3-D Infrastructure: Building the Next California

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California is a state where people have built their dreams, noted historian Kevin Starr. Now it is the time to see what Californians will do over the coming decades to continue to build their dreams in this quickly changing world.

To build our dreams for the future, we need to understand the changes that are occurring as the population grows, but in a different way than before. Who will live in California over the next three decades? How will these changes affect our economy? What infrastructure will we build to support this different growth and how will we pay for it?

We will need to look at who the people will be and what will their desires and needs will be. The majority of the growth will be those over 65 - over half of the household growth will be in this age group. There will be fewer workers as a percentage of the population and in some decades, there will actually be fewer workers. The growth in the number of young people will also be slower over the next several decades.

We now understand that these demographic changes are raising our health expenditures and pension costs. These cost increases are affecting budgets now and will put increased pressure on all local and state governments budgets over the next several decades.

What are the effects of these changes on our economy and how we grow our state?

It is commonly understood that over half of our national and state economic growth is derived from the growth in our labor force. With a labor force growth rate that will be 70% lower over the next three decades than the three before, it is likely that national and state growth rates will grow 1.8% to 2.5%, substantially less than the past several decades of 3.0% to 3.5% growth.

What is not understood is the effect that these demographic changes will have on our incomes, the amount that we will expend and consume, and on the taxes that we will pay to all levels of government.

Our incomes, including that from equity assets and transfer payments, peak at 55, and by the time we are 75, our incomes will decline more than 50%. All personal related taxes paid, including property taxes, will decline an even greater 80% when we reach 75. While these changes historically occur, the major differences this time are the enormity of the group getting older ("baby boomers" reached 55 in 2001 and started retiring in 2011), and the reduced size of the working age population.

These changes in the demographic structure are creating an "age penalty" which will further dampen economic and revenue growth forecasts that can be counted on to build our future. In California over the next three decades, this "age penalty" will reduce income growth by 20%, our expenditures by 13% and the taxes we pay to all levels of government by 34%. When this is added to the likely reduction of state and national GDP growth from our labor force, our economic and revenue picture in the future will not be what we experienced in the past.

During the last three decades, our dream fulfillment has benefited from the demographic dividend of a favorable labor force participation rate and size, and the additional advantage of a larger than average group of people making more money and paying more taxes. Going forward, these advantages turn to penalties which will lead to greater budgetary stress for the state and local governments.

What can be done to respond to these changes? Many note that we might work longer; we can increase our immigration rates; or that we will become more productive. All are possible, but when analyzed more carefully, do not hold either technical or political promise as a solution. We have been working longer for the past several decades and the likelihood of continuing this trend is limited. Immigration today is lower than the levels before 1980. The major question is not just political acceptance, but job formation that will attract higher levels of immigration. The most interesting question is the role of productivity changes. Will it increase output per hour worked and not just increased consumer surplus?

One additional major transformation that is occurring in California is our environmental sustainability policies on climate change which have led to long range changes in our growth patterns, energy and transportation strategies. We have launched an emission trading program and a sustainable communities initiative. These initiatives could lead to more efficient use of our resources and will also encourage us to look at longer run decision-making. If we align our environmental and fiscal decision-making, the solution to both initiatives become possible. Lastly, the leading industries of the State are developing the information systems and networks that will enable individuals and consumers to become decision-makers in these sustainability strategies.

When you view all these transformational changes together, what emerges will be a more efficient growth pattern and infrastructure investments that are less capital intensive, more decentralized and diversified, and take advantage of the information services and networks that are being created. We will change from the 3-C world of infrastructure: centralized, capital intensive and controlled by hierarchy, to the 3-D world: diversified, distributed, and decentralized when building our infrastructure. Large capital investments made with centrally controlled systems with long term dependence on stressed public funds or on individuals whose incomes are not growing as fast as we thought, will be difficult to finance in this environment. The continuing stress of public budgets coupled with lower growth will not support the 3-C paradigm. With stressed public resources, we will move to more user based financial systems made possible by information and networks that are decentralized and more closely linked to users.

The sustainable communities strategies which flexibly link resource utilization to gain efficiencies and also take advantage of information systems to link users to what they are consuming will generate different infrastructure strategies. Water, energy, transportation, education, health and other infrastructure systems will look and operated differently. Investments that are focused on integrated sustainable communities, that capitalize on the advantages of the 3-D world, should be our priority. Larger regional and state connecting systems should be built if they stand the test of being supported with business plans and their own revenue streams and not stressed general funds. In the regions and cities that are pioneering these systems we are seeing different strategies emerge. When investments are made, they increasingly are linked to identified investment streams that users are willing to pay. The extensive transit networks that are financed locally coupled with the changing city and county sustainability plans in Southern California are an example.

New institutional structures the create partnerships among the sectors, that link users with services and that take advantage of better resource utilization and flexible localized strategies will be the best approach to building our infrastructure. Numerous experiments such as the Presidio Trust; the Alameda Corridor; High Occupancy Transportation Corridors in San Diego & Los Angeles; and desalination in Carlsbad have been undertaken. New efforts such as the San Diego border crossing are on the drawing books.

The recently published National Academy of Public Administration "Memos to National Leadership: Partnerships as Fiscal Policy" outlines a framework for building our infrastructure in the future. The elements of this framework are Public Benefit Corporations (PBC)'s like those described above, the Infrastructure Bank, and the Risk Assessment and Mitigations Board (RAMB). The state has been willing to advance policies in the past to enable parts of this framework and to begin the experiments described above. The effort is incomplete. Additional authority for Public Benefit Corporations needs to be provided by the legislature. The framework for removing barriers and obstacles and time delays and risk (RAMB) so that revenue backed projects can continue should also be created.

The Governor and the legislature need to create a culture of willing partnerships instead of trying to control the process. By creating the "rules of the game" that enable us to put public, private, nonprofit organizations and people together differently throughout the state, the organizations and people of the state can build what will be needed in the future.

The procurement process needs to be altered to allow for the innovations that are being created by the industries in our state. How?

By creating an outcome based procurement process, instead of the current specification process that is based on what has already been implemented and discourages innovation. We need to create a level playing field with the capacity to assess risks and allow innovative and creative new infrastructure systems in our communities. The NAPA paper describes a partnership with The Aerospace Corporation, a California-based federally funded research and development corporation that can assist in this process. They are currently assisting the city of San Jose in developing the transportation system of the future.

The demographic, fiscal, environmental and innovation transformations that are occurring will require the leadership of the state to provide the tools to capture the convergence. "3-C" infrastructure will burden the state with continued debt and unrealized opportunities, while "3-D" infrastructure will enable the future population to realize their dreams.