The essence of transportation is moving people and goods from one place to another. The transportation system is the network of facilities—roads, trails and rails, to name a few—that move people and freight. Emphasis in the past has been on how to invest in transportation to move people and goods more efficiently; however, there is a growing awareness across the country that transportation systems impact quality of life in many ways. Increasingly, community leaders are placing an emphasis on how transportation systems can enhance a community’s economic opportunity, meet the mobility demands of residents, and promote active and healthy lifestyles. The way a community’s transportation system is designed, and redesigned, to meet shifting needs of residents, workers and employers will have a profound impact on the community’s future prosperity.

When thinking about St. Louis County’s transportation system, it is possible to focus on just one aspect at a time—roads, transit, or bicycle facilities; or about one purpose at a time—commuting across the region for work, traveling across town for a doctor’s appointment, or walking down the street to the neighborhood park. In actuality, though, the transportation network must be interconnected and dynamic in order to fulfill the many needs of current and future residents, employers and visitors.

The pieces of the system must work together to provide access to employment, education and other opportunities, as well as access to shopping and other services. Pieces must be in place to offer opportunities for recreation and fitness. And still other pieces must be available to provide independence and mobility for all residents. All of these facets must be considered holistically if the transportation system is to provide the greatest benefit to all its users.
**Snapshot of the System**

To understand how the transportation network performs to meet the demands of residents, workers and employers, it is necessary to understand the basic elements that make up the system. The snapshot of the system focuses on the movement of people, whether by personal auto, mass transit, or bicycle and pedestrian means.

**Local & regional road network**

The principal road network throughout St. Louis County radiates from the City of St. Louis, reflecting the connection with the City of St. Louis as the historic hub of the region. While Interstates 55, 44, 64, and 70 serve to connect St. Louis County with the rest of the metropolitan region and beyond, Interstates 170 and 270 provide north-south, cross-county access. In addition to the two north-south Interstates, cross-county connectivity is provided by Highway 61/67 (Lindbergh Boulevard) and Highway 141. In 2012, the St. Louis County Department of Highways & Traffic along with the Missouri Department of Transportation completed the Page-Olive Connector, which extended Highway 141 between Olive Boulevard and Page Avenue.

St. Louis County is the second largest steward of public roads and bridges in the State of Missouri, second only to the Missouri Department of Transportation. The St. Louis County Department of Highways & Traffic maintains 3,129 lane miles of road throughout St. Louis County. These roads include subdivision streets, roads through the County Parks system, and County arterial roadways, including those that run through municipalities.

**Metro transit system**

The Metro transit agency is responsible for transit services in the core of the St. Louis metropolitan area. The agency provides MetroBus, MetroLink light rail, and Call-A-Ride on-demand bus service for St. Louis County, the City of St. Louis and portions of St. Clair County.

The MetroBus system has 57 routes in Missouri serving the City of St. Louis, St. Louis County, and one express route into Jefferson County. The MetroBus routes provide connections to 33 of the 37 MetroLink stations. In fiscal year 2012 (June 2011 to July 2012), there were over 29,000,000 passenger boardings on MetroBus, up 11 percent from the previous fiscal year.

The MetroLink light rail system runs over two routes and extends over 46 miles serving 37 stations in Missouri and Illinois. The Red Line operates over 40 miles between Lambert-St. Louis International Airport in Missouri and Shiloh/Scott Air Force Base in Illinois. The Blue Line extends 22 miles between Shrewsbury in St. Louis County and Fairview Heights in Illinois. Between Forest Park and Fairview Heights stations, both alignments run on the same set of tracks. In fiscal year 2012, there were over 17,000,000 passenger boardings on MetroLink, up nearly 5 percent from the previous year.

Metro's Call-A-Ride service provides curb-to-curb van service in St. Louis City and St. Louis County. Service is provided to Americans with Disabilities Act (ADA)-eligible customers who
have registered to use the service, as well as the general public (for an increased fee). Call-A-Ride operates 120 vans throughout St. Louis County and the City of St. Louis. In fiscal year 2012, over 584,000 riders boarded a Call-A-Ride bus, up 3 percent from the previous year.

**Bike/pedestrian facilities**

Bicycle and pedestrian facilities vary widely based on location, design, purpose and use. For example, bicycle facilities can include dedicated bike lanes along a roadway or shared traffic lanes with lane markings or signs. Pedestrian facilities include sidewalks along streets, as well as dedicated paved and unpaved walking/biking trails. There is a large network of on-street and off-street bicycle and pedestrian facilities, used by some for daily commuting and others for more recreational or shorter, neighborhood trips.

Great Rivers Greenway (GRG) is the principal agency coordinating the various bicycle facilities and greenway trails in St. Louis County, the City of St. Louis, and St. Charles County. For bicycle facilities, GRG partnered with St. Louis and St. Charles Counties, MoDOT, the City of St. Louis, Metro, and East-West Gateway, along with a number of advocacy organizations including municipalities to create the Gateway Bike Plan. For regional greenways and trails, GRG convened several advisory committees comprised of many of the same entities, including other environmental, health, academic and economic development partners. Through the efforts of GRG and its partners, bicycle facilities and greenway trails continue to expand throughout the region.

Great Rivers Greenway’s Gateway Bike Plan, which covers St. Louis and St. Charles Counties and the City of St. Louis, indicates that 95 percent, or 961 miles, of the bike facility network is comprised of on-street facilities, including bike lanes, shared lane markings, or a paved shoulder. While the on-street bike network includes paved shoulders along roadways and wide outside lanes, only 56 percent, or 541 miles, is comprised of dedicated bike facilities – shared lanes with explicit pavement markings or signage and dedicated bike lanes. Of those dedicated bike facilities, St. Louis County has 218 miles that are existing or in active planning, design or construction.

Great Rivers Greenway’s Master Plan outlines a regional effort to build a network of greenway trails throughout St. Louis and St. Charles Counties and the City of St. Louis. Known as the River Ring, the complete vision for the regional greenway network includes 45 separate greenways encompassing 600 miles of trails. According to the plan, GRG has compiled an impressive list of accomplishments, including 90 miles of off-street trails, an additional 17 miles of trails under construction, and another 63 miles in engineering and planning. In St. Louis County, 80 miles of trails have been constructed by GRG planning efforts, with 35 miles in some phase of planning, design and construction. Through its Master Plan, GRG has identified another 143 miles of trails in St. Louis County that would connect existing trails and help complete the River Ring.
Performance of the System

The user’s experience defines how well the transportation system performs. While there are many ways to measure the performance of the transportation system, this policy brief focuses on the commuter’s experience, whether by auto or mass transit. Performance measures include the congestion experienced by drivers on the roadways, the number of jobs accessible by a typical auto commute, the number of jobs accessible by a typical transit commute, and the number of jobs accessible by zero-car/transit-dependent households.

Commuting to work

As the population and employment hub of the region, with just less than one million residents and 564,322 jobs (nearly half of which are filled by residents living outside the county), St. Louis County requires a dynamic transportation system to move people, goods and services throughout the county and to destinations beyond. Though it is possible to define the transportation system in terms of the local (or state) jurisdiction that builds and maintains the infrastructure, performance on the system is typically measured at a regional level, as people move between counties for jobs, recreation and services.

According to the American Community Survey (2005 – 2009 5-year estimate), 83.6 percent of St. Louis County residents drove alone to work, while only 2.1 percent took transit. These averages are very comparable to that of the metropolitan region, but nationally more people carpool (10.5 percent) or take transit (5 percent). The same American Community Survey shows that commute times in the St. Louis region average 24.8 minutes, ranking it 23rd out of the 35 largest metro areas in the country, where the metro average is 26 minutes.

Congestion on the roadways

Though widespread throughout the region, congestion in St. Louis County is relatively low and typically confined to very specific spots along the road network. This intermittent overcapacity, or spot congestion, is often experienced at bridges and where major roadways intersect. Several steps have been taken in recent years to address spot congestion at key points along the road network, including the widening of Interstate 64 and completion of the Page-Olive Connector. The morning and evening peak hour highway congestion maps from East-West Gateway display where congestion occurs on the interstate highway system in the region.

The 2010 Urban Mobility Report from the Texas Transportation Institute shows that the travel time index (how much longer it takes a driver to get from one place to another during peak times versus free-flow travel time) is 1.12 – which means a typical 30 minute trip in St. Louis would take about 34 minutes due to delay in congestion (12 percent longer). The travel time index has actually improved since 2003, dropping from 1.22 to 1.12, roughly a savings

Mode for Commuting to Work

<table>
<thead>
<tr>
<th>Mode</th>
<th>St. Louis County</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drove alone:</td>
<td>83.6%</td>
<td>75.9%</td>
</tr>
<tr>
<td>Carpoled:</td>
<td>7.7%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Public Transit:</td>
<td>2.1%</td>
<td>5.0%</td>
</tr>
<tr>
<td>Walked:</td>
<td>1.4%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Other Means:</td>
<td>1.1%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Worked from Home:</td>
<td>4.1%</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

Source: 2005-2009 ACS
of 3 minutes for a 30 minute trip. The travel time index is one way to gauge the impact of congestion on a region, and the St. Louis region ranks seventh-best out of the largest thirty-five metropolitan areas. In addition to extra time spent on the roadway, another way to measure the impact of congestion is through fuel consumption. In 2010, congestion cost the average commuter 14 gallons of fuel per year, down from 20 gallons in 2005.

One way congestion has been reduced in recent years is by implementing what is known as intelligent transportation systems (ITS). These are a variety of technology tools such as road sensors, traffic signals connected by fiber optic, and the variable message signs alerting motorists of incidents on the roadway. All of these tools funnel information into a central control center and help engineers manage congestion and delay. ITS is second only to transit as an effective means of reducing congestion. Since 2007, St. Louis County has implemented over 200 miles of ITS.

Access to opportunity

One important aspect of how well the transportation system works for residents is how well it provides access to opportunity, specifically employment. There are a lot of factors that go into job accessibility – where people and jobs are located, the density of communities and size of a region, a person’s accessibility to a car or dependency on transit, as well as the capacity and connectivity of the road network and the coverage of the transit system. All of these factors interplay to either constrain the number of jobs available to a resident or increase the access to opportunity.
In a 2011 report, the Brookings Institution looked at how well the transit system covered working-age residents in metropolitan areas, and how well that coverage provided access to area jobs. Nationally across the 100 largest metropolitan regions, nearly 70 percent of working-age residents lived in neighborhoods with access to transit of some kind. On average, transit riders had a median wait for any rush hour transit vehicle (bus or light rail) of 10.1 minutes, and could access 30 percent of all metro jobs with a 90-minute transit commute.

Comparatively, only 57 percent of working-age residents in the St. Louis metropolitan area are covered by transit. The median wait for any rush hour transit vehicle was 11.2 minutes, and less than one-quarter (24 percent) of all metro area jobs are accessible with a 90-minute transit commute. The coverage and job accessibility factors combine to rank the St. Louis metro area 68 out of the 100 largest metropolitan areas in transit access to opportunity.

**Zero-car households**

The issue of access to employment is particularly acute for households that do not have access to a private automobile. For these so-called zero-car households, access to transit becomes a vital piece of the equation for access to opportunity, prosperity and quality of life.

According to a 2011 Brookings Institution report, in the nation’s largest metropolitan areas, 7.5 million households do not have access to a private automobile, with a majority of these zero-vehicle households living in cities and earning lower incomes. Over 90 percent of zero-vehicle households in large metro areas live in neighborhoods with access to transit service of some kind, and can typically reach 40 percent of the metro-wide jobs via a 90-minute transit
commute. Job accessibility is slightly greater for zero-car households living in central cities (47 percent), and significantly less for those living in the suburbs (26 percent).

In the St. Louis metropolitan area there are 81,721 zero-car households, approximately 63 percent of which are considered low income (earning less than 80 percent of the median income). Throughout the St. Louis region, 82 percent of the zero-car households have access to transit, ranking it 57 out of the largest 100 metropolitan areas. Looking at where those zero-car households live, 100 percent of those living in the City of St. Louis have access to transit, versus a coverage rate of only 71 percent of those living in the suburbs.

When looking at how well that transit coverage is for connecting zero-car households to jobs, the St. Louis metropolitan area fares worse than the national average, ranking 69 out of the 100 largest metro areas. In the St. Louis region, only 31 percent of the region's jobs are accessible to zero-car households via transit. It is slightly higher for those living in the City of St. Louis (nearly 40 percent of jobs) compared to the zero-car households living in the suburbs (24 percent of jobs), but all of the statistics are lower than the national averages.

**Beyond Mobility: Transportation as an Asset**

While statistics on commuting, congestion and job accessibility are important to assessing the performance of the transportation system, more and more community leaders are looking at a broader range of impacts to consider the true benefits of an integrated, well-functioning transportation system. Planners, designers and community leaders are looking at transportation as an asset to a community, to help it achieve goals beyond simply moving people from one place to another. They are looking at how transportation choices can enhance a sense of community, provide mobility for residents throughout their lives, and get greater economic and fiscal bang for their transportation investment dollar.

**Sense of community**

There is an emerging national trend that traditional suburban development, where uses are segregated and people need an automobile for even the most basic of neighborhood trips, is becoming less desirable. A growing segment of the population, from young professionals to empty nesters, is looking for a built environment that offers a variety of housing types as well as transportation options. Both the Millennials and the Baby Boomers are looking for denser, more mixed-use communities that have high levels of service and amenities near where they work and live. They are looking for high-quality public transit, bicycle and pedestrian facilities, and mixed-use districts that allow people to live, shop, eat and socialize without an automobile.

There are many motivations for this trend.

In the 2011 Community Preference Survey, *What Americans Are Looking For When Deciding Where To Live*, conducted for the National Association of Realtors, nearly half of respondents said they would prefer to live in a city (19 percent) or a suburban neighborhood (28 percent) with a mix of houses, shops and businesses. Only one in ten (12 percent) said they would prefer a suburban neighborhood with houses only.

Seventy-seven percent said it was somewhat or very important for their community to have sidewalks and places to take walks. Sixty-six percent said it was important to be able to walk to places within their community, with grocery store, pharmacy, hospital, and restaurant topping the list of desired destinations.
For some, the desire is economical – having the ability to take transit to a job, or walk to nearby restaurants and retail, or even using a car-share option like Zip Car, is much more economical than the monthly payments for buying and maintaining a car. For those too young to own a car, or perhaps too old to drive one, it is about mobility and independence without needing a personal automobile. And for others, mixed-use districts with quality transit and bicycle and pedestrian facilities provide opportunities for social interaction and help create a sense of community.

The implications of this trend point in many directions. For instance, many young professionals may find this sort of community in an urban environment (32 percent of Millennials live in cities, according to a 2009 Pew Research Center report); while others are able to find it in places like Bethesda, Maryland, or Arlington, Virginia, which have more walkable spaces along with quality public transit to employment, shopping and services in Washington, D.C. And while some Baby Boomers may be looking to leave the suburbs to seek out the same sort of urban and quality suburban communities as Millennials, this desire might also result in a growing demand for density, mixed use, and quality transportation alternatives in more traditional suburban settings.

**Healthy & active communities**

In addition to creating a sense of community, denser, mixed-use places with true multi-modal access are also being looked at for their health benefits. Organizations such as Congress for the New Urbanism (CNU), Alliance for Biking & Walking, and AARP, as well as the Center for Disease Control and Prevention (CDC) and local and state health agencies across the country are investigating the link between public health and community design, including the availability for non-motorized means of transportation. These groups are looking at a balanced approach to transportation policy that supports health and reduces healthcare costs. They are looking at ways that community leaders, planners and designers of the transportation system can encourage healthy community design; promote opportunities for physical activities; reduce exposure to air pollution; and ensure that all people have access to safe, healthy, convenient and affordable transportation.

**Economic impacts**

Investment in transportation infrastructure has long been used as an economic development tool. From railroads, to trolleys, to roads, increasing accessibility to jobs, services and shopping has been an important component of economic growth. For employers, a dynamic and well-integrated transportation system is vital to connect their jobs to the regional workforce. As employment shifts throughout a region, the transportation system, particularly public transit, must respond to ensure a wide spectrum of the workforce can access jobs of all skill levels. Employers who move away from the urban core and the well-defined public transit system are finding it increasingly difficult to attract lower-skilled, lower-wage workers who might rely on
transit to access jobs.

Beyond the pragmatic need to connect jobs with workers, employers are also looking at quality of life and community amenities as one factor in locating a business. Much like their current and future employees, employers are looking at the availability of quality transit and bicycle and pedestrian facilities as an indicator of how desirable a place is to live. Employers want to capitalize on this growing preference for communities with a vibrant transportation system as a way to attract and retain future workers.

In times when local government budgets are tightening and funds from federal and state agencies are shrinking, community leaders are looking to maximize their investments in infrastructure to get the biggest bang for their tax dollar. For transportation investments, this means looking beyond road expansion to capitalize on all facets of the transportation system, including bicycle and pedestrian facilities and public transit. There is a growing body of research showing that communities that capitalize on the presence of light rail through transit-oriented development (TOD) experience greater market interest in new housing, retail and office development. These mixed-use, multi-modal TOD areas capitalize on investments already made in transit infrastructure, as well as the preference by some to live and work in such areas. Likewise, research is showing that more walkable places perform better economically, with rents for office and retail space and home values fetching a premium.

Transportation systems have an intricate relationship with local and regional economies, with a community's quality of life, with development patterns and real estate demand, and the environment. Now is the time, with shifting demographics, competition for economic growth, and pressures from tightening fiscal realities, for community leaders to embrace a holistic view of transportation and capitalize on the broad range of benefits that can come from it.

Sources


