

Regional Transportation Plan Update (2010-2035)

Draft Overarching Issues and Trends Considered in the Plan

The 2010-2035 Regional Transportation Plan is built within a context defined by overarching issues or trends which will likely impact transportation during the period of the Plan. These are external factors or conditions which will likely impact either the provision of or demand for transportation through the planning period. The vision, guiding principles, and goals of the Plan are defined within the context of several overarching issues and trends which will likely influence transportation planning and policy-making in the long-term. These overarching issues can be generally grouped in broad categories such as economic innovation and technological change, lifestyle and workforce change, globalization and security, and energy and climate and are outlined below.

Economic Innovation and Technological Change

A dramatic transformation is likely over the next three decades from an information economy to an economy driven by innovation. This transformation will be brought about by sweeping technological changes that will result in the rise of new industries and areas of economic activity.

The Innovation Economy expected to emerge over the next three decade has the potential to transform the business model for supplying transportation services and facilities, as various innovations and technological advances change the nature of transportation modes and logistics, and create new demands for decentralized, flexible transportation services. In addition, technological changes may create opportunities for improvement in how transportation is supplied and information about it provided which range from innovations in roadway design and operations, to transit vehicles and energy sources and on to the logistics of supply chains and the types of the transportation services and information provided.

Likewise, demand for transportation services and facilities may be greatly altered by the economic and technological changes which emerge over the next three decades. These changes may result in an overall reduction in travel demand while vastly altering travel markets in terms of the origins, destinations and times trips are made. This is especially true when considering the likely "always on, always available" future of wireless communications and information exchange, which has the potential to reduce overall demand for travel. However, as the Innovation Economy ultimately engenders growth in population and economic activity, the net effect may be an overall growth in travel demand despite technological change, but with a further spreading of that demand away from traditional peak travel periods to create a more even spread of demand around the clock as ubiquitous communications, relentless competition and the further globalization of the economy make necessary a 24 hour business day and seven- days-per-week operations.

Lifestyle and Workforce Change

An equally dramatic change in lifestyles is likely, which will be brought about by the advent of longevity medicine. The technological changes and innovations noted above will also drive this trend toward increased longevity, which will exacerbate anticipated trends brought about by the aging of the Baby Boom generation. Additionally, workforce demands over the next three decades will likely be met through both increased immigration and the export of jobs off shore, since anticipated lower birth rates will mean that workforce demands cannot be met in any other way.

The anticipated expansion of longevity medicine over the next three decades will impact the manner in which transportation services are supplied as the proportion of older adults in the population grows and is maintained. People living longer means that a higher level of specialized services will be offered to maintain the quality of life of those who are living longer. To the extent that the most debilitating effects of aging can be restricted and individual human performance extended by these technologies, the private mobility of aging adults may be maintained for longer periods of time. However, it is unclear at present how accessible these technological advances will be to all older adults over the next three decades.

In addition, workforce changes will likely support and reinforce anticipated increases in immigration into the region, but they also foreshadow an increase in immigrants with more economic power and less dependence on public services for mobility needs. In that regard, they will likely rely more on personal mobility which means increased auto ownership. Their economic power will also mean greater freedom in terms of where they live in the region. Both of these possibilities translate into greater demands being placed on the region's roadway network and longer auto-dependent trips being taken. Thus, the region's roadway bottlenecks and congested links cannot be ignored.

The demand for specialized transportation services will increase over the next three decades as the proportion of older adults in the population grows. Additionally, technologies applied to life extension are more mature at present than those developing for extension of human performance, so it is likely that the next three decades will see people living longer but without the restrictions to aging and maintenance of performance that may emerge in the longer-term future, thus increasing the demand for specialized services for people who no longer have a private means of mobility available to them. These demands have the potential to greatly stress the operating budgets of mainstream transportation agencies and therefore point to the need for new business models for specialized transportation, most likely built around public-private partnerships. Additionally, increased vehicular demand on the part of immigrants with greater economic power will likely increase the pressure on the region's roadway network.

Globalization and Security

Globalization is anticipated to be at the epicenter of the explosive speed of change and the convergence of different trends that will shape the future over the next three decades. Globalization is about the deep collaboration of nations in the world aligning around free trade, and shared global concerns such as climate, energy, economics, technology,

security and democracy.¹ Globalization is feared (and will be opposed) by nations that justifiably feel impotent in the face of more powerful nations' resources. In a world of increased globalization, there is a new generation of haves and have-nots, which increases global tensions.² The convergence of future trends of globalization, innovation and security will have multiple impacts on regional transportation.

The demands of globalization will likely conspire to alter the logistics chain and the supply of transportation for goods. Innovations in wireless communications and broadband Internet connections will likely yield collaborative virtual workspaces, virtual production and on-demand supply chains that will alter the location, scale, scope and time constraints of global, national and regional commodity flows. Logistics chains and supporting transportation will need to change in response, placing additional stress on the region's goods movements systems.

Globalization's impacts on transportation demand are already being felt. Goods and people are moving in different ways and for different reasons. Travel origins and destinations are more varied as business and commerce transform. These trends should continue and accelerate, placing newer and more complex demands of the region's transportation systems for both goods and people and bringing niche issues into sharper focus, including airport access and intermodalism. At the same time, advances in wireless communications and broadband Internet connections will likely conspire to mitigate some of these demands, since the need to physically travel for certain purposes will finally be reduced by a reliable and accessible alternative. But, the emergence of virtual workplaces and virtual production has the potential to even further decentralize travel demand as well as to mitigate its growth.

Energy and Climate

Our current energy system will likely not be sustainable over the next three decades. Additionally, climate issues and climate change will be major drivers during that period. The convergence of these major trends in energy and climate will have serious implications for the region and its transportation system.

Transportation supply is directly threatened by the trends cited above. As a whole, the transportation system relies on a reliable energy source for both public services and private mobility. Growing limitations to energy supply and rising energy prices could shift more and more of the mobility burden to public services, while also directly affecting and probably limiting the availability of those services. The result could very well be a significant degradation of the level and cost of mobility available to the region's travelers. Transportation supply can also be impacted by climate change, as infrastructure is damaged or destroyed by catastrophic weather events and/or rising sea levels.

A growing unreliability in available energy from petro-sources would likely shift demand from dependence on privately owned vehicles to greater reliance on publicly provided or subsidized transportation services. At the same time, this unreliability would fuel an increase in demand vehicles powered in alternative ways.

¹ Institute for Global Futures

² Institute for Global Futures

Transportation Financing

Transportation finance will undergo significant change over the next 25 years. Alternatives to fuel taxes will need to be found to finance transportation at the federal and state levels as fuel taxes become less viable. A more diversified portfolio of resources will be needed to reliably support transportation. As transportation needs and inflation outpace resources, the role of the public and private sector in financing and operating facilities will continue to change. Large, mega-projects that will make significant regional contributions to the economy, environment and other areas will be unable to compete for limited funding to maintain a state of good repair, and operate the transportation system. Complex financial planning will work in tandem with traditional transportation planning and engineering, to identify the means for these mega-projects to advance. Project delivery and management (such as staging of megaprojects) will also play a role in project affordability. Partnerships with the private sector, where appropriate, will provide transportation customers with facilities and improved services which might not otherwise be affordable. New technologies will continue to evolve which will provide the means to directly assess customers for transportation usage, while better managing operation of the transportation system.