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**Anderson County** 

Mayor Terry Frank

**Blount County** 

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**Knox County** 

Mayor Tim Burchett Commissioner Dave Wright Knoxville

Mayor Madeline Rogero Councilwoman Brenda Palmer

**Lenoir City** 

Mayor Tony Aikens

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**Loudon County** 

Mayor Buddy Bradshaw II

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**Tennessee County** 

**Highway Officials Association** 

Harold Pitner

Tennessee Department of Transportation Region 1

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**East Tennessee Human Resource Agency** 

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**Knoxville Knox County** 

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**Lenoir City** 

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**Sevier County** 

Jeff Ownby

Tennessee Department of Transportation

Steve Borden

Jerry Roache Jack Qualls

Non-voting

**Federal Highway Administration** 

Scott Allen

**Federal Transit Administration** 

Elizabeth Martin

## **TPO STAFF**

Jeff Welch, AICP

**TPO Director** 

**Tarren Barrett, EIT** 

**Transportation Engineer** 

**Amy Brooks, AICP** 

Integrated Planning Manager

**Doug Burton** 

Principal Planner

**Dori Caron** 

Administrative Assistant II

Mike Conger, PE

Senior Transportation Engineer

**Kelley Segars** 

Principal Planner

**Christi Wampler** 

Smart Trips Program Coordinator

Ellen Zavisca, PTP

Senior Planner



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# LETTER TO THE REGION

Welcome to the first edition of the State of Transportation Report for East Tennessee. This report is intended to provide an overview of this Region's transportation system and factors that influence our investment in that system. As the Mayor of Knoxville and current Chair of the Knoxville Regional Transportation Planning Organization (TPO) I see firsthand how transportation services and facilities impact the daily lives of everyone in our region.

We are all connected by the natural features of our mountains, valleys, rivers and streams. We are also connected by streets, highways, greenways, bike facilities and buses. **How we maintain and improve our transportation infrastructure is the major role of the TPO**. The TPO coordinates the investment of federal, state, regional and local agencies in our shared transportation system.

Our region is prospering economically and our quality of life is very high compared to many regions in the country. There are small towns, big cities and rural areas to live, work and play in all within a short distance of each other. Our population is diverse and meeting the needs of that diverse population is becoming more challenging.

The TPO is embarking on an 18 month process of updating our Region's Long Range Mobility Plan that will identify our transportation needs through the year 2040. I ask you to become engaged in the dialogue that has just begun on this effort. This plan will help guide our transportation investments and our economic prosperity over the next 25 years.

I look forward to working with you as we continue building prosperity and maintaining a high quality of life for all those that call East Tennessee home.

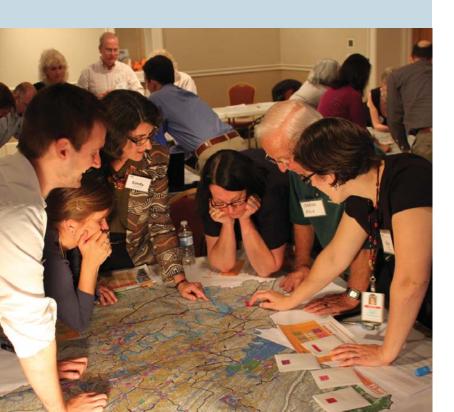
Respectfully,

Mayor Madeline Rogero City of Knoxville Chair TPO Executive Board



# **OUR MISSION**

Advise and assist our region to improve and expand transportation choices by involving residents and decision makers in our plans, forums and outreach.



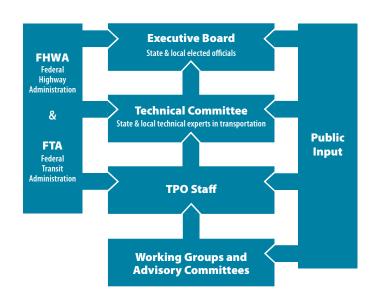
# **ABOUT THE TPO**

The TPO helps the region's leaders decide how to invest transportation dollars through a fair and transparent planning process. The TPO provides a forum for collaboration, coordination and education among community members, state leaders and federal officials.

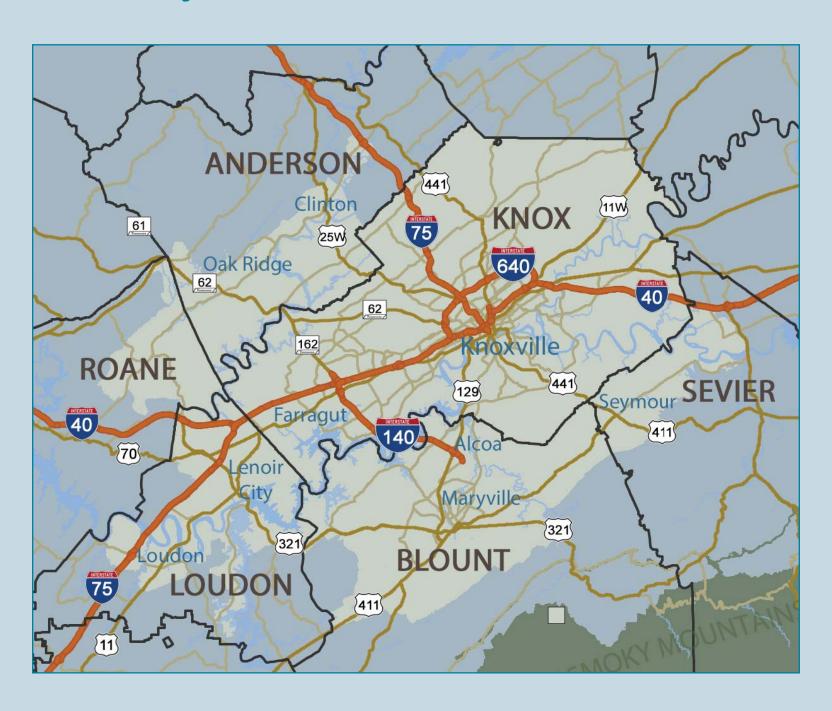
The TPO serves a population of 657,109 in all or parts of Anderson, Blount, Knox, Loudon, Roane and Sevier counties.

The TPO is responsible for the development of a long-range Mobility Plan and short-range Transportation Improvement Program. In cooperation with a wide variety of partners, the TPO contributes to and often leads important conversations about issues such as public health, economic development, safety, land use and the environment.

### **TPO STRUCTURE**



# The TPO Planning Area



# **Regional Transportation Survey**

The TPO is interested in learning how the regional transportation system is meeting the needs of the public and priorities for the future. The TPO contracted with the University of Tennessee Social Work Office of Research and Public Service's Center for Applied Research and Evaluation to conduct a survey to measure current attitudes, spending priorities, and preferences for funding future projects. The survey was conducted between December, 2015 and January, 2016 with residents in Anderson, Blount, Knox, Loudon, Roane and Sevier counties. Below are a few highlights from the survey.

### **NEEDS OF THE PUBLIC**

- 70 percent of respondents say improving traffic flow is a high priority
- 72 percent say maintaining and fixing existing roads and bridges is a high priority
- Expanding transit where it already exists was more important to those between the ages of 50 - 64

## **PRIORITIES FOR THE FUTURE**

- Maintaining and fixing roads and bridges was the highest priority
- People with household incomes under \$25K were more strongly in favor of increasing transit where it exists.
- Residents of Blount and Anderson counties were more strongly in favor of expanding transit where it doesn't exist
- People between 18 34 years of age were more likely to support expanding the greenway, sidewalk and bike facilities

### PREFERRED METHOD OF REVENUE GENERATION

- The most frequently selected sources for revenue generation were an increase in gas tax and a transportation bond or borrowing funds
- However, almost one out of four respondents indicated they would not support any type of additional funding

# Active forms of transportation and recreation appear to be growing.

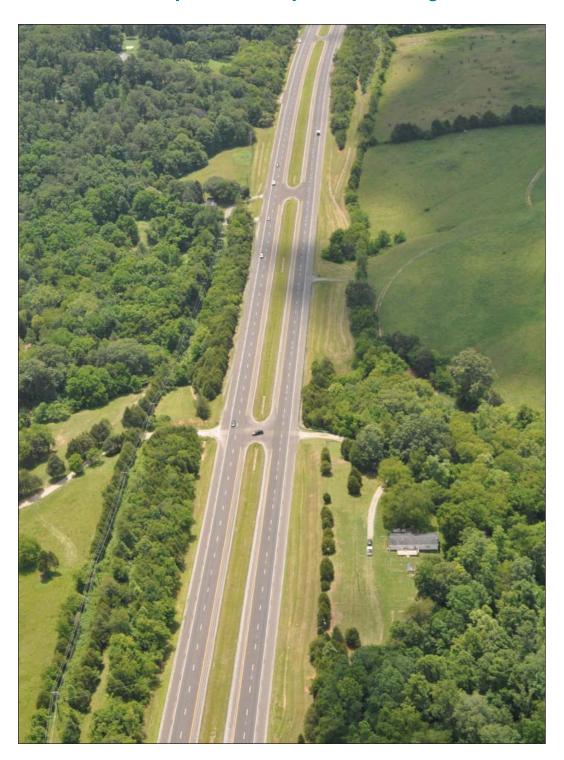
- 40 percent of respondents have ridden a bicycle for recreation in the past year
- 15 percent have used a bicycle for transportation
- 56 percent of respondents have used a greenway in the past year

# **OUR CORE PRINCIPLES**

- Preserve and manage our existing system
- Link transportation and land use
- Plan and build for all transportation modes
- Develop our region's potential



# What is the Transportation Improvement Program?



The Transportation Improvement Program (TIP) is a list of transportation projects, including roadway, transit, greenway, sidewalk and bicycle facilities, expected to receive funding over the next four years. These projects are managed by state and local agencies responsible for managing the transportation system within the TPO planning area. In order to develop the TIP, TPO staff works closely with the TPO Technical Committee, which includes planners, engineers and public transit representatives (e.g. Knoxville Area Transit, Knoxville-**Knox County Community Action** Committee, and East Tennessee Human Resource Agency).

In areas such as ours that do not meet federal air quality standards (or that have been deemed "maintenance areas" because they only recently have come back into compliance), the TIP must go through a conformity determination process. This means that the planned transportation projects are not expected to make our air quality worse.

The FY 2014 – 2017 TIP was adopted by the TPO on October 16, 2013, and includes \$590 million in federal, state and local funding distributed over 117 projects.

# **Federal Funding Commitments**

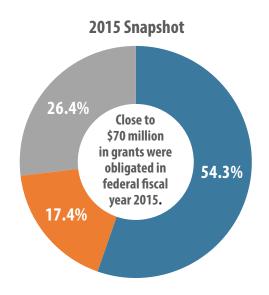
Transportation projects that use federal transportation funds are listed in the TIP. There are several categories of federal funding, including those listed in the graph below. TDOT and the TPO share responsibility for deciding how these funds are distributed in our region.

TPO planning efforts also get funded by federal transportation dollars, with local agencies providing the required matching funds. More information about the TPO work program and budget is available on our website at www.knoxtrans.org/unifplan.

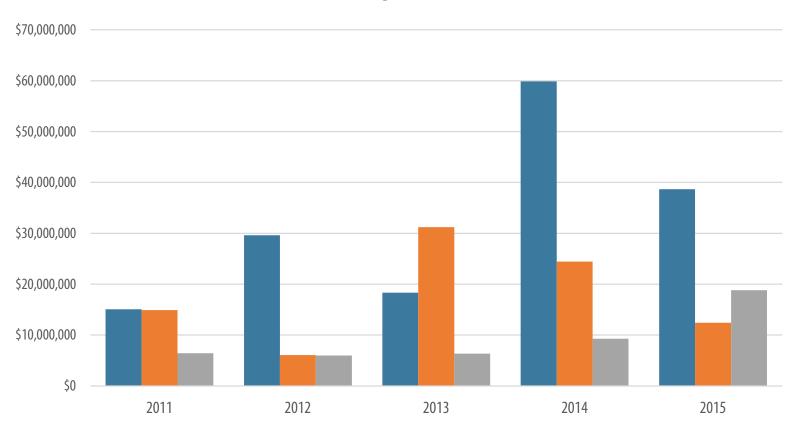
National Highway and Interstate Programs

Surface Transportation Programs

Transit Programs



# 5-Year Funding Trend, 2011-2015



# **CONNECTING PEOPLE AND PLACES: Mobility Plan Update Underway**



Mobility Plan 2040 is the long-range transportation plan for our region. Based on input from the region's residents, stakeholders and elected officials, it guides transportation decision-making in the region over the next 20-plus years.

Federal law requires the TPO to develop a long-range transportation plan every four years. *Mobility Plan 2040* establishes a framework that will be implemented through a variety of transportation projects, plans and programs. The

policies established by the Plan guide the TPO as it prioritizes funding for all modes of transportation—including public transportation, freight, bicycle, pedestrian and paratransit.

Mobility Plan 2040 calls for greater correlation between regional transportation investments and community development and land use, and greater investment in our transportation system to provide the choices the region's residents need for future.

# **STATE OF THE REGION: East Tennessee Trends**

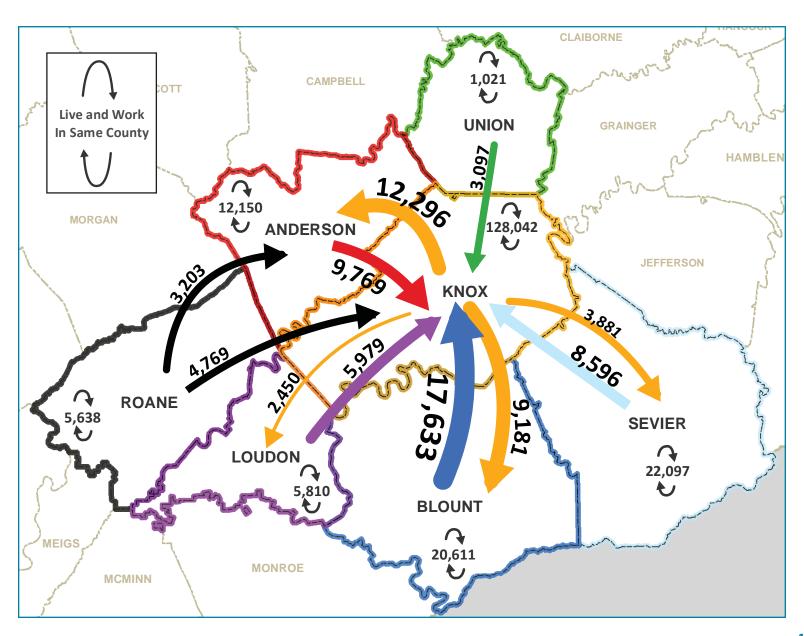
These strengths, challenges, and trends affect the quality of life in our region.



# **REGION'S COMMUTERS ON THE MOVE**

The number of workers leaving their county of residence for employment grew 6 percent between 2002 and 2012. Out of the 385,000 workers in our region, 180,000 live and work in different counties.

- Almost 18,000 workers commute from Blount County to Knox County
- 12,000 Knox County residents commute to Anderson County
- The average worker commutes 32.8 miles per day in our region



# **INCREASING COST OF TRANSPORTATION**

Owning and operating a vehicle is a necessity for many in our region. However, it has become too expensive for many East Tennesseans. According to the Center for

HOUSING + TRANSPORTATION		
County	Percent of Income	
Anderson	57	
Blount	59	
Knox	59	
Loudon	62	
Roane	57	
Sevier	60	
Union	54	

Neighborhood Technology and the U.S. Department of Housing and Urban Development, the average American household spends about 18 percent of its annual income on costs related to transportation – auto ownership, transit fare, parking, fuel and other expenses. The average

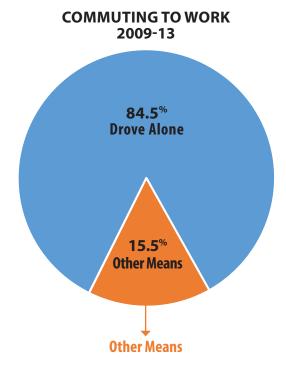
household in our region spends 32 percent of their income on transportation.

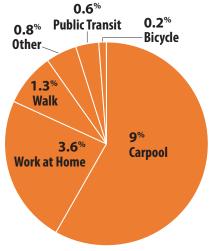
HOUSING + TRANSPORTATION COSTS PERCENT OF INCOME FOR A TYPICAL HOUSEHOLD, 2015		
Tennessee Metropolitan Planning Organizations	Percent of Income	
Bristol MPO	60	
Chattanooga Hamilton County North Georgia MPO	58	
Clarksville Urbanized Area MPO	57	
Cleveland Area MPO	57	
Jackson Urban Area MPO	63	
Johnson City MPO	60	
Kingsport MPO	61	
Knoxville Regional TPO	58	
Lakeway MPO	60	
Memphis Urban Area MPO	58	
Nashville Area MPO	55	

Source: Center for Neighborhood Technology

# **FEW SAFE OPTIONS TO DRIVING ALONE**

Nearly all of our travel in the region is done by automobile, most often by people driving alone. Eighty-four percent of commuters drive alone, an increase of 6 percentage points since 2002.







# **GROWING HEALTH CONCERNS**

According to the Trust for America's Health and the Robert Wood Johnson Foundation, 31 percent of adults in Tennessee are obese, up from 11 percent in 1990. Recent reports from the Centers for Disease Control and Prevention suggest that these statistics will not get any better in the near future—one in three children in the state are overweight. Many of our communities lack adequate and safe places for people to walk, bike or take transit.

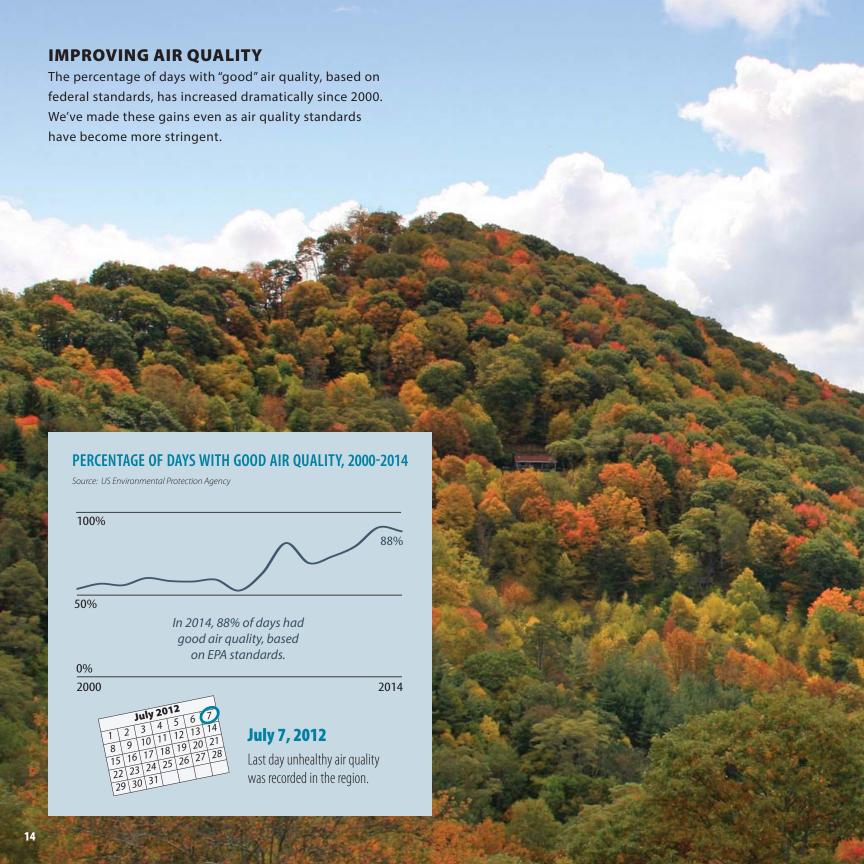
If current development trends continue, by 2040, only about one in seven households in the Knoxville region will be within walking distance to transit, and almost none of the new neighborhoods, shopping centers and employment centers will be walkable places.

## **GROWING TRANSIT RIDERSHIP**

Although it represents a small percentage of regional travel, transit is becoming increasingly attractive. Knoxville Area Transit (KAT), East Tennessee Human Resource Agency (ETHRA) and Knoxville-Knox County Community Action Committee (CAC) have all seen continued growth.

# **Knoxville Area Transit Ridership, 2005-2013**





# **Air Quality Attainment for Ozone**

As further evidence of improved air quality in the Knoxville region, the EPA formally re-designated the area to "Attainment" for the 2008 Ozone Standard, effective August 12, 2015.

Affecting Blount, Knox and a portion of Anderson counties, this action removes some of the restrictions that accompanied the "Nonattainment" designation. This is a significant milestone for the Knoxville region – ours is the first area in the United States to complete the process of re-designation to Attainment for the 2008 Ozone Standard under Clean Air Act requirements.

### 0zone

Ground level or "bad" ozone is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Ozone pollution can trigger health problems, particularly for children and elderly populations and harm sensitive vegetation.

## PM 2.5 Air Quality

Anderson, Blount, Knox and Loudon counties, and a portion of Roane County, are designated Nonattainment for Fine Particulate Matter (PM2.5). However, most recent air quality monitoring data show that our region is meeting federal standards. A formal process seeking re-designation to Attainment for PM2.5 is expected to begin when final monitoring data are released for this year.

### PM 2.5

Particulate matter less that 2.5 microns in diameter (1/30th the width of human hair) is a complex mixture of extremely small particles and liquid droplets. These "fine" particulates generally pass through the throat and nose and directly enter the lungs causing potentially serious health effects.

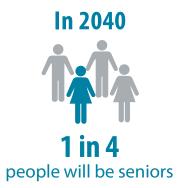


## **SHIFTING DEMOGRAPHICS**

According to the Pew Research Center, in 2015 Millennials will overtake Baby Boomers as the nation's largest living generation. The population is also rapidly graying as the Baby Boomers age. Seniors (65 years and older) are the fastest growing demographic in the region. For example, our region has a growing need for demand-response ride services that take seniors who are unable to drive on daily errands. There is growing interest in providing more housing in transit corridors to accommodate transit-dependent seniors.

# Our Region's Aging Population





Source: UT Center for Business and Economic Research



## RISE OF THE MILLENNIALS

While the senior demographic is placing new demands on transportation, housing, social and economic systems, another group is having a different sort of impact.

Millennials are youngs born between 1982 and 2000—key trends about this demographic have been reported recently by the U.S. Census Bureau:

- Population totals 83.1 million and represents more than one-quarter of the nation's total. The group exceeds the 75.4 million Baby Boomers.
- More diverse than previous generations: 44.2 percent are part of a minority race or ethnic group.
- More likely to be foreign born and speak a language other than English at home
- More are living in poverty today, compared with their counterparts in 1980: One in five lives in poverty, up from one in seven in 1980.
- Lower rates of employment: Today, 65 percent are employed, down from 69 percent in 1980.
- More educated: 22 percent have a college degree, up from 16 percent in 1980.

The Executive Office of the President of the United States, Council of Economic Advisors also has weighed in on the emergent impacts of the Millennial demographic:

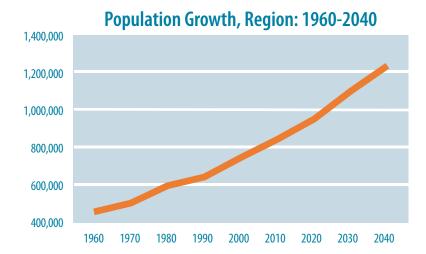
- Largest, most diverse generation in the U.S. population
- Shaped by technology
- Value community, family and creativity in their work
- Less likely to be homeowners than young adults in previous generations
- Moved into urban areas faster than their lesseducated peers

# **GROWTH AND DEVELOPMENT TRENDS**

By 2040, our region's population is expected to exceed 1.2 million.

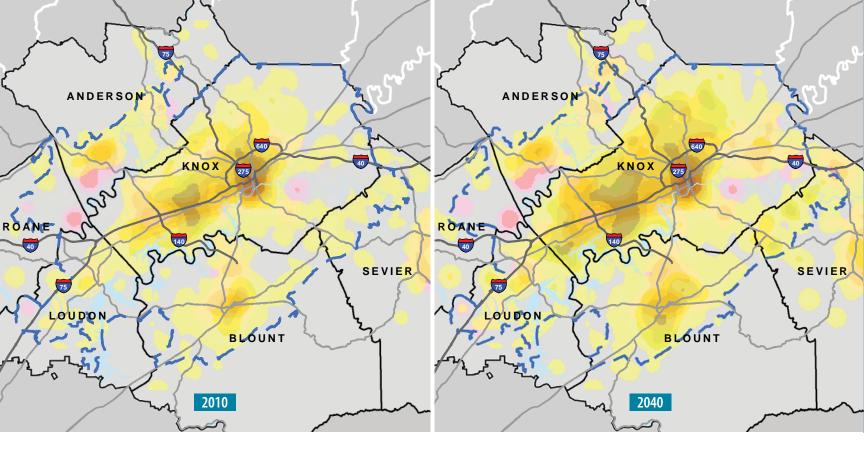


By 2040, our region is expected to add close to 300,000 new jobs.



Our region is defined as Anderson, Blount, Knox, Loudon, Roane, Sevier and Union counties. Sources: Knoxville Regional TPO; Bernardin, Lochmueller & Associates; Blount County



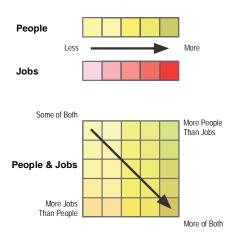


The region's population is expected to increase by 42% between 2010 and 2040 and close to 300,000 new jobs will be created in the region.

Although it is difficult to predict the future, the TPO has developed a forecast tool that simulates growth patterns based on past trends in land development and existing conditions, such as zoning and access to utilities, roadways and employment centers.

Understanding where everyone will live, work, shop, and play in the next several years in our region is critical to determining how to maintain and improve our transportation system. The growth forecast tool provides a starting point for deeper review and local input into a planning process that is updated regularly.

# **Distribution of People and Jobs**



# **TPO YEAR IN REVIEW**

Following is a brief descripton of some of this year's most significant activities, many of which provide direct support to local planning efforts. For more information about our work visit www.knoxtrans.org.

#### FEDERAL PARTNER COMES TO TOWN

U.S. Transportation Secretary Anthony Foxx visited Knoxville on May 12th to highlight the need for transportation funding that is sufficient to maintain our infrastructure and allow for good planning.



L to r: TPO Director Jeff Welch, Knoxville Mayor Madeline Rogero, U.S. Secretary of Transportation Anthony Foxx, Knox County Mayor Tim Burchett



# EAST TENNESSEE MAYORS CAUCUS

The TPO hosted the first East Tennessee Mayors Caucus on May 13th to discuss the state of our region and the future of economic development for the state.



#### **ETINDEX**

# **Online Community Indicators Project**

ETIndex was launched by the TPO and the Knoxville Knox County Metropolitan Planning Commission in early 2015 with the support and input of several regional

organizations. Its 87 indicators track critical aspects of our region's economy and quality of life. ETIndex provides a common source of data and analysis on critical topics to inform community stakeholders, spur discussion and collaboration, and monitor and improve quality of life.

## **Livability Report Card**



In partnership with the United Way, Knoxville Knox County Metropolitan Planning Commission, and East Tennessee Quality Growth, the 3rd annual

Livability Report Card was launched in February.

## LOCAL GOVERNMENT TECHNICAL ASSISTANCE ACTIVITIES

## **Transit Oriented Development**

The City of Knoxville hosted consultants from Smart Growth America and Strategic Economics on July 15th and 16th for a series of workshops and discussions about Transit Oriented Development. The event was funded by a grant from the U.S. Environmental Protection Agency awarded to Knoxville Area Transit and the city's Office of Sustainability.



# **Smart Growth Developments**

The TPO and partner City of Alcoa received a training session led by nationally recognized experts, designed to provide local leaders with the knowledge and tools necessary to create vibrant, healthy communities that are environmentally sustainable and economically resilient. Alcoa was one of 14 communities selected to participate in this competitive program. In addition to the direct benefit that this technical assistance afforded Alcoa, TPO will use the workshop outcomes to engage other communities in the region, thereby spreading the ideas about quality downtown development and redevelopment to areas seeking similar assistance.

## **Lighter Quicker Cheaper**

The TPO, in partnership with the Knox County Health Department, received free technical assistance from Project



PROJECT FOR for Public Spaces (PPS). The group came to town in September 2015 to help neighborhood groups and area officials work on designs to

transform South Knoxville Elementary School and adjacent properties into an inviting hub for community activity.

PPS planners conducted a day-and-a-half technical assistance workshop focused on transforming public spaces along the Sevier Avenue corridor using a concept called "Lighter, Quicker, Cheaper." LQC activates public spaces by capitalizing on the creative energy of the community to generate new uses and revenues for places in transition, at a lower cost and a lower risk than typical development activities. Some examples include adding flexible seating and rotating public art to interject comfort and interest into a public space.



#### **NEIGHBORHOOD CONFERENCE**

TPO staff participated in the City of Knoxville's Neighborhood Conference held in spring 2015, serving on discussion panels and

hosting an exhibitor's booth for the Smart Trips program.

#### **SMART TRIPS PROGRAM**

Smart Trips continued its fun mission of incentivizing "clean commute modes." In addition to its long-running, quarterly gift card raffles, Smart Trips introduced workplace challenges this year. Companies faced off in an effort to do the most carpooling, biking, walking, and telecommuting. Smart Trips also launched a sponsor program which further increased involvement by local employers.



L to r: Smart Trips Program Coordinator Christi Wampler, 2014 Commuter Challenge arand prize winner Dana Bryson, AAA of East Tennessee Public Affairs Director Don Lindsey, and Smart Trips Outreach Coordinator Sara Martin

#### REGIONAL BICYCLE AND PEDESTRIAN ACTIVITIES



The TPO continued to work toward implementation of the 2009 Knoxville Regional Bicycle Plan by holding events to promote bicycling and offering resources to help everyone bicycle more safely.

### **Tennessee Bike Summit**

On April 23rd and 24th, the TPO was a gold sponsor of the 4th annual Tennessee Bike Summit. The keynote speaker was Gil Penalosa, founder of 8-80 Cities and advisor to decisionmakers and communities on how to create vibrant and healthy communities for all.





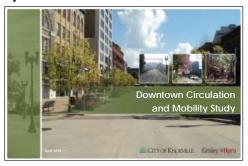


# **Open Streets Knoxville**

On October 25th, the TPO provided significant support for the region's first Open Streets event in north Knoxville. Open Streets programs introduce residents to fun physical activity and celebrate our streets as public spaces where everyone can gather. Many local residents usually have limited access to activity centers, and events of this kind provide new outlets for activity and community interaction.



## **Special Studies**



The TPO provided financial and technical resources for the City of Knoxville to complete a Bicycle Facilities Plan and a Downtown Circulation and Mobility Study.

#### **Crash Database**

The TPO is updating its database of traffic crashes involving pedestrians and bicyclists. The database helps local jurisdictions identify locations, conditions, and behaviors that contribute to crashes so that they can be avoided in the future. The database includes information on 1,294 crashes in the cities of Alcoa, Lenoir City, Knoxville, Maryville, and Oak Ridge; in the Town of Farragut; and, in Knox and Blount counties. Once the update is complete, staff will share its findings with the TPO Technical Committee, local governments, and the public.



## **REGIONAL GREENWAY ACTIVITIES**

## **Great Smoky Mountains Regional Greenway Council**

TPO staff serve on the Great Smoky Mountains Regional Greenway Council, a coalition of local governments, agencies, and individuals working together to coordinate, plan, and promote greenway construction in the greater Knoxville region.

## **Knox-to-Oak Ridge Greenway**

The TPO and the Council recently completed the Knox to Oak Ridge Greenway Plan. A preferred route along the Pellissippi Corridor linking West Knox and Oak Ridge greenways was identified. An outgrowth of this plan was a small greenway study, currently under way, which will determine how best to link the Pellissippi Parkway Corridor to Lovell Road/Turkey Creek area.

## **Maryville-to-Townsend Greenway**

The Maryville-to-Townsend Greenway Master Plan was endorsed in January by the Maryville-Alcoa-Blount County Parks and Recreation Commission. The plan calls for accommodating a new trail in the existing right-of-way along U.S. Highway 321, allowing for wide separation between greenway and highway.

### **STAFF ACCOLADES**

## **President of TSITE**

Mike Conger, TPO's Senior Transportation Engineer, was elected President of the Tennessee Section of the Institute of Transportation Engineers (TSITE) for 2015. TSITE is a professional organization with over 300 members involved in the field of transportation, including engineers, planners and educators. Mike served as TSITE Secretary/ Treasurer in 2013 and Vice President in 2014.



L to R: Major David Barrett, Jeff Welch, Captain Tarren Barrett, Mike Conger, Mul Wyman

#### **Patriot Award**

Mike Conger earned further accolades in April when he was awarded the Employer Support for the Guard and Reserve (ESGR) Patriot Award. Mike was nominated by Captain Tarren Barrett, a full-time Transportation Engineer with the TPO and part-time Tennessee Air National Guard military member for the 134th Air Refueling Wing out of Knoxville, TN. The Patriot Award was created by ESGR to publicly recognize individuals who provide outstanding patriotic support and cooperation to their employees, who like the citizen warrior on their team, have answered the nation's call to serve.

## **Thirty Years of Service**

Jeff Welch celebrated 30 years of service with the TPO in May.

### **Leadership Knoxville**

Jeff Welch was chosen to participate in Leadership Knoxville Class of 2015.

