services offered by a TDM program may depend on the funding available, the motivations behind the program, and the local climate/interests of the community.

Strategies: The table below highlights the key TDM programs and services, as well as some of the more innovative programs and services. It is not intended to be an exhaustive list of all programs and services, but rather a snapshot for high-level comparison. More detailed TDM**+** programs and services are explored throughout the land use, active aging, and traveler information categories. A*lso note that this section does not include specific marketing, promotions or advertising (discussed in more detail in the next section).*

Figure 35: TDM Programs and Services

Program or Service	Atlanta	Washington DC	Houston	Birmingham	San Francisco
Ridesharing Services					
Online ridematching	X	X	X	X	X
Guaranteed Ride Home	X	X	X	X	X
Real-time/Dynamic (incl. pilots)			X		X
Vanpool services[53]	X	X	X	X	X
Employer outreach					
Meeting and TDs	X	X	X	X	X
Leadership/Recognition Awards	X	X	X	X	
Traveler Information					
511 Rideshare Information					X

[53] The degree of management and support for the vanpool services across the programs vary. For more detail, please refer to the *Vanpool Assessment Report* produced by ARC.

Centralized call center or #		X		X	
Regional Trip Planner		X	X		X
Bike Trip Planner		X			X
Commute Calculator	X	X	X	X	X
alternative work methods support					
Implementation assistance	X	X	X		
Promotions and Incentives					
Mass Marketing/Advertising	X	X	X	X	X
Incentives	X	X	X	X	X

Benchmarking: Some programs have begun to expand their ridesharing and traveler information options to include additional bike and pedestrian friendly options (such as Washington, DC and San Francisco's regional trip planner). Others have centralized their commuter operations centers as one stop shops for calls and emails to streamline the process for the end user (DC, Houston and Birmingham). Many of the programs also incorporate the vanpool services as part of the broader TDM program. In Atlanta however, the vanpool program and services are not as well linked or integrated with the broader TDM program and services. Although some coordination occurs informally, there is no formal coordination.

Atlanta has been progressive in its telework assistance, its mass marketing campaign and advertising and its incentive programs. Both the telework support and Cash for Commuters have received attention nationally and are models for other TDM programs. However, other regions are continuing to expand TDM to broader objectives, by more closely aligning travel choices to bike and pedestrian trips, pursuing dynamic rideshare pilots and linking traveler information for alternative modes to statewide 511 systems. Additional details related to these programs and services areas are included throughout the benchmarking section.

Outreach and Marketing

About: Outreach and marketing are key elements of most TDM programs, with employer outreach traditionally playing a central role. Branding plays an important role in creating continuity between various TDM activities, promotions and incentives, which demonstrates to travelers the connectedness of the program and various options. Without effective outreach and marketing, prospective alternative commuters do not find out about the commute options available to them and are more likely to continue commuting by SOV trip.

Strategies: Strategies may include:

- Employer outreach (through meetings, presentations, events), including sometimes varying levels of employer partnerships and partnership recognition/awards
- Mass marketing campaigns (including print, online and radio) – ranging from newsletters and online website to radio ads and bus ads
- Social networking
- Public relations campaigns
- Branding and messaging
- Promotions and incentives

Benchmarking: In Washington, DC, Commuter Connections offers a regional "umbrella" brand that is well established through use of media, mass marketing and PR campaigns. Most of the local jurisdictions within the area operate under their own marketing and branding, while leveraging the name recognition of Commuter Connections. Although Commuter Connections provides some sales training and support (often through sales leads) to its local jurisdictions, the majority of the jurisdictions conduct their own outreach in-house while others contract out the outreach. In San Francisco, the program is branded regionally as 511 Rideshare, and the marketing and outreach is conducted by a contractor. Many of the local jurisdictions assist with additional outreach using their own local messaging. Marketing and outreach is conducted by a contractor for only some counties for 511. Several counties, including San Francisco, conduct marketing internally without the support of a contractor. Additionally, Birmingham does not deal with the regional versus local branding issue since it is all operated in-house.

In the Atlanta region, the Clean Air Campaign has served as an overarching brand that applies to many of the TDM programs, but some programs and services have still operated within their own marketing/branding and messaging. For instance, RideSmart and GRTA's vanpool program are not always seen as part of Clean Air Campaign, and the various ESO brands (ASAP+, Downtown TMA, etc.) also have caused commuter confusion, even when used in coordination with Clean Air Campaign. The region has recognized the challenges with commuter confusion over branding and in response, GDOT launched a statewide rebranding campaign which will go into effect in January 2013.

Georgia Commute Options is a new program from The Clean Air Campaign, GDOT, the Atlanta Regional Commission and metro Atlanta's TMAs. It combines the region's alternate commute resources - incentive programs, ridematching, employer services, telework consulting and more. These services, some of which were previously offered through different organizations, are now bundled together under one umbrella as a free resource for Atlanta commuters and employers.

Promotions and Incentives

About: Incentive programs not only play a significant role in enlisting participation in non-SOV commute modes but also have a strong track record of altering even medium- and long-term travel behavior. In addition, by compelling participants to log their commuting behaviors over periods of time, they play an important in the data collecting function as well.

Strategies:

- Provide incentives that are effective in convincing commuters to try out new commuting modes
- Provide incentives for continuing participants in alternative commute modes, though randomized drawings
- Make reporting information about commutes a requirement for receiving incentives in order to heighten data collection and tracking efforts

Figure 36: Incentives by Program

Region	Program and amount of Incentive
Atlanta	• Cash for Commuters - $3 per day for commuters switching to alternative modes (over 90-day period, up to $100) • Carpool Rewards - $40-$60 gas cards for carpools that log 15 carpool days with three or more riders during a month (carpools can earn up to 12 monthly gas cards within a three-year period) • Commuter Prizes – $25 gift cards through drawings for logging alternative commutes
Birmingham	• GetGreen (for new CommuteSmart Participants) - $1 per day for commutes logged online up to $120 • Commuter Club – (for continued non SOV commuters) - $25 gift card when participants log over 20 alternative commutes over 3-month period
Washington DC	• Pool Rewards program - 1) $200 per month subsidy for newly-formed vanpool of 7+ people and 2) $1 per trip ($2 per day round-trip) up to $130
San Francisco	• Rideshare Rewards- New carpoolers get up to $100 in gas or grocery gift cards; 50 percent of vanpool fee covered for the first 3 months of participation • Spin the Wheel - Randomized drawings for participants who log commute information online

Benchmarking: The Atlanta region's Cash for Commuters, commuter prizes, and carpool rewards programs have all been elements of the region's TDM program for several years. Like Atlanta, many of the other study regions have promotion and incentive TDM programs, and several have modeled their incentive programs after Atlanta's, including Birmingham and Washington D.C. Incentives such as commuter rewards have shown to play a significant role in influencing travel behavior, including influencing travel behavior after the period of rewards has ended. A 2010 report found that, in the Atlanta region, 74 percent of Cash for Commuters participants from 2007 and 69 percent of participants from 2008 continued to use alternative transportation modes to commute at least one day per week.[54] Even when the GetGreen rewards in Birmingham were reduced by 50 percent from $2 per day to $1 per day in 2012, participation in the program actually increased slightly.[55]

Land Use, Healthy Communities and Active Transportation

About: Land use practices and policies are critical to fostering the creation of communities that are healthy, accessible, and provide a range of transportation options – including active transportation – to their residents. In areas where density is very low, there may not be enough residents to support the provision of non-motorized and non-SOV driving alternatives such as transit. Areas that lack sidewalks and other basic infrastructure are not conducive to walking, and areas with a network of high-speed arterials are more dangerous for bicycling, thus threatening the health of communities. TDM programs can work with local governments and agencies that manage land use to support walkable neighborhoods and transit-oriented

[54] Center for Transportation and the Environment, The Clean Air Campaign Cash for Commuters Program Survey: Technical Report, 2010.

[55] CommuteSmart Annual report

development in key locations. Creating accessible communities served by multiple transportation modes not only improves livability, but also enhances economic competitiveness by decreasing transportation costs, attracting employers and additional residents, and lowering infrastructure costs.

Strategies: Strategies, policies, activities, and initiatives can all effect changes in land use patterns that create more livable communities. Some examples of these are:

- Transit-oriented development, which refers to the development of compact, walkable mixed use communities centered on transit stations to enhance transportation options and reduce the need to drive.
- Investments in well-connected bicycle and pedestrian infrastructure to enhance both transportation options and exercise opportunities to establish healthier lifestyle patterns. These investments can also help seniors age in place more easily than in auto-dependent areas.
- Enhancing cooperation between transportation and land use planners to maximize the value of existing resources and ensure that development and transportation investments occur simultaneously to complement each other and reduce costs

The built environment – the direct result of land use regulations and policies – has a strong role in determining the accessibility of jobs, housing, and other amenities to residents. The data below, which compare the proportion of jobs that are transit-accessible in each of the study regions, provides insight into the baseline of accessibility for each metro area. This information has not only economic and transportation efficiency implications, but also significant social implications, as many workers have a limited ability to influence the location of their jobs.

Figure 37: Accessibility to Jobs for Atlanta and Benchmark Region Residents

Region	**Percentage of Jobs that are Transit-Accessible *entire metro area***	**Percentage of Jobs that are Transit-Accessible *cities only***	**Percentage of Jobs that are Transit-Accessible *suburbs only***
Atlanta	52.6	93.8	44.8
Birmingham	50.8	89.0	30.7
Houston	57.8	93.3	17.5
San Francisco	85.4	96.7	78.8
Washington, DC	88.5	99.8	84.0

Source: Brookings Metropolitan Policy Program, Where the Jobs Are: Employer Access to Labor by Transit

Some additional examples of activities in San Francisco and Washington D.C. to promote the formation and strengthening of health, accessible, and active communities through land use-related activities include:

San Francisco

- The Metropolitan Transportation Commission, the MPO for the San Francisco Bay Area, has a Transportation for Livable Communities program, which has established a Transit Oriented Affordable Housing fund to provide housing opportunities in transit-accessible locations for low- and middle-income households challenged by the high cost of housing in the metro area. This enhances the diversity of desirable, walkable, and accessible neighborhoods and reducing the burden of transportation costs on struggling households.
- San Francisco's 511 SF Bay website provides information on appropriate crossings of highways and other main arterials for pedestrians and bicyclists such as information on footbridge locations. In addition, the website has a bicycling page that provides a BikeMapper application for determining the safest route to take, as well as information on bicycle infrastructure, safety, ridematching, and maintenance and education resources such as free classes and workshops.
- The City of San Francisco requires bicycle parking facilities in all City-owned garages and privately-owned garages that rent spaces to the public, which provides key linkages for bicyclists to connect to transit and bus routes. Some newly constructed and renovated commercial buildings are also required to provide bicycle parking, clothes lockers, and shower facilities, which eliminate obstacles to bicycling for many users of the buildings. [56]

Washington D.C.

- Transit-oriented development is common around many Metrorail stations throughout both the District of Columbia and some surrounding inner-suburban areas, such as Arlington, Virginia, which has been recognized as a leader in TOD by national organizations and agencies such as the US EPA. The demand for transit-accessible housing remains very strong in the Washington metro area.
- The region has one of the largest bikesharing systems in the US, Capital Bikeshare, which has nearly 1,700 bicycles at more than 175 stations. Strong partnerships between local governments, the system operator, funders, and consultants have enabled the quick growth of this program.
- The Union Station Bike Transit Center is the first secure bicycle parking facility on the East Coast – including secure parking for over 100 bikes, 50 rentable lockers, a spacious changing room, and a bike repair shop that is available to both users and the general public. The center's strategic location provides connections for bicyclists to the Metrorail system, Amtrak trains, and numerous bus lines that connect to areas around the city and metro area.
- In nearby Fairfax County, Virginia, home to over 1 million DC area residents, the county has taken proactive steps to connect its development and land use approvals with necessary TDM infrastructure and services to enhance benefits to community residents and efficiency. Virginia's system of proffers, agreements between developers and municipalities to mitigate the impacts of new developments, allows significant flexibility in tailoring the proffer package to both projected impacts of a development and local policies. The County negotiates with developers to provide both programmatic and physical benefits, which have included outreach to residents, workers, and employers to inform and provide incentives for alternate mode usage, bicycle and pedestrian infrastructure installation and upgrades, and preferential parking arrangements for shared vehicles.

[56] http://www.sfmta.com/cms/bpark/3176.html#garages

Benchmarking: In terms of the built environment, density, and infrastructure to support alternative commuting and traveling options, Atlanta is much more similar to Houston and Birmingham than it is to Washington, DC and San Francisco, both of which are more historic cities with denser neighborhoods, a larger supply of housing and jobs in transit-accessible locations, and stronger public transportation systems. With a majority of Georgia residents not working in the same county in which they live,[57] there is a massive amount of inter-jurisdictional travel that occurs every day that could be reduced through the creation of healthy and livable communities that offer both living and employment opportunities. The Atlanta region has invested significant resources into creating healthier, more livable, and more active communities for residents of all ages. The region benefits from multiple initiatives in support of integrated approaches to land use, accessibility, healthy communities and active transportation, such as:

- PLAN 2040 as a joint regional land use and transportation plan;
- ARC's Livable Centers Initiative (LCI) Program, which awards competitive planning grants and transportation project implementation funding to ensure consistency between plans and regional development goals to enhance existing centers and corridors;
- Georgia Tech's new bikesharing system called viaCycle@GT; coupled with the consideration around the city and surrounding municipalities about the addition of bike lanes, racks, and other infrastructure that will enhance bicycling opportunities;
- ARC's Lifelong Communities initiative has started to address the rapid growth of the over-60 population in the metro area and the lack of places where they can age in place while having multiple transportation options;
- ARC, in partnership with MARTA, GRTA, ANDP, Southface, and the Livable Communities Coalition, is working to ensure that the areas around all MARTA stations have the necessary planning and infrastructure in place to support transit-oriented development**.**

Parking Pricing and Management

About: Parking policies manage the supply and use of parking, often incorporating pricing that better reflects the costs of providing it. Parking policies can discourage SOV trips and encourage the use of alternative travel modes through preferential parking for carpools or carshare vehicles or through variable pricing based on time of day. Parking management can help make the best use of available space (such as sharing office lots or garages that are normally full only during certain times of day and days of the week). It can also reduce infrastructure costs by reducing the need to build parking spaces, which are costly to provide.

Strategies:

- **Integrated parking approaches**, which manage parking through fees and time limitations and are an effective way to manage parking while supporting activity in downtown areas (proceeds from fees support revitalization and transit infrastructure).
- **Shared parking** can maximize the value of existing parking assets
- **Parking cash out** programs keep costs for employers constant while allowing employees to make decisions about how to get to work based on the actual cost of the parking their employers provide.

[57] http://www.cleanaircampaign.org/Your-Air-Quality-Transportation/State-of-the-Commute

- **New technologies** such as mobile applications have significant potential to increase the efficiency with which parking is allocated and used by drivers.

The San Francisco SF*park* program uses sensors, new meters, and demand-responsive parking to make parking easier to find and more convenient, drastically reducing the amount of time drivers spend "cruising for parking,"[58] which in many cities accounts for a high percentage of all miles driven. Demand-responsive parking leads to sufficient turnover to ensure the availability of parking for incoming visitors to a particular area, with rates varying by block, time of day, and day of the week. Mobile applications, which obtain information about available parking spaces through sensors embedded in the pavement, allow drivers to determine where available spaces are and cut down on unnecessary cruising time. State-of-the-art meters are used as a pricing strategy to allow drivers to pay through a variety of ways including credit cards, and data made available to developers on the internet is expected to enhance the applications, maps, and visualizations that allow drivers to efficiently find parking and pay based on the length of time for which they are planning to occupy a parking space and the demand for proximity to their destinations. SF*park* includes additional demand-responsive policies for off-street parking in garages owned by San Francisco Municipal Transportation Agency (SFMTA).

Washington, DC passed a Performance Parking Ordinance in 2008 and has subsequently conducted a number of pilot studies and programs with a goal of achieving an 85 percent parking occupancy rate in targeted neighborhoods through variable pricing.[59] The city uses license plate recognition software to not only identify violations, but also reference plate numbers against a database with information on registration, previous violations, payment, and other information. DC has also hired a parking manager with the goal of implementing performance parking throughout the city.[60] DC faces issues similar to those in the Atlanta region considering the large amount of privately operated garages, inexpensive free parking and free suburban parking. The University of Alabama at Birmingham has preferential parking for carpools and offers passes for carpools in designated carpool lots.[61] Houston has announced the implementation of a pay-by-phone parking program, but generally is not a leader in pioneering innovative parking management systems.[62]

Benchmarking: Of the regions in this study, San Francisco is the leader in parking management, although its success in determined in part by its higher density. Although there are some parking management strategies in place, the different parking strategies across the Atlanta metro region make it difficult to promote TDM in some areas. For instance, Atlanta's Public Parking Management Program and contract with PARKatlanta have shown efforts to improve traffic flow and maximize the value of existing parking infrastructure, which are a step in the right direction, though there is certainly much more the region could do to ensure that parking is provided and used in a cost-effective way. Additionally, CAP conducted a parking study in 2005 that had a significant TDM component.

[58] http://shoup.bol.ucla.edu/CruisingForParkingAccess.pdf

[59] http://ops.fhwa.dot.gov/publications/fhwahop12026/fhwahop12026.pdf

[60] http://www.tbd.com/blogs/tbd-on-foot/2012/05/d-c-s-new-parking-manager-looks-to-smart-growth-15335.html

[61] http://www.nctr.usf.edu/clearinghouse/pdf/pref%20parking%20at%20universities.pdf

[62] http://www.houstontx.gov/parking/

Transportation Systems and Operations, Traveler Information and ITS

About: New systems management and operational features have the potential to enhance the efficiency of transportation systems without necessitating significant infrastructure investments. TDM is one type of management tool that is part of a broad set of strategies that optimize transportation system performance by influencing travel demand and choices.

Strategies:

- Providing real-time information and traffic management strategies
- Promoting managed lanes, signal timing and signal prioritization
- Promoting and supporting dedicated bus lanes and bus rapid transit
- Special event and incident management (including construction management)

While TDM programs may not be directly involved in the decision making for these strategies, providing incentives and education on the options does ultimately support these TDM**+** strategies. For instance:

- San Francisco offers incentives to vanpools to not pay tolls on the Bay Area's seven state owned bridges when using the HOV lanes (saving up to $6 per trip depending on time of day).
- Commuter programs in San Francisco are also promoted through the statewide 511 system.
- Washington, DC coordinates with WMATA on National's baseball game days to promote alternative transportation in response to special events.

FHWA has been developing a program over the past few years on active transportation demand management, which is aimed at integrating TDM to reduce overall demand with Active Traffic Management to more efficiently and dynamically manage traffic. This program will continue to elevate the importance of operations for TDM.

Benchmarking: The Atlanta region has numerous integrated ITS and transportation operations systems in place to reduce congestion and improve mobility. Georgia NaviGAtor and 511 operate a multitude of ITS technologies to keep the interstate system running smoothly. For instance, Georgia's Highway Emergency Response Operators (HEROs) have become a vital component of the highway system, responding quickly to incidents and clearing the road so that traffic flow is interrupted only for a short period and so normal traffic flow can be restored. Georgia 511 also provides real time travel information by phone anywhere in Georgia. Through 511, travelers can report an incident statewide or request HERO motorist assistance within the Atlanta metro area on highways.

Additionally, GDOT and the regional Transportation Management Center (TMC) as well as a number of smaller Transportation Control Centers (TCC) have taken advantage of ramp-metering technologies to improve traffic flow during peak hours on the highway system; over 160 ramp meters current operate on most major interstates around the Atlanta region. Ramp meters are basic traffic signals that include only the red and green lights and that respond to current traffic conditions. A green signal on the ramp meter typically only allows one or a couple of vehicles to enter the highway system at a time. By managing the rate of vehicle flow into the network, ramp meters have the potential to break up platoons of vehicles as well as mitigate exceedance of a freeway's capacity, reducing the wave-like effect of stop-and-go traffic.

Additionally, the delay caused by the ramp meter waiting period may cause some drivers to choose different routes or times for entry onto the highway system, thereby reducing demand for the freeway during peak periods. NaviGAtor's Video Detection System (VDS) is an invaluable source of real-time information about the roadways themselves. Approximately 1,645 VDS stations cover approximately every 1/3 mile of roadway along most major interstates around the Atlanta region. The cameras are able to record many valuable data points including continuous speed and volume data to allow the system to generate travel times for the Changeable Message Signs (CMS). CMS can be controlled by both automatic messages generated through routinely collected data, or operators can create custom messages when needed. CMS in the Atlanta area typically focuses on real-time travel time information as well as incident messages for accidents, stalls, construction, and other problems that may cause delay on the roadway. Slightly lower tech, but still very valuable are the closed-circuit cameras positioned about every mile on most major interstates. These cameras have tilt, pan, and zoom capabilities that allow operators at the TMC to confirm incident details, dispatch HERO units and request appropriate emergency response. Georgia 511 also provides real time travel information by phone anywhere in Georgia based on data collected through other ITS technologies at the TMCs or TCCs. Through 511, travelers can report an incident statewide or request HERO motorist assistance within the Atlanta metro area on highways.

Sample Managed Lane

Source: GDOT SSTP

Additionally, the Atlanta Region Managed Lanes System Plan (MLSP) was approved in December of 2009 and included a guide for GDOT in developing individual managed lanes projects within the metro-Atlanta area. This guide included a tiered approach that would provide a systematic implementation plan for the ultimate completion of a regional system of managed lanes. Tolling is an integral element in the implementation of the managed lanes network both as a tool to accomplish the purpose of the network and as a source of funding to offset costs for construction, operation, and maintenance. Tolling has been included as part of the regional financial forecasting for the purpose of developing the fiscally constrained regional long-range transportation plan as noted in PLAN 2040.

As part of the Strategic Regional Thoroughfares Plan, ARC plans to follow-up on the CMP efforts by creating a linear reference system (LRS) that would provide geo-referenced data as a set of roadway attributes including, but not limited to, number of lanes, speed limits, presence of intersection traffic control devices, school zones, divided versus undivided roadways, and other existing data sources. Operations and maintenance can be better monitored for performance-related data with a more comprehensive dataset, enabling the transportation system to be better managed and improved upon. The SRTP additionally calls for new types of measurement, either as informative information or actionable information.

MARTA recently released their General Transit Feed Specification (GTFS), removing it from the number one spot on the list of "Largest Transit Agencies with No Open Data" compiled by City-Go-Round.[63] GTFS is the format of transit route, stop and schedule data that is used by developers for web and mobile apps such as trip planners. This release, officially on Oct. 19th, is a big step for the agency and has the potential to improve rides' experience by providing better information on the real-time arrival of buses and trains. ARC also plans to release GTFS data at the regional scale early in 2013.

Even when new capacity-added projects are not seen, over time in a region there will be reconstruction and rehabilitation of the existing system. TDM can play an important role in managing demand during such times, as was done with the 14th Street Bridge.

Performance Measurement and Evaluation

About: Effective evaluation is based on the development and use of clear objectives and quantifiable performance measures. Therefore, developing and tracking pertinent performance measures is a key to a more effective planning process. When performance measures are incorporated into decisionmaking, programs can identify which activities are generating the most cost-effective results aimed at fulfilling key program objectives. With this understanding, a program can change its tactics or reallocate resources in order to improve overall effectiveness. Additionally, a strong performance-based approach to program management demonstrates responsibility to funders or other decision-makers and helps them to understand the value and benefits of a program. Performance measurement may also provide a common framework to assess success and improvement among all stakeholders.

Strategies: Performance measurement and evaluation strategies may include everything from activity logging and commute tracking to random sampling and surveying. An effective performance-based approach includes:

- Establishing program goals and measurable objectives
- Selecting measurement and methodology based on data and resources available
- Determine baseline and set targets for future improvements
- Collect data, calculate measures and generate reports
- Evaluate, assess and improve

The Washington, DC region's Commuter Connections' impact is measured by vehicle trips and VMT reduced, emissions reductions, energy reductions/fuel savings, consumer savings, and cost effectiveness (cost per trip reduced and VMT reduced). The program also uses surveys to calculate placement rates (the percent of commuters that switch to alternative modes), trips reduced for each commuter placed, average commute trip distance, and the proportion of rideshare participants and transit users that drive alone to the location where they meet their ride or transit vehicle. The region acquires information from the Association for Commuter Transportation (ACT) Employer Contact database, Maryland and Virginia telework participants, Bike-to-Work Day participant records, applicant database records, and Commuter Operations Center activity tracking. This information is reported in the State of the Commute report, while Commuter Connections also calculates and publishes its program impacts.

[63] http://www.citygoround.org/

Benchmarking: Like the Washington, DC region, the Atlanta region's programs are evaluated by the Georgia Department of Transportation, which documents the impact of TDM activities through surveys and analysis of data. GDOT, in cooperation with CTE, published an easy-to-digest State of the Commute report with clear and attractive graphics and charts in 2010, which was based on the 2010 Metro Atlanta Regional Commuter Survey of over 4,000 workers. Although the Atlanta region's TDM activities are tracked and the performance is measured in terms of most of the same metrics used by Commuter Connections, Atlanta can build upon these efforts by integrating its performance measurement outcomes and evaluations into feedback processes that influence future policymaking and investments.

MAP-21 has placed an even greater emphasis on performance measurement and evaluation. The law will soon require state transportation agencies to set targets on goals in a number of subject areas including safety, infrastructure condition, congestion reduction, system reliability, freight movement, environmental sustainability, and reduce project delivery delays. The achievement of these targets will largely depend on implementation of policies at the regional and local level, and MPOs and transit agencies can expect that continued improvement in this area will not only be a positive development but a requirement.

The purpose of performance measurement and evaluation is to ensure that resources are being used in the most effective way possible to achieve progress toward predetermined goals. Given that the purpose of TDM programs is almost universally reducing SOV trips in order to enhance traveler choices, boost economic competitiveness, alleviate congestion, and generally create more livable communities, it is important to evaluate the effectiveness with which each region is achieving its goals. In the Atlanta region, where the average one-way commute distance is 17.5 miles[64] (35.9 miles for vanpool riders[65]) altering the mode for just one trip has the potential to reduce VMT (and achieve the associated environmental benefit) significantly more than in regions where commutes are shorter.

[64] Georgia Department of Transportation and the Center for Transportation and the Environment, 2010 Atlanta Regional Commuter Survey.

[65] Georgia Department of Transportation and the Center for Transportation and the Environment, 2010 Atlanta Region Vanpool Rider Survey.

9. Next Steps

Building on the key findings from the inventory, an assessment of Strengths, Weaknesses, Opportunities and Threats (SWOT) of TDM in the Atlanta region will be finalized. Many of these have already been uncovered through interviews with stakeholders and review of program documents.

A series of regional strategies will be developed to leverage existing strengths and build on opportunities, as well as respond to challenges or weaknesses in the region. Using a forward looking approach, preliminary strategies will be identified for action plans and implementation.

Glossary

511	Real time traveler information number
ABC	Atlanta Bicycle Coalition
ACOG	Atlanta Committee for the Olympic Games
ACS	American Community Survey
ARC	Atlanta Regional Commission
ARCRTS	Atlanta Regional Commission Regional Travel Survey
ARCSP	Atlanta Regional Commission Strategic Plan
ARRA	American Recovery and Reinvestment Act
ASAP+	Atlantic Station Access + Mobility Program
ASTRoMaP	Atlanta Strategic Truck Route Master Plan
BATMA	Buckhead Area Transportation Management Association
BMP	Best Management Practices
BRT	Bus Rapid Transit
BTI	Buffer Time Index (measure of trip reliability - represents extra time [buffer] needed to arrive consistently on time)
BTPWP	Bicycle Transportation and Pedestrian Walkways Plan
CAC	Clean Air Campaign
CAP	Central Atlanta Progress
CBO	Congressional Budget Office
CCT	Cobb County Transit
CCMTA	Clifton Corridor Transportation Management Association
CCTV	closed circuit TV
CFCPS	Cash for Commuters Program Survey
CID	Community Improvement District
CMAQ	Congestion Mitigation and Air Quality
CMP	Congestion Management Process
CTP	Comprehensive Transportation Plan
C-Tran	Clayton County Transit
CTE	Center for Transportation and Environment
DMS	Dynamic Message Signs
DOT	Department of Transportation

EJ	Environmental Justice
EPA	Environmental Protection Agency
ESC	Employer Service Committee
ESO	Employer Service Organization
ETA	Equitable Target Areas
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GBA	Georgia Building Authority
GCT	Gwinnett County Transit
GDOT	Georgia Department of Transportation
GEPD	Georgia Environmental Protection Division
GRH	Guaranteed Ride Home
GRTA	Georgia Regional Transportation Authority
HB 277	House Bill 277: Transportation Investment Act of 2010
HERO	Highway Emergency Response Operators
HOV	High Occupancy Vehicle
HST	Human Services Transportation
HTF	Highway Trust Fund
HUD	Department of Housing and Urban Development
IT3	Investing in Tomorrow's Transportation Today
ITS	Intelligent Transportation Systems
LCI	Livable Centers Initiative
LCIIR	LCI Implementation Report
MAP-21	Moving Ahead for Progress in the 21st Century
MARTA	Metropolitan Atlanta Rapid Transit Authority
MLSP	Managed Lanes System Plan Status Report 2011
MPC	Media Planning Committee
MPO	Metropolitan Planning Organization
MTS	Midtown Transportation Solutions
NAAQS	National Ambient Air Quality Standards
NHTS	National Household Travel Survey
NOx	Nitrogen oxides

P3	Public-Private Partnerships
PACES	Pavement Condition Evaluation System
PLAN 2040 F	PLAN 2040 Framework
PLAN 2040 RA	PLAN 2040 Regional Assessment
PEDS	Pedestrians Educating Drivers on Safety
PM2.5	Solid particles and liquid droplets that are in the air and have a diameter of less than 2.5 microns
PTSC	Perimeter Transportation and Sustainability Coalition
PTI	Planning Time Index (measure of trip reliability - 1 is free-flow trip, 2 twice as long as free-flow, etc.)
RCEP	Regional Community Engagement Plan
RCS	Regional Commuter Survey
RFPHN	Regional Freight Priority Highway Network
ROBTS	Regional On-Board Transit Survey
RSPSR	RideSmart Placement Survey Report
RSTS	Regional Strategic Transportation System
RTP	Regional Transportation Plan
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SB 200	Senate Bill 200: Transformation Transportation Investment Act of 2009
SGIA	Smart Growth Implementation Assistance
SHSP	Strategic Highway Safety Plan
SOV	Single Occupant Vehicle
SRTA	State Road and Tollway Authority
SRTP	Strategic Regional Thoroughfare Plan
SRTS	Safe Routes to School
SSTP	Statewide Strategic Transportation Plan
TAC	Technical Advisory Committee
TAD	Tax Allocation District
TAQC	Transportation Air Quality Committee
TCC	Transportation Coordinating Committee
TDM	Transportation Demand Management
TDM+	A broader definition of TDM that expands the view of traditional TDM strategies by making the connection between TDM and livability, sustainability, transit, walking and biking, systems operations, transportation planning, economic development, climate change,

	healthy communities, and active aging.
TIME	Traffic Incident Management Enhancement
TIP	Transportation Improvement Program
TMA	Transportation Management Association
TMC	Transportation Management Center
TOD	Transit Oriented Development
TPB	Transit Planning Board
TRIP	Towing and Recovery Incentive Program
TTI	Travel Time Index (measure of congestion - 1 is free-flow, larger values more congested)
UPWP	Unified Planning Work Program
VMT	Vehicle Miles Traveled
VOC	Volatile organic compounds
YOE	year-of-expenditure