As Chairman of the California High-Speed Rail Authority, one of the questions that I’m often asked is: “How can we afford to build high-speed rail?” While I understand concerns about government budgets and smart spending, I often respond to such questions with a counter-question: “How much will we spend not to build high-speed rail?”

Indeed, here in California (where we already boast the largest population in the United States) our populace is expected to grow to some 50 million by the year 2050. To put that number in context, we’ll effectively be adding the entire population of New York over the next 35 years. That would all be well and good if our transportation infrastructure was serving our residents adequately and if we had plans to ensure that it does so in the future. Unfortunately, the opposite is the case. California’s 170,000 miles of roadway are the busiest in the nation, with estimates pegging the cost of time lost and fuel wasted in traffic congestion at $18.7 billion annually. Moreover, the Los Angeles to San Francisco air market is the busiest short-haul market in the nation with over 5 million passengers annually. This had led to approximately one out of every four flights being delayed by an hour or more.

These congestion problems aren’t new, and they certainly aren’t going away anytime soon as our population continues to grow. So why don’t we expand our highways and airports to alleviate these issues instead of implementing a high-speed rail system? Because achieving the capacity that high-speed rail offers through new freeway miles and airport runways would cost significantly more – up to 3 times more - continue to contribute to harmful greenhouse gas emissions, and ultimately prove unsustainable. When looked at in this light, it becomes clear that the transportation problems we face here and California – and throughout the nation – cannot be solved by a “more of the same” approach.

Aside from the realities of our over-taxed infrastructure and growing population, high-speed rail fills a gap in our transportation network that has existed for decades: medium-distance trips. Specifically, for trips between 100 and 600 miles, automobile and air travel has become inefficient when measured in cost, time, energy, and emissions. These are trips that, for the average traveler, are just too long to
drive but not quite short enough to go through the expense and process of air travel. International experience has shown that when major cities separated by comparable distances, like Los Angeles and San Francisco, are connected via high-speed rail the majority of travelers will switch modes from air or car to rail. For example, the Madrid to Seville line in Spain has increased rail travel between those cities from 16% to 51% of all trips, while total traffic between those cities has increased by 35%; this figure indicating that high-speed rail has actually encouraged more trips between these metropolitan hubs.

But these conditions that make high-speed rail a crucial investment in California's future exist throughout the nation. There are “megaregions” across the country that face the same challenges that California faces and possess similar attributes and strengths. These are areas with large or dense populations that boast significant economic capacity where highly skilled talent, scientific achievement, and technological innovations are concentrated and compete on a global scale. From the Northeast to the Northwest, the Great Lakes to the Gulf Coast, and from Florida to Texas, these regions produce billions – and sometimes trillions – of dollars in economic output, but can be stifled by lack of efficient connectivity. It will be absolutely critical to America’s continued economic growth that we foster the effective transfer and interaction of people, materials, and ideas to ensure that we optimize efficiencies within and between our megaregions. High-speed rail offers a means by which to achieve these goals.

This is why it’s so exciting to see high-speed rail gaining momentum throughout the nation and to participate in efforts like this one: *Emerging Challenges and Opportunities of High Speed Rail Development on Business and Society*. By continuing to expound on the many challenges and benefits of high-speed rail and advocating for its expansion, efforts such as this one can have a real, substantive impact on public policy debates that move high-speed rail forward. We’re already seeing exciting developments in Florida, Texas and Nevada. But only with continued efforts like this one will we see a truly nationwide high-speed rail network in America.

Here in California, construction is now underway on more than 100 miles of brand new high-speed rail infrastructure in our Central Valley, with more than $2 billion in construction contracts already executed. Right now, the first vertical structure associated with the project - the Fresno River Viaduct over the Madera River - is going up just north of Fresno. In the coming months, residents and visitors to the Central Valley will start to see more structures and activity along the backbone of the system between Madera and Bakersfield.

At the same time, we are moving aggressively on planning and implementing high-speed service in Northern and Southern California. In the Bay Area we are working closely with our partners at the intercity train operator Caltrain to implement a blended system between San Jose and San Francisco. This blended system
will benefit commuters and regional travelers in the short-term by electrifying the
corridor and implementing Positive Train Control, while paving the way for high-
speed rail service primarily on shared track in the future as our system extends to
the San Francisco Peninsula.

We are also working with transportation agencies in the Los Angeles Basin,
including LA Metro and Metrolink, to upgrade existing systems and improve con-
nections to begin the process of implementing high-speed rail. Both of these efforts
are part of our phased approach to reaching a statewide high-speed rail system,
wherein individual investments are made on a piece by piece basis and each have
independent utility to commuters and travelers throughout the state. This method is
similar to the one used to implement the interstate highway system, and we believe
it can be used as a model for the rest of the nation as other states begin to move
toward high-speed rail. Our approach takes into account the realities of government
budgets and spending and provides value at each step along the way to achieving
state-of-the-art rail systems.

It is also important to add that the development of high speed rail in California
is a key tool of our state’s program to contribute to global reduction of greenhouse
gas emissions. Governor Jerry Brown has been an ardent champion of the need for
governments at all levels to pursue policies that combat climate change. California’s
initiative to develop a modern, electric rail system, including high speed intercity
as well as regional rail, combined with good land use decisions around the stations,
will have a material impact on greenhouse gas emissions.

In closing, I would like to thank Dr. Raj Selladurai for inviting me to pen a modest
foreword to this important academic work. As I have explained, the need for high-
speed rail is clear and we know that it can provide a sustainable solution to some
of our transportation problems. The key now is to continue to explain, educate, and
publicize this information to the broadest spectrum possible. I strongly believe that
there is a great deal of momentum behind high-speed rail in the United States and
that the trend will only continue with the continued advocacy this book represents.
Someday we will have a modern, efficient high-speed rail network in America. We
can’t afford not to.

Dan Richard
California High-Speed Rail Authority, USA

Dan Richard is the Chair of the Board of Directors for the California High-Speed Rail Authority, USA.