Breaking With the Past

By Ted Droettboom and Christy Riiviere

In line with federal requirements for long-range regional transportation planning, the San Francisco Bay Area is now undertaking its 2009 regional transportation plan update, known as "Change in Motion." The title is fitting because this document represents a radical change in this region's approach to transportation planning.

Past updates have unfolded in more or less the same way. Area planners would assemble a multibillion-dollar investment package based on prior commitments and add in new projects, particularly freeway and transit improvements. We would then forecast the impact these investments would have on key transportation and environmental indicators, such as congestion and air quality.

The result was usually more of the same: Conditions will be better than if we did nothing at all, but worse than they are today. Despite spending billions on transportation infrastructure, our predictions usually showed that congestion, delay, and air quality would get worse.
This plan attempts to break that cycle by actively seeking ways to improve key travel indicators. We are also adding a new indicator: global warming.

Fifty percent of the Bay Area's greenhouse gas emissions are generated by the transportation sector alone, and most of those emissions are carbon dioxide from automobiles. We recognize that, if we are to reduce our overall carbon footprint, we must reduce our transportation-related carbon emissions.

**Performance, pricing, and missing the mark**

A key difference in the current plan relates to our expectations of performance. In the past, we assessed performance only after our investments were lined up. In the current plan, we establish performance expectations up front and use them to guide the long-term investments and policies that will move us away from business as usual.
The big news is that we have set quantifiable targets up front, based for the most part on state and federal mandates. For instance, our carbon-reduction target is based on AB 32, the California law requiring the reduction of carbon emissions to 1990 levels by the year 2020. Our CO₂ target is further influenced by Gov. Arnold Schwarzenegger’s executive order on global warming, which calls for an 80 percent carbon dioxide reduction by 2050.

Complementing our carbon target is a congestion target based on a state transportation strategy, and air quality targets based on federal standards. We also identified an affordability target to reduce the Bay Area’s combined burden of transportation and housing costs on low-income families.

To determine whether we could achieve these targets, we used our regional travel model to evaluate a set of alternative strategies. The strategies included three infrastructure packages: one focused on freeways, including modest improvements like ramp metering; a network of high-occupancy toll lanes combined with expanded express bus service; and a multibillion-dollar expansion of rail transit. We also tested a comprehensive road-pricing policy (tolls, congestion charges, and parking taxes) and a land-use strategy based on smart growth principles.

The results were illuminating. The only infrastructure package that helped to move the needle toward our performance targets was the freeway performance package, which did well relative to the congestion target. Both the road pricing and land-use strategies—particularly in combination—made more of a difference.

To really work, however, both would need to be highly aggressive. The road pricing strategy would have to increase the average cost of driving by five times. The land-use strategy would have to redirect an unprecedented amount of growth to infill areas in the region’s central cities: San Francisco, Oakland, San Jose, Berkeley.

But even by combining all the strategies, we still fell woefully short of our targets. Where we particularly missed the mark was in meeting the greenhouse gas emission targets. This finding was both sobering and empowering. It reminded us of the limited power of our current interventions compared to what is already in place, from land use to infrastructure. But it also gave us a persuasive reason for departing from our business-as-usual approach.

And that’s what we did. Our next step was to assume that California’s proposed Clean Car law, the Pavely Bill, could, in fact, be implemented. (It’s now up in the air, pending a federal Environmental Protection Administration waiver.) The measure would require auto makers to improve fuel efficiency and to reduce tailpipe emissions. We also assumed a large shift in travel behavior—that more people would take transit or walk—and an increase in telecommuting.

In the end, we realized that, if we were to meet our targets, major changes would be needed in five policy areas: infrastructure, pricing, land use, technology, and individual actions.

**Challenges and possibilities**

Knowing all this, we will spend the next year evaluating the projects and programs that will eventually comprise the region’s transportation plan. We will do this through the lens of the five policy areas, linking each to the lessons we have learned. It is these policies that will drive transportation program decisions and investment choices. We face immense challenges in each of these policy areas, along with many possibilities for moving forward.

**Infrastructure.** The greatest challenge on the transportation infrastructure front is inadequate funding for maintenance and repairs to the existing system. Funds for transit services and expansions are also severely limited. In addition, the private railroad systems used for both freight and passenger service are nearing capacity. An aging population is also a challenge, as local transit service may not address the needs of older adults.

The possibilities for moving forward include establishing cost-effective maintenance standards, securing adequate funding for maintenance, and developing public transit and HOV facilities to increase transit ridership. We are also exploring ways to implement design-build project delivery methods and to leverage private-sector funding to support public investments.

**Targets**

**Environment:** Carbon Dioxide (CO₂) and Particulate Matter (PM) Emissions
- Reduce CO₂ emissions by 40 percent below 1990 levels by 2035
- Reduce PM2.5 emissions by 10 percent
- Reduce emissions of coarser particulate matter (PM10) by 45 percent

**Environment:** Vehicle Miles Traveled (VMT)
- Reduce VMT per capita by 10 percent by 2035

**Equity:** Affordability of Housing and Transportation
- Decrease by 10 percent the share of household income consumed by housing and transportation costs for low and lower-middle income households
The historic moment last fall when the leaders of the Metropolitan Transportation Commission and the Association of Bay Area Governments officially joined forces to develop the long-range plan that will guide Bay Area transportation, growth, and land-use decisions in coming years.

Far left: Alternative transportation—a bike rider on the Golden Gate Bridge.

Pricing. Pricing presents the opportunity to harness the power of the marketplace and of cutting-edge technology to deal with congestion. The greatest challenge to implementing pricing is skepticism. Public officials and residents alike are often highly uncertain that pricing strategies can effectively change travel behavior. People are also naturally resistant to anything that may increase their personal costs. Ensuring that low-income families are not priced out of the system is yet another challenge.

One proposal to demonstrate the pricing concept and how it can work in the Bay Area is to begin with high-occupancy toll lanes, or HOT lanes. We are also working with the city of San Francisco to explore European-style congestion pricing on routes entering and leaving the city. We know that we must provide high-quality, viable alternatives to the automobile to ensure that low-income families are not unfairly impacted by any pricing strategy we consider.

Land use. The greatest land-use challenge is local resistance to neighborhood change, especially increased densities. Equally daunting is the fact that most of the Bay Area’s urban areas will need substantial infrastructure investments, including sewers, pedestrian infrastructure, parks, and road improvements, if they are to take on more of the region’s growth. The area is expected to add more than two million people by 2035, bringing its population to 9.1 million.

Tackling these challenges will require targeted investments in areas we now refer to as regional “priority development areas.” These are existing communities with jobs and transit. We hope to secure new infrastructure funding that could be used for development in these areas. In the last year, 50 jurisdictions in the nine-county Bay Area applied for PDA designation.

Technology. Technology is a very important factor in addressing shrinking fuel supplies and dealing with vehicle emissions, and improving the fuel efficiency of our region’s vehicle fleet is a key component in meeting our targets. We are faced with two major challenges in this respect. One is to convince the EPA to grant a waiver to implement the state’s Clean Car Law. The second is to create a seamless public transportation system that would allow riders to use one pass on all of the Bay Area’s major transit systems.

Individual actions. The automobile is and will probably continue to be the primary mode of travel in the Bay Area. Currently, 84 percent of trips are by car. Ten percent are biking and walking trips, while only six percent of people take transit. Real change in travel behavior will occur only when the alternatives are nearly as convenient as the car.

In hopes of changing travel behavior, we intend to embark on a public awareness campaign. That campaign will have to include incentives and pricing programs—among them, variable tolls, parking charges, and vehicle buy-back programs.

What we know
In moving forward, we recognize that transportation infrastructure investments, the traditional focus of most transportation plans, are probably our least powerful tools—at least unless they are coordinated with other priorities. The strategies that have the most potential to instigate change are pricing and land-use changes.

We also recognize that a successful plan requires improvements on a variety of technical fronts, including vehicle emissions. We need changes in individual behaviors and attitudes as well—ranging from increased telecommuting, to driving smarter, to rethinking our housing choices.

We are still nearly a year away from the completion of Transportation 2035. We don’t yet know whether this plan will result in the substantial improvements we are hoping for. What we do know is that starting with performance targets and testing alternatives relative to those targets has given us a much richer knowledge of the consequences of our transportation and regional development choices.

Knowledge is power, and that power just might make a difference.

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