Meeting of Plan Development Team
Visions of the Future

Predicting 25 years into the future of transportation in Pennsylvania is complicated business. Trend-line projection (projecting trends ahead 25 years) may not be the procedure to follow. Futurologists tell us that trends progress until redirected or ended by radical, often unexpected, changes. For example, humans transported themselves for thousands of years by foot and horse. Then in a very short time, the internal combustion engine and the automobile came along to dominate personal transportation. This trend is one we’ve lived with for 90 years. What will be the next leap? Look at the communications industry. Telephones connected by wires have comprised the main system of communication for over 100 years. Now cell phones, personal computers and e-mail have exploded onto the scene.

Given the deficiency of trend-line projection, how does one predict Pennsylvania’s transportation future? This section of PennPlan takes a three-pronged approach:

- Transportation Now—the PennPlan team’s description of the current transportation scene in Pennsylvania, to serve as a backdrop for speculation about the future.
- Debatable Futures—potential approaches to transportation demand during the next 25 years, based on interviews with transportation visionaries across the country. Please note: there is no unanimity here! The purpose is to present an array of futures for consideration.
- Consensus Scenarios—themes that were expressed by the visionaries, the PennPlan team, and participants in the initial phase of PennPlan’s public involvement effort.
**TRANSPORTATION NOW**

Automobiles and trucks dominate the travel scene. This mode of travel offers choice, mobility, privacy and status. Cars and small trucks are so popular that the ratio of vehicles to the population nationally is 8 to 10. The demand for mobility (especially among populations that have been mobility-deficient: the young, minorities, immigrants, the economically disadvantaged, the elderly) is growing rapidly. As these groups gain economic strength, their mode of choice becomes the personal automobile. Numbers of elderly and immigrants are growing quickly, too.

Survey data from the initial public input program tell us that van- and car-pooling, bicycle commuting, walking and electronic commuting are not playing major roles in how people get to work. And since the increased demand for automobiles is not generally being met by an increase in road capacity, high levels of congestion are growing higher. In some areas of Pennsylvania the population is stable or even declining, yet the number of automobile trips and vehicle miles of travel in these areas is growing.

From environmental and safety points of view, there are some positive observations. Many technical innovations have significantly reduced the pollution created by automobiles, and fuel efficiency is greatly improved. However, gains in fuel efficiency have been offset to a large degree by the popularity of sport utility vehicles, which consume greater amounts of fuel and may emit more pollutants. Although localized and relatively minor, there are encouraging trends toward the use of bicycles, pedestrian facilities, telecommuting and electric vehicles. For example, Pennsylvania’s rails-to-trails program is quite successful, allowing people to bike and walk in scenic environments. Furthermore, highway travel is much safer as a result of improved vehicle technology and road design.

Intercity rail transportation appears poised for change. Although passenger rail is not extensively used except on the popular Metroliner route (which passes through Philadelphia on its way from Washington, D.C., to Boston) and in the Keystone Corridor (from Philadelphia to Harrisburg), faster equipment has been installed on the Metroliner route and is planned for the Keystone Corridor. If such service proves successful on the Philadelphia-to-Harrisburg section of the Keystone Corridor, it may be extended west to Pittsburgh.

Intercity and interstate airlines are very active in the midst of major developments in the industry. Because of the evolution of commuter and discount airlines, competition is stiff and price wars are common. Yet mergers and the combination of demand and complex, astute pricing of each seat (seat management) have proven profitable for airlines. However, the complex pricing

“I’d like to see a train that would take me to Philadelphia in one hour and New York City in two hours and a train that would take me directly to Washington, D.C.”

—Pennsylvania resident
causes a great deal of confusion among consumers. Furthermore, a backlash has developed among business travelers, who pay the bulk of the full ticket prices. Finally, smaller cities that attract fewer flights and little competition aren’t benefiting from lower fares. It is not uncommon for an intrastate flight to cost more than an interstate or even international flight.

Intercity bus service plays a minor role in Pennsylvania’s public transportation system; however, the charter bus business is booming.

Goods movement in the state is changing quickly. Freight is moved in a multi-modal fashion, i.e., shipboard containers are transferred to trains and trucks. Trucks are a popular way to serve Pennsylvania’s widely dispersed rural population. Furthermore, retailers and manufacturers are striving to reduce the costs of doing business, by receiving goods and supplies “just in time.” Warehousing and inventory costs are drastically cut when merchandise is received within a day of its sale or use. Essentially, goods are inventoried on vehicles. Trucks are most efficient in this enterprise because of their ability to carry smaller loads and deliver goods almost daily.

Mail order (catalog) and e-commerce (Internet) are also changing the nature of goods movement. The need for storefront operations is reduced, while the need for just-in-time deliveries of small orders is increased. This accounts for much of the volume of short-deadline delivery organizations such Federal Express, United Parcel Service, and the U.S. Postal Service. These services rely on aircraft-truck delivery systems.

Along with the radically changing scene in how people and goods move, there is an equally dynamic shift in how Pennsylvania manages transportation. Local and regional entities are more involved in transportation planning and management. Accompanying this trend are the efforts of the Commonwealth to involve the public in transportation planning and decision making. The Commonwealth also has embarked on a program of partnering with local and regional agencies and the private sector to provide transportation services. For example, under PennDOT’s Agility Program, a municipality may plow snow on a section of a state-owned road and, in return, the state may line-stripe a road for the local agency. Under this program, no dollars are exchanged. Furthermore, Pennsylvania commonly contracts with private companies for the management of services such as motor vehicle registration.

The foregoing provides a snapshot of what’s happening in transportation in Pennsylvania. As noted earlier, changes can occur rapidly. It would be unwise to predict a transportation future 25 years out simply by doing a trend-line projection of what is happening now. The ideas of experts in the field of transportation should also be considered. The next part of this section’s effort to conceive a vision of the transportation system of 2025 presents what some of these experts think about the future of transportation.

**DEBATABLE FUTURES**

*Please note that the visions of the future in both Debatable Futures and Consensus Scenarios are summaries of the ideas expressed by the transportation experts surveyed. The summaries are provided to demonstrate the diversity of thinking on the future as well as the points on which many of those surveyed agree. The summaries are also intended to prompt the reader to consider the many possible features of the transportation system of the 21st Century.*

This part summarizes ideas discussed during hour-long phone interviews with transportation visionaries. There was no con-
sensus among these experts; consensus was not the point of this exercise. Rather, their thoughts are presented here to encourage speculation on the future of transportation.

The experts agreed that Pennsylvanians currently enjoy unprecedented levels of mobility and that demands for mobility will increase. Conflict arose on the question of how to accommodate the expected increase in demand. Some visionaries said that we can’t continue to build transportation facilities (e.g., highways) to accommodate rising demand, because new facilities only create more demand. Some added that the demand itself must somehow be managed. They suggested strategies, such as price incentives to encourage people to use environmentally friendly modes of travel (mass transit, car and van pools, bicycles, feet) and to make other adjustments (moving closer to work, telecommuting). They noted that there should be disincentives to use of vehicles by single occupants for commuting.

Other visionaries countered that very few public undertakings have changed human behavior. They noted that even with high gasoline prices (via high fuel taxes) in Europe, single-occupant vehicle use continues to rise at a rapid rate. These experts suggested that we must continue to accommodate travel demand, and that the negative side effects of increased use of the internal combustion engine must be solved by technology.

The “change demand/change behavior” advocates said that technical solutions to transportation problems often create other undesirable consequences. For example, further breakthroughs in energy efficiency and pollution control may encourage more travel and resulting demands on land, particularly in areas once considered too far from work centers to develop. More farms would succumb to tract homes; more rural centers would become suburbs.

The experts who touted technological solutions noted that the increasing popularity of working at home by using a computer, e-mail and the Internet (telecommuting) will significantly reduce the need for travel. The experts who would change demand and behavior countered that people seem to have travel budgets in dollars and time. If they save travel time on Monday through Thursday by telecommuting, then they can move further into the countryside and complete a week’s worth of travel-demanding errands on Friday. These experts contended that communication will never become a substitute for travel, but merely change the pattern of travel.

Other visionaries pointed out conflicts in policy. For example, if public programs that focus on developing employment opportunities are successful, participants will then have to travel to new jobs. One expert suggested that the most appropriate policy in this regard was to locate housing for the underemployed in the suburbs where more job opportunities are located. Such a policy would improve employment prospects of the underemployed without creating greater mobility demands.

Other differences among the experts concerned the purpose of transportation. Most answers focused on moving goods and people and creating economic opportunity and social exchange. However, some noted that a primary purpose should be to create and manage land use and development patterns. One expert cryptically said that the purpose of transportation is “to create urban form.”

CONSENSUS SCENARIOS

This discussion predicts the nature of Pennsylvania transportation 25 years from now by synthesizing the common themes of the visionaries, the knowledge of the PennPlan project team and widely held opinions expressed in thousands of interviews con-
ducted during the initial phase of PennPlan’s public involvement program.

Pennsylvanians currently enjoy an incredible degree of mobility. It is also clear that mobility demands will increase over the next 25 years because of changing demographics, lifestyles, and ways of doing business. Much of the demand will be for individual mobility, and congestion and travel delay will remain challenges to transportation policy makers. This demand won’t be accommodated by road systems alone.

A continually accelerating demand for transportation resources, such as roads, cannot always be met. Therefore, transportation resources may experience rationing to some degree by 2025. For example, use of tolls might be extended, with higher tolls on premium, limited-access, high-speed roads and lower tolls for off-peak travel. Or there may be quotas on automobile registrations, in which an older car must be officially taken out of circulation before a new car can be put into service.

There will be no single solution to the transportation challenges of the next 25 years. Solutions will reside in a multitude of travel options for residents, visitors and businesses. A major finding of the initial public involvement program was the paucity of travel options. The public seems to feel that there are enough roads in Pennsylvania and that more travel options (e.g., mass transit, electronic commerce, and bicycle and pedestrian facilities) should be offered. New road construction will be relatively minimal by 2025. There was consensus from all groups in the public involvement process for high-speed rail connections between major cities in Pennsylvania. High-speed rail probably will be a reality in the Commonwealth’s transportation system of 2025.

Airlines will continue to play a dominant role in 2025 for both passenger and freight movement. Airlines already are facing legislation that would enact a “passenger bill of rights,” which may result in fewer travel delays and pricing inequities. Under similar pressure, airlines will find ways to expand service to smaller markets within Pennsylvania, primarily with their commuter operations.

The public involvement data also illustrate that travelers will prefer to purchase trips, rather than a mode of travel. They will want to get from Harrisburg to Pittsburgh in the most pleasant, timely and cost effective manner. If the trip will include transfers from one mode to another, the transfer should be seamless. The whole trip will be purchased as an entity, not in its segments. Through sophisticated electronics (e.g., “smart” credit and debit cards, automatic vehicle monitoring on highways) travel expenses will be collected from users in a friendly and equitable fashion. The fares will reflect the true cost of using a given travel mode. People may receive a monthly bill or statement accounting for their use of a transportation facility such as a highway.

One mode of travel will not be disproportionately subsidized over another. For example, the fare for a car trip from the suburbs into a city center will include the costs of parking a car on expen-
sive urban land. Parking costs will become overt, as will the costs involved in using other expensive travel options. Movers of goods (e.g., trucking companies) will also pay the full cost of their use of transportation facilities (e.g., roads). Taxes collected from transportation system users will not be dedicated to the travel mode in which the user operated. Instead, all transportation-generated funds will go into a general transportation account, providing transportation policy makers with the option to address transportation challenges on a strategic scale. Addressing transportation challenges will not be limited by money available for a specific mode.

The development of PennPlan has benefited from extensive public involvement. The voices of constituencies will continue to be a dominant force in the formation and delivery of transportation services for the next 25 years. Public involvement will come not only from individual consumers of the services but also from government agencies, businesses, trade associations, clubs, organizations, and whole population segments, such as the young and the elderly. Transportation policy, decisions and services will be carried out in partnership with many transportation constituencies.

As in 1999, environmental concerns will figure into transportation decisions in 2025. Transportation policy will be viewed as a means to meet environmental goals. For example, transportation decisions may encourage use of land for specific purposes or discourage suburban sprawl. Furthermore, options will be available for those wishing to travel with the least impact on the environment. Choices will include automobiles that emit fewer pollutants and consume energy more efficiently, electronic commerce, mass transit and a comprehensive network of pedestrian and bicycle facilities. As mentioned previously, tomorrow’s transportation challenges will not be answered by a single solution, but by providing consumers with choice. One solution will not solve all environmental concerns. Everyone cannot walk to work or use mass transit.

Transportation services in the year 2025 will strongly support the economic vitality of the Commonwealth, its people and its communities. The economic benefits of transportation will be directed so that no individual or group is unfairly advantaged or disadvantaged because of transportation decisions.

The efficient use of transportation dollars will be as paramount in 2025 as it is today. Efficiency will be attained by continual improvement in the management of capital and human resources. It will often be more efficient to optimize current resources than to build a new transportation facility. Management of current resources instead of facility additions will be a dominant theme. PennDOT’s “maintenance first” policy is characteristic of this approach. It is often wiser to invest in an existing transportation facility than to build a new one.
Another management and efficiency theme that will still operate in 2025 will be the utilization of “off-peak” capacity. Airlines, hotels, phone companies, restaurants and many other services have realized that building additional facilities to accommodate peak-hour demand is very expensive, particularly when they have off-peak capacity. Rather than build a new telephone exchange, a phone company accommodates large increases in business by developing programs that shift excess demand to off-peak hours, commonly in the evening and on the weekend. Shifting demand to these times doesn’t cost the phone company nearly as much as a new facility, yet the company retains income from the additional business. The bottom lines of many companies have improved significantly through demand management. Such management will be a dominant approach to transportation in 2025. Planners will develop programs to use off-peak capacity of roads, rails, mass transit, airports, and freight facilities rather than build expensive new facilities to accommodate peak-hour travel.

Safety will continue to be a dominant transportation theme for the next 25 years. The public will demand it. Safety improvements will result from developments in safe vehicle technology, education and enforcement. For example, in 2025 the public will have an even lower tolerance for those who drink and drive. The punishment for driving under the influence will be even more severe and immediate. Indeed, technological innovations will even prevent an impaired driver from initiating a trip.

Another characteristic of the transportation system of 2025 will be reliability. Improvements in the transportation infrastructure, on-line information about traffic bottlenecks and alternative routes, and an array of transportation options will enable consumers to predict the time and cost of their trips.

CONCLUSION

PennPlan’s unprecedented level of public involvement included public response to surveys taken by the transportation experts whose views are provided above. Opinions on the transportation system of the future include unanimity on some points and diversion on others. One thing is certain, however: Pennsylvania’s transportation system must continue to adapt to demands placed upon it by societal changes. PennPlan is a step to ensure that adaptation occurs. As the transportation system adapts, Pennsylvania’s residents will continue to benefit from a system that provides Mobility; Options; a platform for public Voices; Equity, Efficiency, consideration for the Environment, and Economic development, and Safety. These themes are represented in the logo of the Pennsylvania Statewide Long Range Transportation Plan, PennPlan MOVES.

“I don’t understand mass transit systems. They need to be better explained.”

—Pennsylvania visitor