

Trends in Transportation Discussion:

Smart Cities

Background: “Smart Cities” is a term used to describe a growing trend in which government units use information and communication technologies to increase operational efficiency, share information with the public and improve both the quality of government services and citizen welfare. Smart City transportation elements included:

- Autonomous and connected vehicles;
- Electric Vehicles and charging stations;
- Smart parking meters;
- Using sensors to monitor traffic in real time;
- Connected traffic signals to optimized traffic flow;
- Ridesharing and bike sharing programs; and,
- Real time tracking of public transit to improve rider experience;

These are just some examples of how smart city strategies can improve transportation outcomes.

Staff Perspective: The region should form a Smart City Roundtable to develop plans for how to ensure the region is keeping up with advances in transportation. These plans should be incorporated into the Long-Range Transportation Plan (LRTP).

Questions to Start the Discussion:

1. Is the region doing enough to prepared for advances in transportation technology?
2. How can the LRTP address the need to prepare for these changes?

Land-Use/Transportation

Background: Development patterns and street layout have a significant impact on the transportation system and how well it functions. Transportation and land-use are connected in the following ways:

- Compact, walkable development patterns that provide transportation choice result in healthier financial outcomes for municipal governments;
- Connected street layouts that avoid the use of Cul-de-sacs improve mobility and access for residents. They also improve access and response time for emergency response vehicles;
- Compact development does a better job of using the available infrastructure and is not as dependent on future growth to pay for long-term maintenance liabilities;
- Connected street patterns also help alleviate congestion on roadways by providing multiple routes to get to the same destination; and,
- Compact development with a mixed of uses places housing closer to employment areas helping to reduce combined housing and transportation costs;

These are just some of the major connections between land-use and transportation.

Staff Perspective: The region should focus more on making land-use and transportation decision in conjunction. This will help improve transportation options across the region, improve the fiscal health of municipal governments, and help attract and retain talent and businesses.

Questions to Start the Discussion:

1. Is the region doing enough to address the connection between Land-Use and Transportation?
2. Should the LRTP do more to address the connection between land-use and transportation?

Congestion/Capacity

Background: The Greater Des Moines population is expected to grow by approximately 250,000 people over the next thirty-five years. This growth will have an impact on the region's roadways and will inevitably lead to increased levels of congestion. How we choose to address this challenge will have a significant impact on the financial, economic, and environmental sustainability of the region.

The most common method of addressing congestion over the past few decades has been to add capacity to the system. However, based on numerous studies¹²³, it is well known that adding capacity only leads to more drivers on the road and more congestion. This phenomenon is called induced traffic. Therefore, it is important for the region to consider alternative strategies to address the traffic that will be generated due the projected growth we are anticipating over the coming decades.

Many of the traffic congestion issues in the metro (real or perceived) are not a result of a lack of capacity but rather caused by things like inadequate signal timing, land use and zoning policies, and traffic incidents.

Staff Perspective: The region should not focus on congestion through expansion without first exhausting for cost-effective ways to reduced congestion issues. The MPO's Congestion Management Process, updated in 2016, identifies a hierarchy of congestion strategies that begins with relatively low-cost demand management strategies (such as car/vanpooling and land use policies) to moderately expensive operational management strategies (such as access management and traffic signal improvements) to high-cost capital improvements (such as lane additions or adding higher-capacity transit service). This hierarchy of strategies should be used and updated during the LRTP update.

Questions to Start the Discussion:

1. Should congestion be a driving factor in project selection? Or should the region focus more on quality of life, business retention, and talent attraction when it comes to transportation choices?
2. Should the region focus more of its resources on Intelligent Transportation Systems before expanding capacity?
3. How should the LRTP address the issue of congestion and expansion projects that are submitted to address congestion?

¹ Handy, Susan, *Increasing Highway Capacity Unlikely to Relieve Traffic Congestion*, National Center for Sustainable Transportation, October 2015.

² Jaffe, Eric, *Why Rush-Hour Traffic Isn't the Best Way to Rank Urban Mobility*, The Atlantic – CITYLAB, August 31, 2015.

³ Curry, Melanie, *Caltrans Admits Building Roads Induces More Driving, But Admitting a Program is Just the First Step*, StreetsBlog California, November 18, 2015.

Maintenance vs. Expansion

Background: The MPO looks at the average Pavement Condition Index (PCI) across Greater Des Moines. This tells roadway users what level of quality they can expect when driving on roadways. PCI scores range from 0 to 100, with 100 being the best possible score.

Mobilizing Tomorrow defines several performance measures to determine how well the region is achieving its goal to manage and optimize transportation infrastructure and services. One of the performance targets outlined in Mobilizing Tomorrow is to maintain pavement condition at base year (2013) levels. However, between 2013 and 2015, the region saw a 15 percent reduction in average pavement condition. The average PCI in 2015 for the regional was 51 with 35 percent of roads being in poor or worse condition.

Staff Perspective: Despite a goal of maintaining the system's condition as it was in 2013, the system has only decreased. It is going to become increasingly important for the region to invest adequate resources to maintain and improve its current system of roadways, which may mean that fewer resources should be focused on expanding the system.

Questions to Start the Discussion:

1. How should the LRTP address the balance between maintaining current system vs. expanding the system?
2. How can the MPO help encourage its members to focus more on maintaining the current system?