

# NATIONAL CONFERENCE *of* STATE LEGISLATURES

*The Forum for America's Ideas*

## High-Speed Rail: Changing How America Travels?

Transportation Committee Session at NCSL's Legislative Summit

July 23, 2009

Philadelphia, PA

### Meeting Summary

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#### Moderator

Eric Bugaile, Executive Director, House Transportation Committee, Pennsylvania

#### Speakers

David Randall Peterman, Congressional Research Service (CRS)

Paul Nissenbaum, Federal Railroad Administration (FRA)

Shayne Gill, American Association of State Highway and Transportation Officials (AASHTO)

Representative Charlie Schlottach (Missouri), Midwest Interstate Passenger Rail Commission (MIPRC)

Wendell Cox, Demographia

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## Introductions and Welcome

**Eric Bugaile**

Executive Director, House Transportation Committee, Pennsylvania

Eric Bugaile began by welcoming everyone to the session and to the Legislative Summit and by facilitating introductions of the attendees. Approximately 80 people attended this session, including many legislators and legislative staff members as well as representatives of Amtrak, private companies, engineers' associations, unions, transit organizations and academic institutions.

Mr. Bugaile introduced himself as the executive director for the transportation committee of the Pennsylvania House (on the Republican side). Previous to that, Mr. Bugaile served on the Pennsylvania High-Speed Intercity Rail Passenger Commission, which studied the possibility of connecting Pittsburgh to Philadelphia with a 2-hour rail service. The study ended in 1987, and recommended a MagLev system. Now, one talks about high-speed rail in terms of around 90 mile-per-hour service. In comparison to what the Pennsylvania Commission considered in the 1980s, this is a different definition of what high-speed rail means in the United States.

## An Overview of High-Speed Rail

**David Randall Peterman**, Transportation Analyst, Congressional Research Service (CRS)

Mr. Peterman began by stating that his presentation today represents his own thoughts on high-speed rail, not the official position of the CRS or the Library of Congress.

### Introduction

A century ago, high-speed rail was the dominant form of transportation in the United States, but with the rise of motor vehicles and then aviation, it was greatly eclipsed. The companies that provided both freight and passenger rail services started having financial difficulties in the 1950s and 1960s; passenger rail service was especially unprofitable. Thus, in 1970, the federal government created Amtrak, primarily to relieve those companies of the responsibility to provide passenger rail service. Since then, Amtrak has been the primary provider of intercity passenger rail in the nation.

Periodically, there has been interest in improving passenger rail service and implementing high-speed rail in the U.S.—such as the interest in MagLev in Pennsylvania in the 1980s mentioned by Mr. Bugaile—but such efforts generally haven't come to much, due to cost and other considerations. However, in the last year or so, interest in the prospects for high-speed rail in the U.S. has increased, which is why we are here today.

### Defining High-Speed Rail in the United States

"High-speed rail" has no specific definition, but generally means any service faster than prevailing speeds. In the U.S., prevailing speed is 79 miles per hour (mph), so high-speed rail could be anything from 80 mph to the 200 mph service seen in other countries. This can be confusing, since when people talk about high-speed rail, it's not always clear what kind they mean.

The Federal Railroad Administration (FRA) talks about "emerging," "regional," and "express" high-speed rail. These categories represent increasingly faster service. The FRA's general definition of high-speed rail, however, is not determined by speed, but is "service that is time-competitive with air and/or auto for travel markets in the approximate range of 100 to 500 miles."

The Government Accountability Office (GAO) talks about "incremental high-speed rail," which is what you get with improvements to existing track, and "new high-speed rail," which is building new, dedicated lines, giving you the highest level of service. Most U.S. projects are likely to be slower services that result from improvements to existing lines, rather than faster services like the world-class European and Asian systems, which are more expensive to produce.

Another confusion is about how much funding is available for high-speed rail. People talk about \$8 billion being available. In fact, that funding is for three different programs: 1) high-speed rail specifically, 2) general intercity passenger rail and 3) congestion mitigation. It is unclear exactly how that money will be divided up; the FRA will announce that later this year.

### Technologies for High-Speed Rail

There are two technologies available for high-speed rail: 1) conventional (steel wheel, steel track) technologies, and 2) magnetic levitation (MagLev). Despite the U.S. having had a federal MagLev development program for over a decade, and other efforts to sell it in other countries, there is only one commercial MagLev in the world—in Shanghai, China, where it attains speeds of 268 mph. The prevailing technology is conventional. Conventional trains with dedicated, grade-separated, electrified tracks operate *in service* between 186 and 210 mph, but conventional and MagLev technologies have comparable *maximum* speeds, at around 350 mph. However, it tends not to be financially viable to actually operate conventional trains at that speed, as it costs more in terms of energy used and maintenance costs. Improving existing tracks can result in speeds of 90 to 125 mph.

### High-Speed Rail is a System

The three components of a high-speed rail system are **tracks, signaling systems and trains**. People often talk about the trains, but what really makes high-speed rail is the tracks. Ideally, for the fastest level of service, what is needed is the equivalent of the interstate system for rail: straight tracks entirely dedicated to passenger traffic with no highway crossings. These tracks also should be electrified so trains do not have to carry the weight of fuel and can accelerate and decelerate more quickly.

### High-Speed Rail in Other Countries

Several other countries have developed high-speed rail systems. The first of the "new" systems was in Japan in 1964. Since then, other systems have been developed in Europe and Asia<sup>1</sup>. These systems were developed for different reasons. In Japan and China, a main motivation was to *relieve demand* on the rail systems, which were and are still heavily used. In Europe, the purpose was largely to *revive* rail transportation, which had started to decline in the 1960s and 1970s due to air travel and cars.

### Why is There No High-Speed Rail in the United States?

The simple answer to why the U.S. lacks high-speed rail, despite its technological advancement, is because the government has chosen not to invest in it. There are several reasons for this. First, the **structures of railways**: In other countries, rail systems were part of the national government and served several functions, including preserving employment and being a part of national transportation plans. The U.S. system is more confused, with less central planning and private operation of most of our rail and aviation systems. Secondly, **economics and geography**: Most countries with high-speed rail (except

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<sup>1</sup> Other nations that have implemented high-speed rail systems include France (1981), Italy (1991), Germany (1992), Spain (1992), Korea (2004), Taiwan (2007) and China (2008).

China) are the size of individual states in the U.S., but with larger, denser populations. High-speed rail may seem more feasible if the distance across your country is 400, not 3,000, miles. Further, freight rail is the dominant form of rail transportation in the U.S.; in most other countries, passenger rail is dominant and freight is secondary. Other reasons include an **earlier shift to motor vehicles in the U.S.** and **government policies regarding transportation modes.** Other countries chose to make automobile travel much more expensive than it is in the U.S., and to promote rail travel more.

### High-Speed Rail versus Other Modes

High-speed rail can be time-competitive with air travel between downtowns less than 500 miles apart, but it requires more infrastructure. High-speed rail can be faster and safer than highway travel, and is more predictable than driving because it avoids congestion, but each additional traveler in a group going by rail significantly increases the trip cost of the group.

### Benefits and Costs of High-Speed Rail

The proposed benefits of high-speed rail include energy efficiency, reduced environmental impact of travel, an alternative to congested roads and airports and the opportunity for economic development around stations. These benefits tend to be greater for "true" (new) high-speed rail.

However, the costs of high-speed rail include higher development costs for "true" high-speed rail compared to incremental development. Also, ridership estimates are often overstated, and most corridors are likely to require ongoing funding support for their operations. There are few corridors in the world where rail is economically self-sufficient without any form of governmental assistance. Finally, high-speed rail itself may not be an economically efficient investment in most corridors.

The Passenger Rail working group of the recent Surface Transportation Policy and Revenue Study Commission estimated the average cost of incremental improvements to existing track to enable 79 to 110 mph service at \$7 million per mile. If acquiring right-of-way for service over 110 mph, the cost can be \$35 million per mile—and in general, costs tend to be initially underestimated. Thus, in terms of corridors of 100 to 500 miles in length, high-speed rail can be an expensive proposition.

### Congressional Interest in High-Speed Rail

Congress has been interested in high-speed rail periodically over the years. The first High Speed Ground Transportation Act was passed in 1965 and contributed to the development of a Northeast Corridor (NEC) that runs from Washington, D.C., to New York. There were also improvements to that corridor in the 1970s and 1990s, and there have been efforts to promote MagLev over the years.

The most dramatic change came with the Passenger Rail Investment and Improvement Act (PRIIA) of 2008. This act created new programs and authorized nearly \$5 billion over five years, including \$1.5 billion for the High Speed Corridor Development Grant Program, \$1.9 billion for the Intercity Passenger Rail Development Program and \$325 million for the Congestion Mitigation Grant Program. These are authorizations, not actual dollars provided by an appropriations committee.

The American Reinvestment and Recovery Act (ARRA) provided even more funds earlier this year. From 1990 to 2007, Congress provided \$4.17 billion *total* for high-speed rail development—about \$232 million per year—with about 75 percent going to the Northeast Corridor. In contrast, ARRA alone provided \$8 billion—not as an authorization, but available *now* for that purpose. The administration then was going to request an additional \$5 billion over the next five years in the Department of Transportation appropriations acts. Then, a month ago, the House Transportation and

Infrastructure Committee submitted the draft bill for surface transportation reauthorization, which proposed authorizing \$50 billion for high-speed rail from FY 2010 to FY 2015.

In summary, there is \$8 billion available now, with possibly \$5 billion more over the next five years, and potentially as much as \$50 billion more over the next six years. While that is a staggering amount of money compared to what has been available in the past, the FRA just announced that in the pre-application phase, they had received 278 applications for a total of \$103 billion—far more than the maximum that could be available over the next six years.

### Current U.S. High-Speed Rail Corridors

There are currently five U.S. corridors in which trains travel at maximum speeds over 79 mph: 1) Los Angeles to San Diego (90 mph), 2) Chicago to Detroit/Pontiac (95 mph), 3) New York to Albany (110 mph), 4) Philadelphia to Harrisburg (110 mph) and 5) the Northeast Corridor (Washington, D.C., to Boston) (150 mph). These are all incremental high-speed rail, based on improvements to existing tracks. However, in each of these cases, the trains can only attain those speeds on small portions of track; the *average* speeds on these corridors are between 55 and 69 mph.

### Federally-Designated High-Speed Rail Corridors

There are ten federally-designated high-speed rail corridors: 1) Pacific Northwest, 2) California, 3) South Central (Texas and neighboring states), 4) the Chicago Hub Network, 5) Gulf Coast, 6) Southeast, 7) Florida, 8) Keystone (Pennsylvania), 9) Empire (New York and neighboring states) and 10) Northern New England. The Northeast Corridor was *not* a designated corridor, as the purpose of designation was for a program to provide money to states to eliminate highway crossings, and the Northeast Corridor had no crossings when that program was created.

### Funding for State-Supported Amtrak Rail Routes

In 2008, 14 states contributed \$177 million total to Amtrak service in their states<sup>2</sup>. While this may not seem like a lot, it is notable that these states valued rail enough to fund it without a federal match.

### High-Speed Rail Players

The players in high-speed rail are: **Congress**, which provides money and programs; the **White House**, which has chosen this as a signature issue; the **FRA**, which writes regulations and administers grants; the **states**, which will also need to contribute money to high-speed rail as well as proposing and implementing projects; **freight railroads**, which own almost all of the existing track in the U.S.; **Amtrak**, the primary passenger rail operator; **industry contractors**; and other **federal agencies**.

### Challenges in Implementing High-Speed Rail

The first challenge in providing high-speed rail is **funding**, which may be inadequate to fund the ambitions of the states and the administration. Funding consistency is also a challenge, as this money comes from the general fund rather than a dedicated source. Other challenges include **interstate coordination**, availability of **expertise**, **project management**, **freight network capacity limits**, **uncertain ridership forecasts** and **diffusion of federal funding** across different projects. Also, regulatory requirements may be an issue. U.S. regulations are not the same as those in other countries with high-

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<sup>2</sup> This differs from Mr. Gill's presentation (see note 3 on page 9).

speed rail, so systems can't be imported wholesale. For example, here, high-speed rail trains must be designed for tracks that are shared with freight trains.

### Opportunities for Implementing High-Speed Rail

Opportunities include more funding available from the federal government than ever before and widespread support in Congress and in the public. Also, Positive Train Control (PTC)—a crucial component of passenger and high-speed rail safety—will be required on passenger rail lines by 2016.

## **High-Speed Intercity Passenger Rail (HSIPR) Program**

**Paul Nissenbaum**

Director, Office of Passenger & Freight Programs, Federal Railroad Administration (FRA)

### The President's Vision for High-Speed Intercity Passenger Rail (HSIPR)

On April 16, 2009, President Obama laid out his vision for high-speed rail development in the U.S. Joining him were Vice President Biden and Secretary of Transportation LaHood, who are also passionate about this issue. Rail has become a priority.

The President's key strategic goals in this vision are also broader transportation and administration-wide priorities: safe and efficient transportation **choices**; building a foundation for **economic competitiveness**; **energy efficiency** and environmental quality; and interconnected, **livable communities**.

*“Imagine boarding a train in the center of a city. No racing to an airport and across a terminal, no delays, no sitting on the tarmac, no lost luggage, no taking off your shoes. Imagine whisking through towns at speeds over 100 miles an hour, walking only a few steps to public transportation, and ending up just blocks from your destination. Imagine what a great project that would be to rebuild America.” - President Obama*

### Keys to Success of High-Speed Intercity Passenger Rail (HSIPR) Program

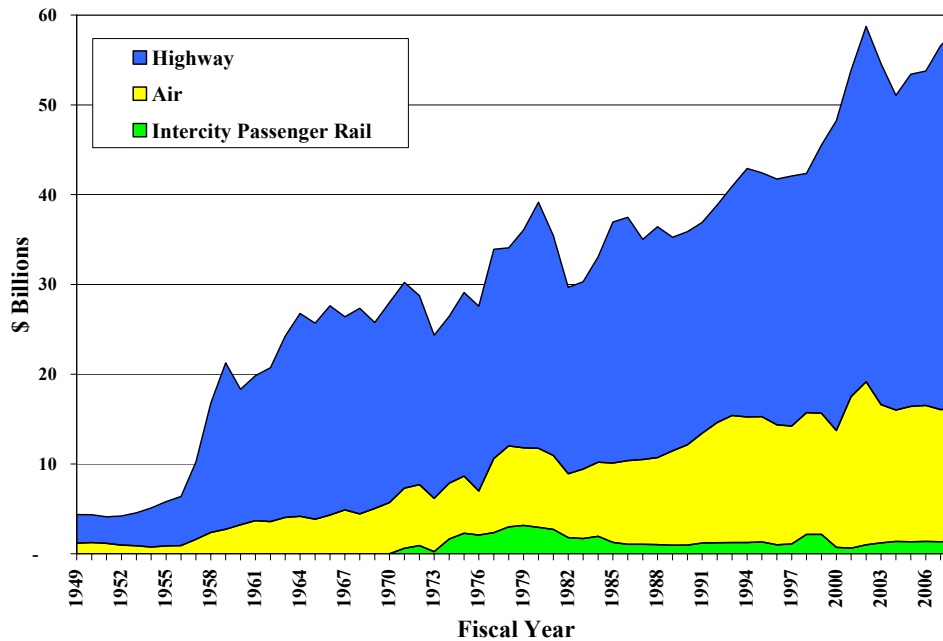
There are many keys to the success of this program, which will be discussed further in the coming months as the FRA works with states and other applicants. One is **state and regional planning**, including an overall transportation vision for a state or region, the role of rail in that vision, alternatives analysis, good ridership and revenue forecasts, cost forecasts, financial plans and environmental processes. Also important are **early project successes**—demonstrated success on projects that are ready-to-go—as well as an **ongoing project pipeline** and assistance for states that are in the process of project development. **Sustained commitments** from states and other investors are needed, including ongoing operating subsidies which will *not* be provided by the federal government. It is important to support these capital investments and avoid "stranded assets." Lastly, **collaboration** among the many stakeholders—the federal government, the states, the railroads, labor, the environmental community—is a critical component for the long-term success of this program.

### Historical Federal Investment in Transportation

Federal investment in intercity transportation in the latter half of the twentieth century has been focused on a substantial highway program and aviation. Intercity passenger rail has not been a federal

priority overall. However, there *has* been significant investment in private freight railroads; the U.S. is considered a world leader in freight rail.

Figure 1: Federal spending on highways, air travel and intercity passenger rail.



### What is High-Speed Rail?

As Mr. Peterman pointed out, definitions of high-speed rail are all over the place. Congress provided a definition in the Passenger Rail Investment and Improvement Act (PRIIA) of 2008 (§26106): *Intercity passenger rail service is "reasonably expected to reach speeds of at least 110 miles per hour."* This is the definition that the FRA is using. Beyond that, the FRA has categorized different kinds of high-speed rail: over a 100- to 600-mile distance, "emerging" high-speed rail reaches top speeds of 90 to 110 mph, "regional" reaches 110 to 150 mph and "express" reaches over 150 mph. The key, though, is not the *top* speed but the *average* speed. As some have said, "The key to going fast is not to go slow." Ultimately, what matters to the traveling public is total travel time, which must be reduced by addressing congestion points, curves and other bottlenecks.

### Program Development Timeline

In October 2008, the Passenger Rail Investment and Improvement Act (PRIIA) provided authorizations. In February 2009, the American Reinvestment and Recovery Act (ARRA) funded those programs well over the authorization levels, at \$8 billion. Then, the omnibus appropriations bill in March 2009 appropriated another \$90 million. In April, President Obama's strategic vision provided broad parameters for this program, and the FRA interim guidance—which gives more specifics—was released in June 2009.

### Implementation Timeline

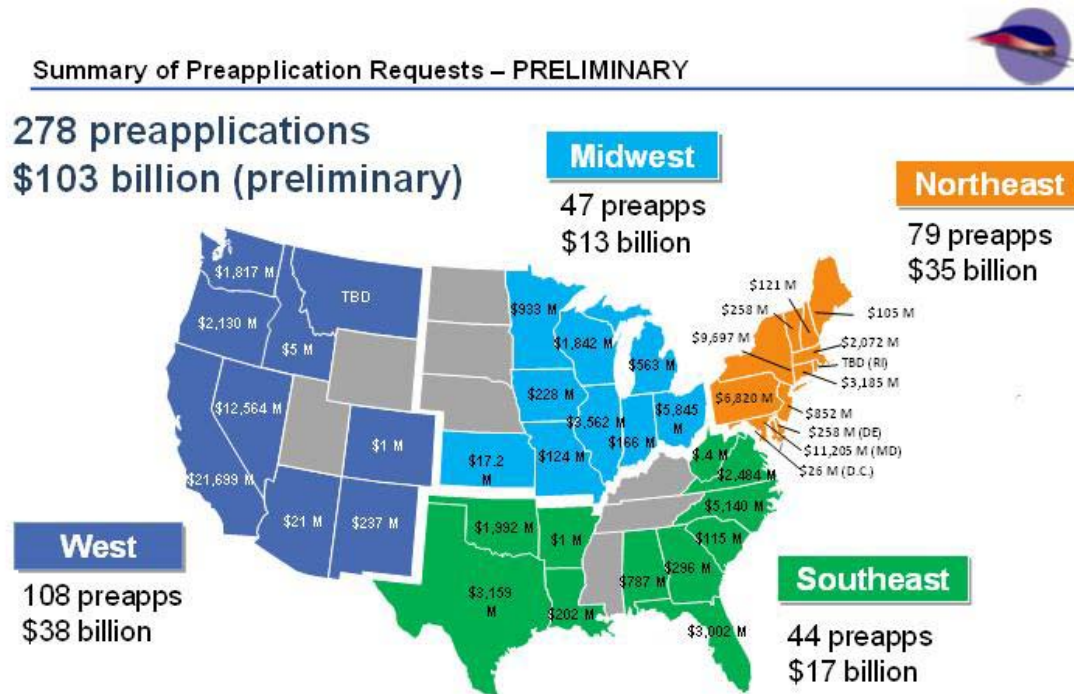
There are four management tracks within the program, set up to handle projects at different stages of development. These categories also address the complicated legislative authorization framework within which the FRA is working. **Track 1 (Projects)** is for individual projects that have independent benefits regardless of additional investments. These projects must also be ready-to-go, which is the emphasis of

ARRA. **Track 2 (Programs)** is for comprehensive, corridor development programs where there are larger benefits to be achieved by upgrading an existing corridor or developing a new one. **Track 3 (Planning)** is a small amount of money—which Congress has indicated it would like to increase—for states that would like to do some planning to get projects in the pipeline. **Track 4** is for the FY 2009 appropriations process. Pre-applications for all tracks were due July 10, 2009. Applications for Tracks 1, 3 and 4 are due August 24, 2009; for Track 2, on October 2, 2009.

Preliminary Summary of Pre-application Requests

So far, the FRA has received 278 pre-applications from 40 states worth about \$103 billion. Note that these are preliminary, draft numbers that have not been checked for project eligibility. Also, states put together these pre-applications in a short period of time. The goal of these pre-applications was not for applicants to put together a proposal for evaluation, but to get a seat at the table and start a dialogue.

Figure 2: Preliminary summary of pre-application requests submitted to the FRA.



Evaluations: Merit-Based Criteria

The *evaluation criteria* are outlined in the interim guidance. First, the FRA is focused on **public return on investment** in terms of broad public benefits—not just transportation benefits to travelers, but also external benefits such as those to the environment, to local communities and, most importantly, to economic recovery and job creation. The next two categories of evaluation criteria are **project success factors** and **other attributes**, which relate to the ability to make sure that the investments will be made, that the applicant knows how to manage the project, that the project is sustainable and that it will be delivered in a timely fashion. After the projects are ranked, they will be looked at collectively. At that point, *selection criteria* will also take into account **region and location**, **project innovation**, a **partnership** approach and whether there is sufficient funding in the different **tracks** and to sustain the **timing of future rounds**.



# State Perspectives for High Speed/Intercity Passenger Rail

Shayne Gill

Program Manager, Aviation, Passenger Rail & Public Transportation,  
American Association of State Highway and Transportation Officials (AASHTO)

## Introduction

Mr. Gill began by emphasizing that partnerships are the key in creating these programs. One point that is not highlighted enough is that, in the past, state legislators have led the way in capital investment in intercity rail programs. There hadn't been much of a federal partner until about two years ago, when Congress stepped forward with the first appropriation. At present, the federal partner has begun investment; in the future, it is hoped that both federal and state roles will continue.

## States Leading the Way

Fifteen states partner with Amtrak by providing additional funds for capital investments and operating costs: California, Illinois, Maine, Michigan, Missouri, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, Texas, Vermont, Virginia<sup>3</sup>, Washington and Wisconsin. State legislators are key partners, as they are making appropriations to keep these trains going.

## Federal Partnership Established

For FY 2008, Congress appropriated \$30 million in a 50-50 federal-state matching program. Even in a context of fiscal constraints, interest was high: 22 states applied for 25 projects, and 12 states were awarded 15 projects. However, compare the 50-50 match to 80-20 for highway and some transit projects. A key component of PRIIA was to increase the federal match to 80 percent.

For FY 2009, Congress appropriated \$90 million in a 50-50 matching program, for which applications are due August 24, 2009. Then the American Recovery and Reinvestment Act (ARRA) provided \$8 billion for high speed/intercity passenger rail, including \$1.3 billion for Amtrak. ARRA funds are for capital infrastructure, not for operating costs or planning. If states have planning needs, they need to look at the FY 2009 funding, and target grant applications to Track 3, as described in Mr. Nissenbaum's presentation.

## High Speed Intercity Passenger Rail Timeline

In April 2009, President Obama released his strategic plan for high-speed rail. Since April, the FRA has reached out through seven regional workshops, which were co-coordinated by state DOTs. Pre-applications for high-speed rail funds were due July 10, 2009. After that short amount of time to prepare, 40 states and the District of Columbia submitted 278 pre-applications for \$103 billion. Applications for Tracks 1, 3 and 4 are due August 24, 2009, while Track 2 applications are due October 2, 2009.

## Challenges and Issues in Implementing High-Speed Rail

For state DOTs, safety is the key issue. AASHTO and state DOTs are working to ensure that the Section 130 program—which uses highway trust fund money to improve grade crossing safety—

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<sup>3</sup> This differs from Mr. Peterman's presentation, which showed 14 states having contributed to Amtrak (see page 5). Mr. Gill explained that he had added Virginia, which began operating additional service at the end of 2008 from Lynchburg to Washington, D.C., and from Richmond to Washington, D.C.

continues in the next surface reauthorization bill. This is one of AASHTO's key legislative goals. Amtrak, the Class I railroads and the short-line railroads are also keeping an eye on this. AASHTO will be reaching out to NCSL and NGA for their support in ensuring this program is not eliminated.

Positive Train Control (PTC) will be another key element in the development of these corridors. Equipment standards are also important, particularly in terms of interoperability. Under PRIIA, they have asked for a Next Generation Equipment Pool Committee to be formed, including states and the FRA, which will develop standards for designs for equipment on various corridors. This may help to develop a domestic base of rail suppliers in the U.S.

Another issue is the need for partnerships between state DOTs and not only legislators and the FRA, but also freight railroads. These partnerships are key to moving projects forward, especially in a "ready-to-go" state. Other pending issues include environmental, liability and insurance concerns. Also, labor is a key partner in moving these projects forward. State DOTs will not be out building these projects. In fact, in some states, rail departments comprise two people.

All of the states are in different stages of project development. The approach that the FRA has taken with ARRA money is probably the best approach that can be taken for the development of a national intercity and high-speed rail plan. It allows for states that are far advanced to be able to apply under Track 1 and move projects quickly, but also to have other avenues of funding for states that are not that far along, or that may still have some environmental work or some final planning that needs to be done. This seems to have worked in the best interest of the states and state DOTs.

### Future Funding

President Obama in his FY 2010 **budget** called for \$1 billion per year over the next five years. Last week, the **House Transportation Appropriations Subcommittee** marked up their bill and passed it out of committee, which included \$4 billion for high-speed rail, with the intent that \$2 billion of that would be transferred to a National Infrastructure Bank, if it were authorized and funded, which may be unlikely this year. This bill also includes \$40 million for rail line location and \$1.48 billion for Amtrak. Finally, the current House Transportation and Infrastructure Committee **draft Surface Transportation Authorization Act** calls for \$50 billion over six years for the development of high-speed rail. This legislation also includes funding for rail relocation and a RRIF loan program.

### The AASHTO Vision for High-Speed Rail

The AASHTO board of directors in fall 2008 called for the authorization of \$35 billion for a capital grant program (equipment and infrastructure), \$13 billion to bring the Northeast Corridor into a state of good repair, and \$55 million annually for high-speed rail grade crossing safety grants. These total approximately \$50 billion, which is what is included in Chairman Oberstar's authorization bill.

AASHTO also calls for Congress to provide dedicated, guaranteed funding for high speed/intercity passenger rail capital infrastructure. AASHTO has provided Congress with a list of around 50 possible revenue sources for this dedicated source of funding, from cap-and-trade revenues to drawing on the gas tax. AASHTO did not advocate any one source; it was just a list of options to consider. To plan for the future, it is important to know that there is a dedicated funding stream. In the past, domestic bus and rail manufacturers went out of business because there was no vision for a dedicated source of funding and they relied on the annual appropriations process. As a nation, we must build up our infrastructure to move these projects forward.

# A State Legislative Perspective on Intercity Passenger Rail

Representative Charlie Schlottach (Missouri)

Chair, Midwest Interstate Passenger Rail Commission (MIPRC)

Eric Bugaile introduced Representative Schlottach. He also described how high-speed rail has been a bipartisan issue across the nation. Representative Schlottach expressed his pleasure to be at this event, discussing this “front-and-center” issue with his colleagues.

## Introduction

Representative Schlottach further introduced himself as a fiscal conservative and a cattle farmer from rural Missouri. When he was first asked by Missouri's Speaker of the House to serve on the Midwest Interstate Passenger Rail Commission (MIPRC), he was reluctant because he was neither proactive nor reactive on rail issues. This presentation today will demonstrate what he has learned firsthand as someone who has been skeptical regarding rail issues. He now believes that the time for rail has come, and that it is important to take a good, analytical look at it. It will also give a case history of what Missouri has done with intercity rail and to prepare itself for high-speed rail in the future.

## Missouri: A Case History

Amtrak funding for the last 15 years or more has been contentious at the state level, with advocates for and against rail service. When Missouri started with improving intercity rail service, about seven years ago, state funding for Amtrak was at a level of about \$6 million per year. Missouri had two trains per day on the 250-mile corridor between Kansas City and St. Louis. On-time performance at that time was embarrassingly low, and many months was below 25 percent. Ridership had plummeted nearly 50 percent. The Missouri House of Representatives had voted at least twice to abolish Amtrak. And nearly everyone who had ridden Amtrak—including key legislators—had had some negative experiences related to service reliability.

In addition, the Missouri Department of Transportation (MoDOT) could not help provide funding for rail services, either. Their focus was on road-building, and they were very limited in what else they could do to help. There was no communication between state leadership and Union Pacific. And politically, there was no commitment to continue rail service—with the exception of a few senators and rural legislators, who had Amtrak trains running through their districts, and who understood the importance of rail for tourism in rural areas and as a resource for those with few other transportation options. Everybody thought they knew what the problem was: either Amtrak, as a big, federal bureaucracy run amuck, or the “bad boys” running the railroad, depending on the political point one wanted to make. In either case, it seemed a short and simple answer.

As Chair of the House Committee for Appropriations for Transportation and Economic Development, Representative Schlottach started the process of committee meetings and communications with MoDOT, as well as transportation experts from University of Missouri and Union Pacific. The committee also financed a study by Dr. Noble of the University of Missouri that for the first time took an analytical look at these problems<sup>4</sup>. The study showed that there were too many trains sharing the same track. That was something that people knew, but what nobody knew was what these congestion problems were costing everybody. It was not only costing passenger rail service in Missouri, but was also causing utility bills to go up, because it took 15 or more hours to get a coal train across the state.

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<sup>4</sup> *Missouri Freight and Passenger Rail Capacity Analysis* (2007), by James Noble and Charles Nemmers, is available at <http://library.modot.mo.gov/RDT/reports/Ri05053/or08001.pdf>

When thinking about rail, it is important to always think about both freight and passenger rail. When we think about highways, we do not separate it into cars and trucks. One must think about both, and how to collaborate to have a better basic infrastructure for both to operate on.

The study showed a cost analysis of investment in rail infrastructure and a matrix of the cost and fair assessment to all who use the track. A lot of those areas are not double-tracked, so we are talking about sidings, or opportunities for trains to move to the side of the track. Few investments had been put into rail, and coal cars had increased from around 40 or 50 cars a few decades ago to now over 100, and there was not enough room or enough places to move 100 cars to the side of the track.

As a result of this study, the state had the analytical tools to understand the bigger picture in economic terms, and it was realized across the board that investments were needed to rebuild the infrastructure for everyone to benefit. The study moved people out of the political muck and provided the information necessary to move forward and make the investments to solve the problem.

### Points to Consider When Looking at Rail Issues

- It is important to realize who owns the railroads: private rail companies. The tracks are, for the most part, private property, and states need to collaborate with those companies.
- The federal law states that passenger rail must have priority. However, if the lines are inadequate—and they are—and there are only four places to park along the corridor, and there are six trains on the track, what are you going to do? This doesn't leave much possibility to follow the letter of the law. Also, 90 percent of the income from rail comes from freight. In Missouri, there are 70 to 90 trains per day on that corridor; *two* are Amtrak. This presents another reason to collaborate with the freight rail companies.
- Investments in infrastructure benefits both passenger rail and the freight lines. When investing in rail, it is important to look at the bigger picture and how to benefit everybody.
- We must become more competitive globally in order to survive. We can no longer spend 30 percent of our disposable income on transportation. There must be real competition in transportation and real alternative choices. For example, to drive from Kansas City to St. Louis and back, at 50 cents per mile, costs \$250. Even with state subsidization, a total of \$60 to \$70 is spent on taking a train for that same trip. There is economic benefit yet to be looked at in terms of total dollar savings regarding passenger rail issues.

### Where Missouri is Today

Since de-politicizing rail in Missouri, the state has committed \$5 million to capital improvements at choke points on the Union Pacific line—in addition to the \$6 million for Amtrak—which has leveraged \$3 million from the federal government and probably \$20 million or more from Union Pacific. Ridership is up, on-time performance is 98 percent, and this year Amtrak appropriation passed the Missouri House of Representatives without a dissenting vote. The state continues to collaborate with Amtrak, Union Pacific and coalitions along the corridor to promote upgrades and discuss what has to be done to implement high-speed rail.

### Midwest Interstate Passenger Rail Commission (MIPRC)

Representative Schlottach has chaired the Midwest Interstate Passenger Rail Commission (MIPRC) for two years. The MIPRC is a 13-state commission to advocate for passenger rail in the Midwest. It was

created in the 1990s because passenger rail had been declining over the last 50 years. The MIPRC has been working on fundamental problems for the past ten years: congestion, funding, adequate infrastructure and equipment to keep passenger rail a viable transportation choice. It is important that regions work together to provide a consistent environment for passenger rail. Rail doesn't stop at state lines, so agreements must be worked out among regions and states for financing and legal reasons.

Right now, the MIPRC's first priority is to get all of the eligible states "on board" by passing legislation—the Midwest Interstate Passenger Rail Compact—in each member state. Eleven of the 13 eligible states have done so. It is important to demonstrate that the MIPRC has a legal, as well as political, connection to those entities. Other MIPRC priorities are to help each state identify its passenger rail needs and to collaborate together to form a regional passenger rail corridor.

Economic and energy issues have again made passenger rail a popular discussion. In 2008, there was a real turnaround with the Passenger Rail Investment and Improvement Act (PRIIA), which put passenger rail on the fast track. The stimulus funding has continued this vision to make rail a reality.

## High Speed Rail: Plans vs. Reality & Cautions

Wendell Cox  
Principal, Demographia

### Introduction

Wendell Cox began by expressing that his great concern is that legislators will be barraged with claims and representations about high-speed rail that are “beyond the pale.” It is important to think about how to develop these systems, because they have potential for causing states great economic harm. High-speed rail, wrongly implemented, can cause something like the Big Dig in Massachusetts.

Another thing to be aware of is that, due to funding availability, many slower-speed rail authorities in the U.S. are now looking at high-speed alternatives, which now peak at 220 mph between Tanjin and Beijing in China. Mr. Cox has spent a lot of time in France, and acknowledges that riding high-speed rail systems like France's is wonderful. The question is, how do you pay for them?

This presentation will mostly focus on very high-speed rail—"express" in the FRA's categorizations—and on the California high-speed rail proposal<sup>5</sup>.

### Funding and Financing Issues for High-Speed Rail

Reference has been made to the fact that large infrastructure projects have a tendency to cost more money than estimated or promised. For example, in California, cost estimates rose from \$30 billion to \$45 billion, even as the system was cut. There have been negative experiences with high-speed rail, and legislators need to be aware of that, so they can build into their programs ways to minimize cost.

It is also important to think about where the money will come from. The highway system has been profitable for the federal government—not subsidized—due to the payment of highway user fees via the gas tax. There have been minor subsidies to the airport system, mainly for air traffic control, and major subsidies for Amtrak. Nobody believes or proposes that user fees will pay for high-speed rail systems,

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<sup>5</sup> Mr. Cox is a co-author of *The California High-Speed Rail Proposal: A Due Diligence Report* (2008), available at <http://reason.org/files/1b544eba6f1d5f9e8012a8c36676ea7e.pdf>

and it is important to consider how they will be paid for. There are claims about the great possibility for profits from these systems. However, Iñaki Barrón de Angoití, director of high-speed rail at the International Union of Railways in Paris, has said that the Paris-Lyon and Tokyo-Osaka routes are the only ones in the world that have “broken even.” If you hear talk about profitability, run and hide.

Taiwan has the only high-speed rail system in the world with available data that conforms to generally accepted accounting principles. Taiwan also has the only high-speed rail public-private partnership (PPP). Taiwan's system is currently broke, and has had to refinance its loans. This is a huge problem for them, and was so even before the economic downturn. However, legislators in the U.S. should still consider PPPs for high-speed rail, as the more private investment you have, the better off you will be.

In California, the plans are for a \$35 billion first phase and a second phase between Sacramento and San Diego that adds another \$10 billion, for a total of \$45 billion in 2006 dollars. The legislature then added back plans for an Altamont Pass-East Bay route, for another \$10 billion. Thus, the total will likely be between \$60 and \$65 billion in 2009 dollars, but the only funding they have is \$9 billion of locally-passed bond funding. They will also likely get federal funding, but that will not be adequate.

In summary, these systems are very expensive. Also, ridership is frequently overestimated. The Eurostar between Paris and London carries over 30 percent less than the ridership projections made 20 years ago. Taiwan's high-speed rail is 67 percent below projections and the Korean line is 50 percent below projections. Planners often exaggerate. The estimate for California is that the system would carry a load factor of 85 percent. Even airlines can't achieve that. The TGV in France only carries around 70 percent, and the Acela is carrying 55 percent. So a critical eye is needed, because if plans are built around an overestimate, the system will in fact need to be subsidized.

### Impacts of High-Speed Rail on Other Modes

Do not expect high-speed rail to have any impact on highway traffic. The major congestion problems are not between cities, but in urban areas. In Japan and France, there is talk about how rail reduces highway traffic. But the highway toll on the 250 miles between Japan and Osaka is \$110, and the toll for the 500 miles between Paris and Marseille is about \$75. Even so, a second parallel freeway between Japan and Osaka is being built. The projections never show much movement from cars to high-speed rail. Why? It is rarely possible, when you arrive, to take transit or walk to where you are actually going. In this way, high-speed rail is similar to aviation, where you often need to rent a car upon arrival.

The other problem is exaggerations with respect to the costs of modal alternatives. California consultants used urban highway construction numbers to cost rural highways as the alternative to high-speed rail, ignoring FHWA guidelines. They also included in their plans highway expansions that were not needed and attributed *all* of the costs of future highway construction to high-speed rail. In fact, if there is no highway expansion or high-speed rail, by 2030, traffic will increase to 30 percent over capacity in the corridors. If highway expansion is done, traffic will rise to 5 percent over capacity; if high-speed rail, to 26 percent over capacity. High-speed rail competes with airlines, not highway travel.

Another concern with slower high-speed rail options—which will share tracks with freight lines—is the potential to interfere with freight efficiency. It will be expensive to upgrade lines so freight lines can still do well. One reason that the U.S. and Canada have the best freight rail systems in the world—more goods are moved by rail than truck in both countries—is because freight rail has free tracks to move on. However, in Europe and Japan, freight rail market shares are low. Europe has worked for decades to bring back freight rail, but it can't because there are too many passenger trains. There is no first world country that has both a first-class passenger rail system and a first-class freight rail system. It

is important to avoid a situation in which high-speed rail forces freight onto trucks that would otherwise be on trains, thereby increasing roadway congestion.

High-speed rail can have an impact on airports, especially in some short markets. For example, rail has nearly eliminated air travel between Paris and Lyon. However, there are exaggerations. One reason for the big market share claims for high-speed rail based on some Asian and European countries is because they ignore the large, pre-existing rail market in those places. In France, high-speed rail was largely developed to increase capacity on the existing system.

Also, in longer markets, air travel continues to have a significant share. The high-speed train from Paris to Marseille covers 500 miles in around 3 hours; however, after high-speed rail, the number of flights on that route only decreased from 23 to 17. The route from Tokyo to Osaka has hourly 777 air service. A San Francisco Bay Area airport report<sup>6</sup> suggested that high-speed rail would have little or no impact on airports, even though the California high-speed rail consultants said it would have major impacts. The reason is that few San Francisco airport flights are serving California destinations. Finally, although it is claimed that high-speed rail has resulted in a 50 percent reduction in the airline market between Barcelona and Madrid, the airlines are in fact continuing to have the same number of flights of the same size—about 48 per day, which may be the busiest air market in the world.

### High-Speed Rail and the Environment

There are also claims that high-speed rail is climate-friendly and will reduce greenhouse gases. There are real concerns about this. For example, in California, it is 380 miles from San Francisco to Los Angeles by highway. The high-speed rail route length would be 490 miles. That would increase greenhouse gases compared to a more direct route. High-speed rail is worse on greenhouse gas emissions per passenger mile than air travel on this route, and in addition studies are now showing that we can cut emissions from planes by half. Hybrid autos are much better on emissions than high-speed rail on this route, cars in 2016 meeting the 35.5 miles per gallon requirements are slightly better, and new cars today are much worse. Further, given these numbers, high-speed rail would only yield 1.5 percent of the reduction in greenhouse gas emissions that California wants to achieve by 2030.

The question is, what is the most efficient way to reduce greenhouse gases? The United Nations Intergovernmental Panel on Climate Change states that no more than \$50 per ton should be spent on reducing greenhouse gases, and a McKinsey report suggests that the U.S. can meet its greenhouse gas reduction obligations for less than that<sup>7</sup>. However, based on data from the California High-Speed Rail Authority's proposals, the most optimistic projected cost per ton of greenhouse gas removed is \$2000—40 times the recommended maximum. More realistic assumptions, it is more like \$10,000 per ton. It is not that high-speed rail is bad or wrong, but it needs to be looked at with open eyes, and objectively.

### Lessons Learned from the Massachusetts "Big Dig" Project

Massachusetts planned to pay \$1 billion for the "Big Dig" (the Central Artery/Tunnel Project), with the federal government paying 90 percent of the project's costs. In reality, Massachusetts paid 73 percent of the costs (with a federal share of 27 percent), totaling \$18 billion. The debt will not be paid off until 2038, and they are borrowing to pay salaries. The lesson is that it is important to look at the facts, and not just be cheerleaders and promoters.

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<sup>6</sup> *Regional Airport System Plan: Update 2000* (2000), available at [www.mtc.ca.gov/planning/air\\_plan/RASP\\_FinalReport.pdf](http://www.mtc.ca.gov/planning/air_plan/RASP_FinalReport.pdf)

<sup>7</sup> *Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?* (2007), available at <http://www.mckinsey.com/client-service/ccsi/greenhousegas.asp>

## Questions and Answers

Question: How did you depoliticize high-speed rail issues in Missouri?

Representative Schlottach: With enough time, consideration and data—and an analytical approach—this issue goes away, which is what happened in Missouri. The ongoing argument was either about the Amtrak bureaucracy not being able to provide the service or about the rail companies not giving priority to passenger rail. All the study did was look at the entire situation analytically and what was needed to fix it. Now this study can be shown to naysayers. It shows that with a \$5 million investment from the state, \$3 million from the federal government and \$20 million from Union Pacific to add capacity on the track, costs will be cut for everybody by 10 or 15 percent. This is a given; it does not need to be explained at length to constituents, especially with the issue of rising utility rates. The \$5 million investment is a good deal. Having good numbers is the key, and knowing what is economically feasible.

Comment: I will not counter most of Mr. Cox's misleading numbers, although I will say that none of his statistics comparing highway to high-speed rail travel included the costs of highway use related to personal car ownership and operation—the cost of owning the car, fuel, driving and so on.

Wendell Cox: I am happy at any time to provide details about this information. The important thing is that legislators not be stuck in a position where they bought something that they didn't realize they were going to get.

Comment: My state made a sizable commitment to rail and put money on the table, but then the railroad companies didn't follow through. So I hope that the federal government will also hold the private railroads accountable.

Paul Nissenbaum: You raise an important issue, which is the ability of the owners of the infrastructure as well as the operators to deliver on the project and its assumed benefits. At this stage, the FRA is asking that applicants have agreements with the infrastructure owners—in this case, the railroads—that are enforceable. There is no model agreement to share right now, although there are examples of where this has been done effectively as well as examples of where it hasn't been done as effectively. Over the next year or two, it may make sense for the FRA to put together a model agreement, or at least share best practices directly. In the meantime, a key component of a successful application is demonstrating how that agreement is in place among the parties that will deliver the project.

Comment: But the state does not regulate the railroads, the federal government does.

Representative Schlottach: I understand where you're coming from. In 2008, when the current law was passed, it really put the Surface Transportation Board in charge and gave it the tools to reprimand the freight railroads. But keep in mind the Missouri example. Passenger rail has the priority, but what do you do when there is insufficient capacity? It's an infrastructure problem.

Eric Bugaile: In Pennsylvania, we have a freight rail advisory committee and provide grants to freight railroads. We have a good relationship with them. The idea is that they are going to get something out of the deal. And if the freight railroads are doing well, passenger rail can do well too.

Paul Nissenbaum: The FRA is the regulatory authority on the safety side. The Surface Transportation Board (STB) is the vehicle for anything not on the economic side of regulation—which we moved away from when the ICC was abolished. But the only enforcement mechanism available to us is in the grant agreement that we have with a state, by requiring that they have a suitable agreement with the infrastructure partner. I recognize the challenges of that.



## Presenter Biographies

**David Randall Peterman** is a transportation policy analyst with the Congressional Research Service (CRS) of the Library of Congress, where he has worked since 2000. He has also worked at the state level, as a policy analyst for the Hawaii State Legislature, and the regional level, as a planner for the Middle Georgia Regional Development Corporation. He has a Masters degree, and postgraduate work, in city and regional planning from Georgia Tech, and a BA and MA in European and Asian history from the University of Georgia and the University of Hawaii, respectively.

**Paul Nissenbaum** is the Director of the Office of Passenger and Freight Programs at the Federal Railroad Administration (FRA), a position he has held for the last year. In that capacity he oversees all of the FRA's major funding programs, including the \$9.3 billion in rail programs funded under the American Recovery and Reinvestment Act (ARRA) of 2009, the annual state intercity passenger rail, high speed rail, congestion, safety and Amtrak grant programs authorized under the Passenger Rail Investment Act (PRIIA) of 2008, the rail line relocation grant program, and the Railroad Rehabilitation & Improvement Financing (RRIF) loan program. He also oversees the FRA's planning and environmental support, including planning guidance and technical assistance to states and railroads. Prior to the FRA, Paul worked at Amtrak for nine years, serving in several capacities including Vice President of Planning, and was a lead author of Amtrak's 2005 blueprint for change, the Strategic Reform Initiatives. He has also worked on Capitol Hill and led a surface transportation and environmental consulting practice. Paul holds a Masters in Public Policy from Harvard University's Kennedy School of Government.

**Shayne Gill** joined the American Association of State and Highway Transportation Officials (AASHTO) in January 2008 as program manager for aviation and passenger rail and in July 2008, took on the issue area of public transportation. Shayne is a member of the Policy and Government Relations staff for AASHTO and serves as liaison to the Standing Committee on Aviation, Standing Committee on Public Transportation and the Intercity Passenger Rail Leadership Group. Shayne also works closely with the Standing Committee on Rail Transportation for passenger rail issues and the AASHTO Multi-State Technical Assistance Program. Prior to joining AASHTO, Shayne worked for almost 12 years on Capitol Hill as both legislative assistant and legislative director responsible for transportation issues for a Member of Congress from his home state of Alabama. Shayne also worked for 3 years at the firm of Bartlett & Bendall in Washington, D.C., as Director of Government Affairs representing a variety of transportation-related clients. Shayne earned a BA from the University of Montevallo, Alabama, and is a resident of the Logan Circle area of the District of Columbia.

**Representative Charlie Schlottach**, Republican, currently serves citizens of the 111<sup>th</sup> District in the Missouri House of Representatives. He is Chair of the House Appropriations Committee for Transportation and Economic Development, Vice Chair of the Retirement Committee and is a member of the House Budget and Agricultural Policy Committees. He also serves as a member of the Joint Committee on Public Employee Retirement and as a Board Member of the Missouri Department of Transportation and Highway Patrol Employees' Retirement System. Since 2003, Representative Schlottach has served as the Missouri House appointee to the Midwest Interstate Passenger Rail Commission (MIPRC). He was elected as the commission's vice chair in 2004, and served in that capacity until June 2007, when he was elected chair.

**Wendell Cox** is principal of Demographia, a St. Louis-area-based international public policy firm. He specializes in urban policy, transport and demographics, and co-authored the Reason Foundation report *The California High-Speed Rail Proposal: A Due Diligence Report*. Mr. Cox was appointed to one term on the Amtrak Reform Council by Speaker Newt Gingrich and by Mayor Tom Bradley to three terms as the only non-elected official on the Los Angeles County Transportation Commission (LACTC). He also served as the Director of Public Policy of the American Legislative Exchange Council for three years. Mr. Cox left LACTC in 1985 to begin consulting and has become a recognized expert and advocate for more effective strategies in urban transport. Mr. Cox has provided consulting assistance to the United States Department of Transportation, public authorities in the United States, Canada, Australia and New Zealand, and public policy organizations. Mr. Cox lectures widely, writes numerous commentary articles (op-eds) and is frequently interviewed by the international, national and local media. Mr. Cox also serves as visiting professor at the largest university in France, where he lectures on transport and demographics.