

Connecting Demand Management and Economic Development Activities

Recent research into employer-based demand management strategies highlighted the fact that most business decisions on where to locate consider freight and services access, but not the employee access to transportation. Specifically, the current economic development process largely focuses on educating potential businesses about access to transportation facilities with respect to business operations, but the details do not extend to available travel modes for the employees commuting to that work location. As a result, most employer-based programs for travel options are developed after the fact and are somewhat limited in scope and scale.



This policy brief presents details on the possible root causes for this disconnect and identifies opportunities for improving the communication and coordination efforts of economic development and transportation demand management efforts at the time of site location decisions. Currently, those responsible for the economic development of a region work with zoning and land use authorities to create attractive incentive packages for new business development, but they do not work with the transportation planners. Because regional and local transportation plans are developed through a process separate from the incentive packages and development proposals, there is limited opportunity for transportation decision makers to suggest improvements in the development design or to adjust their plans for the adjacent transportation network in a more timely manner. Uncoordinated efforts then contribute to congestion and inefficient use of the transportation network.

If not properly managed, high levels of congestion can become a major hindrance for businesses and lead to slowed economic growth. At the same time, a more coordinated effort between the economic development and transportation planning processes could lead to better overall management of demand on the transportation system for a region, paving the way for stronger economic growth and improved quality of life that benefits all agencies involved, as well as the businesses and their employees. While some coordination and communication currently exists among the economic development and the transportation planning efforts, this research suggests that the level and timing of that involvement could lead to greater benefits for all involved.

Connecting in Theory

There is not a clear consensus in the literature on how to best connect economic development and transportation. What is clear is that transportation demand impacts economic development, and economic development activities impact transportation demand. A roadway is built, which results in faster travel times opening up areas for development (neighborhoods, apartments, retail shops, office complexes), which in turn brings more people and travel. Eventually, the system is congested and improvements are needed, thus continuing the transportation and land use cycle as portrayed in Figure 1 from the Lower Rio Grande Valley Development Council and Hidalgo County MPO Access Management Plan (1) These south Texas leaders recognize that effective planning and access management is necessary to avoid conflict between transportation and land development.

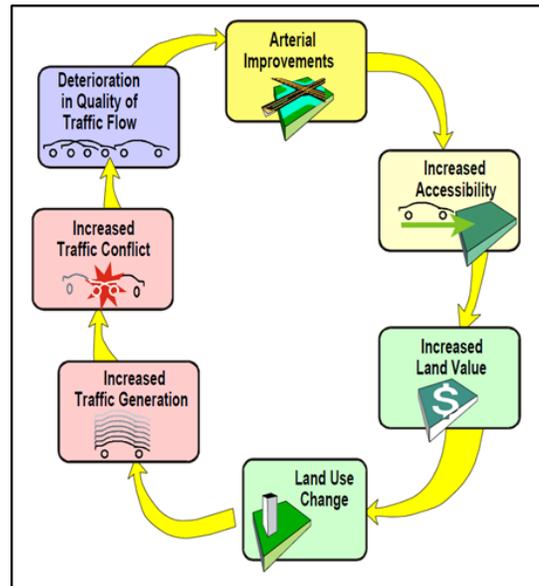
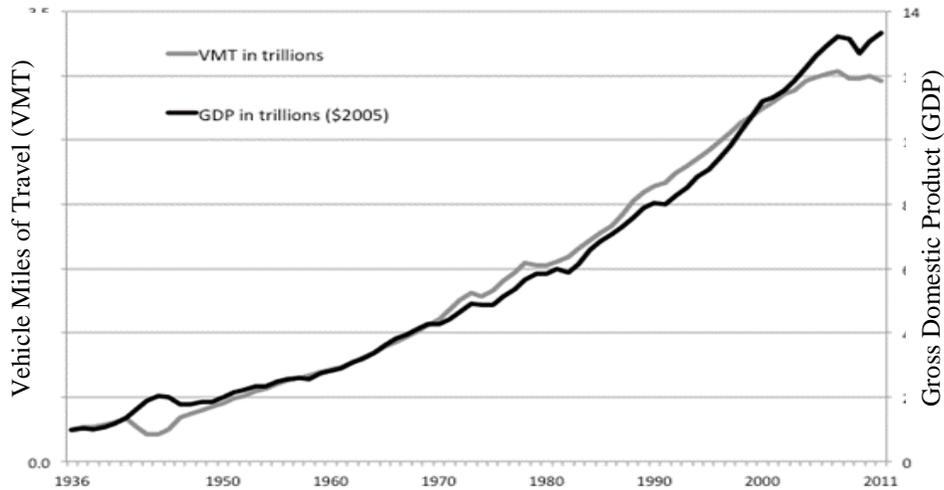


Figure 1. Transportation and Land Use Cycle.

With this cycle in mind, it can also be expressed in terms of vehicle travel and economic growth: more vehicle miles of travel (VMT) means that more people are working and purchasing goods, resulting in economic growth. As indicated in Figure 2, for more than 75 years, growth in VMT and growth in Gross Domestic Product (GDP) in the United States have been on the same trajectory until just recently (2). Based on this relationship, the Cascade Policy Institute claimed that “VMT is a large and statistically significant driver of GDP” (3). The implications of this argument are serious—that in order to grow we must accept congestion, or if we want to reduce congestion, we must sacrifice economic growth.



Sources: VMT: FHWA,1995 (Table VM-201); FHWA, 2012; BTS, 2012 (Table 1-35); GDP: BEA, 2012 (Current-dollar and "real" GDP file as of February 29, 2012)

Figure 2. Total Auto and Truck VMT (Trillions) and GDP (Trillions of \$2005), 1936–2011.

The National Resource Defense Council, as well as others, has stated that causality of the VMT-GDP relationship is not proven (1). In fact in the past decade, the VMT and GDP have been “decoupled” trending away from a “VMT-causes-growth” concept. Some attribute the decoupling to smart growth concepts being implemented; technology advancements allowing work, shopping, and social activities to occur remotely; and an overall decreasing interest in driving.

The decoupling has been occurring in Texas, though it is less evident until just recently as seen in Figure 3. Comparing Houston to Portland, Oregon, the data show significant difference in the two cities as would be expected since they have very different land planning strategies. Figure 4 and Figure 5 show changes in VMT and GDP in these two cities from 2008 to 2013 (4,5,6).

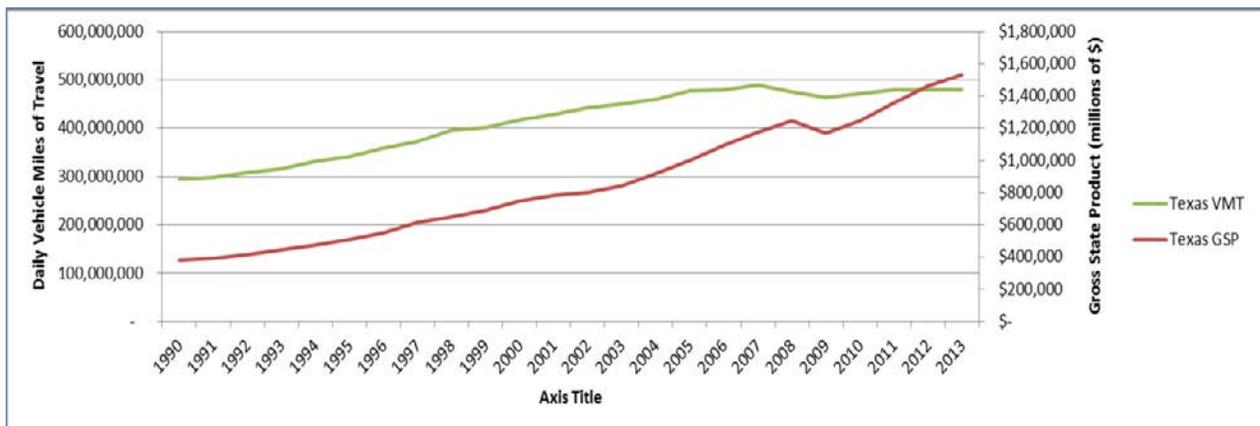


Figure 3. Texas Vehicle Miles of Travel Compared to Gross State Product (GSP).

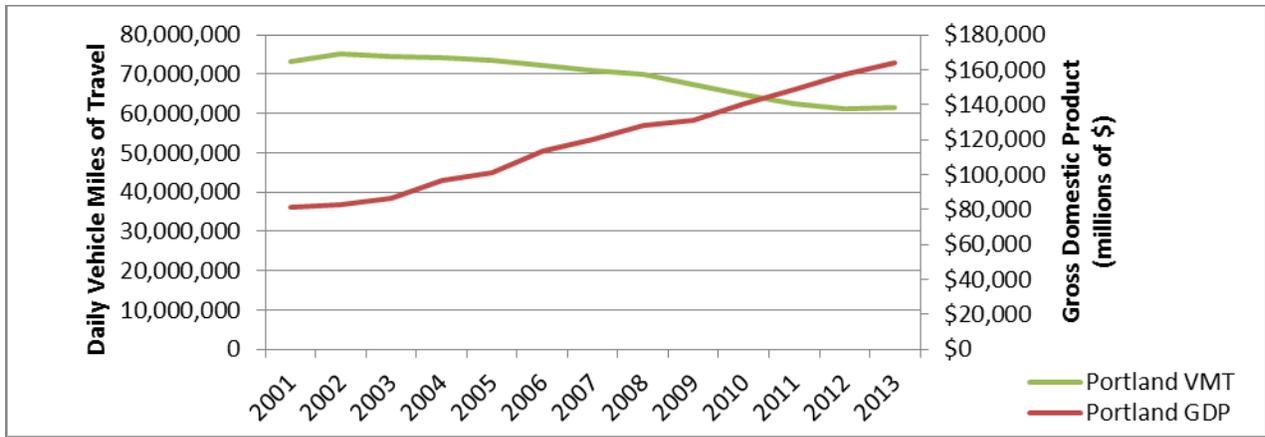


Figure 4. Portland Vehicle Miles of Travel Compared to Gross Domestic Product (GDP).

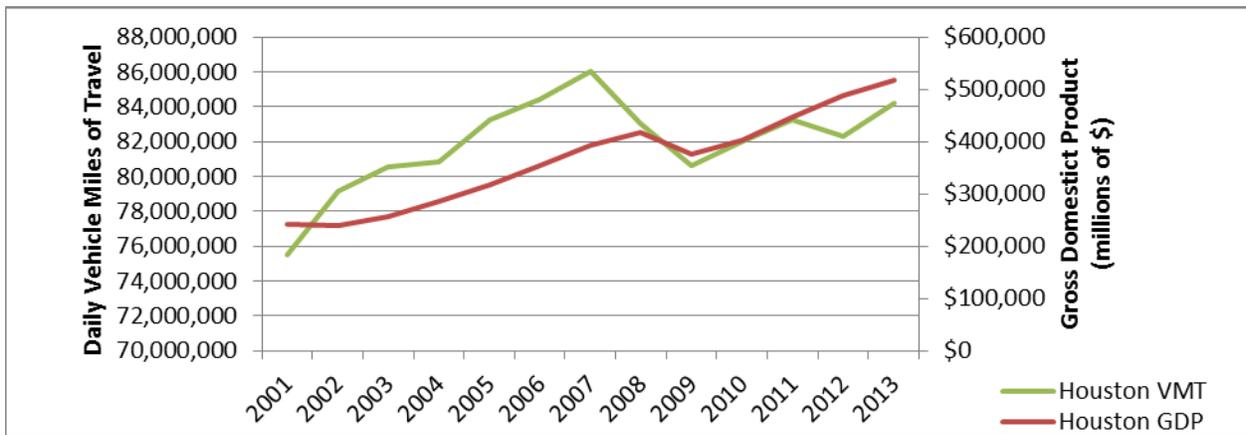


Figure 5. Houston Vehicle Miles of Travel Compared to Gross Domestic Product (GDP).

Therefore, if the economy as defined by GDP or GSP and motor vehicle trips as defined by VMT are not as linked, then there is an opportunity to reduce vehicle trips AND grow the economy in Texas. In the past decade, cities across the United States have been successful in reducing VMT while still experiencing GDP growth, benefitting from smart growth development concepts and a greater focus on demand management. As an example, Portland, Oregon, has been using a combination of proactive collaboration with its citizenry to evaluate the use of urban growth boundaries, coordinated land use and transportation planning, and proactive application of GIS-based mapping to display detailed information on the changing cityscape. This feeds into targeted investments in ITS and other infrastructure improvements. While other factors may also be at play, these efforts have played an important role in engaging the local citizenry to travel more efficiently, thereby contributing to GDP growth trends.

Connecting in Practice

The Federal Highway Administration (FHWA) specifically reports on the connection between demand management and economic development and the misconception that TDM counters economic development. According to the FHWA, when focusing on economic and land use development, “managing demand is key to long-term economic viability and urban vitality.”

Therefore, it is not about reducing VMT, but rather obtaining more efficient use of a limited roadway resource through encouraging a shift to multimodal and high occupancy vehicle use, which frees up the roadway for high impact economic benefits, such as better freight throughput and easier job accessibility (7). This more efficient use of resources is thought to lead to a more competitive economic market, which then motivates better demand management. In addition, in a growing economy, tax revenue and private investment are more readily available to implement innovative demand management strategies.

Even with this mindset, it is challenging to find economic development entities that consider how future businesses might impact congestion. When they do consider the transportation impact, for the most part it is in terms of increasing the capacity of a roadway by expanding highway infrastructure in order to accommodate the additional travelers. With limited exceptions, the management of demand after the business locates is not currently a discussion point in the economic development process.

Governor's Office of Economic Development and Tourism

In Texas, the Governor's Office of Economic Development and Tourism (OEDT) promotes Texas as a place to work and live, connecting interested corporations to local agencies, informing companies of incentives for creating jobs and driving innovation in Texas, participating in statewide economic development meetings, and more (8). They do not focus on any one city and instead work to bring businesses to Texas as a whole. As businesses are drawn to Texas, the OEDT staff turns them over to local communities (based on which regions the businesses express interest in moving to). In some cases, the local entity is the chamber of commerce or the city government staff. In other cases, a city might contract with an economic development company to handle the task of inviting companies. If transportation aspects are considered, they are focused on just-in-time delivery of products or access to airports and trains, not about day to day travel needs of employees.

Searching chambers of commerce or departments of economic development at the state and local level in the United States, researchers have found little mention of transportation and even less mention of transportation demand management. As cities and states work to address congestion, some of the best opportunities to include transportation decision makers are when economic development leaders meet to create new policies and also when they invite companies to visit their regions. One critical piece of any company relocation, beyond a well-trained work force, and lower taxes, typically involves real estate location and access to superior transportation networks. Having a discussion about the availability and quality of local roadway, rail, or port infrastructure to move products is one conversation. Another is to discuss whether they prefer a company location with employee commute options such as transit or bicycle systems, if teleworking is an option, or whether there are local amenities that employees can walk to for lunch or errands.

State of Oregon

In the state of Oregon, a partnership was created between the Department of Land Conservation and Development (DLCD) and the Oregon Department of Transportation (ODOT). Established in 1993, the Oregon Transportation and Growth Management Program (TGM) supports community efforts to expand transportation choices for people. By linking land use and transportation planning, TGM works in partnership with local governments to create residential and employment development in which people walk, bike, take transit, or drive where they want to go. In September 2013, the TGM created *TDM Plans for Development* as a guide to assist local jurisdictions (9).

These TDM Plans monitor and mitigate the transportation impacts of a specific site over time by spelling out the process through which a developer and subsequent tenants commit to TDM measures to reduce single occupant vehicle (SOV) travel to the facility over time. Providing a menu-based approach for developers and tenants, the supportive programs encourage and educate employees and residents about travel options. A TDM Plan includes targets like mode split, emissions, or reduced vehicle miles traveled, as well as a description of TDM strategies used to meet those targets, and evaluation measures to assess progress toward those targets.

Austin, Texas

At the local level, the city of Austin Economic Development Department considers transportation demand as part of its due diligence in recommending a tax incentive package. The city requires the developer to complete a Business Information Form (BIF) to collect all the critical information that enables staff to evaluate the scale of the project, research the potential impact on the city, and make recommendations for incentive eligibility (10). The form includes many questions, two of which are specifically concerning employee travel as seen below:

- Does the company intend to locate in a high frequency transit corridor, TOD, or Regional Center, Town Center, or Neighborhood Center identified in the Growth Concept Map in the Imagine Austin Plan and/or locate within ½ mile of a rail or bus stop that is accessible by safe pedestrian and bicycle routes?
- Does the company have, or would the company be willing to develop, a program to encourage employees to use alternative transportation modes through Transportation Demand Management strategies such as carpooling, flextime work schedules, and subsidizing transit costs for employees?

Arlington, Virginia

Arlington, Virginia, is another city that has documented positive results through its smart growth initiatives. With a population of over 210,000, Arlington adopted smart growth policies to increase the density of development along public transit lines in a series of transit-oriented urban villages. With these transit-oriented development policies, the city has documented a 1 percent

per year growth in population with no corresponding growth in VMT, equating to a 22 percent reduction in VMT per capita over the 25 year period between 1980 and 2005. The resulting dense development is highly valued, which generates money for the county in the form of real estate taxes. In 2010, the city reported that 8 percent of the county land generated 33 percent of the real estate taxes. Millions of square feet of new offices and thousands of new residential units have been built as part of Arlington’s smart growth policy.¹¹ Survey data show that residents of Arlington have shorter and fewer trips on average than the surrounding suburban counties, so traffic volumes on their arterial roadways have remained constant between 1996 and 2011 alongside significant increases in transit usage during a period of explosive economic growth (12). Other benefits include:

- Active participation and inclusion of all stakeholders in the pursuit of smart growth through transit-oriented development strategies.
- High-density, mixed use development clustered around transit service.
- High quality transit service – regional and local.
- Excellent walking environment.
- Safe, visible bike routes and trails.
- High occupancy vehicle lanes.
- Complete streets/supportive traffic management.
- Parking management (right supply, price).
- Demand management – creating a culture of balanced options, less car dependence (13).

Many more examples of growing the economy while reducing car travel can be found outside of the United States, particularly in European communities such as Lund, Sweden; London, UK; and Rome, Italy, as well as The Netherlands (14).

Opportunities for Making a Connection

Transit-Oriented Development

As noted in Arlington, the transit-oriented development (TOD) process achieves both economic growth and reduced VMT. Characterized by compact, mixed-use development on or near transit facilities, TOD boosts transit ridership and reduces automobile congestion, providing value for both the public and private sectors, while creating a sense of community and place. In addition, TOD leverages transit infrastructure to promote robust economic development and growth. An example of TODs in Texas is Houston METRO. METRO states the following goals for their TOD program:

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- Increase transit ridership through the coordinated planning of land use and development of properties on and near METRORail stations, Transit Centers, Park and Rides, or other facilities, reducing automobile use and congestion for the benefit of the environment.
 - Enhance the value of METRO real property assets by locating and designing transit facilities to accommodate both existing and future TOD uses.
 - Include a mix of uses that will support transit use throughout the day and meet identified needs of transit riders and the immediate area.
 - Provide pedestrian-oriented development and create a sense of place around a transit facility that is compatible with the nature, scale, and aesthetics of the surrounding community.
 - Consider local interests in the location, design, function, and operation of the transit-oriented development to the extent reasonable and appropriate.
 - Allow for the disposition of surplus property for development purposes and maximum asset utilization.
 - Promote the highest levels of quality in terms of urban and architectural design.
 - Generate economic development benefits through job creation and additional revenue for the local economy (15).

Traffic Impact Analysis Process

Another example where development and transportation decisions are made together is in the Traffic Impact Analysis (TIA) studies that many cities require when anticipated trips generated by new development exceed a particular threshold. TIA studies include development size and use. With this information, traffic planners and engineers determine the effect of that planned use on the existing roadway system. Identified transportation problems require reasonable solutions that mitigate the anticipated increase in delays associated with that specific development. This process fosters a roadway system that accommodates the proposed land use while maintaining efficient traffic flow around the proposed site.

As one example of many, the City of Plano requires that a TIA study be conducted for zoning revisions and preliminary site plans. Both types of TIAs share the goal of identifying the relationship between land use and transportation needs. They require TIAs whenever the additional site-generated Average Daily Traffic (ADT) is more than or equal to 8,000. This threshold varies across the country. Though TIAs link development and transportation, the focus is typically on car trips and motor vehicle impacts. Although site specific, this process is well-established and accepted in the development process.

Strategies and Measurement

The research indicates that it is possible to achieve both economic growth and a decrease in VMT. Strategies that improve mobility and accessibility are also compatible with growing urban economies since they allow people to reach their destinations. Strategies that reduce congestion and enhance goods movement are vital for economic competitiveness.

Specific strategies to better manage demand on the system that also support economic development include:

- The use of TDM plans or the encouragement of a menu of travel option strategies such as telecommuting, flexible work hours, employee vanpooling, and guaranteed ride home options for those who have an emergency but do not have their car at work.
- Coordinating transportation system improvements with the regional and local transportation agencies to support the increased demand associated with the additional commuters working at the new site, such as coordinated public transit service, carpooling, vanpooling, ride-sourcing, etc.
- The identification of and planning for “last mile” services, such as shuttles, car sharing, bike facilities, pedestrian connectivity, etc. to support non-SOV travel to the new worksite.
- Strategies that improve travel time reliability for one or all modes. These are beneficial to passenger and freight transport and the businesses that create demand on the system. Reliable travel times minimize uncertainty in travel and support economic development goals (7).

Measuring the impact of demand management strategies on economic development is difficult because direct causality between transport measures and economic impacts is difficult to establish. While more research is needed as to the practicality and reliability of these measures, the following appear to provide the necessary metrics:

- Changes in the proportion of work trips by SOV as compared to non-SOV travel options.
- Proportion of workers reporting telework as their primary work location.
- Changes in the average distance commuted to work.
- Rate of change in VMT in relation to change in economic indicators such as GSP or GDP.

These performance measures can be estimated using the annual American Community Survey Journey to Work data, as combined with data obtained through regional household travel surveys normally conducted for transportation planning and modeling by TxDOT (7).

Conclusions

With few exceptions, transportation impacts resulting from net new development are not part of the discussion when attracting businesses to a locale. When transportation is a topic, it happens mostly in the selection of specific sites where the presence or absence of transportation infrastructure is the key decision-making variable from a business perspective. At the state level Texas leaders have the opportunity to build in more consideration of system wide impacts from new investments, so that development decisions support the resulting demand management activities.

The research is clear that travel (VMT) and economic development (GDP) are related. What is not clear is *how* they are related. Further research is needed to define, understand, and explore this relationship. Regardless of the relationship, the research indicates that economic growth can occur even while reducing vehicle miles traveled through the use of transportation demand management strategies.

Being able to measure the success of this new level of coordination is very important. Data driven evaluation is critical in understanding what works and does not work in Texas. Having data that demonstrate success will confirm the possibilities and result in quicker adoption of proven strategies. Coordination between those involved in economic development and those in managing demand on the system is a key activity in moving forward.

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