Greater Cleveland Regional Transit Authority

TRANSIT 2025
Long Range Plan

Engineering & Project Management Division
Programming & Planning Department

December 2004
# EXECUTIVE SUMMARY

The Greater Cleveland Regional Transit Authority has developed the Transit 2025 plan, a long-range plan for the region's transit system. This plan outlines the vision, purpose, and strategic initiatives for the future of the transit system in the Greater Cleveland area.

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Executive Summary

Background

Since the late 1980s, the Greater Cleveland Regional Transit Authority (RTA) has conducted long-range planning to help guide the future development of public transit in Cuyahoga County. After nearly 3 years of extensive community outreach and research, the RTA Board of Trustees adopted in 1993 the Authority's first-ever long-range plan, Transit 2010. Transit 2010 recognized that Cleveland's transit route network had changed very little in over 30 years. As a result, it proposed a coordinated network of community circulators, park & ride lots, transit centers and rail extensions to reach out to the population and jobs that had moved to outlying areas of the region over that period. Later, the Euclid Corridor and waterfront areas became the region's highest priorities for rapid transit investments, and a program to implement a network of community circulators, park & ride lots, and transit centers was undertaken by RTA. Many of the rapid transit extensions and commuter rail lines that had been studied by Northeast Ohio as far back as the early 1970s were also part of that first plan.

By 1996, RTA and the region realized that a proposed new rail line connecting the region's two busiest development areas, downtown Cleveland and University Circle, and other elements of its long-range plan were not practical. The Euclid Corridor was to be better served by a future Bus Rapid Transit line, while a 2.5 mile RTA rail extension serving the Cleveland Flats and Lakefront areas would become operational as one of the 1996 Cleveland Bicentennial Legacy Projects. To reflect these changes and new community preferences regarding public transit, RTA undertook an update of its long-range plan, using internal and external surveys and an analysis of regional travel trends. The RTA Board then adopted its 1998 Long Range Plan, which proposed a major restructuring of the bus network based on a comprehensive operational analysis. A public survey on the relative importance of key elements of the 1993 plan led RTA to retain rapid transit extensions, commuter rail, community circulators, park & ride lots, and transit centers in its long-range plan.

By the time RTA entered the present century, Greater Cleveland's economic conditions had continued to worsen, with jobs and population continuing to locate in areas of the region that were difficult to serve by transit. Development patterns in many parts of RTA's service area were such that access by transit was often cost-prohibitive, pedestrian unfriendly, or both. In addition, many of the major changes to RTA's bus network proposed in the 1998 Long Range Plan were deemed politically impossible, and the envisioned cost savings by those changes could never be realized. By year 2000, RTA's "Back to Basics" strategy, with its heightened focus on service quality, cost-effectiveness and financial prudence, dictated that RTA's long-range plan be updated.

Transit 2025 - RTA's Current Long Range Plan

The current RTA long-range plan, Transit 2025, differs substantially from earlier plans. It more closely reflects RTA's, the region's and the state's financial capacity for major transportation investments. Transit 2025 continues RTA's commitment to the more than 80% of its riders using the bus network with improved services, including new community circulators, transit centers and park & ride lots. It also begins the implementation of the region's premier transit project, the Euclid Corridor Transportation Project, consisting of
the following service elements: Bus Rapid Transit, improved downtown bus flows and routings, East Side Transit Center, and downtown transit zone improvements. **Transit 2025** also focuses on bringing RTA's transit infrastructure up to higher standards and encouraging transit-oriented design, or TOD. Related to nationwide efforts towards Smart Growth, TOD encourages locating transit and development in close proximity in order to reduce auto dependency and improve transit access. The plan also addresses a variety of customer amenity enhancements, such as improved passenger waiting areas and bicycle racks on buses. It also promotes speeding the flow of RTA buses and trains along various major travel corridors using lower cost traffic signal technology advancements and enforcement of peak hour parking restrictions.

**Transit 2025** has also incorporated input from RTA's key stakeholders including NOACA, the Ohio Department of Transportation, Cuyahoga County, and the City of Cleveland, as well as other partners like EcoCity Cleveland and the Cleveland Neighborhood Development Corporation. Given the economic realities facing the U.S., the State of Ohio and RTA's region, these entities encouraged RTA to take a realistic look at cash flow projections and to prioritize its major projects. In addition, there are major, yet undetermined land use changes anticipated for Cleveland's downtown lakefront and Innerbelt Freeway, and Chagrin Highlands areas. Therefore, RTA is renewing its focus on maintaining and upgrading the current RTA system, and placing less emphasis on rail extensions and commuter rail. Until more is known about future land uses, RTA will delay pursuing certain rail projects.

RTA believes that **Transit 2025** will help coordinate and maximize its future investments relative to the long-term plans of its stakeholders and partners. Once a better federal funding picture emerges after adoption of the next Federal transportation funding bill and as more detailed Census 2000 journey to work data become available, RTA will continue charting the future course of Cuyahoga County's public transit system.

**Transit 2025 Chapters**

Following is a brief synopsis of chapters in the long-range plan.

**Chapter 1 - Transit 2025 Vision, Purpose and Strategic Initiatives** provides more detailed background on long-range planning at RTA. This includes the vision, purpose and need for this plan relative to RTA's policy underpinnings, and key trends affecting RTA's service and service area. Chapter 1 also includes a set of shorter-term RTA Strategic Initiatives developed to help implement this Long Range Plan.

**Chapter 2 - Demographic & Market Analysis** presents key national and local data on factors shaping the RTA transit network. Northeast Ohio continues to experience flat growth in population and jobs. Automobile travel continues to increase, but congestion is not yet a major problem. However, providing mobility for the economically challenged and those who prefer not to, or cannot, drive remains important to the region and RTA.

**Chapter 3 - Service Analysis and Future Service Concepts** initially describes RTA's system performance and selected characteristics, and discusses the kinds of trips typically taken on RTA. Later, it details the various services RTA is pursuing or considering pursuing in both the short- and long-term. This includes new corridor-level approaches to service enhancements, as well as passenger amenities. Intercounty service coordination, transit vehicle types, and intercity and commuter rail options are discussed here as well.
Chapter 4 - Capital Projects and Funding lists the projects comprising RTA's 2005-2009 Capital Improvement Plan, including system maintenance and expansion projects. This chapter briefly summarizes the funding for key RTA development projects and describes the three future rail extension projects that remain under consideration by the region.

Chapter 5 - Transit Oriented Design and Joint Development presents RTA's current and recommended future efforts in this area. Transit-oriented development supports Smart Growth and related initiatives in helping make cities better places to live, work and visit. Encouraging new development near major bus and rail transit hubs, especially in urban redevelopment areas, improves access and mobility by transit and reduces auto dependency. This also helps create a more pedestrian- and bicycle-friendly environment that can ultimately build transit ridership.

Chapter 6 - Transit 2025 Sketch Plan presents in tabular and graphic form the projects comprising the possible future RTA transit system. This chapter includes key existing bus facilities, as well as expansion projects that are capital- or service-oriented. Regionally-significant projects by others, such as major highway improvements and intercity and commuter rail, are also shown here.

Chapter 7 - Summary and Next Steps gives brief concluding remarks about Transit 2025.

Transit 2025 Appendices

As with Transit 2010 in 1993, the current RTA long range plan includes a separate volume of appendices. These seven appendices present a portion of the research done by RTA and national transportation experts on important trends and issues influencing the region's land use and transportation future. Some of these same issues were raised in RTA's 1993 plan, such as livable communities and transit-focused development. But more is known today, and it is important that this plan help keep the community informed on the latest developments in these and related areas. The appendices also contain background on new initiatives being implemented or considered by RTA, such as Location Efficient Mortgages. And, since millions of dollars (mostly from earmarked Federal funds) have been spent studying commuter and intercity rail in Northeast Ohio, with future study still being considered by others, it is appropriate to share some results of those efforts.

Conclusion

Transit 2025 represents RTA's best possible realistic look at its future. It incorporates many ongoing major planning efforts by others, extensive trend research, and the latest thinking by RTA. As Census data and additional funding become available, RTA will begin its next long-range plan update, most likely in conjunction with the next update of the region's transportation plan by the area's metropolitan planning organization, NOACA. By that time, important downtown land development decisions will likely have been made and an even clearer picture of the future transit system can be drawn.
Chapter I. Transit 2025 Long-Range Plan Vision, Purpose and Strategic Initiatives

Transit 2025 - Vision

RTA's Transit 2025 Long-Range Plan envisions a sustainable, balanced transportation system for Greater Cleveland, with public transit playing a vital role in that system. Accounting for people's choices for where they live, work, shop, and spend leisure time, Transit 2025 encourages transit-supportive land-use patterns that improve mobility and access for area residents and visitors.

RTA's day-to-day operations and future plans must directly reflect the enabling legislation that created the Authority in 1975. Both state (Ohio Revised Code Section 306) and municipal legislation enabled the creation of RTA. A key part of that legislation is City of Cleveland Ordinance #2390-B-74 Section 1:

"That it is hereby determined that the creation of a regional transit authority is necessary to provide a coordinated, consolidated, comprehensive public mass transportation system, to enable residents of the City and County to travel to and from their homes, jobs, and other destinations in a convenient, safe, and economical manner, to facilitate and advance the commercial and economic development of the City and County, and to protect the public health, safety, and welfare of the residents of the City and County."

This legislative mandate for the Authority's purpose is expanded in RTA's Motto, Mission, and Priority Policy Goals. Transit 2025 embodies these legislative and strategic directives.

MOTTO "Quality Service: Every Customer, Every Day."

MISSION RTA enhances the quality of life in Greater Cleveland by providing outstanding, cost-effective public transportation services.

PRIORITY POLICY GOALS

I. CUSTOMER FOCUS
   Provide quality service to all customers, and support our employees in that endeavor.

II. EXPAND AND REORGANIZE SERVICE
   Expand and reorganize services to retain our current riders and attract new riders by providing service that meets customer and community needs.

III. PREPARE FOR THE FUTURE
    Prepare for the future by forging new partnerships and strengthening existing ones with the public and private sectors to establish policies, funding, and technologies that support cost-effective public transportation.

IV. IMPROVE FINANCIAL HEALTH
    Improve the agency's financial health through efficient use of resources and the pursuit of new revenue sources.

V. PROVIDE COMMUNITY BENEFITS
    Provide social, economic and environmental benefits to the community through system improvements.
Table 1.1  RTA At-A-Glance in 2004

<table>
<thead>
<tr>
<th>Category</th>
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<td>Employees</td>
<td>2,660</td>
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<td>Ridership</td>
<td>55.5 million (unlinked) trips</td>
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<td>Service Area</td>
<td>458 square miles</td>
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<tr>
<td></td>
<td>59 municipalities</td>
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<tr>
<td></td>
<td>1.4 million people</td>
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<tr>
<td>Bus Service</td>
<td>650 buses</td>
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<tr>
<td></td>
<td>1,500 shelters</td>
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<td>8,423 bus stops</td>
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<td>101 routes</td>
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<td></td>
<td>1,666 route miles</td>
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<tr>
<td>Red Line Rapid Transit</td>
<td>60 heavy-rail cars</td>
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<td></td>
<td>18 stations</td>
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<tr>
<td></td>
<td>19 route-miles of track</td>
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<td>Blue/Green/Waterfront Line</td>
<td>48 light rail cars</td>
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<td>Rapid Transit</td>
<td>34 stations</td>
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<td>15 route-miles of track</td>
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<tr>
<td>Community Circulators</td>
<td>55 vehicles, 10 routes</td>
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<tr>
<td>Paratransit</td>
<td>77 vehicles</td>
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<td>Park &amp; Ride Lots</td>
<td>8,500 spaces</td>
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<td>Bridges</td>
<td>47 RTA-owned structures</td>
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<tr>
<td>RTAnswerline: 216.621.9500</td>
<td>Over 1 million calls</td>
</tr>
<tr>
<td>RTA Web Site: <a href="http://www.RideRTA.com">www.RideRTA.com</a></td>
<td>4.6 million hits</td>
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Source: GCRTA 2004 Annual Report

Table 1.2  RTA Ridership

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<td>2004</td>
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**Transit 2025 - Purpose and Need**

The purpose of Transit 2025 is to maximize the near-term and long-term quality, safety and productivity of RTA services. To achieve this, RTA is targeting two policy goal areas: Customer Focus and Financial Health. Through this framework, Transit 2025 guides RTA towards an affordable future transit system, one that meets customer needs and complements other elements of the region's transportation system, including bicycling and walking.

Metropolitan planning organizations typically prepare the federally-mandated comprehensive long-range transportation plans. Such plans serve as the basis for federal funding of capital projects for transit, ports, waterways and highways. The Northeast Ohio Areawide Coordinating Agency (NOACA) prepares and updates this region's long-range transportation plan update covering Cuyahoga, Geauga, Lake, Lorain and Medina counties. Because RTA is the largest transit operator in Northeast Ohio, its projects comprise the major portion of the NOACA long-range plan transit element. In order to expedite updating of the region's long-range plan by NOACA, it was agreed that RTA, with assistance from NOACA, would develop a long-range transit plan that could serve as input into the NOACA long-range plan.

Since the adoption of RTA's first long-range plan in 1993 and revision of that plan in 1998, freedom of travel for Greater Cleveland's residents remains hindered by many factors adversely affecting the quality of life in RTA's service area. They include:

- Insufficient development in urban areas, with accelerated creation of suburban job centers and residential areas,
- Increasing travel delays for autos and buses due to road projects, road capacity, and traffic accidents;
- Transit-dependent persons, especially current/former welfare clients unable to reach jobs/job training;
- More families throughout the region with income below poverty levels;
- Increasing auto ownership costs;
- Regional development patterns and community facilities that fail to accommodate public transit, resulting in places that are difficult or impossible to reach by transit;
- Loss of downtown Cleveland as the sole commercial/job area, which increased the importance of access to suburban destinations.

Additionally, NOACA, the 5-county region's metropolitan planning organization, provides the following "big picture" trends as background for future expectations in its five-county region.

**From 1960 to 2000:**
- Population of the Cuyahoga, Lake, Geauga, Medina, and Lorain area has grown 1%.
- Population has declined in Cuyahoga County but has grown in the four other counties.
- More than 100 of the 175 communities in the region grew in population between the 1990 and 2000 Census. These are typically communities in outlying areas of the region.
- Two-thirds of the region’s population live in communities that have lost population. These are typically communities that are closest to the heart of the region.
- The number of households has grown more than 40%.
- The number of registered passenger vehicles and non-commercial trucks has more than doubled.
- Freeway lane-miles in the 5-county region have increased from 250 miles to 1500 miles.
- Annual vehicle miles of travel in the region have increased from 6.9 billion to 15.9 billion.
- Vehicle emissions declined from 345 tons per day to 73 tons per day.
From 1980 to 2000:

- Automobile fuel consumption declined 10% from 1980 to 1990, but increased by 12% from 1990 to 2000.
- Automobile crashes declined 25%, and crash fatalities declined 50%.
- Air quality improved from a moderate non-attainment for ozone to a maintenance area.
- 2,047 Cleveland housing permits issued (1990-2000).

Job availability in Cuyahoga County is a major determinant of RTA's success. Between 1970 and 1999, overall employment in the region increased by 25%. But the majority of those jobs were not located in the City of Cleveland or Cuyahoga County. This is reflected in U.S. Census figures that show major changes in the number of commuters going from residence to workplace. From 1970 to 1980 in the 5-county NOACA region, the number of people leaving Cuyahoga County to work in the 4 adjoining counties increased by 44%. From 1970 to 1990, while there was only a 12% increase in people traveling to work, those leaving Cuyahoga County for work in the 4 adjoining counties increased by 82%, nearly double the amount in the 1970 to 1980 period. As jobs continue to move outward, the region's transit authorities will need to improve service coordination to better accommodate inter-county trips. However, transit will likely lose market share once people relocate their homes closer to their jobs in outlying areas.

According to the 1980 Census, public transportation carried 10.6% of all trips made by Cuyahoga County residents. The 1990 Census reported this number at about 8%. The 2000 Census indicates that public transit's share of work trip travel has fallen to 6%. These and other factors adversely affect the quality of life in RTA's service area. This update of RTA's Long-Range Plan takes a thorough, systematic look at what major changes are needed in this area's transit network in the years ahead to address these factors.

Future Plans by Others

The need to update any plan becomes apparent when major changes occur in key elements of that plan and/or the issues the plan is intended to address. Plans are also revised by federal mandate, as is the case with the five-county region's long-range plan, which must be updated by NOACA every three years.

RTA last updated its first long-range plan, Transit 2010 (1993) during 1996 and 1997, in conjunction with NOACA's updating of the region's long-range plan. The following are among the principal reasons for the current update.

Framework for Action 2025 NOACA Region Long Range Plan 2005 Update

Framework for Action 2025 is the transportation plan for the NOACA region, which includes Cuyahoga, Geauga, Lake, Lorain and Medina counties. It is a goal-oriented plan that addresses specific federal requirements by including air-quality conformity analysis, a fiscally-constrained list of transportation projects and other required elements. Most recently updated by NOACA in 2005, guides all major transportation improvement projects sponsored by RTA, the Ohio Department of Transportation, and counties and municipalities in the NOACA region. Homeland security, transportation safety and energy conservation were major additions to the plan's goals with this update.

Framework for Action 2025 includes major regional projects that are proposed for implementation over a 20-year time frame. These projects are included in one of four project tiers:
• **Tier I** – Projects that are in an advanced state of planning whose funding has been identified. With the exception of the Turnpike projects, all are expected to use federal funds. These projects are on the fiscally balanced part of the Plan and are used to perform the federally required air-quality analysis. These projects are expected to be constructed within the next five years. RTA's Euclid Corridor Transportation Project is found in this category.

• **Tier II** – Tier II projects are those at an advanced stage of planning whose funding has been guaranteed by the project sponsor, but no federal funds have been identified at this time. Since the project sponsor has agreed to find a way to finance the project, they are also on the fiscally balanced part of the Plan and are used to perform the federally required air-quality analysis. The projects are expected to be constructed within the next 20 years.

• **Tier III** -- Tier III projects are those undergoing a Major Investment Study (MIS) or equivalent, or needing an MIS or equivalent. RTA's rapid transit extension and remaining transit center projects fall into this category.

• **Tier IV** – Tier IV projects are projects or concepts that are part of a visionary plan. The NOACA Governing Board approved the current four-tier listing of regional investments in summer 2002 along with the Framework for Action 2025 plan. The Solon Transit Center, North Coast Intermodal Transportation Center, and commuter rail are found in this category.

A key element of the region's transportation plan is air quality attainment. For National Ambient Air Quality Standards, the NOACA region is in "monitored attainment" for 6 key emissions standards, including ozone. Thus, the 2030 plan is in conformity with federal requirements. However, the United States Environmental Protection Agency has updated its standards for ozone and particulate matter to an eight-hour standard. Although these standards are still being challenged in court, current measurements by NOACA indicate that Northeast Ohio will be a non-attainment area in ozone and particulate matter by the new standards. This suggests a greater role for public transit as the revised standards take effect.

A copy of the NOACA plan and the project tier list may be obtained from NOACA or at http://www.noaca.org/2030connections.pdf and http://www.noaca.org/tiers1-4.pdf

**Civic Vision 2010 Citywide Plan**

The City of Cleveland has begun revising its comprehensive master plan. When completed, it will serve as a long-term plan for neighborhood development and revitalization, a guide for evaluating development proposals, and a tool for marketing Cleveland's neighborhoods for new development. The Citywide Plan will analyze current conditions and prepare goals and policies concerning neighborhood development and quality of life. Key elements of the plan will be land use, transportation, zoning and capital improvements. For more information, see http://planning.city.cleveland.oh.us/cwp/whatis.html.

**Connecting Cleveland: The Lakefront Plan/ Waterfront District Plan**

The City of Cleveland is working on a development plan for the roughly eight-mile long Lakefront between West Blvd. and Martin Luther King, Jr., Blvd. Both the land development and the transit service to support it are expected to occur gradually over several decades. In cooperation with the City, the RTA has sketched out a transit plan to support an intense level of development with a constrained parking supply.
Major components of this transit plan are:

- Extension of the Waterfront Line from its current terminus at South Harbor/Municipal Parking Lot along the railroad corridor to a new terminus near E. 88th St., with intermediate stations at E. 18th, E. 40th, E. 55th, and E. 72nd Streets. An extension to the Collinwood area is also a consideration.

- A tram route or other line-haul service along the lakefront boulevard linking the Waterfront Line’s eastern terminus with a transit center near Public Square.

- A Bus Rapid Transit line along what is now the West Shoreway, between the transit center near Public Square and a terminus in the western suburbs.

- Extension of crosstown routes (e.g., #2, #45, and #807) to serve lakefront venues.

- Relocation of selected bus routes (e.g., Route #39) to serve Lakeside Avenue between E. 18th and E. 9th Streets.

- A system of community circulator routes to feed trips to, and distribute trips from, the Waterfront Line and other line-haul services.

For more information, see http://planning.city.cleveland.oh.us/lakefront/ and http://planning.city.cleveland.oh.us/lakefront/finalgraphics/concept05-flash.htm

Cleveland Innerbelt Plan  (Underway)

The purpose of this plan is to develop a strategy for the intelligent renewal of the transportation infrastructure within the Innerbelt Corridor. The majority of this infrastructure was constructed over a 10-year period that began in the late 1950s. This corridor has endured nearly 40 years of traffic and an equal number of Northeast Ohio winters. As a result, the bridge decks and pavements are approaching the end of their useful lives and will require major rehabilitation or replacement before the end of this decade. Working in partnership with numerous public, private, neighborhood and community organizations, the Ohio Department of Transportation and its consultants are investigating the physical and operational deficiencies of the Innerbelt Corridor infrastructure.
In conjunction with the renewal of bridge and roadway infrastructure within the Innerbelt Corridor, the Innerbelt Plan includes four other key elements for improving mobility in and through downtown Cleveland, the Flats and University Circle areas. These are being addressed by the following Innerbelt Plan subarea studies: Cuyahoga River Valley Intermodal Connector Study, Cleveland Lakefront West, Opportunity Corridor and Quigley Road Connector. The Lakefront West and Opportunity Corridor elements would have the greatest potential benefits to RTA, as these areas presently support a significant amount of public transit service. For more on the Cleveland Innerbelt Study and its related elements see http://www.innerbelt.org/

Cuyahoga County Planning Commission and Other Initiatives

There are numerous major planning initiatives underway at the county level that RTA will play an important role in. The Cuyahoga Valley Initiative seeks to influence development patterns, construction practices and industrial processes for the next generation using a sustainable development approach based on the integration of economic, social and ecological systems. The County Greenspace Plan is aimed at preserving the county's greenspace as well as enhancing and increasing what exists. Reducing automobile dependence and increasing public transit access will be an important element in the success of these two projects sponsored by the Cuyahoga County Planning Commission. The County Planning Commission is also engaged in developing and updating master plans for numerous municipalities in Cuyahoga County. These plans set key development patterns throughout RTA's service area, and it is important that future public transit services and future land use plans are developed in concert. For more information about County Planning initiatives see http://planning.co.cuyahoga.oh.us/.

Senior Transportation

The Cuyahoga County Department of Senior & Adult Services and the Cuyahoga County Planning Commission have undertaken a comprehensive study to develop a strategic plan that will provide for the availability of, and access to, sufficient transportation services for older adults in Cuyahoga County. This study is known as the “Cuyahoga County Strategic Plan for Senior Transportation.” Seniors, defined as persons over 60 years of age, comprise 19.6 percent of Cuyahoga County’s population, according to the 2000 Census of Population. Surveys of this population consistently reveal that transportation is a critical need necessary to maintain basic living standards. Without access to safe, reliable, efficient and affordable transportation, seniors may be unable to obtain medical care, groceries, banking services, or entertainment. This can put added burden on family members who must assume responsibilities for elder transportation, even if a senior is able-bodied and capable of handling their affairs. Where family members are unable to assist, this transportation problem isolates seniors and diminishes their quality of life.

RTA is among the major partners assisting Cuyahoga County in implementing its senior transportation strategic plan. In early 2006 service will be provided by a new non-profit Senior Transportation Organization (STO) dedicated to accommodating up to an estimated 1.26 million annual senior trips. RTA will provide the STO with a license to its service scheduling software, and will eventually provide business incubator service to the STO for things like accounting and finance, personnel and labor relations, marketing and public relations and purchasing and procurement.

Ohio and Erie Canal and Cuyahoga Valley Scenic Railroad

The Ohio and Erie Canalway, stretching 110-miles from New Philadelphia to Cleveland is comprised of three key linkages that touch RTA’s service area: the Towpath Trail, Scenic
Byway, and Cuyahoga Valley Scenic Railroad. Through various initiatives including its Bicycles on Transit program, RTA is improving access to the Cleveland Metroparks System and the Cuyahoga Valley National Park. Many RTA routes intersect the Scenic Byway, Towpath Trail and Scenic Railroad. While the Scenic Byway can be accessed in Cleveland’s Flats area in downtown, both the Towpath Trail and Scenic Railroad stop short of downtown Cleveland. Efforts are underway to extend both of these important elements of the Canalway into downtown Cleveland in coming years. See http://planning.co.cuyahoga.oh.us/towpath/ and http://www.cvsr.com/index.shtml.

Ohio Hub Study
The Ohio Rail Development Commission has embarked upon a major study to determine the feasibility of establishing intercity passenger rail service linking Ohio’s major cities. The Ohio & Lake Erie Regional Rail Ohio Hub Study is being conducted in cooperation with neighboring states to the east and west to develop a coordinated passenger rail network for the Midwest. At full build-out this system could provide a viable alternative to other travel modes by supporting an estimated 2 million to 3 million annual passenger trips by train. Intercity train stations proposed for Cleveland Hopkins Airport and downtown Cleveland’s lakefront would provide unsurpassed intermodal connectivity for Greater Cleveland’s residents and visitors. See http://www.dot.state.oh.us/ohiorail/Programs/Passenger/Ohio_Hub_Executive_Summary.pdf.

Other Challenges for Public Transit

RTA has profound effect on the region’s quality of life. To maintain and extend its success, RTA needs to adapt service to the changing needs of the community and provide regional solutions valid through 2025. However, RTA, like many transit service providers, is at a cross-roads. National surveys have found that most trips taken in the U.S. are for family and personal business or socializing/recreation, rather than for work. Also, auto use has continued to climb because of the auto’s inherent advantage in serving the auto-oriented land development patterns that prevail in this country. The challenge for RTA and other public transit providers may best be met by focusing more closely on customer needs. The role of transit may need to be broadened, as suggested by a group of national transit leaders, to become: "managers of mobility.” The mobility manager’s role is to oversee a portfolio of services, encourage competition as appropriate, coordinate systems, and ensure that the entire system is convenient and user-friendly."

RTA must diversify its services in response to its customers’ travel needs. Future RTA options can include flexible routing, more community circulators and suburb-to-suburb routes, longer-distance bus and rail services, and state-of-the-art travel information systems. For example, the US Department of Transportation’s National Household Travel Survey has found that in the past 15 years, the average length of a work trip has grown from roughly 9 to 11 miles. In contrast, trips taken in Ohio by auto are now 10 miles long on average, while trips taken via typical U.S. transit buses and rapid transit trains average between 3 and 5 miles in length. For U.S. commuter rail service, trips average about 20 miles. This means that these longer-distance trips cannot easily be served by RTA's traditional bus and rapid transit lines, and that more freeway-based transit services are needed.

RTA continues to provide service to downtown Cleveland for jobs and special events. As the suburbs and outlying areas continue to grow, Cleveland's downtown core is increasingly becoming less of a focus for trips. In the future, RTA must meet the challenges of providing public transit in lower density areas. To serve lower density auto-oriented areas, and to provide longer-distance services will require increased funding, since cost per passenger will rise.
To counteract sprawl, RTA and many other U.S. transit providers are turning to Transit Oriented Development (TOD) and Joint Development. TOD focuses on a mix of uses, such as residential, office, shopping, civic uses, and entertainment within a 5 to 10 minute walking distance from a transit station. This mix of uses, combined with pedestrian-friendly community spaces, helps create vibrant places where people enjoy living, working, and playing. RTA’s role in TOD is to proactively work with local communities and developers to encourage this type of development around its rail and bus hubs. A key benefit is the greater use of transit and less reliance on the automobile. TOD is discussed in more detail in Chapter 5.

Louis Stokes Station at Windermere - Grand Re-Opening in 1997

The Council of Economic Opportunities of Greater Cleveland (CEOGC) Childcare Center adjacent to the Louis Stokes Station at Windermere opened in 2002. In 1996 RTA received a $3.2 million Livable Communities Initiative grant, the nation’s largest that year, to jointly develop the center with CEOGC.
Customer Focus

The “Customer Focus” RTA Policy Goal represents the Authority’s commitment to "provide quality service to all customers, and support our employees in that endeavor." With respect to the Long-Range Plan, Total Quality at RTA means understanding and meeting the needs of persons within RTA's service area.

To achieve this understanding, RTA requested input from its employees, the public, elected officials, citizen groups, and municipal and private sector planners, through a series of surveys and meetings. These needs include short-distance trips taken just in neighborhoods, medium-distance trips taken between suburbs, and longer-distance, two-way trips taken between Cleveland's and Cuyahoga County’s neighboring suburbs and counties, and downtown Cleveland.

The need for travel depends upon many factors, but Greater Cleveland, like many other developing regions, has numerous destinations, including work, education, entertainment, shopping and recreation. The overriding desires heard from participants in the process to update RTA's long-range plan included:

• Service quality and the environment of RTA vehicles/facilities are very important
• All components of the Long-Range Plan are important (e.g. circulators, park-n-ride lots. transit centers). But in spite of their relatively high costs, rapid transit and commuter rail should not be completely excluded from long-term planning consideration
• RTA should extend service further out, but must consider sprawl impacts
• Transit service must be coordinated with other service providers
• Service coordination should occur with new developments, and at municipally-preferred hubs
• The Long-Range Plan must support and encourage core area reinvestment
• RTA should provide better access to jobs, and support welfare reform
• Rapid transit extensions, commuter rail, park & ride lots/transit centers, and community circulators were important elements to consider including or expanding in the future transit network.

Conclusion and Strategic Initiatives

In shaping the future transit system, RTA is focused on the basics: excel in customer safety and service while controlling costs. RTA will also pursue transit-oriented joint development around its key bus and rail hubs, and advocate strongly for transit-supportive land use tools. Transit 2025 supports these initiatives by providing a cost-effective blueprint for meeting Greater Cleveland’s future travel needs.

Projects to bring RTA's vehicles and facilities up to a state of good repair represent the vast majority of Transit 2025 major investments. Other projects are service related, including improving the suburban transit network and providing flexible routing (route deviation) for selected bus lines. Better transit circulation in the suburbs as well as Cleveland, strengthening service to Cleveland's lakefront, and developing compact land uses with transit oriented design near RTA passenger facilities are other priorities of the Transit 2025 plan.

To address its many future challenges, RTA will pursue the following strategic initiatives.
TRANSIT 2025 Long Range Plan Strategic Initiatives

The Census and travel data presented in the Long Range Plan identifies less population, fewer jobs in the central city and continued expansion of “ex-urban” areas in regions across the U.S., including Greater Cleveland. This creates a major challenge for public transit authorities to provide cost-effective service. RTA’s strategic vision must acknowledge this likely future of its market and adjust its services to meet the changing demands. A number of initiatives outlined in later chapters of the Transit 2025 Long Range Plan document are intended to help address projected ridership patterns and establish new transit markets. They are summarized below.

1. Optimize Existing GCRTA Services.

RTA has been working to increase the efficiency of existing bus service through its service planning efforts. The bus system undoubtedly will continue to be refined to meet changing customer demands efficiently. Becoming aware of travel needs and adjusting schedules to meet these demands is part of this initiative. An example is to ensure bus schedules are compatible with work and school dismissal times to gain ridership.

Maximizing connections with community circulator and rapid transit routes is also essential for improved effectiveness of all modes in RTA’s service network. Trading the reduction of competing and unnecessary services for the provision of new services to capture new travel markets is part of this assessment.

Objectives:

1. Complete the Downtown On-Board Survey passenger needs assessment for the Cleveland downtown area. Revise route systems as necessary to reflect more efficient service based upon the survey results.

2. Continue analyzing bus service in a systematic and programmed manner to assess the level of existing service to meet current and future demands.

3. Review new developments, as they occur, to determine what, if any, levels of RTA service should be provided.

4. Review RTA service to eliminate as much service duplication as possible while still meeting customer demand.

5. Work with municipal boards of education, colleges and universities to make transit a more viable travel option for students. This includes expanding RTA’s U-Pass program.

6. Encourage growth in Commuter Advantage membership and develop a transit validation program with merchants.

7. Maximize transit efficiency through technology applications like traffic signal priority.
2. Complete the Park-n-Ride/Transit Center Network.

RTA has been actively engaged in developing a network of suburban park-n-rides/transit centers since the 1993 adoption of its first Long Range Plan Transit 2010. RTA now owns six such facilities in Strongsville, Euclid, Westlake, Fairview Park, Maple Heights, and North Olmsted. The completion of this network and deployment of the local, commuter, and regional services through these hubs will provide RTA with an opportunity to more efficiently increase its services to suburban residents. The network can also substantially improve reverse-commute opportunities for urban residents. The capital and service elements can assist RTA in meeting the increasing demands of suburban patrons and also decrease the redundancy of service into the urban core. Part of this effort could include new service initiatives such as flexible routing and increased demand responsive services for more suburban routes.

Objectives:

1. Accelerate the Park-n-Ride/Transit Center Program per the long-range plan and in accordance with 5-year Capital Improvement Plan. Six facilities are proposed in Parma, Brecksville, Independence, Oakwood, Solon, Mayfield/Highland Heights.

2. Consider additional park-n-ride/transit centers, perhaps in collaboration with other Transit Agencies in the region (Metro RTA of Summit County, Laketran, Lorain County Transit, etc.)

3. Review capacity of existing park-n-ride lots and if necessary, program the costs for expansion in the capital budget. In particular, high-use lots in North Olmsted, Strongsville and Westlake should be reviewed. Continue working with the Ohio Department of Transportation to identify how RTA’s park-n-ride lots can support Cleveland Innerbelt Corridor reconstruction.

RTA’s North Olmsted Transit Center/Park-n-Ride Lot opened in 2003 and reached full capacity shortly thereafter. Expansion plans are underway.
3. Coordinate with Other Transit Agencies in the Region.

As growth continues in the neighboring counties, inter-county travel will continue to grow. It is essential for all of the region's transit authorities, e.g. Summit County’s Metro RTA, Lake County’s Laketran, Lorain County Transit, and Portage Area RTA, to work cooperatively to provide high-quality public transit. Coordination of transfer points, schedules, fare media, and services can improve transit’s overall ability to serve the entire region more effectively.

Objectives:

1. Convene interagency meetings as needed to discuss service and common transit issues.

2. Review and evaluate projects that may have regional transportation benefits such as park-n-ride locations, transfer policies, service opportunities, and transfer points.

3. Support other transit authority project proposals at the Metropolitan Planning Organization, State, and Federal levels.

4. Pursue opportunities to develop a more regional approach to public transit in Northeast Ohio to reduce duplication of expenses and services and to leverage regional expertise. For example, this would include participating in Cuyahoga County’s Strategic Plan for Senior Transportation.

4. Upgrade Existing Bus and Rail Passenger Facilities and Fleet.

Red, Blue and Green Line rapid transit stations were initially built between the 1930s and 1950s. Since 1980, ten Red Line stations and twenty-six Blue and Green Line stations have received major renovation, including Tower City. Previously renovated Red Line Stations are: Airport, West Park, Triskett, Cudell/West Boulevard, West 25th, E. 105th & Quincy, Superior, Stokes/Windermere, and West 65th St. EcoVillage. ADA station improvements have been made at University/ Cedar, Brookpark, Warrensville, and Green Road. However, some stations are past their useful life. They require substantial reconstruction to meet current ADA and safety requirements, and to provide an attractive image for the riding public. Red Line stations at W. 117th, Puritas/W. 150th, Brookpark, University/Cedar and E. 120th St. and Blue/Green Line stations at Shaker Square, E. 93rd/Woodhill and Lee/Van Aken are slated for major improvements next. General station upgrades are recently completed or underway at several other Blue/ Green line stations like E. 116th St. and Drexmore.

These investments will increase the attractiveness of RTA’s facilities and enhance the image of our services. RTA will also continue to modernize its bus and rail fleet. With both rail fleets at their mid-life, planning the replacement of the fleet is essential given the possible capital cost.
4. Upgrade Existing Bus and Rail Passenger Facilities and Fleet. – continued-

RTA must decide if the acquisition of a uniform fleet of new Red and Blue/Green Line rail cars would be more cost effective than maintaining two separate fleets, given the number of facilities that would require modification. The size of RTA’s future fleets and facilities must also be more closely scaled to the amount of funds it can reasonably expect to receive in the future for rehabilitation, operations, and maintenance.

Additionally, RTA is designing improvements to the transit waiting environment at transit stops throughout the service area. A pioneering Transit Waiting Environments project is underway in Cleveland Heights. Other TWE projects will be implemented over time.

Objectives:

1. Expedite the Station Rehabilitation program as outlined in the ADA Key Station Plan and contained in the Capital Improvement Plan.

2. Review needs of all stations and complete maintenance/renovation plans for those stations that are not covered by ADA or need rehabilitation prior to their ADA deadline. Create a Comprehensive Preventive Maintenance Program to keep RTA’s stations and facilities in a good state of repair.

3. Continue the Bus Fleet Improvement Program (BIP) and Rail Vehicle overhaul Program as per the Capital Improvement Plan.

4. Establish an inter-divisional committee to review all aspects of fleet replacement and plan for the replacement of the rail fleet, specifically, vehicles and the cost implications on the Capital Improvement Plan.

5. Actively pursue Transit Waiting Environments (TWE) opportunities in partnership with municipalities, local development corporations and private businesses. Coordinate the TWE and Arts-In-Transit programs to the greatest extent possible.

5. Support Others on Transportation Planning Projects and Issues.

RTA must continue to work with ODOT, Cuyahoga County, the City of Cleveland, all other municipalities in the County, local development corporations, planning commissions, et al. The purpose of this effort is to ensure the needs of public transit are addressed in planning efforts of others and not precluded. Examples include Cleveland’s Lakefront and Citywide Plans, the Innerbelt Study, Crocker Park in Westlake, and the Shaker Heights Strategic Investment Plan. Supporting Cleveland’s initiative for 500,000+ residents by 2010 is another example of an important RTA partnership contribution.

Objectives:

1. Continue to represent RTA issues on the various committees for on-going projects such as the Innerbelt Study, the Lakefront Plan, Opportunity Corridor, etc.

2. Continue strategizing on what RTA divisions and/or departments take the lead on the various project planning efforts.

3. Proactively promote RTA in projects at the City, Region, and State level. Become more active in transit alternative planning in NOACA; take full advantage of NOACA’s Regional Transportation Investment Policy transit planning section, requiring transit to be considered in all major investments.

4. Continue the close coordination of RTA Paratransit service plans with the Countywide Senior Planning and Transportation initiative. Minimize duplication of services and maximize efficiencies to seniors creating a comprehensive network. Also continue to support Cuyahoga County’s Work Access Transportation Program.
6. Complete the Euclid Corridor Transportation Project (ECTP). Investigate Bus Rapid Transit in other areas.

This hallmark project will increase the efficiency and enhance RTA’s service network in the most heavily traveled corridor in the system. The land use and economic development generated by this project will ensure the growth of this corridor and become a national example of the link between land use and transit service.

RTA has other corridors that may benefit from such service, however with less investment in roadways or streetscapes. The service levels, population, and density along portions of major arterial roads like Broadway, Clifton, Detroit, Lorain, and Mayfield may be better served by a bus rapid transit-like operation. Increasing the quality and speed of the service can increase ridership in these areas. RTA should study these corridors and others to determine the feasibility of significant, yet cost-effective, service enhancements.

Objectives:

1. With the ECTP Full Funding Grant Agreement now in place, complete the project by 2008.

2. Review high-density bus service corridors as potential candidates for BRT-like services, e.g. increased service frequencies all day, strict no parking enforcement in bus stops and curb lanes during rush hour/special events; traffic signal priority, off-board fare payment, etc.

Euclid Corridor Transportation Project renderings; project completion is slated for 2008.
7. **Pursue Joint Development and Transit Oriented Development Projects (TOD).**

RTA has been working on TOD projects for years. Westlake’s Crocker Park, Cleveland Heights’ Severance Town Center, Tower City and CEOGC’s Head Start Center at the Louis Stokes Station at Windermere are examples. **TOD should be widely promoted across the region, especially in places like Chagrin Highlands.** All rail station renovations are being planned collaboratively with the active involvement of local development corporations, planning agencies, and developers to enhance the neighborhoods and to increase the vitality of the transit station. Station designs should include land use and development planning that is consistent with the land use and zoning of the area. Station designs should also help increase housing density and expand commercial activity directly adjacent to transit stations. Creating redevelopment opportunities near RTA stations will help meet the demand for urban housing while promoting easy access to transit, resulting in higher RTA ridership.

**Objectives:**

1. Create a development strategic priority plan for RTA/TOD sites.

2. Update joint development procedures used within RTA to streamline the process and enable RTA to respond to private developers in a more timely manner without violating any state, federal guidelines, regulations, statutes, or procedures; integrate station planning efforts.

3. Promote and maximize the benefits of RTA’s Location Efficient Mortgage® (LEM) program, called The Smart Commute Initiative.

*(Location Efficient Mortgage® is a registered trademark of the Institute for Location Efficiency, a California Not-For-Profit organization).*

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**Kamm’s Youth Education Center**

Youth center proposed for the area adjacent to RTA’s West Park Red Line Station.
8. **Invest in Capital Expansion of RTA System Elements that are Cost-Effective and Increase Ridership and Market Share.**

RTA has studied the extension of the Red Line into Berea, the Blue Line into Chagrin Highlands, and the extension of the Waterfront Line. The Southwest Corridor Study reviewed extension of the Red Line to serve Hopkins International Airport and surrounding business parks. An Intermodal Hub Study analyzed the site of a Greyhound/Amtrak intercity bus/rail hub to serve the area. Commuter rail has also been studied extensively by the region, and would be incorporated into this hub as well. Although these projects require significant resources to develop, they still represent important opportunities for RTA. Ridership forecasting models indicated that, while a Red Line extension into Berea would not make economic sense, a Red Line spur to the Hopkins Car Rental campus would gain a significant ridership base at a modest cost. Yet, the uncertainty of the future Hopkins master plan creates uncertainty for this transit project. A possible Blue Line extension, with branches to Warrensville Heights and/or North Randall, would only make sense if planned land use and development is transit friendly. Waterfront Line potential extension planning should be completed in concert with Cleveland’s Lakefront Plan.

These expansions may help RTA reach new ridership markets to its benefit. But projects must be selected carefully to maximize the investment and outcome to RTA.

Objectives:

1. Review planning projects that have been completed and rank in priority of cost-effectiveness and value-added to GCRTA.

2. Develop list of potential projects with low-cost alternatives that may assist in creating new market segments for GCRTA to serve.

9. **Invest in Technology Upgrades to Assist in System Performance.**

Strategic investment in technological advances such as GIS, AVL and other technology that will upgrade the efficiency of RTA’s service product would greatly enhance RTA’s service delivery ability. This will also enhance communication of transit information to customers. Such investment should be strategic and cost effective as to provide the best product for the expense. RTA should continue to explore and deploy state-of-the-art technology systems.

Objectives:

1. Investigate innovative methods to use existing technology to increase efficiency and service delivery.

2. Invest moderately in obtaining data and information that assists GCRTA in making good decisions on future projects and opportunities.
9. **Invest in technology upgrades to assist in system performance.** – continued -

3. Investigate and invest in signal prioritization programs with communities in areas where transit would benefit from increased travel speeds. Ensure that NOACA-funded signal projects include transit prioritization.

4. Expand the incorporation of Green Building (LEED) techniques/applications in RTA facilities and projects.

5. Expand RTA’s real-time passenger information electronic sign network throughout the region.

10. **Configure the Downtown Bus/Rail Network and Interface to Achieve a Proper Downtown Distribution System.**

Downtown Cleveland has always suffered from a poor distribution system serving the Central Business District (CBD). A single main rail station and inefficient road and development patterns have been main causes. Over the years, RTA has struggled to provide loop bus services, over-lapped bus routes, etc. all to more evenly distribute passengers to their downtown destinations. With the advent of the Euclid Corridor Transportation Project (ECTP) service network, it is essential that RTA work with the business community and its services to provide high-quality transit access throughout the CBD.

Objectives:

1. Complete the downtown bus network planning efforts underway to more efficiently serve the central business district, including the emerging tourist and entertainment venues.

2. Complete the bus network planning necessary for ECTP and the East Side and West Side Transit Centers.

3. Continue reviewing existing bus network to ensure new downtown residents have adequate reverse commute services.

*RTA is investigating use of Trolley Vehicles to replace downtown Loop Buses*  
*ECTP Transit Zone Vehicle Stops and Routes*
Chapter 2. Demographic and Market Analysis

Demographic Analysis

Population

The U.S. Bureau of the Census figures for the year 2000 showed an overall net regional population increase of 1.0% over the 40-year period from 1960 – 2000. Despite the slight population increase, the population of Cleveland and Cuyahoga County have continually been decreasing as a result of out-migration from the urban core. The population of the five counties is still 7% lower than its peak in the 1970 Census. Detailed analysis of this data shows that natural increase in population due to births and deaths is negated by net out-migration from the region. The flat growth over 40 years (0.025% annually) indicates that increases and decreases of population within jurisdictions do not denote regional growth or decline, but instead, a shifting of population from community to community.

Figure 2.1: Regional population by county, 1960-2000  

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<td>2,173,734</td>
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<td>2,148,143</td>
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The City of Cleveland and Cuyahoga County’s loss of population, coupled with the gain in the surrounding counties, reveals this regional shifting of population. Comparing the 1960 Census with the 2000 Census, Cleveland’s share of the regional population (and overall population) has been reduced by almost half, while Cuyahoga County’s share has witnessed a 12.6% decrease. This significant share of the regional population has been redistributed to the other four counties in the region, with Medina County gaining more than half of the total growth. Every county except Cuyahoga has had a higher share of the regional population with each successive Census since 1960. The City of Cleveland has also witnessed a dramatic population loss over the same time period.

Despite the significant population loss from the City of Cleveland and much of Cuyahoga County, the population of GCRTA’s service area has remained relatively constant over the past 20 years. Studies have shown that population leaving RTA’s service area has tended to locate in counties adjacent Cuyahoga County. Coupled with this trend, is the ever-increasing amount of inter-county and suburb-to-suburb travel. The amount of
traffic to and from major employment centers on the urban fringe have resulted in trip patterns that are much different from the suburb to downtown traffic from 40 years ago.

Figure 2.2: Cleveland/Cuyahoga share of regional population, 1960-2000

Population Projections

Recent projections by the Ohio Data Users Center and NOACA, based on Census data, suggest a continued increase in Ohio population. This increase is results mostly from people moving to Ohio from elsewhere. The following six charts provided by NOACA illustrate trends and projections at the state, region, and county level. While the Northeast Ohio region’s population will slightly increase to reflect state-level projections by 2030, Cuyahoga County’s share of the regional population will continue its historical decline.

In the first two graphs, Ohio Population and NOACA Population, there are multiple trend projection lines. These reflect earlier and more current projections by the Ohio Data User’s Center (ODUC). They also reflect the NOACA compact future land use projection assumptions, meaning that NOACA anticipates future growth will be more concentrated in the region’s core, including along the Euclid Corridor. The NOACA population projections tend to be more conservative than ODUC’s.

The pie charts show another representation of Cuyahoga County’s population share of the region, and how it is expected to approach 61% by 2030.
Ohio Population

NOACA Population
Cuyahoga County Share of Regional Population: 1970 - 2030

Distribution of Regional Population: 1970

- Cuyahoga: 74%
- Geauga: 11%
- Lake: 8%
- Lorain: 3%
- Medina: 4%
Distribution of Regional Population: 2000

Distribution of Regional Population: 2030
Households

The City of Cleveland, the Cleveland region, and the nation as a whole are experiencing a long-term trend of declining household size. A greater number of people live alone or in smaller households than they did 40 years ago. At the same time, the number of households has increased more than 40% since 1960. Compared to the total population growth of about 1% over 40 years, the number of households has increased by 36%. Even when the population dropped by 150,000 in the Cleveland region, the number of households increased by more than 60,000 from 1970 to 1980. The City of Cleveland’s share of the region’s households and household population declined from 1960 to 2000, but it was not as pronounced as the decline of its population share.

Figure 2.3: Regional household number, size, and population, 1960-2000

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<tr>
<td>City of Cleveland # of Households</td>
<td>269,891</td>
<td>248,280</td>
<td>218,499</td>
<td>199,617</td>
<td>190,638</td>
</tr>
<tr>
<td>Regional # of Households</td>
<td>627,555</td>
<td>723,218</td>
<td>785,220</td>
<td>808,426</td>
<td>853,165</td>
</tr>
</tbody>
</table>


Another startling trend in the size of households is that at the beginning of the time period being analyzed; the size of households within the City of Cleveland was much smaller than those in the surrounding suburban communities. Since 1960, the size of households in Cleveland has evened off with those in surrounding communities.

GCRTA is continuing to serve smaller and smaller households. The number of people in a household has decreased, while the number of single-parent homes has drastically increased. Increasing the density of residential development in areas already well-served by transit should be a top priority for the region. While more dense residential development is not always synonymous with apartments or multi-unit dwellings, a variety of mixed land uses near major transit lines and transfer points can potentially make public transit a more viable option.

School Enrollment

GCRTA has school enrollment data from 1975-2000 for the entire region. Approximately 18% of the persons in the region are enrolled in school. School enrollment declined, along with regional population, from 1975 – 1985, and continued to decline each year until 1989. Since 1990, school enrollment in the region has slowly increased with the exception of the year 2000. As enrollment rises and falls, its fluctuations mirror the total population, as evidenced by enrollment remaining almost constant at 18% of the population.
Historically, GCRTA has always served a significant portion of student and student-related travel. RTA has often formed partnerships with various school districts to serve student travel, including a new agreement to carry larger numbers of Cleveland Municipal School District students. During the course of the past year, GCRTA initiated the "U-Pass Program" for students at Case Western Reserve University. Institutions have a consistent amount of people in a relatively small area, moving in and out on a regular basis. The enrollment in K-12 has increased since the middle of the 1990s and further attempts are being made to gain additional riders from institutions of higher learning. For example, the 16,000 students at Cleveland State University are considering joining RTA's U-Pass program.

**Employment**

Between 1970 and 1999, overall regional employment increased 25%, although the majority of those new jobs were not located within the City of Cleveland or Cuyahoga County. The major event in this timeframe was the economic downturn that occurred between 1978 and 1983, when the regional economy lost more than 80,000 manufacturing jobs. During this same time period, the service industries emerged as the largest source of jobs in the nation and the region. The manufacturing decline and services growth continues to the present day. In 1970, manufacturing accounted for 31% of the regional employment and services provided 18%. By 1999, manufacturing was 16% and services was 32%.

Throughout the 1990s, the region witnessed an increase in the total number of employees, as the nation did as a whole. However, where was this employment growth located? A more detailed analysis below shows an increase of 12.4% in the Cleveland region, a 9.8% increase in Cuyahoga County, and a 3.9% increase in the City of Cleveland.
Despite some of the trends discussed earlier, the City of Cleveland has witnessed a dramatic change in the local economy, as the nation has as a whole. Cleveland has grown in some major service industries, as well as in public-sector administrative employment. Health-care providers, particularly those around University Circle like University Hospitals and The Clinic, also continue to experience job growth.
Looking at trends for the region surrounding RTA’s service a similar picture is portrayed. (Source and analysis for Figures 2.7 through 2.9: Council of Economic Opportunities of Greater Cleveland, based on Ohio Department of Job and Family Services ES-202 Data)

Figure 2.7 Cuyahoga County Employment Trends, (a) Total, (b) Manufacturing and (c) Non-Manufacturing

<table>
<thead>
<tr>
<th>(a) Cuyahoga County Total Employment Trends</th>
<th>2001-2002 First Quarter Data, Cleveland &amp; Suburbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>JURISDICTION</td>
<td>1Q 2002 JOBS</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleveland</td>
<td>287,608</td>
</tr>
<tr>
<td>Suburbs</td>
<td>513,416</td>
</tr>
<tr>
<td>Cuyahoga County</td>
<td>801,024</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(b) Cuyahoga County Manufacturing Employment Trends</th>
<th>2001-2002 First Quarter Data, Cleveland &amp; Suburbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>JURISDICTION</td>
<td>1Q 2002 JOBS</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleveland</td>
<td>31,964</td>
</tr>
<tr>
<td>Suburbs</td>
<td>76,903</td>
</tr>
<tr>
<td>Cuyahoga County</td>
<td>108,867</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(c) Cuyahoga County Non-Manufacturing Employment Trends</th>
<th>2001-2002 First Quarter Data, Cleveland &amp; Suburbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>JURISDICTION</td>
<td>1Q 2002 JOBS</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleveland</td>
<td>255,644</td>
</tr>
<tr>
<td>Suburbs</td>
<td>436,513</td>
</tr>
<tr>
<td>Cuyahoga County</td>
<td>692,157</td>
</tr>
</tbody>
</table>

As seen in Figure 2.7(a), of the 752,272 jobs in Cuyahoga County 278,456 of them are located in the city of Cleveland while the other 473,816 are in the suburbs. This means that 37% of the jobs in Cuyahoga County are located in the city of Cleveland. That is actually a little higher than it was in 2002, since a large majority of the jobs lost in Cuyahoga County during the 2000-2004 recession were lost in the suburbs, not in the city.

In Figure 2.7 (b) a large majority of the high wage manufacturing jobs in Cuyahoga County are also located out in the suburbs. Of the 93,173 manufacturing jobs that we still have left, only 29,525 of them are located in the city of Cleveland. Thus, only 32% of our manufacturing jobs are in Cleveland, with the other 68% being located out in the suburbs. Of the 659,099 non-manufacturing jobs in Cuyahoga County seen in Figure 2.7 (c), only 248,931 of them are in the city of Cleveland. Thus, 38% of non-
manufacturing jobs are in the city of Cleveland, with the other 62% located out in the suburbs.

Figure 2.8 Cleveland-Akron-Lorain-Elyria CSA Total Employment Trends 2000 – 2004 Third Quarter Data, Eight Counties

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medina</td>
<td>53,548</td>
<td>53,316</td>
<td>54,340</td>
<td>56,531</td>
<td>57,846</td>
<td>4,298</td>
<td>8.0%</td>
</tr>
<tr>
<td>Portage</td>
<td>52,749</td>
<td>51,196</td>
<td>52,702</td>
<td>53,402</td>
<td>53,702</td>
<td>953</td>
<td>1.8%</td>
</tr>
<tr>
<td>Geauga</td>
<td>34,053</td>
<td>33,612</td>
<td>33,100</td>
<td>33,434</td>
<td>34,358</td>
<td>305</td>
<td>0.9%</td>
</tr>
<tr>
<td>Summit</td>
<td>265,817</td>
<td>259,405</td>
<td>260,084</td>
<td>257,884</td>
<td>263,294</td>
<td>-2,523</td>
<td>-0.9%</td>
</tr>
<tr>
<td>Lake</td>
<td>101,932</td>
<td>98,097</td>
<td>96,868</td>
<td>97,612</td>
<td>98,840</td>
<td>-3,092</td>
<td>-3.0%</td>
</tr>
<tr>
<td>Ashtabula</td>
<td>35,368</td>
<td>33,333</td>
<td>34,363</td>
<td>33,282</td>
<td>33,928</td>
<td>-1,440</td>
<td>-4.1%</td>
</tr>
<tr>
<td>Lorain</td>
<td>105,067</td>
<td>99,104</td>
<td>99,182</td>
<td>99,736</td>
<td>100,740</td>
<td>-4,327</td>
<td>-4.1%</td>
</tr>
<tr>
<td>Cuyahoga</td>
<td>804,287</td>
<td>779,902</td>
<td>761,093</td>
<td>749,699</td>
<td>744,336</td>
<td>-59,951</td>
<td>-7.5%</td>
</tr>
<tr>
<td>6 Counties</td>
<td>Cleveland PMSA</td>
<td>1,134,255</td>
<td>1,097,364</td>
<td>1,078,946</td>
<td>1,070,048</td>
<td>-64,207</td>
<td>-5.7%</td>
</tr>
<tr>
<td>7 Counties</td>
<td>7 Crain's Counties</td>
<td>1,417,453</td>
<td>1,374,632</td>
<td>1,357,369</td>
<td>1,353,116</td>
<td>-64,337</td>
<td>-4.5%</td>
</tr>
<tr>
<td>8 Counties</td>
<td>8 Counties CSA</td>
<td>1,452,821</td>
<td>1,407,965</td>
<td>1,391,732</td>
<td>1,387,044</td>
<td>-65,777</td>
<td>-4.5%</td>
</tr>
<tr>
<td>88 Counties</td>
<td>State of Ohio</td>
<td>5,468,473</td>
<td>5,354,336</td>
<td>5,290,826</td>
<td>5,250,625</td>
<td>-217,848</td>
<td>-4.0%</td>
</tr>
<tr>
<td>All USA Counties</td>
<td>United States</td>
<td>132,450,000</td>
<td>131,871,000</td>
<td>130,559,000</td>
<td>130,253,000</td>
<td>-323,000</td>
<td>-0.2%</td>
</tr>
</tbody>
</table>

Figure 2.9 Cleveland-Akron-Lorain-Elyria CSA Manufacturing Job Trends 2001-2004 Second Quarter Data, Eight Counties

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Geauga</td>
<td>9,827</td>
<td>9,347</td>
<td>8,917</td>
<td>9,540</td>
<td>-287</td>
<td>-2.9%</td>
</tr>
<tr>
<td>Ashtabula</td>
<td>9,278</td>
<td>9,246</td>
<td>8,681</td>
<td>8,666</td>
<td>-612</td>
<td>-6.6%</td>
</tr>
<tr>
<td>Portage</td>
<td>13,355</td>
<td>12,392</td>
<td>12,151</td>
<td>12,204</td>
<td>-1,151</td>
<td>-8.6%</td>
</tr>
<tr>
<td>Medina</td>
<td>10,681</td>
<td>10,053</td>
<td>9,821</td>
<td>9,616</td>
<td>-1,065</td>
<td>-10.0%</td>
</tr>
<tr>
<td>Summit</td>
<td>42,270</td>
<td>36,787</td>
<td>37,505</td>
<td>37,518</td>
<td>-4,752</td>
<td>-11.2%</td>
</tr>
<tr>
<td>Lorain</td>
<td>24,728</td>
<td>22,669</td>
<td>22,038</td>
<td>21,443</td>
<td>-3,285</td>
<td>-13.3%</td>
</tr>
<tr>
<td>Lake</td>
<td>25,071</td>
<td>22,639</td>
<td>21,308</td>
<td>21,573</td>
<td>-3,498</td>
<td>-14.6%</td>
</tr>
<tr>
<td>Cuyahoga</td>
<td>106,008</td>
<td>96,460</td>
<td>90,805</td>
<td>89,150</td>
<td>-16,858</td>
<td>-15.9%</td>
</tr>
<tr>
<td>6 Counties</td>
<td>Cleveland PMSA</td>
<td>185,593</td>
<td>170,414</td>
<td>161,570</td>
<td>159,988</td>
<td>-25,605</td>
</tr>
<tr>
<td>7 Counties</td>
<td>7 Crain's Counties</td>
<td>231,940</td>
<td>210,347</td>
<td>202,545</td>
<td>201,044</td>
<td>-30,896</td>
</tr>
<tr>
<td>8 Counties</td>
<td>Cleve/Akr/Lor CSA</td>
<td>241,218</td>
<td>219,593</td>
<td>211,226</td>
<td>209,710</td>
<td>-31,508</td>
</tr>
<tr>
<td>88 Counties</td>
<td>State of Ohio</td>
<td>942,885</td>
<td>882,555</td>
<td>838,386</td>
<td>824,731</td>
<td>-118,154</td>
</tr>
<tr>
<td>All USA Counties</td>
<td>United States</td>
<td>16,185,000</td>
<td>15,195,000</td>
<td>14,420,000</td>
<td>14,404,000</td>
<td>-1,781,000</td>
</tr>
</tbody>
</table>

Figures 2.8 and 2.9 present similar job data as in Figure 2.7 but with a focus on comparing local, regional, state and national employment figures. Over the long run there has been growth in local employment within the county. But Northeast Ohio's growth is continuously below the growth in the rest of Ohio. Further, Ohio's job growth has been below the national average for an all-time record 109 months in a row for the last nine years. A very troubling statistic is that Cuyahoga County has lost nearly 8% of its total jobs during the last four years. Even worse, it lost nearly 16% of manufacturing jobs just during the last three years. Amazingly however, RTA ridership has held steady and even shown a modest increase in the face of this fact, which reflects a payoff to investments in improved service quality and marketing.

Regional Income

Per capita income is defined as wage, salary, investment, pension and other income divided by total population. From 1970 to 1999, regional per capita income (in 1998 constant dollars) increased 53%. The decline over the 1978 – 1983 period corresponds with the regional employment decline, especially the loss of 80,000 high-paying manufacturing jobs noted earlier. The growth in income since 1983 is the result of steady employment increases over that time.

Figure 2.10: Regional per capita income, 1970-2000

Ohio’s job growth is not consistent across industries. The leading job growth industries are services and retail trade. Of the 650,000 new jobs projected for Ohio to the year 2006, the service sector is expected to add about 400,000 jobs or more than three-fifths of all job growth. Retail trade will account for about another 120,000 jobs. Business and health services account for about two-thirds of the projected growth in the service sector. Eating and drinking places will account for over half of the growth in retail trade.
Firms in low unemployment areas, in particular, will continue to have to be inventive to retain and attract new workers. Many areas of Ohio are faced with the geographic reality that a substantial portion of the jobless population lives in inner city areas, while the jobs may be in suburban areas, so that transportation becomes an issue.

**Freeway Lane Miles**

Over the past 40 years, the number of freeway lane miles in the region has increased from less than 250 miles in the year 1960 to more than 1,500 miles in the year 2000. During the year 2001, new freeway lane miles were under construction on I-71 in Medina and Cuyahoga County, and on I-90 in Cuyahoga County. Additional lane miles on I-90 in Lorain County have been constructed; but their opening has been delayed for safety reasons until completion of the project in Cuyahoga County.

The greatest increase in new freeway lane miles occurred in the years between 1960 and 1980. This means that 85% of the current freeway lane mileage was established by 1980. Only 7% of the current freeway lane mileage system is less than 10 years old. The age of the region’s freeway system has serious implications, as the pavements and structures require major rehabilitation (i.e. Innerbelt) and/or replacement after 20 years of use. As these lane miles approach the end of their useful life, funding for resurfacing and other repairs will be essential.

Figure 2.11: Regional number of freeway lane miles, 1960-2000

*SOURCE: U.S. Bureau of the Census, 2000*

The increase in the number of freeway lane miles has been occurring at a slower rate in every decade since the 1960s. This would suggest that the region’s amount of freeway infrastructure is approaching its maximum. Nonetheless, major infrastructure additions continue to occur and are being planned for, as with the I-271 express lanes and Harvard Road interchange, the Jennings Freeway, and lanes added/to be added along portions of SR 2, Interstates 71, 77, 90 and the Cleveland Innerbelt Project.
Annual Vehicle Miles of Travel

Computer models calculate regional estimates of average weekday vehicle miles of travel (VMT). Since monitoring every vehicle for every mile traveled within the region is impractical, NOACA uses travel demand models to estimate daily traffic volumes on a network of arterial and collector streets. These estimates are expanded to include all streets, and factored to provide annual figures.

Annual vehicle miles of travel have more than doubled in Northeast Ohio over the past 40 years. However, the rate of increase has slowed for the last 20 years, with the most dramatic decline occurring over the last 10 years. While VMT continues to rise, the lower percent increase may reveal a steadying of the miles traveled within the region. On the other hand, the drastic increase in the number of households with an automobile, the slowed growth of the freeway infrastructure, and the rapid development on the urban fringe have all resulted in more highly congested roads and more minutes spent in an automobile for work-related trips.

Figure 2.12/2.13: Regional per capita and annual vehicle miles traveled, 1960-2000


Fuel Consumption

GCRTA, with the assistance of the NOACA staff, estimates motor vehicle fuel consumption based upon the State of Ohio Department of Taxation data. Ohio distributes fuel taxes back to units of government, based on state regulations. Since this is the case, its usage can be estimated by converting tax distributions to the area back to gallons of fuel taxed. The resulting estimates can then be used with vehicle miles of travel (VMT) estimates to generate miles per gallon estimates. Estimates of vehicle miles of travel and fuel consumption are provided for 1980, 1990, and 2000.

In 1972, the first fuel shortage events since World War II occurred in the United States. As a result, Americans began to purchase smaller, more fuel-efficient vehicles. For several years in Northeast Ohio, the increase in VMT was offset by greater increases in fuel efficiency, resulting in decreasing fuel consumption. Around 1990, the fuel efficiency no longer offset increased travel and fuel consumption began to rise.
Volatile organic compounds (VOCs), commonly referred to as hydrocarbons, and oxides of nitrogen, both emitted from vehicles, react in sunlight on warm days to produce ozone, a gas that irritates the lungs and eyes and worsens pre-existing respiratory problems. While vehicle emissions relate to the vehicle miles traveled, the efficiency of the vehicle’s engine may reveal the most significant relationship. The Clean Air Act of 1970, and later amendments to it, required automobile manufacturers to make more efficient engines with respect to emissions of air pollutants. Changes in gasoline formulation were also required to further reduce emissions. Since the Clean Air Act, hydrocarbon emissions have decreased significantly, despite continued increases in vehicle miles traveled.

Beginning with the Clean Air Act driven designations in 1978, ozone levels in portions of Northeast Ohio, including the City of Cleveland, were classified as “Non-Attainment” of the National Ambient Air Quality Standard (NAAQS). The 1990 Clean Air Act Amendments led to the development of a new State Implementation Plan (SIP) for Ohio that included several traffic control measures. Unfortunately, stricter federal air quality standards has resulted in Northeast Ohio being declared in nonattainment for two pollutants regulated by the Clean Air Act: ozone and fine particulates (PM2.5). During 2005 NOACA is convening a public involvement process to assist in formulating regional recommendations for Ohio EPA to consider as it updates the SIP in order to attain federal standards for ozone and fine particulates.
Transit Ridership

GCRTA, created in 1975, grew in the number of trips every year for its first five years, largely as a result of deeply discounted fares and improved service coordination. The peak year for transit ridership occurred in the year 1980, with the ridership peaking at 130 million trips. Since 1980, annual ridership has been cut in half, with a 20% decrease from 1982 to 1983. Ridership reached a low point in 1995, with a little more than 58 million trips per year. After 1995, transit ridership increased for two years, rising to almost 61 million in 1997. In 2003 (54.5 million trips) and 2004 (55.5 million trips) RTA again experienced two consecutive years of ridership growth, the first time since 1995.

Figure 2.17: Annual RTA total ridership,
Source: RTA 1976-2004 Annual Reports

Despite the leveling of the number of passengers over the last 10 years, RTA has witnessed a growing percentage of their riders being without an automobile.

As one of six transit operators in the region, GCRTA carries 98% of all the transit trips. Increases in transit ridership in Lake, Lorain, and Medina counties do not greatly offset the trends established by GCRTA. Overall, the number of transit riders has now been steady for the last 10 years. Future RTA projects, such as the Euclid Corridor and new transit center/park & ride lot expansions, will support the increased ridership initiative.
Average Work Trip Length and Travel Time

The Census Bureau has recorded time and distance work trip data since 1970. Trips to and from work cause the most recurring congestion. Work trips in Northeast Ohio increased in length and shortened in travel time for at least the last 30 years. The trend in shorter travel times for work trips serves as an indicator of the small amount of congestion in the region up to 1990. Over the past 10 years, however, the travel times to work have skyrocketed, indicating more congested freeways and thoroughfares or shorter work trips. Although there is some evidence of the latter, the former is the primary reason for the skyrocketing work trip times.

Figure 2.18/2.19: Regional miles and minutes traveled to work, 1970-2000

SOURCE: U.S. Bureau of the Census, 2000 (Census Data for Miles in 2000 not available)

Conclusions

The region’s demographic, employment, and travel data all suggest further hardships for public transportation in Northeast Ohio. People and jobs are moving further and further away from the urban core, and automobile-focused development and travel patterns continue supporting these outward movements. As a result, it is simply not feasible for many people in outlying areas to utilize public transit. In addition, Northeast Ohio continues to feel the effects of a protracted economic recession. Nonetheless, in 2003 and 2004 RTA was able to post two consecutive years of ridership growth, which is a testimony to its successful efforts to provide quality service to customers.

RTA East 55th Street Rapid Transit Station existing area and renovation rendering.
Market Analysis

National and Local Trends

A major trend with similar manifestations at the national and local levels is greater car availability per person. As the US population grew by 23% from '69 to '95, average cars per household doubled. The number of households is increasing, but persons per household have been decreasing. Since contemporary standards include the expectation that a household will not only occupy a dwelling unit but will also have available at least one vehicle, we find vehicle availability on the rise.

Nationally, one can observe a decline in the number of car-less households, from 13 million in 1969 to 8 million by 1995. Americans are traveling more, over time, making about 145 million trips in 1969 and 379 million trips in 1995.

As of 1997, about 16 million of the nation’s 100 million households had no more than a poverty-level income. But 4.6 million of the 16 million had no motor vehicle available to the household, and accounted for 48% of the American populace who could be considered transit-dependent. About 2.9 million African-American households were numbered among the 4.6 million who lacked auto transportation, for a rate of 63%.

Accordingly, public transit agencies such as RTA cannot move completely away from their “social safety net” responsibilities and operate fully “as a business.” RTA will need to continue to serve a large number of customers who are socially and economically disadvantaged.

While the 1990 Census showed nearly 95,000 households as having no car, the most recent Census suggested that number was now about 72,000. In 1990, more than 15% of the County’s households did not own an automobile; the current share is just under 12%.

Our society now shows an unsurprising, but sometimes overlooked trend: women’s work trips are increasing. Two-thirds of adult women are now in the labor force, up from 37% in 1969. And, about 85% women drive now compared with 61%, 25 years ago. About 60% of RTA’s riders are females.

Other national trends are also worthy of note as RTA plans its annual marketing activity. Taking into account the whole United States, transit accounts for 1.8% of all trips and 2.1% of all person miles of travel. Today, about 5.1% of American workers travel to work by transit. This varies dramatically by State, with Ohio ranked 22nd as of the 2000 Census. Less than 3% of Ohio’s workers use transit to get to work—trailing such States as Utah and Alaska as many as 27% in New York State and 35% in the District of Columbia do so.

By the 1990 Census, 50,290 workers residing in Cuyahoga County used public transit to get to work—a 3.6% share. At that time, about 543,000 used a private car, truck, or van for work trips. The transit share has now dropped to 3.1%, or about 42,000 workers. This contrasts with 575,000 now driving to work. Population forecasters see the share dropping even more—to 2.6% in the next five years.
In 1998, there were 211 million registered vehicles but only 186 million licensed drivers, in the U.S.A.

Also continuing to climb is the average fixed cost of operating an automobile in the US. This factor largely reflects annual depreciation amounts and rises with a greater preponderance of newer and more expensive vehicles in the national “fleet.”
The variable cost associated with auto ownership is relatively constant on a per mile basis. But even here, we see an upturn from the neighborhood of nine cents in the early 1990’s to an 11-cent level today. Though validated statistics are not yet available, the fuel portion has undergone dramatic variability over the past four or more years.

Putting these together yields the result that for the average commuting American worker traveling 30 miles round trip for 250 days a year will today spend more than $5,300. That same travel pattern in 1992 would have cost $700 less annually.

Over about the same period, total US expenditures for public local bus and transit rose from nearly $17 billion at the decade’s outset to a peak of about $21 billion in 1995. National statistics indicate, however, that the nation’s overall spending on public transit has gone down both in current and constant dollars.

Shifting to the local demographic scenario, Cuyahoga County’s 2000 population was registered as 1,393,978, residing in 571,457 households (of which 354,615 are families), nearly 200,000 of who live at or below a poverty-level income. Median household income is estimated at $39,745 for 2001, up from $28,760 in 1990 and $33,500 in 1995. By mid-decade, median household income in Cuyahoga County is projected to pass $40,000. Considering the rise in single-person households, reductions in family households, and smaller cohorts under age 12, Per Capita Income will rise even faster than median household income. By 2006, Per Capita Income in the County could reach $31,000, up from $14,943 in 1990 and its current level of about $28,000.

Cuyahoga County residents’ median age is now 38, two years older than the 1990 figure of 36. Within five years, the County’s population will split into two equal halves on either side of the 40 year-old line. The area will see moderately fewer people enrolled in educational institutions. Whereas in 1990, 224,719 were enrolled in public and private primary and secondary schools, that number is now leveling off in the 222,000 range. College-student residents numbered more than 93,000 in 1990, but that figure now appears to be leveling off at the 88,000 for the remainder of the decade.
On the other hand, Cuyahoga County will improve in average educational attainment. Larger shares of the population have and will have one or more degrees from institutions of higher education. More than 120,000 residents held undergraduate degrees (only) as of 1990, but that jumped to the present estimate of 168,000 and could go as high as 190,000 in another five years. Meanwhile, the complement of residents with graduate degrees rose from under 70,000 in 1990 to the current level of over 78,000 and an expected further jump to 82,000 by 1996. The area is getting better educated, with 18% holding one or more college degrees, and that share rising to nearly 20% in the next half-decade.

The County’s population is 53% female, 47% male. Racial and ethnic composition shifted through the past decade, with African-Americans showing a slightly higher share than in 1990—at 27%, whites at 67%, dual or multi-racial at 2%, and other races 4%. (“Other races” and multiracial categories have likely grown more as an artifact of different wording in the 2000 Census form compared with earlier versions and less from dramatic demographic shifts in the Cleveland area.) More than half (57%) of RTA’s riders are African-American.

Cuyahoga County can claim nearly as many motor vehicle registrations as people. Its 1.4 million residents have collectively registered 1,040,232 cars and light trucks, about 10% of the entire State’s (including the other 87 counties)—numbering 11,740,513. The County gained an average of about 14,000 registrations each year of the decade.

Figure 2.22: Cuyahoga County Car and Light Truck Registration (in thousands)

Source: 2000 RTA Market Research Report

But the County’s total population is not growing much at all, as reflected in the fluctuating but overall rather constant number of licensed drivers. An upturn was reflected in 2000, possibly the result of baby boomers’ children (the “baby boomlet”) reaching driving age.

The increasing local “fleet” of passenger vehicles, together with a lack of growth in licensed drivers, means that more vehicles (1.15 in 2000) are available per driver.
Increased vehicle traffic causes delays. In 1999, traffic delay in the Cleveland urbanized area was estimated at 36.8 million person-hours, associated with monetary losses totaling $665 million (ranking 28th among US urban areas) or about $350 per driver per year (ranking 46th). Traffic delay accounted for about 60 million gallons in wasted gasoline, putting the area 28th nationally.

Census and other survey data show travel time to work Cuyahoga County continuing to be reduced over time, even though both residence and employment are more dispersed and less densely concentrated. About 450,000 of the County’s active labor force—totaling about 575,000—have less than a 30-minute commute.
These lower ranks contrast with the area’s rank of 19 on the basis of population alone. Congestion is still an area transportation problem, but it is actually disproportionately mild relative to what is experienced in other metropolitan areas.

Another trend of interest is the increasing share of RTA passengers who report coming from homes where no vehicle is available. This share has been on a steady upturn over the decade. The overall number of riders has remained steady and the number of households without an automobile has decreased, so the trend shown below is a positive reality.

Figure 2.25: RTA Riders without Vehicles in Household, 1990-2000
Source: 2000 RTA Market Research Report

![Graph showing RTA Riders without Vehicles in Household, 1990-2000](image)

**RTA Research Highlights**

RTA conducts periodic surveys of three target audiences – current riders, potential customers, and the general public. The first group is surveyed while traveling RTA via the “on-board” survey. The other two groups are surveyed by telephone in their homes via the potential customer survey and the general public opinion survey. The surveys are intended to give RTA an inventory of the opinions shared by a variety of constituents, whether current customers or potential customers. The full results of these surveys are available from RTA's Marketing Department.

Also included in the appendix are the marketing objectives, utilizing the same general marketing segments as the surveys. The specific marketing segments were divided up into six pieces: current choice customers riding at least five days per week, current transit-dependent customers riding at least five days per week, other current choice riders, other current transit-dependent riders, potential customers, and the general public. Analyzing the market segments, some of the greatest concerns of current and potential customers included safety while on board, driver courtesy, security while riding, short travel time, and the on-time arrival of RTA. Some of the RTA attributes that current and potential customers do not place high on there list are the calling out of stops by the drivers, clean RTA shelters, buses, and rapids both inside and out, and the RTA management.
CONCLUSIONS

As this chapter has shown, RTA continues to face trends that have constrained transit ridership. This includes jobs and population moving beyond the easy reach of bus and rail lines, relatively low congestion and travel times on area roads, and relatively low automobile operating costs. Additionally, the local economy has also kept many out of the workforce, further reducing trips taken by transit.

While the factors influencing these trends are far beyond the control of any transit authority, RTA is working to increase its market share by improving service quality to retain riders and gain more choice riders, through its "Back to Basics" initiative. The Long Range Plan Strategic Initiatives in Chapter 1 are an outgrowth of this effort.

RTA has taken substantial public feedback through customer research and face-to-face sessions held by top managers at major RTA rapid transit stations like Windermere and Tower City. Public meetings on major transit initiatives, like the Euclid Corridor Transportation Project, have also provided feedback to RTA management on important issues. Steps to implement RTA's future plans will continue to draw upon ongoing customer research and feedback. Appendix C contains selected data on customer preferences that RTA is using to help direct its short- and long-term improvement plans.

In spite of the unfavorable trends discussed in this chapter, RTA remains the travel mode of choice for many residents and visitors to Cleveland and surrounding communities. RTA has dedicated itself to providing these customers with the best possible service.

Renderings of the renovated Puritas-West 150th Red Line Rapid Transit Station, projected to be under construction in 2007 and completed in late 2008.
Chapter 3. Service Analysis and Future Service Concepts

This chapter reviews GCRTA’s current service operations, discusses long-term service concepts, and highlights inter-county coordination between GCRTA and other transit service providers.

Service Performance

With about 670 buses, 1,500 passenger shelters, 8,400 bus stops, 100 routes and 1,600 route miles, GCRTA’s bus system carries over 80 percent of all transit riders in Cuyahoga County. It also carries the most riders of any Northeast Ohio transit system. In 2004, 44.8 million of RTA’s 55 million annual passenger boardings were on buses. With a fleet of over 100 rail cars, 34 miles of one-way track, and 52 stations, GCRTA’s rail lines logged over 7.7 million passenger boardings that same year.

GCRTA’s most productive routes serve densely populated areas, areas where automobile ownership levels are low, as well as places where suburban park-n-ride facilities are located. GCRTA’s top 10 productive routes based on boardings per in-service vehicle hour include 2-E. 55th-E. 79th, 6-Euclid, 10-E. 105, 22-Lorain, 30-E. 140-Hayden, 51F Drake-Howe, 246 – Westlake Park &Ride, 251-Strongsville Park & Ride and 326-Detroit-Superior. In terms of passenger boardings the top 10 routes are the 1-St. Clair, 6, 10, 14-Kinsman, 15-Union, 20-Broadview, 22, 40-Lakeview-Lee, 25-Madison and 326. In 2003, these high ridership routes carried about 50% of total boardings, or 20,499,796 rides (see Fig.3.1).

From 2000 to 2002 GCRTA’s performance trend by mode reflects the economic recession. Bus and rail passenger boardings declined and in response vehicle hours were reduced. However, in 2003 bus ridership began to recover and systemwide ridership increased in that year and the next. Rail passenger boardings increased in 2004 and the second consecutive year of total system ridership growth was posted.

Table 3.1 Passenger Boardings (Ridership): 1999-2004
Source: Service Planning, GCRTA

<table>
<thead>
<tr>
<th>Mode</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>48,239,753</td>
<td>49,140,405</td>
<td>45,393,260</td>
<td>41,885,766</td>
<td>43,606,112</td>
<td>44,897,012</td>
</tr>
<tr>
<td>Rail</td>
<td>9,823,152</td>
<td>9,404,634</td>
<td>9,359,859</td>
<td>8,054,661</td>
<td>7,297,414</td>
<td>7,779,709</td>
</tr>
<tr>
<td>Circulators</td>
<td>1,240,842</td>
<td>1,931,010</td>
<td>2,603,427</td>
<td>2,361,261</td>
<td>2,216,441</td>
<td>2,349,452</td>
</tr>
<tr>
<td>TOTAL</td>
<td>59,303,747</td>
<td>60,476,049</td>
<td>57,356,546</td>
<td>52,301,688</td>
<td>53,119,967</td>
<td>55,026,173</td>
</tr>
</tbody>
</table>

Table 3.2 Vehicle Hours: 1999-2003
Source: Service Planning, GCRTA

<table>
<thead>
<tr>
<th>Mode</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>2,050,396</td>
<td>2,066,665</td>
<td>1,827,252</td>
<td>1,756,909</td>
<td>1,745,915</td>
<td>1,706,292</td>
</tr>
<tr>
<td>Rail</td>
<td>183,660</td>
<td>177,517</td>
<td>171,759</td>
<td>146,263</td>
<td>137,807</td>
<td>143,126</td>
</tr>
<tr>
<td>Circulators</td>
<td>130,470</td>
<td>175,315</td>
<td>184,902</td>
<td>164,449</td>
<td>164,713</td>
<td>168,110</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,364,526</td>
<td>2,419,497</td>
<td>2,183,913</td>
<td>2,067,621</td>
<td>2,048,435</td>
<td>2,017,528</td>
</tr>
</tbody>
</table>

Systemwide, productivity or “boardings per vehicle hour” improved slightly because of improved bus service productivity; the vast number of passengers carried on bus outweighed the slight productivity declines with rail and community circulators. GCRTA continually examines and refines its services according to travel demands.
Circulators contribute about 5% of systemwide boardings. Due to the smaller ridership base, circulator ridership changes have minor impact on systemwide boarding counts. Since 1999, circulator passenger boardings increased 90% or 1.1 million riders, while vehicle hours increased 26% or 33,000 hours.

Figure 3.1

![Productivity by Mode: Boardings per Hour (B/VH)](chart)

Source: Service Planning, GCRTA

**Trip Purpose and Destination**

Commuting to and from work is the most common trip purpose. Twenty years ago, NOACA reported that 10.6% of all work trips within Cuyahoga County were on public transportation (1980 Census data). This figure declined to about 8% in 1990 and 6% in 2000. Almost 75% of trips on the Red Line, 63% of trips on the Blue/Green line, and 62% of bus trips, are work trips (1990 RTA Onboard Origin-Destination Passenger Survey). School trips are the second most common trip taken on GCRTA: 10.5% of the bus trips, 8.7% of the Blue/Green Line trips and 8.1% of the Red Line trips are school trips.

**Intra- and Inter-regional Trips**

Based on NOACA projections, between 1990 and 2020 there will be nearly an 8% increase in work trips, from 1.88 million to 2.03 million, in the NOACA region. During this time period the average number of daily work trips to downtown Cleveland is projected to decline by 11%. Similarly, there will be a 10% decline in trips to other locations in Cuyahoga County.

However, overall trips will increase to outlying counties, continuing a longstanding trend where population and jobs increasingly locate outside the regional core. Although fewer work trips will be made in and around downtown Cleveland and Cuyahoga County in the future, GCRTA can seek to capture a larger percentage of work trips. This issue is discussed later in this chapter.
Table 3.3 Comparison of 1990 and 2020 Projected Home-Based Work Trips

<table>
<thead>
<tr>
<th>To:</th>
<th>1990 Work Trips</th>
<th>2020 Work Trips</th>
<th>Difference</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown</td>
<td>134,225</td>
<td>119,291</td>
<td>(14,934)</td>
<td>-11.1%</td>
</tr>
<tr>
<td>Rest of Cuyahoga</td>
<td>828,409</td>
<td>747,586</td>
<td>(80,823)</td>
<td>-9.8%</td>
</tr>
<tr>
<td>Geauga</td>
<td>28,073</td>
<td>54,851</td>
<td>26,778</td>
<td>95.4%</td>
</tr>
<tr>
<td>Lake</td>
<td>115,652</td>
<td>175,014</td>
<td>59,362</td>
<td>51.3%</td>
</tr>
<tr>
<td>Lorain</td>
<td>121,612</td>
<td>125,478</td>
<td>3,866</td>
<td>3.2%</td>
</tr>
<tr>
<td>Medina</td>
<td>41,203</td>
<td>69,800</td>
<td>28,597</td>
<td>69.4%</td>
</tr>
<tr>
<td>Ashtabula</td>
<td>42,957</td>
<td>37,736</td>
<td>(5,221)</td>
<td>-12.2%</td>
</tr>
<tr>
<td>Portage</td>
<td>62,314</td>
<td>114,980</td>
<td>52,666</td>
<td>84.5%</td>
</tr>
<tr>
<td>Stark</td>
<td>197,471</td>
<td>220,861</td>
<td>23,390</td>
<td>11.8%</td>
</tr>
<tr>
<td>Summit</td>
<td>313,872</td>
<td>367,630</td>
<td>53,758</td>
<td>17.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,885,788</strong></td>
<td><strong>2,033,227</strong></td>
<td><strong>147,439</strong></td>
<td><strong>7.8%</strong></td>
</tr>
</tbody>
</table>

Source: NOACA

Future Service Concepts

**GCRTA Bus**

Cuyahoga County's transit network is likely to experience several changes within the next five years. Vast regions of GCRTA's service area have low passenger trip-density, which translate to expensive service. GCRTA therefore will need to focus on cost-effectiveness throughout the service area.

Today, downtown Cleveland bus service is extensive. Many bus lines follow independent routing, stops, and transfers in the downtown area, which are not always convenient. A more effective downtown distribution system for transit riders is being developed as part of the Euclid Corridor Transportation Project. Future service concepts will be based on the following general goals and objectives.

- GCRTA expects to reconfigure services in the Central Business District (CBD), with the following objectives:

  1. Improve the CBD bus network for travelers planning an intra-CBD trip. Many riders are not aware of their service options for intra-CBD trips.

  2. Increase travel convenience for passengers making intra-CBD trips from the Tower City Station or Public Square.

  3. Reduce unnecessary bus miles and hours from the CBD partly by feeding more bus routes to the rail system.

  4. Incrementally, redesign CBD service to complement the Euclid Corridor Transportation Project, including the Downtown Transit Zone and the two downtown transit centers.

- Seek opportunities to improve service to outlying employment sites that are not well served by transit. Explore additional private sector partnerships. GCRTA’s rail network, suburban van services and reverse-commute buses have begun to improve suburban job access, but more can be done.
• Move closer to the transit hub service concept, by anchoring more service at major activity centers. Expand GCRTA's network of transit centers/park & ride lots with new facilities. Possible locations to serve are the Parma/Parma Heights, Mayfield/Highland Heights and Brecksville/Broadview Heights areas. The I-77/I-80 interchange, Independence/Rockside Road and Oakwood Village/I-271 are other areas under consideration. Based on demand, routes serving these hubs could not only link urban areas with suburban job centers, but could possibly link suburban areas with one another.

The opportunity for suburb-to-suburb commute is possible only if private sector suburban employers purchase large blocks of transit passes. This is an ideal scenario for large groups of employees that use the same bus. Marketing and selling GCRTA's Commuter Advantage and U-Pass Programs is a good way to build markets for this type of service.

• Continue to develop alternative service concepts such as reserved-ride van service to outlying employment sites, flexible radio-dispatched bus service for the general public in low-density areas, and taxicab service to complement fixed-route and ADA Paratransit services.

GCRTA proposes to test flex-routes anchored at a transit center, shopping mall or other activity center to serve these locations of low density. In this scenario, a bus will depart every hour from the anchor point, returning no longer than 55 minutes later. Trip routing will depend on in-person requests from customers boarding at the anchor, and telephone requests from customers in the route’s designated service area. Service areas may be as large as 15-20 square miles. In-vehicle equipment will create and display the optimal vehicle routing to service these requests. The routing will be re-optimized each time a request is added, canceled or altered.

RTA’s proposed Euclid Corridor Silver Line Bus Rapid Transit Vehicle.
Bus Garage Consolidation
In the past, GCRTA’s network required more than 800 forty-foot buses to meet its service commitments, and four garages were required to house and maintain all vehicles. Currently, GCRTA only requires about 600 buses hence, three large garages (Triskett, Hayden and Harvard) with approximately 200 buses each will be adequate for daily bus operations.

GCRTA’s Paratransit facility on Euclid Avenue is operating at its capacity. The demand for Paratransit services continues to increase and a larger facility will be required to meet this growth. Both the size and location of Brooklyn Garage make it a good facility for the future Paratransit operations. GCRTA intends to re-configure Brooklyn Garage to accommodate Paratransit, Revenue, non-revenue vehicle maintenance, and the shelter cleaning operations.

The RTA Triskett District bus maintenance facility renovation will be completed in 2005, enabling RTA to consolidate four main garages into three and significantly reduce operating and maintenance expenses.
**Intercounty Transit Coordination**

GCRTA and five other transit providers across Northeast Ohio, including one private operator, installed bicycle racks on buses beginning in mid-2001. Participants include Brunswick Transit Alternative in Medina County, Laketran in Lake County, Lorain County Transit, Medina County Transit, and University Circle Inc. This has provided unprecedented intercounty bicycle access with public transportation.

*From the successful 2001 Rack-n-Roll bus bicycle rack pilot project involving a joint purchase by NOACA region transit systems using clean air funding, all new RTA buses have factory-equipped bicycle racks and its fixed-route fleet is 100% bike accessible.*

Future initiatives to improve coordination among adjacent county transit agencies will expand as technologies advance. Regional real-time bus arrival/departure information and regionally accepted pre-paid fare media are just a few of the concepts that could be explored in the future.

In the short-term, to the extent possible, schedules are being coordinated to minimize waiting time at intercounty transfer locations at the fringes of GCRTA's service area. Typically, these are locations where buses turn around, allowing convenient passenger connections to be made with adjoining county transit system buses.

**Major Travel Corridors and High Occupancy Vehicle Lanes**

Like most major metro areas, Greater Cleveland has developed around its major travel corridors. Developed areas first matured next to waterways and trails used by early settlers, then by state highways and railroads, and finally, by the interstate highways. GCRTA's buses use major arterial roads, highways and interstates to carry more than 80% of its passengers. The remainder are carried on rapid transit trains in separate and semi-separate rights-of-way.

If transit vehicles can avoid traffic conflicts, travel by transit can be made faster and more desirable. This concept has been integrated with the Euclid Corridor Transportation Project, which, for the first time, will give buses their own separate right-of-way on a major arterial street in Cleveland.
There are numerous other ways to give priority to transit buses on streets in order to speed their flow. Pittsburgh's transit buses use former railroad rights-of-way that have been converted to bus-only roads, called "busways." No commercial vehicles or private automobiles share these roadways, and passenger capacity is comparable to GCRTA's Blue and Green lines. In places like Houston, Seattle, Atlanta and Northern Virginia, buses operate in freeway lanes dedicated during rush hours only to multi-occupant vehicles, including vanpools and carpools. These are called High Occupancy Vehicle lanes, or HOV lanes. In some places, HOV lanes are being opened up to single-occupant vehicles for a fee, and are called HOT (High Occupancy Toll) lanes. GCRTA and ODOT have explored adding HOV lanes to area freeways in the past, and the Cleveland Innerbelt Study will update the findings of the earlier HOV studies.

**GCRTA Rail**

**System Upgrade**
Efforts to improve GCRTA's rail system are focused on upgrading and maintaining stations to modern standards, especially towards meeting federal Americans with Disabilities Act (ADA) standards. Running time and service reliability improvements are being achieved through track, power, and train control improvements. A railcar overhaul program is well underway to improve vehicle reliability, comfort and safety.

**Far-Side Blue/Green Line Stations**
Operationally, several key future improvements are being considered. One is preferential traffic signalization for transit. Another is a project to install far-side passenger stops to replace near-side stops at intersections along Shaker and Van Aken Boulevards. Far-side stops would be functionally superior to near-side stops in terms of reducing left-turn collisions. For example, the Lee Road/Shaker Boulevard stop was moved from near- to far-side with the Blue Green Line reconstruction in the late 1970s/early 1980s. Switching to far-side stops increases speed of operation and facilitates traffic signal preference for transit.

Any new far-side stop built would be ADA-compliant, and costs could be contained if life-cycle cost comparisons were made among various technologies for installing mini-high platforms, including prefabricated options. The far-side stops would likely be long enough for 2-car trains, but could be designed for expansion to a 3-car platform. There is no timeframe for the far-side transit stops at the present time.

**Universal Rail Vehicles**
Several studies have explored the idea of a new vehicle that is capable of operating on both high and low platforms. By eliminating the need for many transfers, this would increase travel convenience tremendously between the Red Line and Blue and Green Lines. Plans for a combined rail fleet would need to include rail station and shop facility modifications. Further, diesel self-propelled rail passenger vehicles capable of safely operating over the general railroad network have been contemplated.

As railroad tracks owned by Norfolk Southern and CSX become surplus, self-propelled diesel rail vehicles might prove to be a lower-cost option for extending the reach of the GCRTA rail system. Possibly, it may be more cost-effective to create dedicated Bus Rapid Transit rights-of-way where freight railroad service has been discontinued. These concepts would need further study before including them in this transit plan.
Commuter and Intercity Rail
Commuter rail is a passenger rail service serving multi-county regions via existing railroad network. Typically, average U.S. commuter rail trip lengths are 20 miles long, compared to 3-5 miles length for bus and rapid transit. GCRTA participated in commuter and intercity rail studies, contributing both technical and financial support. These studies have clearly illustrated that the multi-jurisdictional planning and coordination associated with commuter and intercity rail's governance, funding, and private-sector railroad issues are well outside GCRTA's current priorities.

In the long-term, GCRTA envisions that with more effective land use planning that is supportive of transit-oriented development, commuter rail and intercity rail may become a key part of rebalancing the region's transportation network. Ultimately, commuter rail might offer a viable travel alternative for longer distance inter-county trips, especially for the transit dependent, senior citizens, and others who cannot drive or choose not to.
New Customer Services and Amenities

Transit Preference at Traffic Signals
Signal preference is a key element of the Euclid Corridor Transportation Project's Bus Rapid Transit service. Traffic signals across the NOACA region are being upgraded using Federal clean air funds. With help from municipalities, NOACA and ODOT, this concept can be expanded further to improve the safety and efficiency of bus operations in major travel corridors. In addition, GCRTA is working with the City of Shaker Heights to upgrade traffic signals that will give the Blue and Green Line trains priority at grade crossings. This would reduce auto and train collisions. Also it would better communicate to motorists when trains are approaching. Signal indications will also restrict automobile turns across the tracks when trains are present. This will provide better collision protection while also reducing delays at passenger stops, allowing faster end-to-end travel times.

Passenger Waiting Environments and Service Information Projects
GCRTA continues upgrading major passenger facilities, such as rapid transit stations and has recently built new transit centers at key bus transfer points such as Maple Heights and Fairview Park. During 2003 and 2004 GCRTA carried out a study proposed by its Citizens Advisory Board to enhance waiting environments. The study determined that people would ride transit more often if travel times were competitive with the automobile and they could save money. It also found that customers wanted more amenities at stops including lighting, basic schedule information and additional shelters. In addition, advertising revenues were found to be an acceptable way to pay for these amenities. During 2005 GCRTA will be developing the partnerships needed to begin implementing the transit waiting environments study recommendations.

GCRTA is also making major advances in upgrading its trip planning and service arrival information. Twenty electronic message boards have been installed on the rail system. These provide next-train scheduled arrival times and news updates. Fifty electronic real-time bus arrival signs, tied to the Authority's satellite-based radio system, are being installed in key transfer points. And sometime soon a modern trip planning package will be available on GCRTA’s website, supplemented by an interactive voice response telephone system. GCRTA’s Paratransit scheduling system has also been upgraded to enable vastly more efficient trip planning, resulting in far fewer customer trip denials.

The Lee Road & Chagrin Boulevard streetscape project in Shaker Heights included making a number of bus stop improvements throughout the entire intersection. Modern passenger shelters will be added next.
Conclusions

GCRTA will continue to concentrate on cost-effective improvements to all services. It will also make prudent investments in upgraded and new facilities. Future, long-term investments will be targeted to improve operations and service to transit riders. New services and amenities will be considered based on demand, benefits, and funding availability. Key strategies for achieving RTA’s future goals include:

1. Improving basic bus and rail service;
2. Implementing Bus Rapid Transit and related corridor operational and safety improvements in Euclid Corridor and elsewhere (e.g. Advanced Pedestrian Signals);
3. Enhancing service through new technologies and vehicles, e.g. transit vehicle preference at traffic signals and global positioning satellite vehicle tracking;
4. Improving customer information and the waiting environment at transit stops.

In 2004 RTA purchased a new heavy-duty bus for its Community Circulator routes. The bus is pictured in front of RTA’s headquarters on West 6th Street.
Chapter 4  Capital Projects

Each year, RTA develops a Capital and Operating Budget for the coming year. The 2005 Operating budget General Fund Balance Analysis element reflects a multi-year horizon. Similarly, the Capital budget element consists of a Capital Improvement Plan (CIP) with a five-year horizon (2005-2009). Typically, the reliability of any revenue projections declines proportionally the farther out in time they go. With economic markets in a state of flux and the federal transportation funding authorization bill due for renewal in several years, the certainty of major capital project funding sources is low. Therefore, the Transit 2025 Long-Range Plan will reflect the exact same capital costs contained in RTA's current CIP, and will not address operating costs at all.

The 2005 - 2009 CIP is grounded in RTA's "Back to Basics" initiative. The budget premise is to provide cost-effective, superior service to customers while enhancing RTA's image and maintaining financial health. Funds authorized by this budget enable the acquisition, construction, replacement, repair and renovation of major capital facilities, vehicles and equipment. The CIP also includes major investments such as the Euclid Corridor Transportation Project, which will require significant Federal, State and local funding participation. Transit 2025 categorizes RTA's near-term and potential long-term projects as follows:

**Category I**  System Maintenance, Equipment, Efficiency, Other - Projects that are required to achieve and maintain the system in a state of good repair and comply with federal and safety standards and mandates. These include rehabilitation, replacement, and systems innovation projects to add new technologies and improve operating efficiencies.

**Category II**  System Expansion - Projects that significantly build RTA's capacity to serve more customers. These include transit centers, park & ride lots, the Euclid Corridor Transportation Project and future rapid transit extensions.

**Category III. Future Major Projects by Others/System Development** - Regionally-significant projects to RTA, the region, and/or the State, for which RTA resources may be contributed to assist these efforts by others. These are major transportation system enhancement projects such as RTA's rail rapid transit corridor improvements, and projects being pursued by others. These include the Cleveland Innerbelt Study, the Cleveland Lakefront Plan, I-77 Widening from SR 82 to Pleasant Valley Road and State Rte. 2 Improvements.

Category III major capital projects are important to be aware of because of their possible impact on RTA services. But until these projects are more fully defined in coming years, they will not be listed or costed out in this chapter.

Chapter 6 includes a graphic vision of RTA's future system in 2025, called the 2025 Sketch Plan. That chapter summarizes all the capital projects in Categories I-III, plus other potential projects like major travel corridor improvements, transit-oriented joint development and others not able to be included in RTA's fiscally-constrained 2005-2009 Capital Improvement Plan.
Tables 4.1 and 4.2 present RTA Capital Improvement Plan cost summary and major funding of capital projects by category in 2004 dollars for Transit 2025 projects in categories I and II above.

**Table 4.1 Capital Improvement Plan/Transit 2025 Cost Allocation by Fund**

<table>
<thead>
<tr>
<th>Fund</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine Capital</td>
<td>$2,008,900</td>
<td>$2,630,300</td>
<td>$2,518,300</td>
<td>$2,526,700</td>
<td>$2,814,700</td>
<td>$12,498,900</td>
</tr>
<tr>
<td>Asset Maintenance</td>
<td>2,197,000</td>
<td>1,851,000</td>
<td>2,062,500</td>
<td>2,008,000</td>
<td>2,094,000</td>
<td>10,212,500</td>
</tr>
<tr>
<td>RTA Development Fund</td>
<td>139,669,636</td>
<td>145,417,450</td>
<td>73,025,901</td>
<td>87,787,787</td>
<td>72,161,309</td>
<td>518,062,083</td>
</tr>
<tr>
<td><strong>System Total</strong></td>
<td>$143,875,536</td>
<td>$149,898,750</td>
<td>$77,606,701</td>
<td>$92,322,487</td>
<td>$77,070,009</td>
<td>$540,773,483</td>
</tr>
</tbody>
</table>

Source: GCRTA 2005 Operating and Capital Budget

**Table 4.2 2005 – 2009 Capital Projects by Category (Figures in thousands of dollars)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail Projects</td>
<td>$26,140</td>
<td>$32,537</td>
<td>$33,162</td>
<td>$25,330</td>
<td>$19,550</td>
<td>$136,720</td>
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<tr>
<td>Bus Garages</td>
<td>3,700</td>
<td>0</td>
<td>1,445</td>
<td>1,038</td>
<td>10,150</td>
<td>16,332</td>
</tr>
<tr>
<td>Transit Centers</td>
<td>3,760</td>
<td>14,454</td>
<td>4,668</td>
<td>27,260</td>
<td>12,000</td>
<td>62,142</td>
</tr>
<tr>
<td>Facilities Improvements</td>
<td>2,890</td>
<td>5,963</td>
<td>6,967</td>
<td>6,547</td>
<td>3,120</td>
<td>25,487</td>
</tr>
<tr>
<td>Buses</td>
<td>16,304</td>
<td>19,286</td>
<td>2,772</td>
<td>3,459</td>
<td>7,032</td>
<td>48,853</td>
</tr>
<tr>
<td>Equipment, Vehicles, Furniture</td>
<td>20,032</td>
<td>3,388</td>
<td>2,253</td>
<td>2,263</td>
<td>8,614</td>
<td>36,550</td>
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<tr>
<td>Bus Rapid Transit</td>
<td>44,444</td>
<td>47,666</td>
<td>4,736</td>
<td>4,821</td>
<td>0</td>
<td>101,667</td>
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<tr>
<td>Other</td>
<td>26,605</td>
<td>26,605</td>
<td>21,604</td>
<td>21,604</td>
<td>16,604</td>
<td>113,022</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$143,875</td>
<td>$149,899</td>
<td>$77,607</td>
<td>$92,322</td>
<td>$77,070</td>
<td>$540,773</td>
</tr>
</tbody>
</table>

Source: GCRTA 2005 Operating and Capital Budget
2010-2025 Major Investment Project Descriptions

This section briefly describes key RTA system expansion projects that would likely be constructed beyond the 2005-2009 RTA Capital Improvement Plan horizon. These projects would address future travel needs and may move ahead if the region anticipates positive growth over the long term. A number of potential expansion projects contained in earlier long-range plans, such as Parma Light Rail or the Green Line extension to I-271, are no longer included due to changing travel patterns or lack of community support. Three major projects, however, have been carried over from previous long-range plans. That is because they would serve future travel needs in the areas that the region has identified as priorities for important new development. These projects are:

- Red Line Extension - serving the Cleveland Hopkins Airport Economic Development Zone;
- Waterfront Line Extension - serving the Central Business District and Lakefront areas;
- Blue Line Extension - serving the Chagrin Highlands development area.

Although RTA's capital plan only shows costs for the Red Line project, the Waterfront and Blue Line projects will continue to be carried in the Long Range Plan. They can eventually programmed into the budget once key land use planning decisions are made for the areas that they would serve. Subsequent study funding will allow the Waterfront and Blue Line extension alternatives to be further refined. Additionally, RTA's capital plan sets aside funds to support the Metro RTA's continued study of commuter rail in the Canton-Akron-Cleveland Interregional Travel Corridor.

Waterfront Line Extension

This project would extend the Waterfront Line (WFL) from its current terminus near the Cleveland Municipal Parking lot near the Shoreway and E. 13th Street. The purpose would be to improve downtown access to RTA's rail system in downtown Cleveland. One alignment being considered extends the line southeast from its current terminus through Downtown past Playhouse Square and Tri-C's main campus, where it would reconnect with the Red/Blue/Green Line Joint Area in the vicinity of E. 30th Street and the Main Post Office.

This extension would "complete the loop" initiated by the Waterfront Line segment built in 1996 and help establish a more effective downtown transit distribution system. The initial alignment options would link the Euclid Corridor Transportation Project (ECTP), a BRT project, with the Flats, a new convention center, North Coast Harbor, Playhouse Square, Cleveland State University and Cuyahoga Community College.

The Alternative's Analysis study for this extension has been completed. The Locally Preferred Alternative (LPA) process has not started because of a major planning effort currently underway along the Lakefront. The Waterfront Line is a vital part of that plan and further study of its extension will proceed after the City comes to a consensus on what the Lakefront plan will be. The current City of Cleveland administration will assist in determining its future. Additionally, Cleveland's Lakefront Plan is considering extending the Waterfront Line east along the lakefront as far as East 88th Street and possibly out to Collinwood, where significant public and private sector development investments continue to be targeted. This extension is illustrated in the Chapter 1 section describing plans by others. This alternative was not included in RTA's Waterfront Line Extension study and would need a separate FTA-compliant evaluation.
Blue Line Extension

The Blue Line would be extended by approximately 2 miles in order to improve access for Clevelanders to new jobs being located in and around the 600-acre Chagrin Highlands development near Harvard Road and I-271 over the next 25 years. The proposed route leaves the current terminus at Warrensville-Van Aken following Northfield Road south, and then turns east along Mill Creek Pond Dr., traveling parallel to Harvard Road. The line would terminate somewhere between Richmond and Green Roads, depending upon the area's development plans.

The initial technical study work for this extension is completed. RTA is working with the stakeholders to build consensus on the alignments and to raise the capital required to fund preliminary engineering. RTA is also working with the City of Cleveland Administration and the existing property owners to plan a transit-oriented development on the Chagrin Highlands Industrial Park. It is anticipated that this effort would take 24 months once underway. The locally preferred alternative will not be selected until the community reaches consensus on future land uses and potential alignment(s) in the corridor, and when funds are identified for the preliminary engineering effort.

Figure 4.1 RTA’s 2001 RTA Highland Hills Corridor Alternatives Analysis (Major Investment) Study recommended the improvements described above. They include a variety of bus-related options, park-n-ride lots, transit oriented development and extension of the Blue Line to I-271 and Harvard Road with a North Randall option.
Red Line Extension

In 1968, Cleveland became the first city in the United States to link its Downtown Central Business District to a major airport with a direct rail connection. RTA is proud of that accomplishment and is studying ways to strengthen this strategic connection within its service region.

The Red Line Extension, now called the Southwest Corridor Project, started by looking at extending RTA's Red Line west through Hopkins International Airport to serve the nearby I-X Center convention complex. Traveling further west, it would have served the cities of Brookpark and Berea and end in the vicinity of neighboring Lorain County, which is growing at a tremendous rate.

Early in the study process, it became clear that many residents of the City of Berea did not favor a rail extension that stopped in their city. It was then discovered that the real transportation issue was the connection of the Red Line to the new development around the airport. The airport campus itself had created so much development and related traffic that a more unique transportation solution was required.

The Red Line Southwest Corridor Project is analyzing the major Airport area traffic generators including the I-X Center, the Cleveland Hopkins Airport, Emerald Industrial Park, Cleveland Business Park, NASA/Glen Research Center and others. A transit improvement linking these destinations is being studied. Technical work was completed in January 2004. RTA management decided not to pursue the completion of the environmental process or the choosing of a locally preferred alternative until the Airport completes a masterplan for the development of its terminal and facilities.
Related to this study, RTA is also exploring with the City of Cleveland, the State of Ohio, and other passenger rail interests, the idea of creating an intermodal transportation airport hub similar to Newark or Baltimore. This effort seeks to explore the competitive advantages of shifting trips of 300 miles and less by air to passenger rail, something commonly done in Europe that the U.S. is studying closely in order to lessen road and airway congestion and delays.

**Rail Vehicle Replacement**

GCRTA’s previous long-range plan contained a cost element for replacement of its rail fleet. *TRANSIT 2025* no longer includes that element. RTA’s 108-car rail fleet is currently undergoing rehabilitation, and like the periodic replacement of buses, will eventually need to be replaced. However, until more is known about Greater Cleveland’s projected land development goals and patterns, especially concerning the Lakefront, Chagrin Highlands, and major travel corridors like Kinsman Road or West 25th Street, the future mix of RTA’s bus and rail fleet cannot be projected at this time.

For example, the mix of RTA's fleet of Paratransit, Community Circulator, BRT, and Rapid Transit cars that will operate in 2008 when the Euclid Corridor Project begins operation will be much different than in 1996, just 12 years prior. Projects such as the Cleveland Innerbelt Plan, Opportunity Corridor and I-77 (south of I-480) and State Route 2 improvements will enable more efficient travel patterns to which the RTA fleet must be able to effectively respond. RTA will continue working with NOACA, ODOT, Cuyahoga County and municipal planners to evaluate the future transit fleet mix as the region and its travel patterns are re-shaped. To further economize and improve service to customers, RTA may explore whether it makes sense to maintain the rail fleet at its current size (108 cars) and whether the next railcar fleet should consist of two different type vehicles or one vehicle that can operate on all lines. While a single type rail fleet will reduce transfers and afford savings in operating and maintenance costs, significant capital improvements may be necessary. This could include modifying station platforms if a single boarding level-type (i.e. “low-floor”) car is selected, and modifying the Central Rail Maintenance Facility to accommodate that car.

**ADA Key Station Program**

For the estimated 54 million Americans with disabilities, access means simply being able to use, enjoy and participate in the many aspects of society, including work, commerce and leisure activities. Added to this number are the many millions of seniors who may not be categorized as disabled but who have difficulty getting around or cannot drive an automobile. For these citizens, public transit is a vital link that allows full participation in society. RTA is committed to building a transportation system that provides equal access for all Americans. In accordance with the Americans with Disabilities Act (ADA) GCRTA’s Key Station Program will add signage, wheelchair ramps, elevators, emergency communication and other features resulting in accessible, modern rail stations.

ADA station retrofits have already been completed at the Warrensville-Van Aken and Green Road terminals on the Blue/Green lines, and work has been programmed in the near term for the Shaker Square, East 55th, and Woodhill stations. ADA work at another half-dozen stations is also planned.
On the Red Line, ADA retrofits were recently completed at the University Circle station and as part of the newly-reopened W. 65th-Lorain-EcoVillage and E. 105th & Quincy Stations. Near-term ADA work has been programmed for the Brookpark, W. 117th, and Puritas stations. By 2007, nearly all Red Line stations will meet ADA standards.

The Euclid Transit Center/Park-n-Ride, RTA’s first, opened in the City of Euclid in 1999. Like RTA’s Westlake Park-n-Ride Lot, it is adjacent to a Norfolk Southern freight rail line. In 1997 the Euclid site held temporary parking for the 6-week RTA-ODOT Cleveland-Euclid-Mentor Railbus commuter rail demonstration.

The Southgate Transit Center, in Maple Heights, opened in 2004

The Parmatown Transit Center, RTA’s fifth and newest one, will open in 2006

Conclusion

RTA’s Capital Improvement Plan programs more than $658 million over a 5-year period to modernize revenue vehicles and passenger and support facilities. Including investments like the $168.4 million Euclid Corridor Transportation Project, these capital improvements will help ensure RTA is well-positioned to retain customers and attract new riders to transit in coming years.
Chapter 5 - Transit-Oriented Design and Joint Development

Introduction

Recent research by the Brookings Institution and others has found that many U.S. metropolitan areas are adding urbanized land at a much faster rate than they are adding population. Unlike areas in the West and the South that are gaining population, the Northeast and Midwest are increasing the amount of developed land and only redistributing residences and jobs across a broader area. Also known as "sprawl," this inefficient use of land makes it difficult or impossible for public transit to accommodate travel needs. Most challenged by this are the transit dependent, who cannot easily get to jobs that are increasingly locating beyond the easy reach of transit.

One way that RTA can better serve the future travel needs of Greater Cleveland will be through better coordination of transit service planning with land use planning in partnership with municipal, county and regional entities. For example, public transportation should be an integral part of any major new development or redevelopment project. Transit should be incorporated at the outset, when major development decisions are made, rather than as an afterthought. For example as part of the TOD philosophy, Crime Prevention Through Environmental Design (CPTED) concepts will be melded into new transit facilities thereby enhancing the quality of life for those using public transportation.

This chapter presents an overview of Transit-Oriented Design, why it's important, and how RTA can pursue it while developing the future transit system. This chapter also discusses RTA's Joint Development Policy. If TOD describes a vision of how Greater Cleveland and its transportation system are re-integrated, then Joint Development is the method by which TOD is implemented. Simply put, TOD is what RTA aspires to with respect to transit-focused development, and Joint Development is how that is accomplished.

What is Transit-Oriented Design (TOD)?

TOD can be defined as any medium or high-density, mixed-use development 1,200 to 2,000 feet (an approximate 5-minute walk distance) from a transit node. TOD draws heavily on the more traditional design principles found in older central cities and suburbs. These include a mix of land use (residential, retail, offices), a centrally located commercial corridor, well-connected grid street networks, and proximity to transit. Joint planning of facilities can also help reduce costs for infrastructure and operations.

TOD utilizes traditional land-use and development strategies to aesthetically and functionally cluster pedestrian activities around bus/rail transit stops/stations. Research has shown that transit-oriented development can increase transit ridership. But perhaps more important, TOD can improve quality of life, and under the right circumstances, encourage development to occur in close proximity to existing transit facilities.

There are numerous benefits of TOD, some of which are summarized as follows.

Economic Benefits of TOD

- With TOD, people have better access to jobs and employers have better access to workers
• TOD provides more travel options. Fewer automobiles and parking spaces are needed. Land for parking can instead be used for other purposes. Families and businesses can reinvest the savings.

• The cost to provide parking continues to skyrocket. In one inner ring Cleveland suburb, below-ground parking costs approximately $20,000/space to construct. Above-ground parking structures range in cost from $10,000/space to $15,000/space, depending upon site conditions. A surface lot costs about $1,500/space in addition to the cost of the land.

• A study several years ago quantified some of RTA’s economic benefit to the region. In addition to environmental and other less tangible benefits, RTA contributes about $1 billion annually to the region’s economy, as shown below (1998 RTA budget analysis figures updated to 2004 dollars. Does not reflect growth in RTA budget since 1998.)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of RTA Operations/Expenditures</td>
<td>$857 Million</td>
</tr>
<tr>
<td>Maintenance of Access to Jobs</td>
<td>$166 Million</td>
</tr>
<tr>
<td>Transit User Net Savings</td>
<td>$63 Million</td>
</tr>
<tr>
<td>Auto User Cost Savings</td>
<td>$70 Million</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1.156 Billion (2004 dollars)</strong></td>
</tr>
</tbody>
</table>

By promoting compact, walkable areas where transit is easily accessible, TOD enables transit to make even greater economic contributions.

Environmental Benefits of TOD
• Air quality is improved;
• Green space is preserved;
• Parking lot rainwater run-off to sewers is minimized.

Social Benefits of TOD
• TOD facilitates labor force involvement for those without, and those who choose not to own, an automobile;
• Livability and other quality of life factors are enhanced throughout communities and the region;
• A sense of place and community ownership is increased;
• TOD creates attractive places that bring people and dollars into the community. Kamm's Corners and Shaker Square in Cleveland, and Coventry Village in Cleveland Heights, are local examples;
• The typical commute becomes less stressful and more productive;
• TOD supports neighborhood revitalization, which in turn promotes economic development and long-term growth.

A Federal Transit Administration-funded Transit Cooperative Research Program study identified characteristics common to regions that have successfully promoted transit-supportive development activities, such as TOD. These characteristics include:

• Commitment to a regional vision of high-capacity transit connections between regional centers or in development corridors;
• Political cultures that value transit;
• High-quality transit services that attract riders;
• Regional growth that provides the development to channel to station areas;
• Transit stations in areas where the market supports development;
• Regional policies that focus growth in transit corridors and limit it elsewhere;
• Station area policies and programs to support private-sector investments and transit-friendly development; and
• Long-term commitment.

**TOD Principles - Euclid Corridor Transportation Project**

RTA is applying the following TOD principles to its Euclid Corridor Transportation Project, where new development has been, and continues to be focused by the City of Cleveland. These principles can be applied throughout RTA's service area in order to encourage transit-supportive development, improve mobility and increase transit ridership.

1. **Mixed and Concentrated Land Use**

   Locate a diversity of complementary uses within easy walking distance of transit stations and stops, promote balanced levels of transit ridership throughout the day, promote pedestrian activity and reduce dependence on the automobile.

2. **Supportive Access Patterns**

   Create circulation patterns that form a convenient, safe and accessible network types of transportation, that interconnect surrounding residential, commercial, and employment areas, and that provide direct connections to transit stations and stops. Provide adequate, and in some cases structured, parking facilities that do not visibly dominate the station area or consume large amounts of land.

3. **Enhanced Environment**

   Create an environment for transit users and others that is safe, attractive and functional. Organize public and private spaces to invite pedestrian activity and incorporate design elements to increase public access, comfort, and security.

It should be also be noted that the combined construction investments and focused development associated with the Euclid Corridor Transportation Project are expected to bring the following **long-term economic benefits**:

- Commercial Development – 7.9 million square feet
- Residential Units – More than 5,400
- Capital Investment - $1.3 billion
- Annual Local Taxes - $62.1 million
- GCRTA Annual Sales Tax Revenues - $1.98 million
- Person-Years of Employment During Construction – 13,000

**RTA TOD Guidelines**

The following guidelines have been successfully employed across the U.S. to promote transit-supportive development. They elaborate on some of the above principles and can further help RTA promote TOD around Greater Cleveland. Because TOD reflects traditional development practices, RTA's application of these guidelines will help promote a more people-centered pattern of urban development.
**TOD Guideline #1: Create pedestrian linkages that connect transit facilities to surrounding communities.**

People like places where a walking environment is safe and comfortable. This can be accomplished by ensuring that sidewalks are wide and protected from traffic with on-street parking, by planting street trees and by locating storefronts and building entrances close to the sidewalk. People like to walk about well-lit streets lined with trees and pleasant storefronts and away from fast-moving traffic. These areas will show an appreciation for the design elements that contribute to fear reduction by the enhancement of lines of sight with areas of refuge and assistance being readily identifiable. Streets that are narrower and have slower speeds allow children to walk and bicycle more safely in the neighborhood. Including this type of pedestrian-friendly street design in new developments can play a major role in encouraging walking and the use of transit.

An example of this is Cleveland's Shaker Square. The many retail stores and eating establishments are all located within easy walking distance to RTA's Blue/Green Line rapid station, and local bus stops around the Square.

**TOD Guideline #2: Intensify activity within walking distances of transit stations and stops.**

Since people must travel to and from activity centers, such as work, school, shopping and recreation, transit stations and stops, transit stations and stops should be co-located with these activities. This helps create lively activity in, as well as safe and convenient access to, community activity centers, streets and transit stations.

A recent example of this is the CEOGC Headstart Daycare Center in East Cleveland, which opened in 2002. This facility was conveniently located directly adjacent to RTA's Windermere rapid transit terminus and park & ride lot, where a covered walkway links the station to the center.

**TOD Guideline #3: Diversify land uses.**

Diversifying land uses helps create self-contained walkable neighborhoods. The mix of uses should include residential, retail, and public facilities such as libraries or parks. This way, everyday activities are easily reached by walking and bicycling, which reduces the need to use a car.

Coventry Village in Cleveland Heights exemplifies this guideline. This quarter-mile area roughly encompassing both sides of a two-lane street is home to a wide variety of establishments including restaurants, bars, banks, bookstores, specialty clothing stores, video and electronic game stores and a movie theatre, laundromat, drugstore, hardware store, an elementary school with playground, and a library. Above many of these commercial establishments, and along many of the intersecting street, are apartments and homes.

**TOD Guideline #4: Apply good urban design.**

Pedestrians and transit users prefer to walk along areas that are both safe and interesting. People avoid areas with large blank walls, a lack of lighting, overgrown vegetation, and a lack of other people. Developments that are successful in attracting people generally have attractive architecture, interesting storefronts, visible and accessible building entrances, adequate lighting,
and are designed with safety in mind. Good transit-oriented design also means locating
buildings close to sidewalks and transit and not behind large parking lots, walls or other barriers.
This must also include Crime Prevention Through Environmental Design (CPTED) principles.

TOD Checklist

When projects are proposed for new development or redevelopment many elements must be
taken into account in order to effectively incorporate TOD. The following checklist provides
examples of those elements. Appendix C. gives the clearance and turning radius specifications
for rapid transit cars, transit buses, and passenger shelters needed by municipal planners and
engineers in order to plan for transit.

Land Use
- Encourage a mix of land uses
- Locate highest density development closest to transit stops
- Locate new development near transit stops and existing
developments.

Site design
- Locate buildings near roadways
- Place pedestrian oriented retail uses along roadways
- Orient buildings towards transit stops
- Minimize distances to building entrances
- Discourage abundant free parking
- Connect neighborhoods and transit stops with walkways
- Allow for efficient multi-modal access, especially bicycles and buses
- Link adjacent development parcels with roadways and walkways

Pedestrian and transit facilities
- Design roads to accommodate transit vehicles
- Provide transit shelters, safe street crossings, paved walkways,
  bicycle- friendly facilities, and ample landscaping
- Make buildings, walkways, and transit facilities easily accessible to
  the young, the elderly, and the disabled
- Give high priority to transit passenger safety and security
- Make use of passive security systems e.g. closed circuit television and emergency phones
- Participate in Community and Transit Watch Programs

RTA Joint Development

Joint Development of homes or commercial revenue-generating facilities on, over, or
adjacent to property owned by public transit providers like RTA is governed by Federal
and State statutes. RTA also has a number of administrative policies and procedures on
Joint Development and related matters like property acquisition, disposition, and
management. The Property Management department handles theses matters with the
support of the Legal department and the Director of Programming and Planning.

This section briefly describes the legal framework for RTA's Joint Development activities, and
mentions several types of joint development initiatives now underway. This also will include a
discussion of potential TOD sites that have been analyzed and targeted for future TOD
opportunities.
As referenced in Chapter 1, RTA was created by state and municipal statutes for the primary purpose of public transportation. Ohio Revised Code (O.R.C.) Section 306.31 expands upon that purpose, saying that a regional transit authority my be created for any one or more of the following purposes:

"...acquiring, constructing, operating, maintaining, replacing, improving, and extending transit facilities; controlling and administering the public utilities franchise of such transit facilities; entering into and supervising franchise agreements; accepting assignment of and then supervising an existing franchise agreement; and accepting assignment of and exercising a right to purchase a transit system in accordance with the acquisition terms of an existing franchise agreement."

Thus, any RTA joint development project would then necessarily have to fall within the statutory purpose of regional transit authorities. Furthermore, O.R.C. 306.32 states that a regional transit authority so created is a political subdivision of the State and a body corporate with all the powers of a corporation. As well, the Ohio constitution governs RTA's ability to jointly develop projects with public or private sector interests.

Recognizing a need to insure comprehensive planning and uniform implementation of joint development projects, RTA adopted in 1991 a set of policies and procedures. These directives encouraged land use plans designed to enhance system ridership, and addressed areas such as joint development control, revenue generation, cost sharing, and value capture, land acquisition and disposition, and procedures for development of connectors to RTA rail and bus facilities.

In 1993, RTA amended its joint development policies to take advantage of an Ohio Revised Code amendment. This law change made competitive negotiation a permissible means by which the joint development rights of a particular transit facility may be awarded. The new RTA policies emphasize four joint development approaches: (1) negotiated investments, (2) public improvement districts; (3) connector fees, and (4) leasing of land and air rights. As a result, RTA has proactively engaged in joint development projects like the following:

- Windermere Rapid Transit Station Council for Economic Opportunities of Greater Cleveland Headstart Child Care (2001),
- West 3rd Street Waterfront Line Station at Cleveland Browns Stadium (1999), and
- Walkway to Gateway pedestrian connector to Gund Arena and Jacobs Field (1994).

There are numerous joint development opportunities with RTA's Euclid Corridor Transportation Project, especially within the Midtown Corridor. The programmed renovations of RTA's West 117th, Brookpark, East 55th, and E. 105th Rapid Transit Stations also hold significant joint development potential as well.

While joint development in many U.S. cities has traditionally been focused around rapid transit stations, RTA and the Committee for Transit Oriented Design of Greater Cleveland have begun to explore development around major bus transit nodes. These include places like West 25th Street and Lorain, and East 93rd Street and Union Avenue. Research has begun to show how the potential for transit oriented joint development is in part dependent upon how easily accessible by walking these transit nodes are. The appendix includes a report on this notion of "pedestrian sheds" with regard to the idea that the most efficient sidewalk-roadway network for
facilitating access to a transit stop, bus or rail, is one that minimizes the distance between the stop and a person's intermediate or final destination. Following is a vision statement describing a desirable future for RTA's transit-oriented joint development program.

Vision of RTA's future transit-oriented Joint Development Program

RTA has a very active public/private Joint Development Program. Through this program, RTA aggressively seeks partners to develop RTA-owned real property to complement transit station and related facility operations. RTA's Joint Development Program seeks to promote projects that achieve the following goals:

- Promote Transit Oriented Development (TOD) by giving priority to Joint Development proposals which contain the following smart growth development principles; reduce automobile dependency; increase pedestrian/bicycle originated transit trips; foster safe station areas; enhance surrounding area connections to transit stations, including bus access; provide mixed uses development, including housing in compliance with local regulations; and the opportunity to obtain goods and services near transit stations and offer active public spaces;
- Attract new riders to the transit system by fostering commercial and residential development projects on RTA owned or controlled land and on private properties adjacent to key bus and rapid transit stops;
- Create a source of revenue for the Authority to operate and maintain the transit system by expediently negotiating joint development agreements between RTA and public or private development entities; and
- Assist local jurisdictions served by RTA in recapturing a portion of their past financial contributions and to continue making subsidy payments by expanding the local property tax base and adding value to available local revenue.

Location Efficient Mortgages

The Location Efficient Mortgage® (LEM) is a fairly new type of mortgage loan that supports public transit use, and may possibly help create more transit-friendly communities. Typical mortgage lending programs don't acknowledge the cost of transportation, but the average household in Northeast Ohio actually spends more on transportation than housing. For example, a family of four moves from Lakewood to Medina in order to get "more house/yard for their money," but needs to buy an additional car to maintain their same level of mobility/access to goods and services. The monthly cost of the additional car is substantial, but is completely ignored by the banker.

The LEM allows lenders to acknowledge that some places are less car-dependent than others, and that being less car-dependent can translate into lower monthly transportation expenses (less miles driven, fewer vehicles owned, etc). A portion of this savings (i.e. - avoided additional expense) can be applied to a larger mortgage payment without increasing the borrower's risk of default. So whereas a person might qualify for a $100,000 loan with a standard mortgage formula, they might qualify for $130,000 in a location-efficient area.

Mortgage lending policies don't affect municipal housing policy, planning, zoning, etc by themselves, but the awareness raised by creation of a LEM can inspire local officials to
pay more attention to areas that score well for location efficiency. This can make living near public transit much more attractive, possibly leading to higher population densities near transit lines and increased ridership.

In 2004 GCRTA and the Federal National Mortgage Association (Fannie Mae) launched a local LEM program called the Greater Cleveland Area Smart Commute Initiative, which will give prospective homebuyers the opportunity to qualify for a mortgage with the help of savings realized from using public transportation. Highly endorsed by key local officials, Smart Commute will help the region by encouraging development along existing corridors already well-served by GCRTA, which will help ease congestion and improve the quality of life in Northeast Ohio.

Transit Waiting Environments (TWE)

During 2004 GCRTA developed new guidelines for improving bus stop areas, with assistance from Kent State University’s Urban Design Center and a multidisciplinary advisory task force. Directly supportive of TOD principles, these guidelines expanded upon an idea from RTA’s Citizen’s Advisory Committee and was based on national research showing that a high quality transit passenger waiting experience not only improved ridership, but also positively influenced transit’s image in the community. Drawing upon that national research and a local survey of customer preferences, RTA TWE design team developed the following guidelines for improving areas around bus stops. These guidelines are helping RTA and its partner communities identify specific design improvements, which are both affordable and practical from a purchase, installation and maintenance perspective.

TWE Guidelines

1) Waiting for the bus should be a comfortable, safe and predictable experience.
2) Waiting for the bus should be a convenient part of everyday life
3) Bus stops must be easily identified
4) Bus stops are a community responsibility
5) Basic amenities should be provided at all stops, with added amenities at stops serving the greatest number of potential riders

Conclusion

TOD and joint development are tools for locating transit and residential and activity centers closer together. Location Efficient Mortgages are a new transit-supportive tool. Communities can take additional steps to support TOD, the most positive of which would include creating zoning overlays that increase density and limit parking near key activity centers and corridors that are well-served by transit. Appendices B, D, E and F present additional information on sprawl, transit and livable communities, Location Efficient Mortgages, and Transit Oriented Design (TOD)/transit-supportive development. An analysis of several potential TOD sites for RTA to consider is found in Appendix B, and research and examples of successful TOD programs at other transit authorities make up Appendix E.
Chapter 6  *Transit 2025* Sketch Plan ---Long Range Plan Project Elements

This chapter presents the *Transit 2025* Sketch Plan as a summary of the current and proposed future elements of the RTA transit system as envisioned in 2025. The sketch plan term is used because the transit projects comprising this plan have not been modeled to project future transit system ridership. This is because U.S. 2000 Census journey to work, and other data, is still not available to update the region's travel demand model. For the next update of long-range plans by NOACA and RTA in several more years, this census data will be available.

Most of the proposed projects are included in RTA's 2005-2009 Capital Improvement Plan, and their costs are shown in Chapter 4 *Capital Projects and Funding*. Descriptions of these projects may also be found in Chapter 3 *Service Analysis and Future Service Concepts*.

A number of *Transit 2025* projects are also already included in the region's long-range plan *Framework for Action 2025* prepared by NOACA. These projects have a NOACA ranking indication beside them; ranging from Tier I, the highest priority to Tier IV, the lowest priority. The definition of NOACA project tiering is found in Chapter I in the *Future Plans by Others* section.

*Transit 2025* Sketch Plan projects are grouped into 10 elements and focuses mostly on new infrastructure to improve direct service to customers.

Table 6.1  *Transit 2025* Sketch Plan Project Elements

<table>
<thead>
<tr>
<th>A. RTA BUS TRANSIT CENTERS / PARK –N-RIDE LOTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>These facilities are presently operational. At the time RTA’s first long-range plan was adopted in 1993, the only park &amp; ride lots owned by RTA were those in Berea and Strongsville.</td>
</tr>
<tr>
<td>1. Westlake Park-N-Ride Lot – Routes 55CX, 55SX, 246, 808, Lorain County Transit</td>
</tr>
<tr>
<td>2. Clague Road Park-N-Ride in Bay Village** - Routes 55CX, 808</td>
</tr>
<tr>
<td>3. Westgate Transit Center in Fairview Park - Routes 22, 25, 46, 53, 55NX, 55SX, 326, 808</td>
</tr>
<tr>
<td>5. Sprague &amp; Fair Park-N-Ride in Berea – Routes 86, 86F</td>
</tr>
<tr>
<td>8. Brecksville Park-N-Ride Lot** - Route 77F</td>
</tr>
<tr>
<td>9. Solon Park-N-Ride Lot** - Route 41C</td>
</tr>
<tr>
<td>10. Southgate Transit Center – Routes 40, 41, 76, 88X, 90F, 802</td>
</tr>
<tr>
<td>11. Euclid Transit Center &amp; Park-N-Ride Lot – Routes 1, 39BX, 39X, 239, 806</td>
</tr>
</tbody>
</table>

**Uses leased property
Table 6.1 Transit 2025 Sketch Plan Project Elements - Continued

<table>
<thead>
<tr>
<th>B. PLANNED RTA TRANSIT CENTERS / PARK &amp; RIDE LOTS  2005-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilities proposed in these areas are included in RTA’s current 2005-2009 Capital Improvement Plan and are actively being pursued.</td>
</tr>
<tr>
<td>1. North Olmsted Park-N-Ride Lot Expansion</td>
</tr>
<tr>
<td>2. I-77/Independence Park-N-Ride &amp; Transit Center</td>
</tr>
<tr>
<td>3. Solon Park-N-Ride &amp; Transit Center</td>
</tr>
<tr>
<td>4. Mayfield/Highland Heights Park-N-Ride &amp; Transit Center</td>
</tr>
<tr>
<td>5. Oakwood Park-N-Ride &amp; Transit Center</td>
</tr>
<tr>
<td>6. Brecksville Park-N-Ride &amp; Transit Center</td>
</tr>
<tr>
<td>7. East Side Transit Center</td>
</tr>
<tr>
<td>8. West Side Transit Center</td>
</tr>
<tr>
<td>9. Strongsville Park-N-Ride Lot Expansion</td>
</tr>
<tr>
<td>10. Westlake Park-N-Ride Lot Expansion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. PROPOSED RTA TRANSIT CENTERS / PARK &amp; RIDE LOTS  2010-2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>This facility is being considered under a longer-term development timeframe.</td>
</tr>
<tr>
<td>1. I-77/I-80 Park &amp; Ride</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. MAJOR NEW RTA FACILITIES  2005-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>These projects will result in major new RTA transit facilities, and will require modification of others (e.g. Euclid Corridor vehicle storage).</td>
</tr>
<tr>
<td>1. Euclid Corridor Transportation Project - Rapid Transit Stations &amp; Dedicated Bus Roadway</td>
</tr>
<tr>
<td>2. Triskett Bus Garage</td>
</tr>
<tr>
<td>3. Brooklyn Garage Conversion to Paratransit District</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E. ALTERNATIVES ANALYSIS PROJECTS / Planning Studies  2010 - 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>These projects have each advanced from the System Planning phase into the Alternatives Analysis study phase. They are being further developed in coordination with major land use, transportation, and economic development studies led by the City of Cleveland and the Ohio Department of Transportation.</td>
</tr>
<tr>
<td>1. Southwest Corridor/Red Line I-X Extension</td>
</tr>
<tr>
<td>2. Waterfront Line Extension</td>
</tr>
<tr>
<td>3. Highland Hills Corridor/Blue Line Extension</td>
</tr>
<tr>
<td>4. Canton-Akron-Cleveland Interregional Corridor Study***</td>
</tr>
</tbody>
</table>

***The Metro Regional Transit Authority of Summit County leads this project; RTA provides technical support as needed.
F. STATE OF GOOD REPAIR PROJECTS 2005-2009

State of Good Repair Projects are those needed to bring the RTA system to a consistent, high quality condition systemwide. Listed below is a representative sample, not fully-inclusive, list of such projects.

1. Triskett Garage Renovation
2. Bus & Paratransit Vehicle Improvement & Spare Parts Program
3. Woodhill Garage Conversion; Brookpark Shop Modifications
4. Rapid Transit Car Mid-Life Overhaul
5. Rapid Transit Right-of-Way, Train Control, Power Distribution & Bridge Improvements
6. Rapid Transit Station Renovations/ADA Conversions
   a) Brookpark Rapid Station/Red Line
   b) East 105th - Quincy Rapid Station/Red Line
   c) West 150th - Puritas Rapid Station/Red Line
   d) Shaker Square ADA Rapid Station/Blue-Green Lines
   e) West 117th Rapid Station/Red Line
   f) Woodhill Rapid Station/Blue-Green Lines
   g) East 120th Street Rapid Station/Red Line
   h) University Circle Rapid Station/Red Line
   i) East 116th Street Rapid Station/Blue-Green Lines
   j) East 55th Street Rapid Station/Red-Blue-Green Lines
   k) Lee-Van Aken Station Rapid Station/Blue Line
   l) Van Aken Station Roadway Improvement/ Blue Line Terminus
7. Revenue Collection System Evaluation & Equipment Replacement
8. Passenger Shelter Replacements
9. Radio System, Website, Paratransit & Customer Call Center Computer & Phone Upgrades

G. RTA TRANSIT SERVICE IMPROVEMENTS

These service-related improvements will improve operational efficiency with cost-effective service changes. They include FY 2004 Service Change Proposals from RTA's 2004 Annual Service Management Plan.

1. Downtown Service Improvements / Euclid Corridor Transportation Project Transit Zone
2. Garage Consolidation
3. South Corridor Service Improvements
4. North Olmsted Transit Center Changes
5. Southeast Area Service Improvements (Southgate Transit Center)
6. University Circle Interdistrict Community Circulator
7. Major Travel Corridor Operational Enhancements
8. Flex-Routing

H. CUSTOMER FOCUS - AMENITIES

These projects, some of which are still being developed, will improve the RTA customer experience, thereby making transit easier and more pleasant to use. Research shows that investments in these types of projects will improve RTA's image and boost ridership.

1. Transit Center Network & Timed Transfers
2. Transit Waiting Environment, Including Inter-County Transfer Points & Passenger Shelters
   ** Municipally-Targeted Corridors/Areas *e.g. Euclid Corridor, Kinsman Road, Chagrin Blvd.
3. Customer Information (incl. Web-based trip planning & interactive voice response telephone information for Paratransit and regular customers.)
4. Bicycle Racks (mobile and stationary)
Table 6.1 Transit 2025 Sketch Plan Project Elements - Continued

I. TRANSIT ORIENTED DEVELOPMENT OPPORTUNITIES

Many transit facilities, both bus and rail, could serve as places where new mixed-use development can occur. Listed below are potential RTA locations and related plans by others that could result in improved transit access. This list not fully-inclusive.

2. East 105th Rapid – Cuyahoga County Juvenile Intervention Center
3. Brookpark Rapid - Station Area Adjacent Mixed Use Development
4. West 117th Rapid - Madison Avenue Redevelopment
5. East 120th Rapid - Station Area Adjacent Apartment & Institutional Development
7. East Side Transit Center - Cleveland State University Master Plan
8. West Side Transit Center – Historic Warehouse District Development
9. West 25th Rapid - Market Square Historic District Redevelopment
10. University Rapid - Case Western Reserve Univ. Master Plan - Parking Garage
11. Mayfield - Euclid - University Circle Master Plan – Housing
12. East 55th Rapid - Station Area Adjacent Mixed Use Development
13. West Side Transit Center - Civic Vision Downtown / Warehouse District Plan
14. Triskett Rapid - Station Area Adjacent Mixed Use Development
15. West Boulevard - Cudell Rapid - Future Station Area Adjacent Mixed Use Development
16. Lee Road Rapid (Blue Line) – Kensington Station/Shaker Towne Center Area Development
17. East 79th Rapid (Blue - Green Line) - Future Station Area Adjacent Mixed Use Development
18. Waterfront Line - Flats East Bank Redevelopment & E. 9th Street Trolleyville Museum
19. Waterfront Line – Cleveland Waterfront District Redevelopment (Plan)
20. Selected Other Rapid Transit Station Areas (Incl. along Euclid Corridor)

J. Additional Potential Development Sites
1. Columbus & Franklin Avenues in the Flats
2. West Superior Ave & Old River Road in the Flats
3. RTA Harvard Bus Garage
4. West 83rd St. & Franklin Avenue

K. ONGOING Transit 2025 PLAN COORDINATION - MAJOR PROJECTS BY OTHERS

Transit 2025 is designed to respond to the region's travel needs. Numerous plans and projects are underway in RTA’s service area that it must take into account as it develops the future transit system. These are many of the plans and initiatives that will help shape the future RTA system.

1. Connecting Cleveland 2020 Citywide Plan
2. Connecting Cleveland: The Lakefront Plan
3. Cuyahoga County Municipal Master Plans
4. EcoCity Cleveland Citizen's Bioregional Plan
5. Cuyahoga County Work Access & Transportation Program, Cuyahoga Valley Initiative, County Greenspace Plan, & Metroparks Towpath Trail Extension
6. Cuyahoga Valley Scenic Railroad (CVSR) Cleveland Extension
7. National Park Service Cuyahoga County Towpath Trail and CVSR Transit Link Study
8. Framework for Action 2025 NOACA Region Long Range Plan & Five County Zoning Data Analysis
9. Ohio Department of Transportation ACCESS OHIO, Vision 2006 & Cleveland Innerbelt Study including University Circle Access “Opportunity Boulevard”
10. Ohio Rail Development Commission Ohio and Lake Erie Regional Rail Hub Study
11. Key Initiatives by groups like First Suburbs Consortium, Sustainable Communities 2000, Green Building Coalition, and others.
12. Cleveland Steelyard Commons Development
13. Westlake Crocker Park Development
Transit 2025 Sketch Plan Maps

The following maps, Figures 6.1 through 6.3, illustrate some of the key long-term transportation projects listed above.
FUTURE MAJOR PROJECTS BY OTHERS

Legend
- Inner City Rail Alignments
- Commuter Rail Alignments
- Cuy. Valley Scenic Railroad

Other Major Projects
Name
- Inner Belt & Lakefront
- I-77 Widening
- North Coast Transportation Cir
- State Rt 2 Widening
- Cuy. Valley Scenic Railroad

Commuter Rail Corridors
Name
- Lorain - Cleveland
- Pataskala - Cleveland
- Elyria - Cleveland
- Akron - Cleveland
- Aurora - Cleveland

Inter City Rail Corridors
Name
- Chicago - Toledo
- Cleveland-Pittsburgh
- Columbus - Cleveland
- Cleveland - Youngstown
Chapter 7   Summary and Next Steps

Summary

In preparing this long-range plan update, GCRTA developed a set of 10 strategic initiatives. These initiatives, found in Chapter 1, are action steps to be taken now by RTA to position the transit authority to later implement the longer-term Transit 2025 projects.

This long-range plan refocuses on providing basic, quality transit service in order to support a strengthening of the region’s urban core, and stabilizing transit ridership. But it also helps lay the foundation for future transit system development in concert with new regional development and the evolution of the region’s entire transportation network.

Next Steps

Completed in 2004, eleven years after adoption of Transit 2010, RTA’s first-ever long range plan, Transit 2025 is a guide for:

- updating the transit element of the NOACA Long Range Transportation Plan, Framework for Action 2025 (next update scheduled for 2005);
- developing RTA’s annual Capital and Operating Budget, and updating its annual Service Management Plan;
- encouraging municipalities to enhance transit waiting environments and pursue joint development around transit stations, centers and park-and-ride lots; and
- continuing discussions throughout the Greater Cleveland community regarding long-range policy issues such as regionalization and their related social and economic impacts.

Adoption of this plan by the RTA Board marks an important milestone. With the continued growth of a coordinated network of transit centers, park & ride lots, community circulators and other services first envisioned nearly 15 years ago, many of RTA’s first long-range plan milestones are being achieved. When the Euclid Corridor Transportation Project becomes operational in 2008, another major long-range milestone will have been reached.

Efforts toward projects yet unattained, like new transit oriented joint development, can hopefully be advanced in the near term. Transit 2025 projects like the recently opened W. 65th Street-Lorain-EcoVillage Rapid Station will hopefully spur even more station area development, such as that being envisioned at the E. 120th Street Station. Building the transit system recommended by this plan will require more than just additional funding. Active citizen and public official involvement and cooperation by all stakeholder organizations will be needed in order to realize the Transit 2025 plan’s vision for public transportation in Greater Cleveland.