Austin State Agency Congestion Footprint

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Austin State Agency Congestion Footprint

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Executive Summary

The Austin metropolitan statistical area (MSA)* has seen steady population and job growth over the last several decades, stemming from its strong and growing economy. The Austin MSA’s economic growth has been accompanied by increases in congestion, particularly during the morning commute period. There is widespread interest in improving congestion and a growing recognition that we cannot build our way out of this issue—especially in highly developed and dense urban areas.

Concentration of State Employees in Central Austin

Because Austin is the state capital, a high proportion (about 8 percent) of the region’s 880,000 workers are state employees, which makes the State of Texas one of the single largest employers in the Austin MSA (1). Focusing on the central Austin region (the area bounded by MoPac on the west, I-35 on the east, Oltorf Street on the south, and US 183 on the north), 19 percent of the 226,000 total workers in that region are state workers. The purpose of this research was to determine the extent to which this large concentration of state workers influences Austin-area congestion.

State Employee Commuting Characteristics

A review of American Community Survey (ACS) journey-to-work data show that Austin-based state employees exhibit higher levels of commuting by modes other than driving alone compared to state employees in most peer cities (except Sacramento, California). This trend is also evident when comparing work commute characteristics between employee types in Austin: state employees exhibit higher levels of commuting by alternative modes compared to non-state employees.

The ACS data also reveal that state employees in Austin telework at much lower levels than all other categories of workers (both their Austin counterparts and peer employees in other states). Many state agencies list telework and flexible schedule options for employees on their websites, but in practice these travel options are not widely used due to either the need to comply with statutory requirements that agencies offer services Monday through Friday from 8:00 a.m. to 5:00 p.m. (2) or a heavy reliance on desktop computers.

Best Practice: Texas Health and Human Services Commission

A few state agencies have strong and viable telework and mobile work programs, most notably those that are standard operating practice across the Health and Human Services Commission (HHSC) enterprise. The HHSC programs were implemented after extensive meetings and

* A metropolitan statistical area is a geographical region with a relatively high population density at its core and close economic ties throughout the area.
planning efforts that considered all aspects of telework and mobile worker programs. Central to the HHSC business practice are the ability for each department to tailor the programs to their specific needs and the requirement that all programs have measurable performance metrics as part of their implementation. Throughout the HHSC enterprise, training is integral for both managers and staff, as are robust technological tools that support the enterprise’s activities in this area (including real-time feedback on those metrics).

Programs in Other States

Outside of Texas, notable examples exist for comprehensive statewide programs that have shown measureable benefits in reducing travel in single-occupant vehicles (SOVs). Most of these state-level programs focus on the commute trip, some limited to state employees and others for all workers. An extension of these programs considers all residents making trips for all purposes and using all modes (ridesharing as well as using transit, biking, walking, etc.). For the most part, these packages are branded and marketed throughout the state, with metrics in place to measure effectiveness.

Quantifying the Congestion Impact of State Employees

The research team used INRIX congestion data* to estimate the influence of this high concentration of state employment on congestion in the downtown Austin area. Researchers focused on the differences in congestion on typical work days compared to congestion on skeleton-crew-only state holidays (i.e., days when state employees were not likely to be commuting to work). This analysis focused on the downtown I-35 corridor (from Ben White Boulevard north to US 183) and congestion occurring during the peak travel period on the selected dates. As illustrated in this report, the comparison of average congestion levels to those associated with state skeleton-crew holidays enabled the identification of slight changes in congestion patterns. The most notable differences were associated with:

- Veterans Day.
- Lyndon B. Johnson’s (LBJ’s) birthday.
- Emancipation Day.

Although this analysis is not a perfect isolation of state workers, the ability to identify slight changes in congestion patterns associated with state skeleton-crew holidays confirms the general notion that the high concentration of state workers in the downtown/central area has an impact on Austin congestion levels.

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* INRIX is a private company that assembles, packages, and sells congestion and congestion-related data.
Findings

The analysis of state employee commute data and congestion impacts suggests that state agencies can influence congestion through programs that lead to modified work commutes. State workers are already more likely to commute by non-SOV compared to their peers (both in Austin and in other state capitals). These programs could be strengthened through the following options.

Statewide or State-Agency-Focused Travel Demand Management (TDM) Plans

Statewide or with a focus specifically on state agencies, several states have improved congestion conditions through strategic and measurable activities organized in travel options and TDM plans. Outside of Texas, notable examples exist for comprehensive statewide programs that have shown measurable benefits in reducing travel in SOVs.

Most programs focus on the commute trip, some for state employees and others for all workers. An extension of these programs considers all residents making trips for all purposes and considers all modes (ridesharing as well as using transit, biking, walking, etc.). Most state-level programs are branded and marketed throughout the state, with metrics in place to measure effectiveness.

Ridematching

State agencies can undertake internal initiatives to promote ridematching, using the tools available on current ride-matching websites or funding a staff person to serve as the internal travel options coordinator. Intra-agency efforts can effect change, but a review of the American Community Survey’s distribution of census tract concentrations of state employees’ residential and work place locations identifies high concentrations of census tract pairs where the state workers live near each other and travel to nearby state agencies.

This suggests that inter-agency coordination would be even more effective than intra-agency efforts as would encouraging state employees to join with other commuters through other ridematching programs already in operation in Austin.

Telework

The ACS data show that state workers telework at levels much lower than their counterparts in Austin and in peer state agencies. This is likely because of statutory requirements that agencies offer services Monday through Friday from 8:00 a.m. to 5:00 p.m., and/or the continuing reliance on desktop computers and related information technology infrastructure issues. Because state agencies seek to attract and retain top talent, management should consider work schedules and capital purchases that would support increased levels of teleworking.

Transit Subsidies

Under the Federal Transportation Fringe Benefit Program (3), “qualified transportation fringe benefit” employers are allowed the opportunity to offer tax-free transportation benefits to their employees, including transit passes, vanpooling, parking, and bike commuter expenses, at
different maximum costs per month. State agencies in Texas are prohibited from providing transit subsidies because there is no authority to use appropriated money to fund such a program or to offer a pre-tax option.

The ACS data show that state workers already use transit at higher levels than their counterparts, so offering this as a benefit appears to be relevant and applicable to state workers. However, there is a business cost to implementing this program, which needs to be more fully explored prior to moving forward.

**Requirements for Successful Programs**

Regardless of the strategy pursued, the experiences of Texas’ HHSC and other state agencies underscore the importance of having:

- A high-level champion to support travel options for employees.
- A well-thought-out implementation plan.
- Strong consideration of the business or operational aspects of any program.
- Training for both managers and employees.
- Measurable performance metrics.
Introduction

The Austin metropolitan statistical area (MSA)* has seen steady population and job growth over the last several decades, stemming from its strong and growing economy. The Austin MSA’s economic growth has been accompanied by increases in congestion, particularly during the morning commute period. There is widespread interest in improving congestion and a growing recognition that we cannot build our way out of this issue—especially in highly developed and dense urban areas. Other solutions involve better managing demand on the system through shifting travelers away from single-occupant vehicles (SOVs) to other modes of travel or to less congested times.

Because Austin is the state capital, the single largest employer in the Austin MSA is the State of Texas (/). The purpose of this research was to identify the extent to which the state employment base contributes to congestion in Austin and to provide options for agency-based programs for travel demand management (TDM). This research accomplished its purpose through three activities:

- A review of best practices among state-level TDM programs.
- A presentation of data that summarize the Austin context of high congestion and concentrated state employment.
- A review of congestion data to evaluate the effect of state employment on Austin-area congestion.

* A metropolitan statistical area is a geographical region with a relatively high population density at its core and close economic ties throughout the area.
Background

As the state’s population grows, the corresponding increases in demand on the transportation system create incentives to consider alternatives to SOV travel during the peak hours of congestion.

The cycle of growth and transportation often looks like this: as economic development activities result in more downtown employment, the increased number of workers commuting to jobs in those centralized areas, when unchecked, leads to more users on the roadways during the peak travel period. Eventually, the system becomes congested, and additional roadway capacity is built, which is filled over time by more workers commuting to new jobs at employers locating in the same area.

So while the goals of increased density in a concentrated area are met, the unchecked addition of workers commuting to those locations puts pressure on the transportation infrastructure, leading to the need for even more roadway capacity. At some point, it is not possible or feasible to build our way out of congestion, and consideration shifts to travel options for those workers commuting to the high-density areas.

Travel options are important tools in improving the efficiency of demand on the transportation system by promoting and facilitating alternative modes of travel and related trip reduction strategies. These include efforts to reduce SOV travel, educate travelers about mode alternatives, and illustrate the benefits of traveling more efficiently through combining trips (also known as trip chaining). Most TDM programs today focus on the commute trip, with a goal of reducing peak-hour congestion through the promotion of alternatives, although a few take a more holistic approach to consider all travel regardless of purpose.

Local and regional agencies are typically the ones who promote and implement travel option strategies; however, there are also successful examples of state agencies implementing and leading programs for state employees and/or all commuters. For example:

- Washington State passed legislation to ensure the achievement of a state-level goal to reduce commute trips.
- Massachusetts developed the MassRIDES program to inform travelers across the state about alternative travel modes and options.
- Arizona, Georgia, and Tennessee have state agency travel option programs.
- Arizona, California, Colorado, Georgia, Florida, Minnesota, Oregon, Virginia, and Washington have state-level telecommuting policies.

Within state departments of transportation (DOTs), one study found that at least 33 DOTs encourage their employees with specific TDM-oriented activities such as carpooling, bicycling, using transit, vanpooling, and walking, which are most commonly suggested. Some DOTs go as far as developing statewide TDM plans (although not in Texas). The unit within the DOT
responsible for TDM efforts varied across the agencies studied. Responsibility rested with operations, planning, or another division (4).

This section presents:

- Best practices across the most notable state-level travel option programs.
- The transit subsidy program not currently available to Texas state employees.
- A review of travel option programs offered across Texas state agencies.
- An inventory of Austin-based state agencies.

**Best Practices of State-Level TDM Programs**

This subsection highlights best practices for five state-level TDM programs:

- Washington.
- Massachusetts.
- North Carolina.
- Utah.
- Virginia.

This subsection also gives a summary of travel option programs offered by states specifically for their employees. These programs offer insights into activities that could be considered for implementation in Texas. All are official programs, with appropriate levels of funding and staff resources.

**Washington**

The Commute Trip Reduction (CTR) Program in Washington was developed in recognition of several issues, most notably air quality and congestion. Automotive traffic in Washington’s major cities was a major source of polluting emissions. In addition to the environmental degradation, corresponding traffic congestion was having a major impact on businesses, governmental agencies, and individuals in terms of lost working hours and delays in the delivery of goods and services.

The legislature saw an opportunity to reduce the demand for vehicle trips and passed the Commute Trip Reduction Law in 1991. In 2006, legislators passed the Commute Trip Reduction Efficiency Act that required local governments in congested urban areas to develop programs that reduce drive-alone trips and vehicle miles traveled (VMT) per capita (5).

With these laws, the Washington Department of Transportation (WSDOT) was required to develop a joint comprehensive commute trip reduction plan for all state agencies, including institutes of higher education, in the three urban growth areas of Olympia, Lacey, and Tumwater.
The legislation specified strategies to include in the programs: telework, flexible work schedules, parking management, and consideration of the impacts of worksite location and design on multimodal transportation options. The intent of the legislation was to reduce commute trips by state employees by aggressively developing substantive programs. Biennial reporting is mandatory, with WSDOT reviewing these performance reports. In addition to this state-level initiative, the CTR Program website indicates that workplaces with “100 or more full-time employees…develop and manage their own programs based on locally adopted goals for reducing vehicle trips and miles traveled.”

The CTR Program has proven to be an effective tool for easing congestion and operating the transportation system efficiently. More than 1,050 worksites and 530,000 commuters statewide participate in the program (5). The CTR worksites saw reductions of almost 5 percent in the drive-alone rate and about 5.6 percent in the VMT per employee, which translates to nearly 16,000 fewer daily vehicle trips on roadways in 2009 through 2010 (6). Figure 1 shows how the Washington commute trip drive-alone rate compares to the average in the United States and to the CTR worksites (6).

![Figure 1. Commute Trip Drive-Alone Rate Comparison between Washington and the United States.](image)

**Massachusetts**

Massachusetts currently operates one of the longest-running statewide travel solutions programs in the country, under a Massachusetts Department of Transportation (MassDOT) program called MassRIDES. The state has provided commuter services for over 30 years, initially with the program Caravan for Commuters that focused on vanpool services. Ten years ago, this program
expanded into the multimodal, mode-neutral MassRIDES that serves individuals and employers across the state. The stated objectives for the MassRIDES program include:

- “Slim down your commuting costs”
- Help you share your rides in carpools or vanpools
- Find current transportation info
- Give you new ways to feel good about your health
- Help you bring smart transportation programs to your workplace
- Reduce traffic congestion within your community or at your worksite
- Reduce pollution in your community” (7).

MassRIDES is a one-stop resource that provides transportation information, ridematching services, and employer-based outreach. These government-funded services encourage sustainable and lower-cost commuting options by providing information, incentives, and technical support. Outreach coordinators work with employers to provide customized commute programs for their employees. Travelers can contact MassRIDES by phone, mail, email, or message on its website to gain access to information on a full range of travel options including public transit, nonmotorized travel, carpools, vanpools, alternative work schedules, park and ride, and emergency ride home.

Vanpools are still an important focus for the MassRIDES program. MassDOT reports that there are about 60 vanpools in the state serving over 700 riders. In July 2014, MassDOT announced a new Massachusetts Vanpool Program, designed to further increase vanpool use across the state. The program offers a monthly subsidy of up to $600 per month for participating vanpools. The program is funded by the Federal Transit Administration (FTA) Capital Cost of Contracting policy (8).†

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* Information provided by Kristin Slaton, director of MassRIDES and Massachusetts Safe Routes to School, Massachusetts Department of Transportation, Boston, Massachusetts. Phone interview August 6, 2014.

† According to the U.S. Department of Transportation, some FTA recipients turn to an outside source to obtain public transportation service, maintenance service, or vehicles that the recipient will use in public transportation service. When recipients contract for such service, FTA provides assistance with the capital consumed in the course of the contract:

- In the case of a contractor’s providing vehicles for public transportation service, the capital consumed is equivalent to the depreciation of the vehicles in use in the public transportation service during the contract period.
- In the case of a maintenance contract, the capital consumed may be, for example, depreciation of the maintenance garage or depreciation of the machine that lifts the vehicle.
- Capital consumed may also include a proportionate share of the interest the contractor might pay out as the contractor purchases and makes available to the recipient these capital assets.
Several other program features support and encourage the use of alternative transportation modes:

- **MassRIDES** coordinates the Emergency Ride Home program to give commuters peace of mind by providing a free ride home in the case of an emergency (a standard offering in most ride-sharing programs). This service provides reimbursement for up to four unexpected emergency trips per year offered only to employees of organizations that have partnered with the program.

- The Excellence in Commuter Options Awards are an effort to recognize organizations and companies that make alternative travel options viable and enticing for their employees.

- Other promotional events include the Bay State Bike Week and Car-Free Week (see Figure 2).

Another program offered by MassRIDES is NuRide, the nation’s largest rewards program for individuals who take green trips. The service is available to all travelers, who can join and track their greener travel habits in order to earn rewards in the form of coupons and discounts. NuRide also serves as a rideshare database, connecting participants to potential travel partners in their area. Since its launch in August 2010, NuRide has accumulated 22,744 members in Massachusetts who have reported over 6.5 million alternative mode trips using the website’s activity tracker. Figure 3 shows the activity of Massachusetts NuRide members.

MassRIDES and NuRide are offered to all travelers in Massachusetts but do have a notable presence among state employees. MassRIDES reports that 1,926 Massachusetts state employees are registered for NuRide as of August 2014, accounting for over 8 percent of the state’s NuRide members. Participating state employees have reported 221,779 alternative mode trips, for a reduction of over 3.2 million vehicle miles. *

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* Information provided by Kristin Slaton, director of MassRIDES and Massachusetts Safe Routes to School, Massachusetts Department of Transportation, Boston, Massachusetts. Email August 13, 2014.
North Carolina

The North Carolina Department of Transportation (NCDOT) developed a TDM plan in 2004. Motivated by issues related to air quality and growing concerns over ground-level ozone pollution from motor vehicles, increasing VMT, and oxides of nitrogen, NCDOT and its Public Transportation Division worked together to create the NCDOT Statewide TDM Plan (9).

In addition to providing the overall policy framework for TDM in the state (see Figure 4), NCDOT allocates state funding and maintains fiscal oversight for these programs and transportation management associations. Guided by the statewide plan, NCDOT also provides funding for the statewide ride-matching program that is run from within the DOT’s Public Transportation Department.
One notable program called SmartCommute is available for all employees working in the Research Triangle Park (RTP), which is located about 20 miles west of Raleigh, North Carolina. The RTP is a business complex covering 7,000 acres in the middle of the Raleigh, Durham, and Chapel Hill triangle. There are over 140 organizations, which employ about 38,000 people (10). With 29 member employers, SmartCommute encourages and tracks TDM efforts ranging from carpooling and vanpooling to transit, biking, walking, and telecommuting. Subsidies are provided to employees for bus and vanpool use. Emergency ride home and ridematching are provided as well, which are standard offerings for most of these types of programs.

**Utah**

TravelWise is a program started by the Utah Department of Transportation (UDOT) in 2009 to support alternatives to driving alone, inspired by TDM efforts associated with hosting the 2002 Olympic Games. TravelWise offers a 25-page kit for businesses to download from its website and use as a guide when setting up their TDM programs (11). The program currently has three goals:

- Reduce energy consumption.
- Optimize transportation mobility.
- Improve air quality.

UDOT is considering adding a fourth goal about health.

TravelWise Tracker is a program that allows users to set travel goals and see how they can save time and money, reduce energy consumption, optimize mobility, and improve air quality. Top commuters and teams are recognized on the website. UDOT has recently improved the tracker so that users can register on Facebook, use the planner to find a carpool, track trips on a mobile device or tablet, and create teams to rival coworkers, family, or friends.
For six years, TravelWise has also included a Clear the Air Challenge. Using the motto “Drive Down Your Miles,” this competition encourages participants to reduce vehicle emissions by choosing alternatives to driving alone. The competition has the following goals for 2014:

- Register 10,000 program participants (up from the 8,400 participants last year).
- Save 2 million vehicle miles driven (up from the 1.9 million miles saved last year).
- Eliminate 250,000 vehicle trips (up from the 176,000 trips eliminated last year).

TravelWise receives funding from a variety of sources including the Chamber of Commerce, the metropolitan planning organization (under the Congestion Mitigation and Air Quality and Alternatives Transportation Programs), Utah State Planning and Research Program, and general UDOT funding for communities.

**Virginia**

Facing a projected 37 percent growth rate between 2010 and 2040, Virginia transportation leaders work with the Virginia Department of Rail and Public Transportation (DRPT) and Virginia Department of Transportation to ensure TDM is an element of all transportation studies.

In January 2014, DRPT approved the Statewide Transit and TDM Plan that describes the challenges and opportunities expected by the year 2040, identifies gaps in transit and TDM services across the state, and recommends optimum service and funding levels for transit and TDM (12). Expanded and enhanced public transportation is a large part of this plan. A full list of strategies is shown in Table 1. The table gives an indication of the market for the TDM strategy as well as the setting where it is most appropriate, such as in an urban or suburban setting.

Telework!VA is a statewide program in which DRPT provides resources to employers, employees, and local agencies on how to establish and manage telework programs. The program encourages the reduction of commuting time or elimination of the commute altogether by working from home or a satellite workplace. Program materials describe how to take advantage of Virginia’s telework tax credit (administered by the Virginia Department of Taxation), which provides benefits of up to $1,200 per employee and up to $50,000 per organization for eligible telework expenses incurred during taxable years 2012 through 2016 (13).

Virginia uses the number of passenger miles of travel saved by customers of commuter assistance agencies as a performance measure. From 2006 to 2008, the state peaked in its achievement of a 25 million average-per-year reduction in passenger miles traveled. The current average is approximately a 12 million average-per-year reduction in passenger miles traveled in 2011 (14). A more comprehensive list of performance measures is currently being developed.*

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* Information from Christopher Arabia, manager of mobility programs, Virginia Department of Rail and Public Transportation, via email exchange with Nevine Georggi July 24, 2014.
Table 1. TDM Strategies as Defined in the Virginia 2013 Statewide Transit and TDM Plan.
Source: Virginia 2013 Statewide Transit and TDM Plan.

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<td>Vanpool Subsidy</td>
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<td>✔</td>
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</tr>
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</tr>
<tr>
<td>Infrastructure</td>
<td>Park &amp; Ride Lots</td>
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<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>Private Shuttles</td>
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<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>Cashshare</td>
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<tr>
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<td>Bikeshare</td>
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<td>✔</td>
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</tr>
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<td>Goal-based programs</td>
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<td>Support Services</td>
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<td>Land Use &amp; Zoning</td>
<td>TDM conditions for development approval</td>
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<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td></td>
<td>Parking management</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

State Agency Programs for State Employees

In addition to offering statewide programs to all employers and commuters, some state agencies offer travel option programs targeted to state employees. For example, the Telework Arizona program in the Phoenix metropolitan area has evolved into a key strategy for reducing congestion and improving air quality. As of 2007, more than 20 percent of state employees in Maricopa County participated in the program. Telework Arizona estimates that these workers saved 5,250,000 miles of vehicle travel and 181,000 hours of personal commute time in 2008 (15).

Similarly, eligible state employees in Georgia can participate in the statewide Work Away telework initiative. As of 2012, 5 percent of Georgia’s 80,000 state employees participated in the program. If state employees telework at least once a week, 416,000 trips are saved per year, which equates to an estimated VMT savings of 5,470,400 miles annually (15).

The state government in Tennessee offers a Swipe and Ride Program where Nashville- and Memphis-area state employees receive a transit pass to use for work trips made using transit, commuter rail, and downtown trolleys (16). Work trips are defined as those associated with the work commute and travel to a meeting, lunch, or other necessary appointment (e.g., medical). Swipe and Ride began in 2006 as a way to alleviate state employee parking demands in downtown Nashville. At the time, it was funded by the State Revolving Fund where the Department of General Services paid the Nashville Metropolitan Transit Agency on a per-ride
basis. In July of 2009, the Tennessee Department of Transportation (TDOT) took over the administration of the program, still using State Revolving Funds. Also in 2009, TDOT extended the program to state employees in the Memphis area, and the Memphis transit agency later became an official partner in the program.

**Transit Subsidies**

Many employers in the private sector offer transit subsidies as a mechanism to encourage the use of alternative modes for the work commute. This benefit has its origins in 1993, when a voluntary fringe benefit program for employers was authorized under Section 132 (f) of the Internal Revenue Service (IRS) Service Code. Under the Federal Transportation Fringe Benefit Program (3), a “qualified transportation fringe benefit” allowed employers the opportunity to offer tax-free transportation benefits to their employees, including transit passes, vanpooling, parking, and bike commuter expenses, at different maximum costs per month. This voluntary benefit is one of eight types of statutory employee benefits that are excluded from gross income that would be subject to federal tax, and can only be provided by employers to employees.

In 2009, the qualified bicycle commuting reimbursement option (17) was added to the eligible transportation fringe benefits. Although the original intent was to equalize bike commuting with transit and driving (which are already covered by the Qualified Transportation Fringe Benefits), there are some restrictions on the bicycle commuter benefit. The reimbursement must be paid by the employer; an employee cannot reimburse themselves with pre-tax income, and an employee cannot receive both transit and bicycle benefits in the same month.

Table 2 summarizes the qualified transportation fringe benefit and bicycle commuting reimbursement programs.

A 2014 survey of mobility attitudes showed that travelers are much more likely to use transit if they receive transit benefits from their employer (18). This response did not vary based on the level of transit service available to the traveler. Many states offer qualifying employees a financial incentive to encourage use of mass transit and other options for commuting to and from work in an effort to reduce traffic congestion and pollution. Table 3 summarizes the number of states providing transit subsidies and incentives. State agencies in Texas are currently prohibited from providing transit subsidies because there is no authority to use appropriated money to fund such a program or to implement a pre-tax employee benefit.

---

* Information provided by Bill Hayes, transportation specialist, Tennessee Department of Transportation, Division of Multimodal Transportation, Nashville, Tennessee. Email August 12, 2014.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Transit</th>
<th>Commuter Highway Vehicle (e.g., Vanpool)</th>
<th>Qualified Parking</th>
<th>Qualified Bicycle Commuting Reimbursement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentive Levels</td>
<td>Up to $130/month for transit expenses</td>
<td>Up to $130/month for vanpool expenses</td>
<td>Up to $250/month</td>
<td>Up to $20 per qualified bicycle commuting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>for parking at or</td>
<td>month. This exclusion for qualified</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>near an employer’s</td>
<td>bicycle commuting reimbursement</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>worksite, or at</td>
<td>includes any employer reimbursement</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>a facility from</td>
<td>during the 15-month period beginning with</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>which employee</td>
<td>the first day of the calendar year for</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>commutes via</td>
<td>reasonable expenses incurred by the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>transit, vanpool,</td>
<td>employee during the calendar year.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>or carpool</td>
<td></td>
</tr>
<tr>
<td>Employer Tax Benefit</td>
<td>Employers give their employees up to</td>
<td>Employers give their employees up to</td>
<td>Employers give</td>
<td>Employers reimburse their employees up to</td>
</tr>
<tr>
<td></td>
<td>$130/month to commute via transit; gets</td>
<td>$130/month to commute via vanpool;</td>
<td>employees up to</td>
<td>$20/month for qualified bicycle commuting</td>
</tr>
<tr>
<td></td>
<td>a tax deduction and saves over providing</td>
<td>gets a tax deduction and saves over</td>
<td>$250/month for</td>
<td>month. This exclusion for qualified</td>
</tr>
<tr>
<td></td>
<td>same value in gross income or</td>
<td>providing same value in gross income</td>
<td>parking at or near</td>
<td>bicycle commuting reimbursement</td>
</tr>
<tr>
<td></td>
<td>Employers allow employees to use pre-tax</td>
<td>or</td>
<td>an employer’s</td>
<td>includes any employer reimbursement</td>
</tr>
<tr>
<td></td>
<td>income to pay for transit and employers</td>
<td></td>
<td>worksite, or at</td>
<td>during the 15-month period beginning with</td>
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<tr>
<td></td>
<td>save on payroll tax (at least 7.65%</td>
<td></td>
<td>a facility from</td>
<td>the first day of the calendar year for</td>
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<tr>
<td></td>
<td>savings) or</td>
<td></td>
<td>which employee</td>
<td>reasonable expenses incurred by the</td>
</tr>
<tr>
<td></td>
<td>A combination of both up to statutory</td>
<td></td>
<td>commutes via</td>
<td>employee during the calendar year.</td>
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<tr>
<td></td>
<td>limits</td>
<td></td>
<td>transit, vanpool,</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>or carpool</td>
<td></td>
</tr>
<tr>
<td>Employee Tax Benefit</td>
<td>Employee receives up to $130/month tax</td>
<td>Employee receives up to $130/month</td>
<td>Employee receives</td>
<td>Employee reimbursed up to $20/month for</td>
</tr>
<tr>
<td></td>
<td>free for transit or vanpool (this value</td>
<td>tax free (not on their W-2 form) or</td>
<td>employees up to</td>
<td>reasonable expenses related to commuting</td>
</tr>
<tr>
<td></td>
<td>will not appear on their W-2 form) or</td>
<td></td>
<td>$250/month tax</td>
<td>by bicycle</td>
</tr>
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<td></td>
<td>Employee pays for commute benefit with</td>
<td></td>
<td>free (not on their</td>
<td></td>
</tr>
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<td></td>
<td>the pre-tax income and saves on income</td>
<td></td>
<td>W-2 form) for</td>
<td></td>
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<tr>
<td></td>
<td>tax or</td>
<td></td>
<td>qualified parking</td>
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<td></td>
<td>A combination of both</td>
<td></td>
<td>or</td>
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<td></td>
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<td></td>
<td>Employee pays for</td>
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<td>commute benefit</td>
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<td>with the pre-tax</td>
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### Table 3. Summary of Incentives for State Employees

<table>
<thead>
<tr>
<th>Incentive</th>
<th>No. of States</th>
</tr>
</thead>
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<tr>
<td>Offering Transit Incentive</td>
<td>20</td>
</tr>
<tr>
<td>Not Offering Transit Incentive</td>
<td>30</td>
</tr>
<tr>
<td>Offering Additional Incentives/Programs</td>
<td>19</td>
</tr>
<tr>
<td>Vanpool</td>
<td>16</td>
</tr>
<tr>
<td>Parking</td>
<td>13</td>
</tr>
<tr>
<td>Carpool</td>
<td>1</td>
</tr>
<tr>
<td>Bike</td>
<td>3</td>
</tr>
</tbody>
</table>

**Examples of Texas State Agency Travel Option Programs**

Texas state agencies are engaged in improving congestion through specific travel option efforts, with notable results. This subsection describes TDM activities at select agencies. Researchers obtained these details through a combination of agency website scans and calls to clarify the available website information. The Health and Human Services Commission program, which is the strongest identified among Texas state agencies, was documented based on a series of meetings and related site visits. However, the information presented here is not intended to be an exhaustive summary of travel option programs at Texas state agencies.

Across the agencies listed, the programs were designed to meet statutory requirements that agencies offer services Monday through Friday from 8:00 a.m. to 5:00 p.m. In addition, the telework programs are limited to some extent by the reliance on desktop computers (although agencies are generally moving to laptops during replacement cycles and for new staff).

**Health and Human Services Commission**

The Health and Human Services Commission (HHSC) oversees four agencies, each headquartered in Austin:

- Department of Aging and Disability Services.
- Department of Assistive and Rehabilitative Services (DARS).
- Department of Family and Protective Services (DFPS).
- Department of State Health Services.

HHSC has comprehensive telework and mobile worker programs and is a leader among state agencies with its efforts in this area. At HHSC, two strong elements drive the business decision to provide telework and mobile worker benefits:

- HHSC views telework and mobile work support as critical to the enterprise’s ability to attract and retain top talent.
Emerging technologies allow for a stronger telework and mobile worker environment, which in turn will help in the longer term with decreased lease and lease-related costs.

**Implementation Process**

The HHSC development and implementation process was highly inclusive—from executives to managers to workers—across the enterprise, including human resources, information technology (IT), etc. DARS was the first agency within the enterprise to implement teleworking. DARS took a strong project management approach to implementing telework, carefully reviewing schedules and deadlines, as well as identifying challenges and working through those for solutions. This process led to the identification of policies and rules DARS would ultimately use to create its telework program. This system was then copied by the other departments that planned to implement teleworking. Although the DARS program was used as a model, each agency within the enterprise created its own telework guidelines and policies (i.e., Office of Eligibility Services staff have to wait until one year of employment, while DARS staff can telework immediately; Eligibility unit staff can telework five days a week, while DARS teleworking ranges from one to three days depending on the job, employees, and manager).

As of January 2014, there are over 1,500 employees within the enterprise eligible for teleworking—a 73 percent increase from 2011. Additionally, there are over 9,000 employees participating in the mobile work program across HHSC agencies.

**Training**

Throughout HHSC, the understanding is clearly and consistently conveyed that telework is an employee benefit, not a right. In implementing its programs, the enterprise focused on detailed training for supervisors/managers to help dispel common misconceptions about remote workers, as well as to focus on how to manage a remote staff alongside an on-site staff. HHSC also requires the programs to be based on measurable performance metrics, which helps with efficient supervision of staff and empowers staff to monitor their own performance regardless of whether they telework or not. All employees that want to telework must complete training to determine if telework is a good fit for the employees themselves and their job duties. As part of the telework program evaluation process, employee input from both those that telework and those that do not was used to make adjustments to the program.

**Performance Measures**

Performance measures were identified as a key factor in the success of these programs, and are recommended to be established in advance of an employee beginning a telework schedule. The enterprise approach is to have these set standards and measures clearly communicated to both the employee and supervisor. Then, when telework has been implemented, performance measurement and expectations are easily measured. Agencies within HHSC have found that production-oriented tasks work best for teleworking.
In 2012, the Office of Eligibility Services Customer Care Center conducted a teleworking pilot study of its center in Athens, Texas. This pilot revealed benefits for both the agency and employee, including an increase in productivity for the pilot office, increased employee retention, decreased absenteeism, increased satisfaction with their work, improved work environment, improved work/life balance, reduced commute time and expenses, and fewer distractions when working from home.

**Equipment and Workspace**

HHSC is pursuing emerging technologies for its telework and mobile worker environment. For example:

- DFPS is outfitting its staff with technology that will increase the performance and efficiency of mobile workers, such as mobile printers, automated forms, remote data entry, etc., which reduces their need to drive to a central office location to file paperwork.

- DFPS maintains an integrated telework call center to handle statewide intake calls. This location uses technology to enable work teams to maintain productivity and efficiency, with set performance measures that supervisors use to monitor team performance on a real-time basis.

- HHSC uses an inter-agency chat program that helps communications and remote supervision and provides the status of workers online.

As the enterprise transitions to a more mobile workforce and increases teleworking, the anticipation is that it will realize longer-term benefits of reduced lease space. This has led to the strategic approach of reducing the number of stand-alone department offices. For example, the HHSC satellite office in Round Rock is available to employees from any of the agencies within the enterprise that mobile-work or telework. This location has designated shared space with fully equipped cubicles that are open for employees to set up workspace for the day.

**Texas Department of Insurance**

The Texas Department of Insurance (TDI) has approximately 900 employees in Austin: 600 in the downtown area and 300 near the airport. This agency offers several travel option programs—compressed work week, flex schedule, and telecommuting. Compressed work week and flexible schedule have been offered to employees within this agency since the early 1990s, and telecommuting since the mid-2000s. TDI believes these benefits help retain staff, boost employee morale, and serve as a recruitment tool for new employees.

**Eligibility**

TDI’s programs are available to all employees in eligible positions. There is no waiting period for compressed work week or flexible schedule, but employees wishing to telecommute may wait up to six months before receiving manager approval.
**Scheduling**

The TDI program was built around a statutory requirement that state offices have staff available Monday through Friday, between 8:00 a.m. and 5:00 p.m. Employees working a compressed work week or flexible schedule can work any schedule between the hours of 6:30 a.m. to 7:00 p.m., with a maximum of 10 hours per day, and 80 hours over the two-week pay period. The agency is able to offer these alternative work schedules as long as all units coordinate schedules so that staff are available to fulfill the statutory requirement.

**Performance Measures**

The agency does not have any performance measures available for the three TDM programs to measure progress against its goals but may add performance measures to the program in the future.

**Equipment and Workspace**

Most TDI employees are issued desktop computers, but the agency is working toward a more mobile workforce. Currently, employees who telecommute must provide their own computer and adhere to computer security and workstation guidelines outlined in a written policy. Also, telecommute work sites are subject to unannounced site visits by managers at any time.

**Office of Court Administration**

The Office of Court Administration (OCA) has approximately 220 employees statewide, with 80 employees based in Austin. This agency has offered flexible schedule and telecommuting to employees with eligible positions since 2008 and 2012, respectively. These programs were first implemented at OCA because employees asked for more options and flexibility in their schedule. Over time, the programs were recognized for their value in staff retention and competitiveness with private-sector benefits.

**Eligibility**

There is no waiting period to begin a flexible schedule or telecommute at OCA, although both schedules are subject to management approval. There are written policies and agreements for both flexible schedules and telecommuting.

**Scheduling**

Employees who work a flexible schedule must work 40 hours in one week, Monday through Friday between 6:00 a.m. and 7:00 p.m. According to the Flextime Policy at OCA, flexible schedules are considered if essential job functions do not require work during the standard 8:00 a.m. to 5:00 p.m. work day, efficient operations of the office will not be impaired, and coworkers are not adversely affected.

**Performance Measures**

No formal reports or performance measures are available for the TDM programs at OCA.
Equipment
Slightly over half of OCA employees are issued desktop computers (54 percent), and 46 percent use OCA-issued laptops. The type of computer assigned is determined by job function and location, as well as employee preference.

The University of Texas at Austin
The 350-acre main campus of The University of Texas at Austin (UT) is home to about 24,000 faculty and staff, and over 51,000 students (19). The main campus is located in downtown Austin, largely on the west side of I-35 between E. Dean Keeton, West 30th Street, Guadalupe Street, and East 15th Street.

The university has established an alternative transportation program, called Green on the Go, which promotes alternatives to SOVs to reduce congestion and vehicle pollution in the Austin area. Green on the Go includes a variety of programs for faculty, staff, students, and campus visitors, including the following.

Car Share Program
ZipCar was introduced to the UT campus in 2011. According to the 2011–2012 annual transportation report, over 600 university students, faculty, and staff became ZipCar members in the program’s first year on campus (20). Currently, ZipCar has three campus locations, shown in Figure 5, with a total of 10 vehicles available. For personal memberships, students, faculty, and staff pay $25 for the first year and $35 each following year. UT departments receive free business memberships. All ZipCars on campus are equipped with a parking permit and include gas, insurance, maintenance, and 180 miles per day.
Carpool Program
The university provides numerous incentives to carpools in an effort to alleviate congestion and the strain on parking. Carpools must register each year and are limited to four people per group. In 2011–2012, there were 430 registered carpools serving 1,116 carpoolers, and there are 54 reserved, first-come first-served parking spaces available for carpoolers on campus (21). Incentives include reserved carpool spaces, reduced permit fees, guaranteed ride home, and UT Share Pass. The UT Share Pass, a pre-paid garage debit card, gives registered carpool participants the opportunity to park in a campus garage in the event a person needs to drive his or her own car, rather than ride with the carpool.

UT Shuttle System
Operated by Capital Metro, the shuttle includes 16 routes and serves over 5 million passengers per year (22). There are eight service levels to accommodate the UT schedule, including service changes during registration, summer, and final exams.

Bicycle Programs
Bicycling is an important component of UT’s plan to reduce local traffic and air pollution. The Orange Bike Project is a daily bike rental program offering commuter bikes for rent on a short-term basis. Prices range from $5 to $15 depending on the day and length of time a bike is rented.
The Kickstand, opened in 2007 on Speedway Plaza within UT’s main campus, is a central location for cyclists to get supplies such as bike maps, helmets, tubes, and patch kits, as well as a place to register bicycles, check out locks, and borrow tools for maintenance.

In 2011–2012, BikeUT added 78 new bicycle racks across campus, adding space for an additional 400 bicycles (20). UT was named a bronze-level Bicycle Friendly University by the American League of Bicyclists.

**Eating and Entertainment Bus (E-bus)**

The E-bus is a late-night service operated by Capital Metro, in conjunction with UT Parking and Transportation Services and the Austin Police Department. This service operates three routes on weekend evenings, providing a safe alternative to driving to and from Austin’s entertainment district. The program began in 2002, serving 38,393 passengers. In 2011, the E-bus served 208,114 passengers (21).

**Texas Express**

The Texas Express provides low-cost weekend bus service to Dallas, Houston, and San Antonio. This program began in 2002, initially as an incentive for students to leave their cars at home. Tickets range from $30 to $55, with one-way and round-trip options (23). Ridership has grown from 2,048 in 2002 to 6,157 in 2010 (21).

**Austin-Based State Agency Inventory**

According to the State Facilities Commission, 131 state agencies have offices in the Austin metropolitan area. The research team inventoried the location and number of employees at each agency location by using the Texas Records and Information Locator (TRAIL) service provided by the Texas State Library and Archives Commission, reports from the State Auditor’s Office (24), reports from the Texas Facilities Commission (25), and agency websites.

The 131 state agency office locations were mapped and illustrate significant clustering of locations in census tracts in the downtown and UT areas, with smaller clusters in San Marcos and Pflugerville. The majority of state employees work in the central Austin corridor, as defined in Figure 6 and summarized in Table 4. This information forms the base of the research into the state’s influence on congestion, particularly in central Austin.
Congestion Footprint of Austin-Based State Employment

Over 60% of state employees in the Austin MSA work in the central corridor between MoPac (Loop 1) and I-35 from Ben White Blvd (SH-71) to US-183 (shaded area).

Figure 6. State Employees per Acre by Census Tract in Central Austin.

Table 4. State Employment in the Austin MSA and Central Austin Corridor.

<table>
<thead>
<tr>
<th>Area</th>
<th>All Workers</th>
<th>State Employees</th>
<th>State Employment as Percent of Area’s Total Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for Austin MSA</td>
<td>880,431</td>
<td>71,004</td>
<td>8%</td>
</tr>
<tr>
<td>Total for Central Austin Corridor</td>
<td>226,035</td>
<td>42,910</td>
<td>19%</td>
</tr>
<tr>
<td>Central Austin Percent of Austin MSA</td>
<td>26%</td>
<td>60%</td>
<td></td>
</tr>
</tbody>
</table>
Austin Congestion and Travel Patterns

The purpose of this study was to evaluate the influence of state employment on Austin congestion. Given the concentration of state agencies in the center of Austin, this study focused on agencies with offices in the downtown Austin area. The purpose of this section is to present the study area geographically and with respect to congestion as reported in the Texas A&M Transportation Institute (TTI) *Urban Mobility Report*. This is followed by a discussion of commuting patterns:

- Census-based commuter profiles, with comparisons based on worker type (state worker vs. non-state worker) and commuters in peer cities.
- Employment and residential densities of state workers.

**Austin Study Area**

A preliminary review of the Austin MSA study area narrowed the research focus to the central Austin core—a major concentration of employment for the MSA region and the epicenter of much of the region’s congestion woes. This core area is shown in Figure 7. It includes the state capital complex and UT, major employment centers for state employees, and many of Austin’s other public and private employers.

**Congestion Levels**

To characterize congestion in this region, congestion trends and patterns for four major roadways that surround the downtown area, shown in Figure 8, are summarized:

- I-35 (red).
- US 183 (orange).
- Texas I/Mopac (blue).
- Texas 71 (purple).

The travel time indexes for each of the four
major roadways were compared for 2012 and 2013 (the years that the weekday averages were available) (Figure 9). While all the roads had weekday speeds slower than free flow (as represented by a higher travel time index), I-35 had the highest-level roadways.

![Travel Time Index, Average Peak Period for 2012-2013](image)

Figure 9. Comparison of Travel Time Index on Major Roadways in the Austin MSA. Source: INRIX Data, ritis.org.

These results are consistent with reports from other sources. I-35 from SH 71 to US 290 was ranked by the Texas Department of Transportation (TxDOT) as the number-one most congested roadway in 2013 (Figure 10) (26). It is estimated that I-35 congestion contributes to an estimated $172 million in annual congestion costs and 788,649 annual hours of delay per mile (see TxDOT’s 100 Congested Roadways). The Mobility Investment Priorities Project (Rider 42), prepared by TTI for the Texas Legislature and the Texas Transportation Commission in 2013, undertook a preliminary screening of long-term, large-scale congestion reduction strategies for the I-35 corridor through Central Texas. The study predicts that if residential and employment growth continues at the current pace through 2035, I-35 will suffer from even worse congestion. Data also showed that local traffic, as opposed to through traffic, represents about 86 percent of the traffic on I-35 in Austin. The report suggested that in addition to adding capacity, which alone will not solve the congestion problem, substantial improvement will only come from a hybrid approach that also includes “operating the system efficiently, new development patterns, and travel behavior changes” (27).
Where Workers Live and Work

In addition to understanding the congestion levels in Austin, another element important to the foundation of this study was knowledge of where workers live and work. Combined, the home and work locations form the basis for commuter travel behavior and help to explain why congestion is higher for the north-south directions of travel than east-west corridors, among other factors.

To that end, statistics describing employment in the Austin MSA were collected from the most recent five-year American Community Survey (ACS) provided by the U.S. Census Bureau and the Census Transportation Planning Package. The census tract level was used in order to display the spatial distribution of total employment and state government workers in the study region (for home and work locations). The gross employment density for the Austin MSA was approximately 206 employees per square mile in 2012.

The following maps show the locations of workers:

- Figure 11 shows the density of worker (all workers, per acre) residential location by census tract. It shows home locations to be distributed across the MSA, with higher concentrations along the center of the region, which explains the higher usage of I-35 for the work commute.

- Figure 12 shows the number of state employees residing in each census tract. This depicts a slightly different scale than used in Figure 11, due to data availability, but depicts a
much less centralized residential location pattern for state employees than for all workers, with higher concentrations of state workers outside of Travis County.

- Figure 13 shows the worker densities at the work location, at the census tract level. Work locations are highly clustered in the central corridor of the MSA and in the downtown Austin census tracts.

- Figure 14 shows the concentration of state employees. The 71,000 state government workers in the MSA were distributed among many census tracts in the Austin MSA but with a high concentration in the downtown area. The data also show concentrations along Cameron/Dessau Road in the northeastern part of the MSA (reflecting a regional agency center at that location).

This brief review of home and work locations suggests that congestion on I-35 is reflective of employees traveling along that route to workplace locations in the downtown region. For state workers, most live outside the I-35 corridor but contribute to congestion in that core area of Austin because that is where the state agencies are located.

The residential patterns of state workers are irrespective of agency of employment and show strong concentrations in the outlying areas. This suggests that inter-agency state employee ridesharing programs or participation in region-wide ridesharing programs may be more effective than intra-agency efforts, particularly given the strong residential clusters and the number of employers in the downtown area.
Figure 11. Worker Density in Home Census Tract in the Austin MSA.
Figure 12. Number of State Government Employees by Home Census Tract in the Austin MSA.
Figure 13. Worker Density by Workplace Census Tract in the Austin MSA.
Figure 14. Number of State Government Workers by Workplace Census Tract in the Austin MSA.
**Austin MSA Commuting Patterns**

According to the 2012 five-year ACS, Austin commuters largely travel by SOV. Over 75 percent of all the workers, or 650,000 commuters, in the Austin-Round Rock-San Marcos MSA traveled to work by driving alone; 22,000 workers reported they take public transit to work, which accounted for 2.6 percent of all workers (28).

The mean travel time to work in the Austin MSA was an estimated 25.3 minutes in 2012. Nearly 25 percent of employees traveled fewer than 15 minutes to their place of work, and about 63 percent of workers traveled less than half an hour to their workplace.

**Commuting Pattern Comparison**

**Peer Cities**

A comparative analysis of peer metropolitan areas was undertaken to contextualize the commuting trends in the Austin MSA study area. Peer cities were selected to provide comparisons both within Texas and with other state capitals outside of Texas. The selected peer cities were:

- Dallas-Fort Worth-Arlington (Texas).
- Houston-The Woodlands-Sugar Land (Texas).
- San Antonio-New Braunfels (Texas).
- Sacramento-Arden-Arcade-Roseville (California).
- Raleigh-Cary (North Carolina).

The Austin MSA and the peer cities have high population and other similar characteristics:

- The Austin MSA is home to a strong economy that includes the state capital, several higher education institutions, and high-tech companies.

- The Texas peer MSAs—Houston, Dallas-Fort Worth, and San Antonio—are three of the most populated metropolitan areas in the United States, as well as cultural hubs and major employment centers in Texas.

- Raleigh, North Carolina, and Sacramento, California, are also state capital regions with a comparable population to Austin. Raleigh, the anchor city of the Raleigh-Cary MSA, is the capital of North Carolina, as well as home to several higher education institutions and a growing cluster of private industry. Sacramento is the capital of California and home to several universities.
The research team extracted and compiled data at both the MSA and census tract levels for the Austin MSA and its peer MSAs to review the employment and commuting patterns. The following tables from the 2008–2012 ACS (29) five-year estimates were used:

- B23025: Employment Status for the Population 16 Years and Over.
- DP03: Selected Economic Characteristics.
- B08301: Means of Transportation to Work.
- B08128: Means of Transportation to Work by Class of Worker.
- B08303: Travel Time to Work.

Spatial data including census tract and county boundaries, roads, railroads, and water features were extracted from TIGER/Line Shapefiles (30) provided by the U.S. Census Bureau. The most recently available data were used: 2010 shapefiles for the boundaries of statistical geographic areas and 2013 shapefiles for the transportation and water layers. The employment data were linked to the shapefiles via geographic identifier codes (GEOIDs) in ArcGIS to generate the maps of employment density and state government worker concentration within the MSAs.

The travel patterns of workers in Austin were reviewed in comparison to the patterns present in the peer cities. Table 5 illustrates the commuting pattern of overall employment and state government workers within each MSA.

### Table 5. Summary Table of Employment and Commuting Patterns of Six Metropolitan Areas.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>State Government Employees</td>
<td>71,004</td>
<td>82,468</td>
<td>100,449</td>
<td>39,287</td>
<td>102,797</td>
<td>45,621</td>
</tr>
<tr>
<td>Percent State Employees</td>
<td>8.1%</td>
<td>2.7%</td>
<td>3.6%</td>
<td>4.1%</td>
<td>10.9%</td>
<td>8.1%</td>
</tr>
</tbody>
</table>

### Commute Mode Distribution of All Workers

<table>
<thead>
<tr>
<th></th>
<th>Drive Alone</th>
<th>Carpool</th>
<th>Public Transportation</th>
<th>Other</th>
<th>Walked</th>
<th>Worked at Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Source</td>
<td>73.8%</td>
<td>25.0%</td>
<td>1.2%</td>
<td>1.8%</td>
<td>6.6%</td>
<td>4.5%</td>
</tr>
<tr>
<td></td>
<td>81.4%</td>
<td>80.9%</td>
<td>10.5%</td>
<td>2.7%</td>
<td>5.6%</td>
<td>1.2%</td>
</tr>
<tr>
<td></td>
<td>82.6%</td>
<td>79.2%</td>
<td>11.7%</td>
<td>1.9%</td>
<td>3.4%</td>
<td>1.2%</td>
</tr>
<tr>
<td></td>
<td>83.4%</td>
<td>79.1%</td>
<td>11.5%</td>
<td>1.4%</td>
<td>3.9%</td>
<td>1.2%</td>
</tr>
<tr>
<td></td>
<td>66.3%</td>
<td>79.1%</td>
<td>11.6%</td>
<td>2.7%</td>
<td>5.6%</td>
<td>1.2%</td>
</tr>
<tr>
<td></td>
<td>82.9%</td>
<td>80.6%</td>
<td>9.6%</td>
<td>1.0%</td>
<td>5.9%</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

### Commute Mode Distribution of State Government Workers

<table>
<thead>
<tr>
<th></th>
<th>Drive Alone</th>
<th>Carpool</th>
<th>Public Transportation</th>
<th>Other</th>
<th>Walked</th>
<th>Worked at Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Source</td>
<td>73.8%</td>
<td>12.6%</td>
<td>6.5%</td>
<td>2.3%</td>
<td>2.7%</td>
<td>6.6%</td>
</tr>
<tr>
<td></td>
<td>81.4%</td>
<td>9.9%</td>
<td>2.0%</td>
<td>1.3%</td>
<td>3.2%</td>
<td>4.5%</td>
</tr>
<tr>
<td></td>
<td>82.6%</td>
<td>10.9%</td>
<td>2.7%</td>
<td>1.4%</td>
<td>1.4%</td>
<td>3.4%</td>
</tr>
<tr>
<td></td>
<td>83.4%</td>
<td>10.7%</td>
<td>1.6%</td>
<td>1.4%</td>
<td>1.9%</td>
<td>3.9%</td>
</tr>
<tr>
<td></td>
<td>66.3%</td>
<td>14.2%</td>
<td>8.5%</td>
<td>0.9%</td>
<td>1.9%</td>
<td>5.6%</td>
</tr>
<tr>
<td></td>
<td>82.9%</td>
<td>11.2%</td>
<td>2.0%</td>
<td>0.9%</td>
<td>2.8%</td>
<td>5.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Travel Time to Work

<table>
<thead>
<tr>
<th>Travel Time to Work (Minutes)</th>
<th>Less than 15 minutes</th>
<th>15-29 minutes</th>
<th>30-59 minutes</th>
<th>60 minutes or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Source</td>
<td>24.7%</td>
<td>39.3%</td>
<td>30.3%</td>
<td>6.3%</td>
</tr>
<tr>
<td></td>
<td>22.4%</td>
<td>35.9%</td>
<td>34.4%</td>
<td>7.4%</td>
</tr>
<tr>
<td></td>
<td>20.1%</td>
<td>35.0%</td>
<td>35.6%</td>
<td>9.3%</td>
</tr>
<tr>
<td></td>
<td>23.8%</td>
<td>40.7%</td>
<td>30.2%</td>
<td>5.7%</td>
</tr>
<tr>
<td></td>
<td>26.0%</td>
<td>38.1%</td>
<td>28.8%</td>
<td>7.0%</td>
</tr>
<tr>
<td></td>
<td>23.3%</td>
<td>42.4%</td>
<td>29.4%</td>
<td>4.9%</td>
</tr>
</tbody>
</table>

### Mean Travel to Work (Minutes)

<table>
<thead>
<tr>
<th>Mean Travel to Work (Minutes)</th>
<th>25.3</th>
<th>26.7</th>
<th>28.1</th>
<th>25.1</th>
<th>25.7</th>
<th>24.5</th>
</tr>
</thead>
</table>

Data Source: ACS 2008–2012 five-year estimates, U.S. Census Bureau
Findings

Researchers had the following findings:

- **Overall:**
  - Austinites generally report a lower proportion of work trips by SOV and more trips by transit compared to the peer cities.
  - Drive-alone commuters range from a high of 81 percent in Dallas and Raleigh to a low of 75 percent in Austin and Sacramento.
  - Transit usage ranged from a high of 2.6 percent in Austin to a low of 1 percent in Raleigh.
  - Austinites report a higher level of carpooling (11.3 percent, comparable to levels in Houston, San Antonio, and Sacramento).
  - Austinites report the highest levels of working at home (6.6 percent) compared to the levels reported in the peer cities.

- **Looking specifically at commuting by state government workers:**
  - Austin state government workers report similar commute patterns as peer agencies, with the second-lowest level of drive-alone commuters, the second-highest carpool level, the second-highest transit level, the second-highest walk level, and the third-highest telework level.
  - Sacramento state government workers led the comparison with the lowest drive-alone levels and the highest proportion of trips by alternative modes and teleworking.

A closer evaluation of commuting in Austin and Sacramento was undertaken (Figure 15). The two MSAs both have the highest proportion of state employees among the peer cities. The state employees in both cities also exhibit strong levels of use of alternative modes. However, Sacramento state employee commuters report higher usage of alternative modes except commuting by walking. Further investigation is needed to determine what supports the higher levels in Sacramento. However, the fact remains that these two capital cities both have strong levels of alternative commute modes among their state workers.

![Figure 15. Comparison of Austin MSA to Sacramento MSA Non-Drive-Alone Commuting among State Employees.](image)
Commuting Patterns by Worker Class in Austin MSA

**Worker Class**

Austin’s economy is anchored by its government and higher education sectors. Still, nearly 70 percent of the workforce is employed in the private for-profit sector (see Table 6). The Austin MSA has experienced rapid job growth in the last decade. Since 2004, approximately 160,000 jobs were created, representing a 25 percent increase in the last 10 years (31). In 2012, there were 880,000 civilian employed workers within the metropolitan area, including 71,000 state government workers according to the five-year 2008–2012 ACS (28). These data reveal that over 8 percent of Austin’s workforce is employed by the state government—the second-largest worker class after private for-profit wage and salary workers. The local and federal governments employ 7 percent and 2 percent of the population in Austin, respectively. Employment by worker class and commute modes for the Austin MSA is summarized in Table 6.

**Table 6. Summary of Employment in the Austin MSA.**

<table>
<thead>
<tr>
<th>Commuting Means by Worker Class for the Austin-Round Rock-San Marcos MSA: Number of Workers</th>
<th>Private For-Profit Wage and Salary</th>
<th>Private Not-For-Profit Wage and Salary</th>
<th>Local Government Workers</th>
<th>State Government Workers</th>
<th>Federal Government Workers</th>
<th>Self-Employed</th>
<th>Unpaid Family Workers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Truck, or Van: Drive Alone</td>
<td>457,862</td>
<td>42,656</td>
<td>48,629</td>
<td>52,405</td>
<td>14,644</td>
<td>33,493</td>
<td>465</td>
<td>650,154</td>
</tr>
<tr>
<td>Car Truck, or Van: Carpooled</td>
<td>67,245</td>
<td>5,388</td>
<td>7,396</td>
<td>8,931</td>
<td>1,766</td>
<td>6,982</td>
<td>196</td>
<td>97,904</td>
</tr>
<tr>
<td>Public Transportation (Excluding Taxicab)</td>
<td>13,904</td>
<td>1,556</td>
<td>1,214</td>
<td>4,642</td>
<td>391</td>
<td>516</td>
<td>6</td>
<td>22,229</td>
</tr>
<tr>
<td>Taxicab, Motorcycle, Bicycle, or Others</td>
<td>17,556</td>
<td>1,439</td>
<td>1,017</td>
<td>1,660</td>
<td>492</td>
<td>1,127</td>
<td>25</td>
<td>23,316</td>
</tr>
<tr>
<td>Walked</td>
<td>10,777</td>
<td>1,105</td>
<td>659</td>
<td>1,946</td>
<td>275</td>
<td>1,047</td>
<td>107</td>
<td>15,916</td>
</tr>
<tr>
<td>Worked at Home</td>
<td>33,974</td>
<td>1,850</td>
<td>782</td>
<td>1,020</td>
<td>509</td>
<td>18,045</td>
<td>312</td>
<td>56,892</td>
</tr>
<tr>
<td><strong>Total Workers</strong></td>
<td><strong>601,318</strong></td>
<td><strong>53,994</strong></td>
<td><strong>59,697</strong></td>
<td><strong>71,004</strong></td>
<td><strong>18,077</strong></td>
<td><strong>61,210</strong></td>
<td><strong>1,111</strong></td>
<td><strong>866,411</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Commuting Means by Worker Class for the Austin-Round Rock-San Marcos MSA: Percent of Workers</th>
<th>Private For-Profit Wage and Salary</th>
<th>Private Not-For-Profit Wage and Salary</th>
<th>Local Government Workers</th>
<th>State Government Workers</th>
<th>Federal Government Workers</th>
<th>Self-Employed</th>
<th>Unpaid Family Workers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car Truck, or Van: Drive Alone</td>
<td>76%</td>
<td>79%</td>
<td>81%</td>
<td>74%</td>
<td>81%</td>
<td>55%</td>
<td>42%</td>
<td>75%</td>
</tr>
<tr>
<td>Car Truck, or Van: Carpooled</td>
<td>11%</td>
<td>10%</td>
<td>12%</td>
<td>13%</td>
<td>10%</td>
<td>11%</td>
<td>18%</td>
<td>11%</td>
</tr>
<tr>
<td>Public Transportation (Excluding Taxicab)</td>
<td>2%</td>
<td>3%</td>
<td>2%</td>
<td>7%</td>
<td>2%</td>
<td>1%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Taxicab, Motorcycle, Bicycle, or Others</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>2%</td>
<td>2%</td>
<td>3%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Walked</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
<td>3%</td>
<td>2%</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>Worked at Home</td>
<td>6%</td>
<td>3%</td>
<td>1%</td>
<td>2%</td>
<td>3%</td>
<td>1%</td>
<td>28%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Percent of Total Workers</strong></td>
<td><strong>69%</strong></td>
<td><strong>6%</strong></td>
<td><strong>7%</strong></td>
<td><strong>8%</strong></td>
<td><strong>2%</strong></td>
<td><strong>7%</strong></td>
<td><strong>0.1%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*data source: Census Bureau, ACS 2012 5 year estimate*

**Commute Mode**

Driving alone to work is the most common commute mode for all classes of workers, but there is some variation in the distributions by worker class. Local and federal government employees had the highest drive-alone proportions. Self-employed and unpaid family workers had the lowest drive-alone proportion and the highest levels of working at home. Seven percent of Austin’s working population reported working from home, but more than 95 percent of these workers are from the private sector. The percentage of government workers at all levels who work from home was lower than the Austin MSA average. The most common commute modes in the Austin MSA were drive alone, carpool, or work from home.
State employees in Austin demonstrate a higher level of alternative mode use in comparison to the overall workforce in the Austin MSA (see Figure 16). A lower percentage of state employees drive alone to work than the average for the Austin MSA. The work-at-home rate is nearly three times higher for the general working population than for state government workers. In general, state government employees carpool, use public transportation, and walk to work more than the general working population in the Austin MSA. However, their telework levels are lower than average.

Figure 16. Commute Mode Distribution of State Employees in the Austin MSA.
Analysis of State Employee Commute Patterns

With the high concentration of state agencies located in downtown Austin, most state employees that work at the downtown Austin locations traverse some portion of the highly congested downtown area in order to reach their office locations, even though most do not live in the I-35 corridor. In addition, while state employees located in downtown Austin are more likely to commute to work by alternative modes than downtown workers who are not state employees, U.S. Census data show that three-fourths of them drive alone to work on a daily basis.

This section of the report focuses on isolating the impact of downtown state employees on I-35 congestion by evaluating typical congestion patterns compared to congestion patterns on state holidays that fall on a weekday. While it is not possible to completely isolate the congestion influence of downtown state employees, this analysis shows that their absence on certain state holidays is related to improved congestion conditions on I-35.

Congestion Analysis Methodology

To determine the extent to which state employees contribute to Austin congestion, researchers used data from the INRIX traffic service for the downtown Austin I-35 corridor during the time period of 2011 to 2013. Using the INRIX data analysis tools, researchers compared travel times on specific weekday state holidays to average monthly and yearly travel times. The following subsections explain the details of this analysis.

Data and Analysis Tools

This analysis relied on historical congestion data as accumulated and provided by INRIX. The data considered congestion measures from 2011 to the present for Travis County, Texas, with a focus on the I-35/downtown corridor.

The decision to use the INRIX data was aided by the availability of an analytical tool that would summarize the data into a useful presentation format. INRIX’s analytical tool was used in this study to evaluate congestion, comparing differences in congestion levels by day or month of the year, and also for specific points in time when the difference in congestion could generally be attributed to specific state holidays. An added benefit to using the INRIX analytical tool is the ability to summarize the data in easy-to-read graphics, which are included in this section.

Travel Time Index

Using the congestion scan feature within the INRIX analytical tool, the research team analyzed the average travel time index on two segments of I-35 most closely correlated with the study area. The travel time index is defined as the ratio of the average peak-period (rush-hour) travel time compared to a free-flow travel time. For example, a travel time index value of 1.20 means that average peak travel times are 20 percent longer than free-flow travel times. When the travel time index of a specific stretch of roadway becomes 2.0 or more, then travel times are twice (or more) as long as the norm (free flow). The travel time index is a widely used
performance measure used to describe traffic congestion, most notably in the national *Urban Mobility Report* prepared annually by TTI and the *Urban Congestion Reports* produced quarterly by the Federal Highway Administration.

For each analysis day, researchers compared the travel time index values to the average weekday-monthly and average weekday-yearly values. The analysis period used for the averages was 2011 through 2013.

**State Employee Holidays**

The premise underlying this analysis is that the best vantage point for viewing congestion attributable to state employees comes from identifying specific state holidays that most state employees observe (and therefore are *not* traveling) but that workers in other categories of employment and the local schools do not observe. To identify these dates and compile a list of state agency holidays, researchers reviewed state agency websites and confirmed what is set in statute (Government Code, Sec 662.003). Table 7 lists each holiday name, agency closure status, date, and day of the week over the past two fiscal years.

<table>
<thead>
<tr>
<th>Holiday</th>
<th>Agency Status</th>
<th>FY 2012</th>
<th>FY 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor Day</td>
<td>All agencies closed</td>
<td>9/3</td>
<td>Monday</td>
</tr>
<tr>
<td>Rosh Hashanah</td>
<td>Optional holiday</td>
<td>9/16</td>
<td>Wednesday</td>
</tr>
<tr>
<td>Rosh Hashanah</td>
<td>Optional holiday</td>
<td>9/18</td>
<td>Friday</td>
</tr>
<tr>
<td>Yom Kippur</td>
<td>Optional holiday</td>
<td>9/26</td>
<td>Wednesday</td>
</tr>
<tr>
<td>Veterans Day</td>
<td>All agencies closed</td>
<td>11/11</td>
<td>Sunday</td>
</tr>
<tr>
<td>Thanksgiving Day</td>
<td>All agencies closed</td>
<td>11/22</td>
<td>Thursday</td>
</tr>
<tr>
<td>Day after Thanksgiving</td>
<td>All agencies closed</td>
<td>11/23</td>
<td>Friday</td>
</tr>
<tr>
<td>Christmas Eve Day</td>
<td>All agencies closed</td>
<td>12/24</td>
<td>Monday</td>
</tr>
<tr>
<td>Christmas Day</td>
<td>All agencies closed</td>
<td>12/25</td>
<td>Tuesday</td>
</tr>
<tr>
<td>New Year’s Day</td>
<td>All agencies closed</td>
<td>1/1</td>
<td>Sunday</td>
</tr>
<tr>
<td>Confederate Heroes Day</td>
<td>All agencies closed</td>
<td>1/19</td>
<td>Thursday</td>
</tr>
<tr>
<td>Martin Luther King, Jr.</td>
<td>All agencies closed</td>
<td>1/16</td>
<td>Monday</td>
</tr>
<tr>
<td>President’s Day</td>
<td>All agencies closed</td>
<td>2/20</td>
<td>Monday</td>
</tr>
<tr>
<td>Texas Independence Day</td>
<td>Skeleton crew required</td>
<td>3/2</td>
<td>Friday</td>
</tr>
<tr>
<td>Cesar Chavez Day</td>
<td>Optional holiday</td>
<td>3/31</td>
<td>Saturday</td>
</tr>
<tr>
<td>Good Friday</td>
<td>Optional holiday</td>
<td>4/6</td>
<td>Friday</td>
</tr>
<tr>
<td>San Jacinto Day</td>
<td>Skeleton crew required</td>
<td>4/21</td>
<td>Saturday</td>
</tr>
<tr>
<td>Memorial Day</td>
<td>All agencies closed</td>
<td>5/28</td>
<td>Monday</td>
</tr>
<tr>
<td>Emancipation Day</td>
<td>Skeleton crew required</td>
<td>6/19</td>
<td>Tuesday</td>
</tr>
<tr>
<td>Independence Day</td>
<td>All agencies closed</td>
<td>7/4</td>
<td>Wednesday</td>
</tr>
<tr>
<td>LBJ’s Birthday</td>
<td>Skeleton crew required</td>
<td>8/27</td>
<td>Monday</td>
</tr>
</tbody>
</table>

Note: Skeleton crews (e.g., traffic management center operators, maintenance) still work on state holidays.
From this list of state holidays, the following travel days were selected for the congestion analysis:

- An average, typical travel day.
- Veterans Day, a holiday for all government agencies, used as a control to test the concept.
- Texas Independence Day, a state holiday.
- Emancipation Day, a state holiday.
- LBJ’s Birthday, a state holiday.

Holidays that fell on weekends were eliminated from potential evaluation. In addition, the state holiday of San Jacinto Day was also considered but not included because the 2011 data were not available, and this holiday fell on the weekend in 2012 and 2013. The 2013 spring break week for UT was also considered but not analyzed due to the atypical traffic associated with the South by Southwest event occurring in that same week.

**Study Site**

Researchers analyzed the average weekday-yearly travel time indexes for the following highway segments, shown in Figure 17:

- Northern section (blue): I-35, from US 183 to Riverside, stretches approximately 10 miles and includes the upper deck portion through downtown Austin.
- Southern section (green): I-35, from Riverside to Highway 71/US 290 (Ben White Boulevard), stretches approximately 2 miles south of the river through downtown Austin.
Baseline Heat Maps

Color-coded “heat” maps were generated to illustrate the severity of the congestion. Figure 18 shows the average weekday congestion across each year on I-35 north- and southbound from US 183/Exit 239–240 to south of the river at TX 71/Ben White Boulevard. The following subsections reference this figure to explain both how to read a congestion heat map, and the specific interpretations for these segments of I-35 from 2011 through 2013.

How to Read the Congestion Heat Maps

The heat maps visualize congestion indicators for a section of roadway over the course of a travel day. Each visualization splits the data by the direction of traffic (southbound and northbound in Figure 18) and presents three periods of time side by side for comparison. The analysis time period (years in Figure 18) is labeled at the top of each heat map. The locations of the exits along I-35 are noted in the middle section. Each map is divided by continuous vertical lines into 12 segments that represent two-hour periods. Reading from left to right, the first and last outer lines of each year’s heat map represent midnight. The 6 a.m.–10 a.m. and 2 p.m.–8 p.m. peak periods are labeled to highlight typical peak periods of congestion where the most significant color changes occur.
The heat maps use a color scale to represent the measure of congestion:

- Green indicates that traffic is moving at free-flow speeds, which means there is no congestion.
- Yellow means that traffic is moving but slower than free-flow speeds.
- Dark red means more congestion is present at a level that doubles the average travel time (or more) through that segment of I-35 during that time of day—in other words, traffic is bad.

**Average Yearly Congestion for 2011–2013: Baseline for Holiday Comparison**

Figure 18 shows that the northbound and southbound congestion on I-35 slightly increases each year during the morning and afternoon/evening hours. For example, the red congestion streaks increase in intensity (dark red) for:

- Southbound in the morning between approximately 6:00 a.m. and 9:30 a.m. (from just north of US 183 to just north of Airport Boulevard).
- Northbound in the morning between 6:00 a.m. and 10:00 a.m. and late afternoon/evening hours between 3:00 p.m. and 7:00 p.m. (from south of Oltorf to 7th Street).

When comparing 2011 traffic to 2013 traffic, the red streaks show up in the same stretches of the roadway but appear to spread wider (indicating the congestion duration is longer) and longer (indicating the backup affects a larger portion of the roadway). This indicates an increase in congestion over that two-year period, particularly on the northbound side.
Figure 18. I-Baseline Conditions for I-35 Average Annual Travel Time Index for US 183 to TX 71/Ben White Boulevard.
State Holiday Congestion Comparison Results

The travel time index values for the selected time periods were compared to their respective monthly and yearly average travel time index values. The analysis suggests that the monthly averages are more appropriate for this analysis, given that the annual averages include the summer months when travel is not as typical. However, both are included in the heat maps for comparison purposes and as a reminder of the baseline values.

Table 8 shows the AM peak, PM peak, and daily travel time index values for the state holidays of interest. Table 9 shows the monthly values.

Table 10 shows the percent difference between the two tables. In general, the analysis reflects some improvement in congestion on the days associated with the three specific holiday dates, although the results are not consistent across all time frames.

There was not a way to directly attribute the differences in congestion specifically to state employees. Thus, the analysis results will discuss general differences on the dates selected, with the underlying premise that differences in travel by state employees contributed at some level.

Veterans Day

As noted previously, Veterans Day was included as a test case to evaluate the effectiveness of using this data source for this analysis. As indicated in the tables and associated Figure 19, large decreases in travel times were observed on Veterans Day. This control case supports the assumption that government holidays can have an impact on congestion and that a federal holiday, which applies to more commuters, revealed the largest decreases in travel times, as expected.

LBJ’s Birthday

LBJ’s birthday in 2012 (August 27) showed the largest impact, or decrease, in traffic congestion. North of the river, the southbound (SB) travel times decreased 38 percent in the PM peak, from a monthly average travel time index of 2.31 to 1.42 on that specific day. Likewise, south of the river, the northbound (NB) travel time index decreased 35 percent in the PM peak, from 1.49 to 0.97. This means that, hypothetically, if someone left work at 5:00 p.m., and it normally took one hour to drive through the congested corridor, the drive on a state holiday is now about 21 minutes shorter. That is a fairly significant difference, and if it actually occurred even just once a week during the work year (50 weeks*), it would save a driver nearly 18 hours of commute time annually.

* This calculation assumes two weeks of vacation per year.
The associated congestion heat maps are shown in Figure 20. Most of the decrease in NB congestion on LBJ’s birthday occurred between the 26th Street and 7th Street exits. For SB congestion, most of the decrease occurred north of the Oltorf Street exit to 26th Street.

**Emancipation Day**

Emancipation Day in 2012 (June 19) generally showed a decrease in traffic congestion. North of the river, the SB travel time index decreased up to 33 percent in the PM peak, from a monthly average of 2.51 to 1.68. Likewise south of the river, the SB travel time index decreased 23 percent in the PM peak, from 1.66 to 1.29. However, the NB traffic showed an unexplained 63 percent increase in the AM peak but later had a 10 percent decrease in the PM peak, as shown in Figure 21. Although the impacts are compared to June’s average, travel patterns are very different in the summer months than during the school year. Therefore, the decreases in congestion may be higher when compared to a typical summer weekday as opposed to a school-year weekday. The associated congestion heat maps are shown in Figure 21.

Some increases in congestion on a state holiday may be attributable to incidents and/or special events. For example, the SB travel time index, south of the river, increased by 66 percent in the PM peak period on Texas Independence Day in 2012. However, the largest increase that day (216 percent) actually occurred between 1:00 p.m. and 4:00 p.m., which may have been due to the Girls Basketball State Championship (at the Erwin Center at I-35 and 15th Street) and/or a crash.

Also, trip patterns will typically not change on a one-day holiday. Non-state employees who still work that day will probably commute on the same route and at the same time as a typical day. In other words, there is no reason to expect huge shifts in travel patterns like there would be if there was additional capacity suddenly available along major routes.
### Table 8. I-35 Travel Time Index—State Employee Holidays.

<table>
<thead>
<tr>
<th>Holiday</th>
<th>Date</th>
<th>North of River—Southbound</th>
<th>North of River—Northbound</th>
<th>South of River—Southbound</th>
<th>South of River—Northbound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6–9 a.m.</td>
<td>4–7 p.m.</td>
<td>Daily</td>
<td>6–9 a.m.</td>
</tr>
<tr>
<td>Emancipation Day</td>
<td>Tuesday, June 19, 2012</td>
<td>1.18</td>
<td>1.68</td>
<td>1.13</td>
<td>1.29</td>
</tr>
<tr>
<td>Emancipation Day</td>
<td>Wednesday, June 19, 2013</td>
<td>1.18</td>
<td>2.35</td>
<td>1.24</td>
<td>1.11</td>
</tr>
<tr>
<td>LBJ’s Birthday</td>
<td>Monday, August 27, 2012</td>
<td>1.16</td>
<td>1.42</td>
<td>1.06</td>
<td>1.02</td>
</tr>
<tr>
<td>LBJ’s Birthday</td>
<td>Tuesday, August 27, 2013</td>
<td>1.55</td>
<td>2.51</td>
<td>1.26</td>
<td>1.14</td>
</tr>
<tr>
<td>Veterans Day</td>
<td>Monday, November 11, 2013</td>
<td>0.98</td>
<td>1.25</td>
<td>1.01</td>
<td>0.99</td>
</tr>
</tbody>
</table>

### Table 9. I-35 Travel Time Index—Monthly Average.

<table>
<thead>
<tr>
<th>Month</th>
<th>Year</th>
<th>North of River—Southbound</th>
<th>North of River—Northbound</th>
<th>South of River—Southbound</th>
<th>South of River—Northbound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6–9 a.m.</td>
<td>4–7 p.m.</td>
<td>Daily</td>
<td>6–9 a.m.</td>
</tr>
<tr>
<td>June</td>
<td>2012</td>
<td>1.30</td>
<td>2.51</td>
<td>1.33</td>
<td>1.11</td>
</tr>
<tr>
<td>June</td>
<td>2013</td>
<td>1.35</td>
<td>2.77</td>
<td>1.35</td>
<td>1.09</td>
</tr>
<tr>
<td>August</td>
<td>2012</td>
<td>1.26</td>
<td>2.31</td>
<td>1.25</td>
<td>1.06</td>
</tr>
<tr>
<td>August</td>
<td>2013</td>
<td>1.35</td>
<td>2.16</td>
<td>1.24</td>
<td>1.08</td>
</tr>
<tr>
<td>November</td>
<td>2013</td>
<td>1.29</td>
<td>2.31</td>
<td>1.27</td>
<td>1.10</td>
</tr>
</tbody>
</table>
Table 10. I-35 Percent Difference in Travel Time Index.

<table>
<thead>
<tr>
<th>Holiday</th>
<th>Date</th>
<th>North of River—Southbound</th>
<th>North of River—Northbound</th>
<th>South of River—Southbound</th>
<th>South of River—Northbound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Daily 6–9 a.m.</td>
<td>Daily 4–7 p.m.</td>
<td>Daily 6–9 a.m.</td>
<td>Daily 4–7 p.m.</td>
</tr>
<tr>
<td>Texas Independence Day</td>
<td>Friday, March 2, 2012</td>
<td>9%</td>
<td>15%</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>Emancipation Day</td>
<td>Tuesday, June 19, 2012</td>
<td>-9%</td>
<td>-33%</td>
<td>-15%</td>
<td>16%</td>
</tr>
<tr>
<td>Emancipation Day</td>
<td>Wednesday, June 19, 2013</td>
<td>-12%</td>
<td>-15%</td>
<td>-8%</td>
<td>2%</td>
</tr>
<tr>
<td>LBJ’s Birthday</td>
<td>Monday, August 27, 2012</td>
<td>-8%</td>
<td>-38%</td>
<td>-15%</td>
<td>-3%</td>
</tr>
<tr>
<td>LBJ’s Birthday</td>
<td>Tuesday, August 27, 2013</td>
<td>14%</td>
<td>16%</td>
<td>2%</td>
<td>6%</td>
</tr>
<tr>
<td>Veterans Day</td>
<td>Monday, November 11, 2013</td>
<td>-24%</td>
<td>-46%</td>
<td>-20%</td>
<td>-10%</td>
</tr>
<tr>
<td>Week before UT starts 2013</td>
<td>August 19, 2013–August 23, 2013</td>
<td>0%</td>
<td>3%</td>
<td>1%</td>
<td>0%</td>
</tr>
</tbody>
</table>

* 35 percent, 12:00–3:00 p.m.
† 216 percent, 1:00–4:00 p.m.
‡ −131 percent, 1:00–4:00 p.m.
§ −26 percent, 1:00–4:00 p.m.

Note: Percent differences calculated based on methodology at http://www.inrix.com/scorecard/methodology-en/
Figure 19. I-35 on Monday, November 11, 2013—Veterans Day.
Figure 20. I-35 on Monday, August 27, 2012—LBJ’s Birthday.
Figure 21. I-35 on Tuesday, June 19, 2012—Emancipation Day.
Summary

According to the ACS, Texas state employees lead the region in the use of alternative commute modes, most notably carpools and transit. In addition, they report the lowest levels of teleworking, which means that the employees associated with one of the largest employers in the Austin MSA contribute to the region’s peak-period congestion woes. The purpose of this research was to understand the impact of state employees on Austin-area congestion. This was accomplished through a review of best practices in offering travel options by Texas state agencies compared to agencies in other states, an analysis of census data with respect to travel patterns of state workers, and the use of private-sector congestion data to evaluate differences in congestion on somewhat obscure state holidays (where most state employees have the day off but most non-state employees are still commuting to work).

The results show that Texas state agencies offering travel option programs do make a difference in Austin congestion. At the same time, this research identified several opportunities that state agencies could pursue to result in a larger impact, including the following:

- **Statewide or state-agency-focused TDM plans:** Statewide or with a focus specifically on state agencies, several states have improved congestion conditions through strategic and measurable activities organized in travel options and TDM plans. Outside of Texas, notable examples exist for comprehensive statewide programs that have shown measurable benefits in reducing travel in SOVs. Most programs focus on the commute trip, some for state employees and others for all workers. An extension of these programs considers all residents making trips for all purposes and considers all modes (ridesharing as well as using transit, biking, walking, etc.). Most state-level programs are branded and marketed throughout the state, with metrics in place to measure effectiveness.

- **Ridematching:** State agencies can undertake internal initiatives to promote ridesharing, using the tools available on the current ride-matching website or funding a staff person to serve as the internal travel options coordinator. Intra-agency efforts can effect change, but a review of the distribution of where state employees live and work (across all state agencies) identifies high concentrations of census tract pairs where the state workers live near each other and travel to nearby state agencies. This suggests that inter-agency coordination would be even more effective than intra-agency efforts. The most effective ridematching would be to encourage state employees to join with other commuters through registering on the Commute Solutions website to find a well-matched carpool partner. This service is offered free of charge, and rideshare arrangements can be structured to meet the needs of those riding together.

- **Telework:** The ACS data show that state workers telework at levels much lower than their counterparts in Austin and in peer state agencies. This is likely because of statutory requirements that agencies offer services Monday through Friday from 8:00 a.m. to 5:00 p.m., and/or the continuing reliance on desktop computers and related IT
infrastructure issues. Because state agencies seek to attract and retain top talent, management should consider work schedules and capital purchases that would support increased levels of teleworking. Two possible barriers to offering more travel options to state employees include the statutory requirements that agencies offer services Monday through Friday from 8:00 a.m. to 5:00 p.m., and intra-agency policies that focus on the purchase of desktop rather than laptop computers. Alongside the move to purchasing more laptop computers is the need to evaluate IT infrastructure and security requirements that may unintentionally limit remote access by employees.

- **Transit subsidies:** Under the Federal Transportation Fringe Benefit Program (3), “qualified transportation fringe benefit” employers are allowed the opportunity to offer tax-free transportation benefits to their employees, including transit passes, vanpooling, parking, and bike commuter expenses, at different maximum costs per month. Despite documentation that 20 states offer state employees such benefits, state agencies in Texas are prohibited from doing so because there is no authority to use appropriated money to fund such a program or to offer this as a pre-tax option. The ACS data show that state workers already use transit at higher levels than their counterparts, so offering this as a benefit appears to be relevant and applicable to state workers without incurring much cost to the state. However, there is a business cost to implementing this program, which needs to be more fully explored prior to moving forward.
References


30. U.S. Census Bureau. TIGER/Line® Shapefiles and TIGER/Line® Files.  