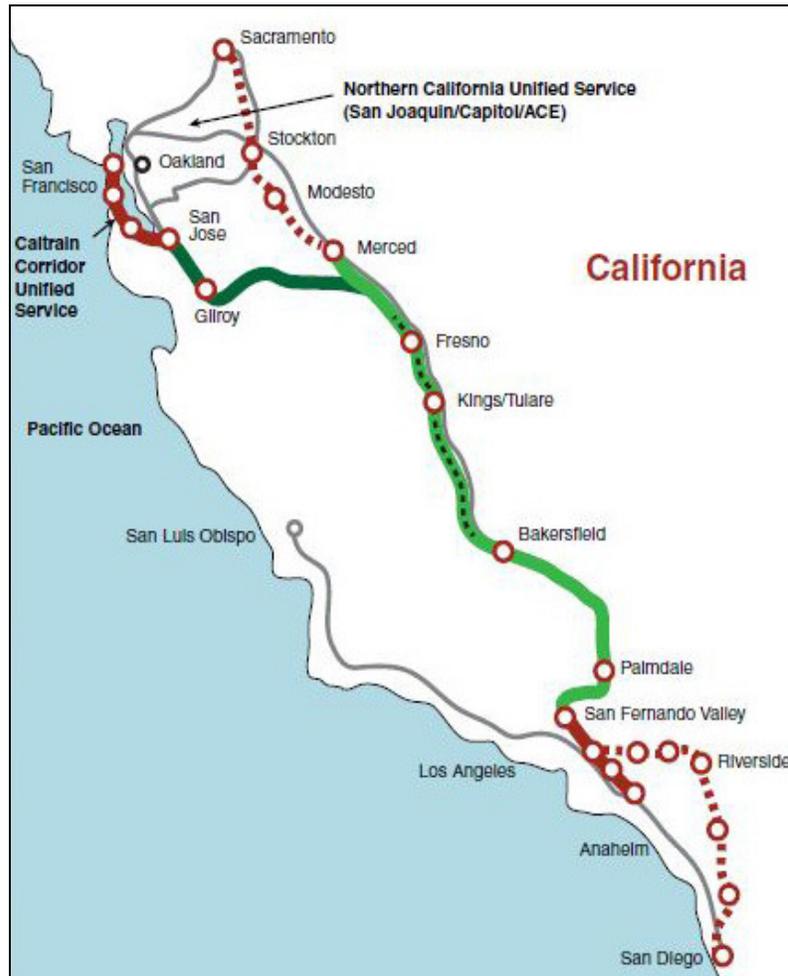


Moving Ahead with High Speed Rail

Why the common-sense approach of the Revised Business Plan deserves support



A white paper analyzing the current high speed rail proposal and providing recommendations for the California Legislature and the High Speed Rail Authority

TRANSFORM



June 13, 2012

About This Paper

This paper was authored by Stuart Cohen, TransForm's Executive Director. The paper was initially prepared for TransForm's Board of Directors as a summary of the California High Speed Rail Authority's Revised 2012 Business Plan, released on April 2.

We hope it proves useful for other stakeholders, on both sides of the issue, as a way to understand the phasing of the Revised Plan, what has changed, and the risks and potential benefits of the proposed system. This paper is meant to be useful as a base for exploration so contains some links in the text and in the footnotes.

The paper and the recommendations were adopted by TransForm's Board in June 2012.

About TransForm

Since 1997, TransForm has worked to create more affordable, wonderful places where everyone – especially low-income people – can safely and easily get where they need to go on public transportation, foot and bicycle. TransForm unites diverse coalitions at the local, regional and state levels to develop solutions that advance environmental, public health, social equity and economic benefits.

We also initiate and coordinate innovative programs, including the Great Communities Collaborative, GreenTRIP, and the Alameda County Safe Routes to Schools Partnership. TransForm co-founded and fiscally sponsors ClimatePlan, which works to ensure sustainable and equitable development policies throughout California, with a focus on Southern California and the San Joaquin Valley.

Learn more at www.TransFormCA.org

TransForm's Offices

Main Office - Oakland

436 14th Street, Suite 600
Oakland, CA 94612
Phone: +1 (510) 740-3150
Fax: +1 (510) 740-3131

Sacramento

717 K Street, Suite 330
Sacramento, CA 95814
Phone: +1 (916) 441-0204

San Jose

48 South 7th Street, Suite 103
San Jose, CA 95112
Phone: +1 (408) 406-8074

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Introduction

California's high-speed rail (HSR) project has been under development for 19 years. In 1996, after three years of study by a high-speed rail commission, the California High-Speed Rail Authority (the Authority) was founded.

Several preliminary studies culminated in a full-system, statewide environmental impact report/statement (EIR/EIS) in 2005. Yet plans to move toward construction only materialized in November 2008 with the passage of Proposition 1A, which authorized \$9 billion of state bond funds toward the project. Prop 1A also included \$950 million for connecting rail systems.

Plans accelerated in early 2009, when President Barack Obama included \$8 billion for new high-speed and intercity rail projects in the American Recovery and Reinvestment Act (ARRA). All told, California is now set to receive \$3.9 billion of these funds, including \$400 million for the Transbay Transit Center.

But the proposed HSR project saw costs spiral upwards, mostly based on adding tunnels and viaducts, largely in response to community and environmental concerns. When the full project hit a projected \$98 billion (in escalated dollars), more than double what had been projected when Prop 1A was passed, it gave almost everyone pause. Appropriately, opposition grew and many groups that supported Prop 1A, including TransForm, no longer voiced support.

In January 2012, a letter by the California High-Speed Rail Peer Review Group (appointed by the state for oversight and evaluation of the project)¹ called the project "an immense financial risk to California."

In February 2012, with the project unraveling, Dan Richard (who joined the California High Speed Rail Authority Board of Directors in August 2011) was appointed chairman. An ex-BART director, Mr. Richard helped usher in the [*California High-Speed Rail Program Draft Revised 2012 Business Plan*](#). It scaled back components of the project, reducing community impacts by narrowing the width of the corridor required in most urban areas, and brought the projected cost down to \$68.4 billion. This plan is described in this report.

Make-or-Break Moment

It is decision time. 2012 is the make-or-break year for HSR; the federal funds must be spent on the first segment, with ARRA-funded construction completed by September 30, 2017. That would require starting almost immediately.

Per Prop 1A, the state legislature must authorize the bond funds before they can be spent. The federal government has recently announced that the legislature needs to confirm California's commitment in this budget cycle or risk the loss of most or all previously committed federal funding. A vote to move forward with the first construction segment of HSR (explained in the next chapters) is now part of the

¹ California Law AB 3034 established the Peer Review Group. More information at: <http://www.cahsprg.com/index.html>

budget negotiation in the legislature – and will be expected by June 15 as part of the budget, or by July 1 as part of a trailer bill to the budget.

TransForm’s History of Engagement

TransForm has been engaged, like so many stakeholders and elected leaders, more intensely at times, less at others. Since 2008, TransForm has not actively engaged in the HSR debate. During this time we’ve been working to support state funding for local transit, and have been advocating against a variety of wasteful rail projects. Most famously TransForm, along with three social justice organizations, filed a successful Title VI civil rights complaint against the Oakland Airport Connector, which led to the loss of over \$70 million of federal funds for that project. Most recently, we have been advocating against BART to Livermore. (In both instances, we believed Bus Rapid Transit would have been much more effective and there are completed studies showing how they can be done²).

TransForm was founded as a coalition of environmental, social justice and community groups in the Bay Area, and had been called the Transportation and Land Use Coalition (TALC) until 2008.

We had engaged in the HSR debate in 2002-2004, as it seemed a vote was headed for the ballot. Member organizations were primarily advocating for a focus on downtown rather than Greenfield stations in the Central Valley, understanding environmental and social equity impacts, and identifying funding that wouldn’t compete with local transit systems.

But the bonds were pulled in 2004 and again in 2006, and with the Authority limping along with almost no staff and an absurdly small budget, community outreach and planning for the details we cared about were going unaddressed. It was fairly clear that 2008 would likely be the last chance to let voters decide on the project.

TransForm proposed to the Authority staff that they needed to re-engage non-profits, develop a compact growth scenario to understand the project’s potential land use benefits, quantify potential greenhouse gas emissions, and initiate a study of using clean renewable energy as the primary power source for the system.

With almost no budget and time running out, Authority staff asked TransForm to help with those items. Lacking any interest whatsoever in this issue from the philanthropic community (especially after 10 years of seemingly fruitless study on the project), TransForm provided consulting directly to the Authority for these items.

Ultimately, when the issue came to the ballot in 2008, it included significant commitments that many environmental organizations had advocated for, including:

- Routing focused on existing downtowns and trying to maximize use of existing rail corridors,
- A commitment to preserve at least 10,000 acres of habitat in the Grasslands Ecological Area and no Los Banos-area station (which could catalyze sprawl in that area),

² See Oakland Airport Connector Options Analysis at <http://transformca.org/resources/reports>

- A commitment to pursue use of clean renewable energy,³
- Land use guidelines and funding for station area plans.

With those commitments TransForm, along with many of the State's major environmental organizations such as Natural Resources Defense Council, Endangered Habitats League, California League of Conservation Voters and the Sierra Club, supported Proposition 1A.

³ http://www.cahighspeedrail.ca.gov/energy_policy_goal.aspx

1. Current Proposed System

In November 2011, the Authority released a [draft business plan](#). While this document received some positive feedback for being more realistic than previous plans, many stakeholders and lawmakers were not supportive. The draft focused all initial investments in the Central Valley and the cost ballooned from \$42.6 billion in 2009⁴ to \$98 billion. A large part of this cost was for dedicated tracks through urbanized areas, a concept also generating huge opposition for being disruptive to communities.

In response to these criticisms, the Authority revamped both phasing and cost structures in their plans. They maintained the core project in the Central Valley. The big change came after working with stakeholders in other parts of the state to focus additional early investments in urban areas (bookends) while scaling back designs in expensive urban sections.

In early April 2012, the [California High Speed Rail Program Draft Revised 2012 Business Plan](#) was released. The outline on the following pages is organized by the four major phases of service that will be provided. We hope it is a useful and clear way to understand the phases of the plan.

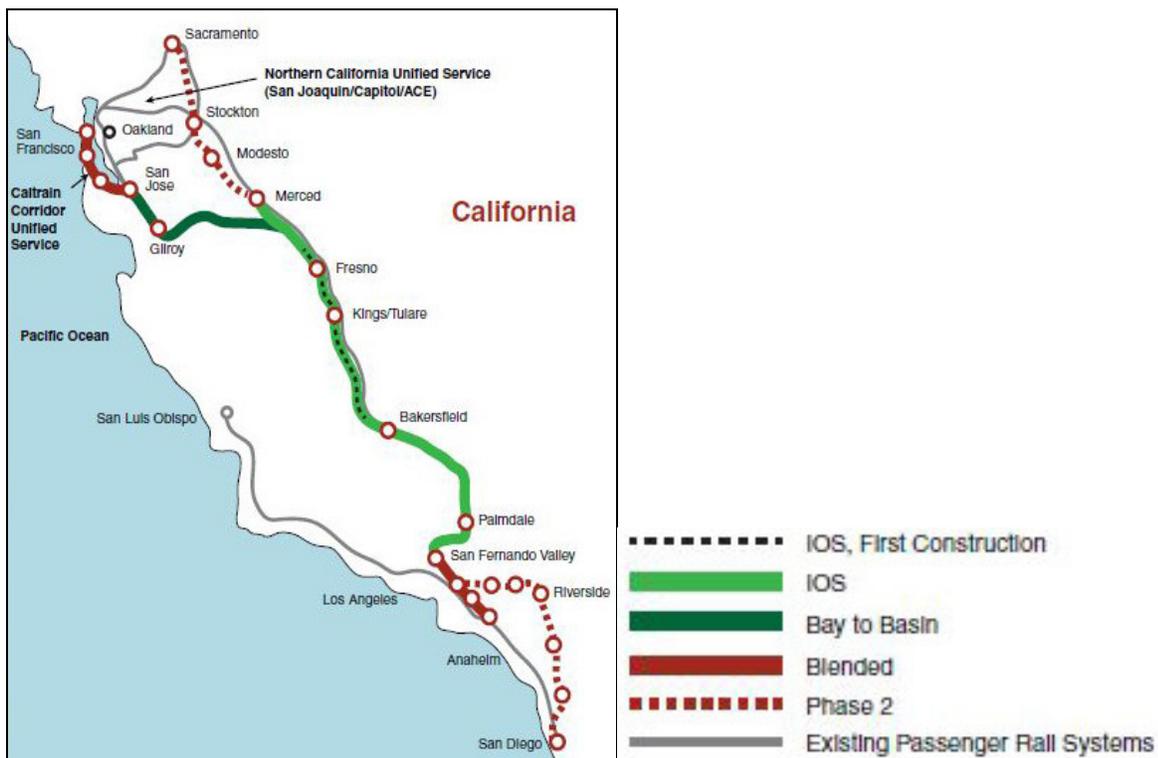


Figure 1-1.

Map of Revised Business Plan routes by the Legislative Analyst's Office

<http://www.lao.ca.gov/analysis/2012/transportation/high-speed-rail-041712.aspx>

⁴ [California High-Speed Rail Authority Report to the Legislature: December 2009, P. 3.](#)

Components of the Proposed System in Revised Business Plan

1. Early Investments with Statewide Benefits

A) Northern California Unified Service (including the first construction segment of the Initial Operating Segment)

- Completion: 2017, service in 2018
- Total Cost: \$6+ billion
 - \$6 billion for the first segment of the Initial Operating Section, or "IOS" (i.e. up to a 130 miles of new HSR track in the Central Valley). **This is what the first bond appropriation would support.**
 - Undetermined amount for improvements to existing intercity track from Fresno to Sacramento and Bay Area destinations.
- Service: Interim intercity services from Sacramento and Bay Area destinations to Bakersfield that utilizes both new HSR track and upgraded existing track.
- Speed: 90 mph max on improved right-of-ways from Fresno to Sacramento and Bay Area destinations.
125 mph max on first construction segment.
Total time savings at least 45 minutes over existing service and possibly more than an hour.

B) Improvements in the Urban Bookends

- Completion: Varies depending on improvement project (there will be several individual projects).
- Total Cost: \$1.1 billion in HSR funds (will be matched by additional local commuter rail funds)
- Service: Improved commuter rail services in the Bay Area (primarily Caltrain) and in Southern California (Metrolink/Amtrak)
Improvements will also be utilized by HSR in the future.
- Speed: Will vary.

2. Full HSR from Merced to LA Basin/San Fernando Valley, aka, "Initial Operating Segment (IOS)"

- Completion: 2021, service in 2022.
- Total Cost: \$25.3 billion (\$31.3 billion when including \$6 billion for initial construction section of IOS in Central Valley, described above)
- Service: Extend IOS from Fresno to Merced and from Bakersfield to San Fernando Valley by 2021, and initiate 300-mile, full-speed HSR service from Merced to San Fernando Valley by 2022.
- Speed: 220 mph max.

3. Full HSR from San Jose to LA Basin, aka, “Bay to Basin”

Completion: 2026, service in 2027.
Total Cost: \$19.9 billion
Service: Extend dedicated HSR track from Central Valley to San Jose by 2026, and extend full HSR service from “Bay to Basin” by 2027.
Speed: 220 mph max.

4. Full HSR from San Francisco to Anaheim, aka, “Phase I Blended System”

Completion: 2028, service in 2029.
Total Cost: \$16.1 billion (\$17.2 billion when including \$1.1 billion of early investments in bookends, described above; does not include budget for Los Angeles to Anaheim, which was added back in at last Authority meeting)
Service: Upgrade existing tracks from San Fernando Valley to Los Angeles and San Jose to San Francisco by 2028, and initiate HSR service on upgraded track by 2029 (allowing for one-seat high-speed service from San Francisco to Anaheim).
Speed: 220 mph max., most urban areas will be 125 mph max.

1. Early Investments: Statewide Benefits

A: Initiate the Northern California Unified Service Rail System that Utilizes Upgraded Intercity and New HSR Track by 2018

While the *Revised Business Plan* contains significant changes, plans for an initial segment of new, dedicated HSR track of up to a 130-mile section, from north of Fresno to just north of Bakersfield, have not changed.⁵ The revised plan calls for this segment to be complete by the end of 2017.

But the new plan also calls for improvements to currently existing northern California rail corridors that would increase capacity and allow trains to run up to 90 mph by 2017 (see purple lines in Figure 1-2), compared to 79 mph now.⁶ Improvements planned include grade separations, double-tracking, curve realignments, and positive train control. Improvements would stretch northward from the planned northern end of the 130-mile section of HSR track, located just north of Fresno, towards San Jose and Oakland in the Bay Area and Sacramento.

Upon completion of both the upgrades to intercity lines in northern California and the initial 130-mile section of HSR track in the Central Valley described above, the *Revised Business Plan* envisions a faster, more frequent rail service from the Bay Area and Sacramento to Bakersfield by 2018.⁷ This would also result in faster overall trip times to and from southern California, even though a bus link would still be

⁵ Ibid. P. 2-12.

⁶ *Revised Business Plan*, P. 2-9.

⁷ Ibid. P. 2-9.

required from Bakersfield to the Los Angeles basin until the full IOS phase is completed in 2021. This improved rail service, which would utilize both the upgraded intercity track and new HSR track in a “unified” way, is referred to as the Northern California Unified Service. Operators involved in running the service would likely be Amtrak California and Altamont Commuter Express.

Three separate routes (see Figure 1-2) would provide service between destinations in northern California and Bakersfield:

- Bakersfield to Sacramento (via Amtrak’s San Joaquin line, Sacramento branch)
- Bakersfield to Oakland (via Amtrak’s San Joaquin line, Bay Area branch)
- Bakersfield to San Jose (via the Altamont Commuter Express corridor)



Figure 1-2.

Source: Revised Business Plan, P. ES-7

The plan estimates that travel times would drop by at least 45 minutes and likely over an hour from current Amtrak schedules.⁸ For intra-Central Valley travel, the faster service would be more significant as a percentage of total trip times, as trains running along the new HSR track would be able to travel at up to 125 mph.

B: Upgrade rail corridors at the urban bookends in the next few years, but reduce the ultimate scope of construction to reduce impacts.

In addition to building the \$6 billion Central Valley segment described above, the *Revised Business Plan* also envisions “early investment” in the construction of improvements at the urban bookends (i.e. the Bay Area and Los Angeles Basin) of the HSR system. These early investments would improve existing rail services in the short-term while beginning to construct the infrastructure that would allow both HSR and commuter rail trains to “blend” their services together within one rail corridor. By committing to shared corridors and some shared tracks, the scope of new infrastructure is significantly reduced from the draft plan. Early investments in the reduced-scope blended corridors include:

- Electrification of the Caltrain corridor and installation of positive train control signaling along the Caltrain corridor, which would allow for faster speeds and more frequent trains.

⁸ Revised Business Plan, P. 2-14.

- A set of capacity and speed improvements along Metrolink corridors that will eventually accommodate HSR trains, including grade separations projects. The final project list is still under development.

The rationale of early investments in these blended corridors is to allow millions of people in the urban areas to benefit in the near-term from the HSR project. Additionally, by reducing project scope and speeding up the improvements in the most costly sections – the urban areas – the overall baseline costs and cost escalation will be significantly reduced.

2. Complete 300-mile Initial Operating Segment between Merced and Los Angeles Basin/San Fernando Valley by 2021, and Initiate Full HSR Service on this Segment in 2022

The *Revised Business Plan* commits to building a 300-mile Initial Operating Segment (IOS) between Merced and the Los Angeles basin by 2021, as outlined in Figure 1-3. The new plan resolves the long-standing question of whether the IOS would first go north to the Bay Area, or to Southern California. Following completion of the IOS, the plan envisions the commencement of the first full-speed, electrified HSR service in the United States in 2022.

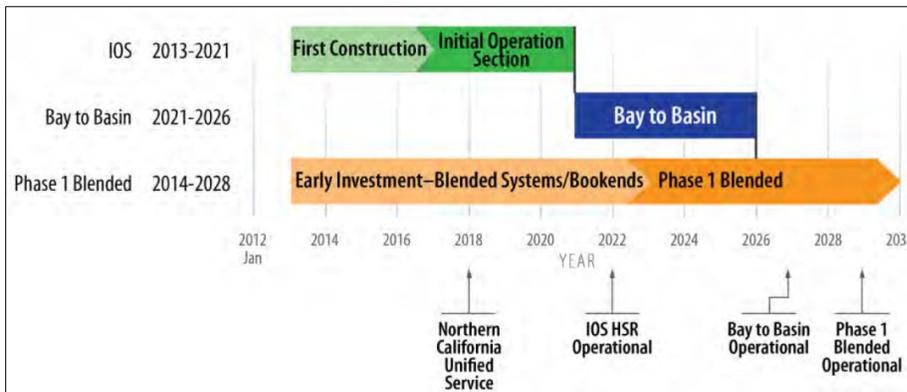


Figure 1-3.

Source: *Revised Business Plan*, P. ES-14

3. Complete the Last Section of Dedicated HSR Track from the Central Valley to San Jose by 2026, and Extend Full HSR Service from “Bay to Basin” in 2027

At the completion of the IOS track in 2021, the *Revised Business Plan* envisions construction to begin on the last section of the dedicated section of HSR track – from the Central Valley to San Jose. This track would be completed by 2026 and allow full HSR service to extend from the Central Valley to San Jose by 2027, creating a San Jose to San Fernando Valley, or a “Bay to Basin” line (see Figure 1-3).

4. Construct Additional Upgrades to “Blended” Corridors to Complete Phase 1 of the HSR System by 2028, and Extend Full HSR Service to San Francisco and Anaheim in 2029

The final phase of project construction would consist of an additional set of improvements along the “blended” corridors in the urban bookends. These improvements would likely include passing tracks and grade separations where feasible, renovation of existing tunnels in San Francisco, a new tunnel to the Transbay Transit Center, integration of HSR tracks at Los Angeles Union Station and other projects. They would be designed to allow for sufficient capacity to adequately accommodate the commuter and intercity rail trains already operating in these corridors along with HSR trains. Service for the entire San Francisco – Anaheim HSR line would commence in 2029.

2. Projected Costs and Funding Plan

The cost of the HSR system and how to pay for it is an incredibly important issue, especially given California’s structural budget deficit and uncertainties surrounding future federal funding. When the draft business plan projected a \$98.5 billion cost for the system, many one-time supporters started to go neutral or even oppose the project. Changes made in the *Revised Business Plan* to the phasing and design of the project (described in the previous chapter) helped to significantly reduce the costs. At the same time a new detailed funding plan was released. This section outlines the projected costs and funding phase by phase.

Projected Costs

The new cost estimate in the *Revised Business Plan* is \$68.4 billion, approximately \$30 billion less than the draft plan. More than half of the savings come from eliminating the “Full Build” phase, which included dedicated HSR tracks and infrastructure from San Francisco to San Jose and from Los Angeles Union Station to Anaheim. The new plan calls for the blended approach with infrastructure shared by commuter and HSR trains along both of these corridors. These costs will come up somewhat now that the Authority has reinstated plans to continue HSR trains to Anaheim (rather than requiring a switch to Metrolink at Los Angeles Union Station).

In Figure 2-1, these costs are split by phases, described in the previous section.

Exhibit 3-7. Year-of-expenditure cost for the low-cost options

| Section | Incremental Capital Cost (billions 2011\$) | Cumulative Capital Cost (billions 2011\$) | Completion of Section | Incremental Year-of-Expenditure Capital Cost | Cumulative Year-of-Expenditure Capital Cost |
|-----------------|--------------------------------------------|-------------------------------------------|-----------------------|----------------------------------------------|---------------------------------------------|
| IOS | 26.9 | 26.9 | 2021 | 31.3 | 31.3 |
| Bay to Basin | 14.4 | 41.3 | 2026 | 19.9 | 51.2 |
| Phase 1 Blended | 12.1 | 53.4 | 2028 | 17.2 | 68.4 |

Figure 2-1

Source: *Revised Business Plan*, P. 3-11.

Projected Funding Plan

The funding plan contained in the *Revised Business Plan* is divided by each phase of project implementation. An important difference in this new plan is that each phase is designed to deliver improvements to the California’s overall rail system, even if funding for future phases is significantly delayed. Given fiscal realities, there is a strong possibility that the system will not be built on the proposed schedule so this is a critical change.

In total, the chart below (Figure 2-2) summarizes the projected funding sources for the entire project.

| Sources | |
|-------------------------------------------|-----------------|
| Net cash flow from operations | \$238 |
| Federal support | \$41,890 |
| State bonds (Proposition 1A) | \$8,200 |
| Other funds (state, local, private) | \$4,931 |
| Private capital | \$13,118 |
| Total Sources | \$68,377 |
| Uses | |
| Phase 1 Blended capital cost ¹ | \$68,377 |
| Total Uses | \$68,377 |

Figure 2-2.

Source: *Revised Business Plan, P. 7-24.*

The Cap and Trade Option

Due to the uncertainty of federal funding, setting a completion date for the IOS is very speculative. The *Revised Business Plan* attempts to resolve this by referencing the revenue generated by California's upcoming Cap and Trade funds as a "backstop." Cap and Trade is a market-based program to clean the air and meet AB 32 Greenhouse Gas reduction mandates. The first auction of permits in this program will be in November 2012. The available funds are likely to grow dramatically in 2015 as transportation fuels and other sources of emissions come under the cap.

Funding Plan – Initial Construction in the Central Valley

The graph below (see Figure 2-3) shows the funding sources to construct the first section of track (up to 130-miles) in the Central Valley. This funding is fully guaranteed as long as the state legislature approves release of Proposition 1A bond funds.

| Exhibit 7-9. IOS-First Construction funding sources (YOE dollars in millions) | | | | | | |
|----------------------------------------------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | Total | 2013 | 2014 | 2015 | 2016 | 2017 |
| Sources | | | | | | |
| Federal grants secured | \$3,316 | \$738 | \$621 | \$633 | \$652 | \$672 |
| State Bonds (Proposition 1A) | \$2,684 | \$597 | \$503 | \$513 | \$528 | \$544 |
| Total Sources | \$6,000 | \$1,334 | \$1,123 | \$1,146 | \$1,180 | \$1,216 |
| Uses | | | | | | |
| Capital expenditure | \$6,000 | \$1,334 | \$1,123 | \$1,146 | \$1,180 | \$1,216 |
| Total Uses | \$6,000 | \$1,334 | \$1,123 | \$1,146 | \$1,180 | \$1,216 |
| Numbers are subject to rounding 2013 represents the first full year of construction | | | | | | |

Figure 2-3.

Source: *Revised Business Plan, P. 7-14.*

Funding Plan – Completion of the Initial Operating Segment

The funding to complete the 300-mile IOS primarily relies on a high-level federal funding – over \$20 billion – while also spending down the remaining \$4.4 billion of Proposition 1A funds (see Figure 2-4).

Exhibit 7-10. Sources and uses for completing the IOS (YOE dollars in millions)

| | Total | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|------------------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Sources | | | | | | | | |
| Federal support | \$20,265 | \$2,214 | \$2,281 | \$2,349 | \$3,629 | \$3,738 | \$3,850 | \$2,203 |
| State Bonds (Proposition 1A) | \$4,416 | \$554 | \$570 | \$587 | \$907 | \$935 | \$657 | \$206 |
| Other funds | \$650 | — | — | — | — | — | \$305 | \$345 |
| Total Sources | \$25,331 | \$2,768 | \$2,851 | \$2,936 | \$4,537 | \$4,673 | \$4,813 | \$2,754 |
| Uses | | | | | | | | |
| Capital expenditure | \$25,331 | \$2,768 | \$2,851 | \$2,936 | \$4,537 | \$4,673 | \$4,813 | \$2,754 |
| Total Uses | \$25,331 | \$2,768 | \$2,851 | \$2,936 | \$4,537 | \$4,673 | \$4,813 | \$2,754 |

Numbers are subject to rounding

Figure 2-4.

Source: *Revised Business Plan, P. 7-15.*

Funding Plan – Bay to Basin

After the completion of the IOS and the HSR service and is in operation, the Authority is anticipating a high-level of interest from private investors. Therefore, the plan assumes significant private investment – over \$10 billion – in the last costly section of HSR track from the Central Valley to San Jose (see Figure 2-5). Reliance on federal grants would continue to be significant during this phase.

Exhibit 7-14. Sources and uses for Bay to Basin with private-sector capital (YOE dollars in millions)

| | Total | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|-------------------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Sources | | | | | | | |
| Net cash flow from operations | \$238 | — | \$59 | \$179 | — | — | — |
| Private capital | \$10,132 | — | — | \$221 | \$4,247 | \$4,374 | \$1,290 |
| Federal support | \$8,353 | \$1,479 | \$3,153 | \$3,721 | — | — | — |
| Other funds | \$1,158 | \$370 | \$788 | — | — | — | — |
| Total Sources | \$19,881 | \$1,849 | \$4,000 | \$4,121 | \$4,247 | \$4,374 | \$1,290 |
| Uses | | | | | | | |
| Capital expenditure | \$19,869 | \$1,849 | \$4,000 | \$4,120 | \$4,243 | \$4,371 | \$1,286 |
| Capital replacement | \$12 | — | — | \$1 | \$4 | \$4 | \$4 |
| Total Uses | \$19,881 | \$1,849 | \$4,000 | \$4,121 | \$4,247 | \$4,374 | \$1,290 |

Numbers are subject to rounding

Figure 2-5.

Source: *Revised Business Plan, P. 7-18.*

Funding Plan – Phase 1 Blended

The Phase 1 Blended phase is actually split into two sets of funding strategies. The first strategy focuses \$1.1 billion of Proposition 1A funds plus matching funds from local and regional partners to create over \$2 billion of early investments in the bookends between 2014 and 2022 (see Figure 2-6). These funding packages are to be governed by Memorandum of Understanding (MOU) between the Authority and the local and regional agencies managing the various HSR-related projects.

Exhibit 7-17. Sources and uses—Phase 1 Blended with private-sector capital (YOE dollars in millions)

| | Total | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
|-------------------------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Sources | | | | | | | | | | | | | | | | |
| Private capital | \$2,986 | — | — | — | — | — | — | — | — | — | — | — | — | — | \$441 | \$2,545 |
| Federal support | \$9,956 | \$50 | \$56 | \$58 | \$60 | \$61 | \$63 | \$65 | \$235 | \$337 | \$1,756 | \$1,809 | \$1,863 | \$1,919 | \$1,624 | — |
| State bonds (Proposition 1A) | \$1,100 | \$66 | \$75 | \$77 | \$80 | \$82 | \$84 | \$87 | \$313 | \$236 | — | — | — | — | — | — |
| Other funds | \$3,123 | \$50 | \$56 | \$58 | \$60 | \$61 | \$63 | \$65 | \$235 | \$232 | \$439 | \$452 | \$466 | \$480 | \$406 | — |
| Total sources | \$17,166 | \$165 | \$187 | \$193 | \$199 | \$205 | \$211 | \$217 | \$782 | \$805 | \$2,196 | \$2,261 | \$2,329 | \$2,399 | \$2,471 | \$2,545 |
| Uses | | | | | | | | | | | | | | | | |
| Phase 1 Blended capital expenditure | \$17,166 | \$165 | \$187 | \$193 | \$199 | \$205 | \$211 | \$217 | \$782 | \$805 | \$2,196 | \$2,261 | \$2,329 | \$2,399 | \$2,471 | \$2,545 |
| Total uses | \$17,166 | \$165 | \$187 | \$193 | \$199 | \$205 | \$211 | \$217 | \$782 | \$805 | \$2,196 | \$2,261 | \$2,329 | \$2,399 | \$2,471 | \$2,545 |

Numbers are subject to rounding

Figure 2-6.

Source: *Revised Business Plan*, P. 7-22.

The funding strategy for the second stage – making the full connection to San Francisco, Anaheim etc., focuses on higher levels of federal grants and private capital between 2023 and 2028. What is not included in the cost estimates are improvements to create a “blended” corridor between Los Angeles Union Station (LAUS) and Anaheim. The LAUS-Anaheim section of the HSR system had been removed in *Revised Business Plan* in favor of upgrades to Metrolink, which would have required a transfer for travel to Orange County. However due to negative reaction from stakeholders in Orange County and around the state, along with questions about the legality of removing this portion of the HSR system, the CHSRA board [voted to put it back](#) into the plan in April of 2012. The additional cost of restoring this section has yet to be determined and will depend on the level of improvements needed to allow HSR trains to reach Anaheim.

Analysis of Proposed Funding Sources

The short-term funding plan for the initial Central Valley project, which relies on guaranteed funding sources in the form of existing federal grants and voter approved bond funds, is solid. Early investment in the bookends also relies on funding that is highly likely to fully materialize. The approximately \$2 billion of investments in the urban bookends – the rail services in the Bay Area and Los Angeles region – will reduce escalated costs from inflation while delivering air quality improvements, faster speeds, higher ridership and other benefits to urban areas.

For the remainder of the project, the funding sources for the IOS, Bay to Basin, and Phase 1 Blended phases are less certain – to say the least.

Federal Funds

The potential for federal funding beyond the initial ARRA and FY 2010 grants is highly speculative. While HSR has been an important priority for President Obama and his administration, HSR is facing massive resistance from significant segments of congress. As a result, the HSR program did not receive funding during the last two fiscal years, and will likely not receive any during this coming year given the country's growing prioritization on deficit reduction. Additionally, due to bipartisan aversion to raising the gas tax – the primary source of federal transportation funding – transportation needs are outstripping available funds. That said, it is simply not possible to determine whether there will be a federal HSR program in the near to mid-future.

Cap and Trade

Cap and Trade funds are envisioned as an alternative funding source or “backstop” if federal funds do not materialize in the future. Unfortunately, this backstop measure is also extremely uncertain. While it has the support of Governor Brown, the actual appropriation of Cap and Trade funds will be made by the Legislature, based in part on recommendations of the California Air Resources Board. And the program may only go through 2020 – potentially raising \$43 billion, though how much funding will ultimately depend on the price of permits.⁹

The Legislative Analyst Office considers anticipation of these funds speculative, at best, and gives [three primary reasons](#) why funding for HSR may not meet the legal nexus required for mitigation fees. But the first reason that HSR “would not help meet AB 32’s primary goal” comes from such a slanted perspective that it is misleading or inaccurate. It explains that since construction won’t be finished until 2028, and the goal of AB 32 is to reduce emissions by 2020, this wouldn’t help meet the AB 32 emissions goal. But this analysis ignores the details of the Revised Plan, which would make improvements to the bookends and initiate the new Northern California Unified Service by 2018. Implying there are no benefits until after 2028 is just misleading.

As to the second reason, whether the initial increase in GHGs required to build the system would create a legal risk is a fair question. We will likely know more by the time the first Cap and Trade appropriation would be requested, currently planned for 2015. At a May 24, 2012 meeting of the California Air Resources Board, there was considerable support, however, for transformative investments that can lead to system changes. along with programs like weatherization which give sure-fire cost-effective results, but don’t lead to disruptive breakthroughs or systems changes.

The issue of whether future projected benefits could qualify will likely be decided by the courts, and if such future benefits are acceptable, HSR may be eligible, especially if the modeling includes land use changes that HSR would help stimulate.

This is a major issue, and two of this report’s recommendations address TransForm’s approach.

⁹ Next 10. Using the Allowance Value from California’s Carbon Trading System, P. 4, Figure B.

Private Funds

The *Revised Business Plan* assumes private investment would occur soon after the IOS is operational and the profitability of initial HSR service is demonstrated.¹⁰ At this point, the Authority anticipates awarding a concession to a private sector operator in exchange for a large upfront capital contribution for the next phase of HSR construction.

There is certainly an element of risk that either there will be no operating profit (though their projected ridership scenarios find that unlikely) or that the offer of capital investment would be smaller than anticipated. Still, private investors have shown interest in HSR. For example, Florida's Tampa Bay to Orlando HSR project had private commitments to cover a portion of baseline construction costs and all cost overruns (though the project was cancelled by incoming Republican Governor Rick Scott in 2010).

State Bonds

Voters have already approved the \$10 billion in state bonds; however the state is limited in its ability to issue them by a requirement to identify matching funds for the system. While there is a high-level of uncertainty in the overall funding plan envisioned by the *Revised Business Plan*, this should not be surprising for such a large, statewide project intended to be built over two decades.

But as we all speculate about the likelihood of the various funding sources materializing, the first major decision is whether to appropriate the first \$2.7 billion in bonds in order to match the \$3.3 billion from the federal government. Current bond interest rates are extremely low and now is a very good time to be issuing debt. Additionally, the State's finance office has identified general fund financing – from truck weight fees that can only be spent on roads, highways and fixed guideway transit (primarily rail or Bus Rapid Transit) – that will cover the debt refinancing of approximately \$230 million per year for these bonds.

Furthermore, the impact will be somewhat offset during the first five years of construction, as increased tax revenue will result from thousands of new construction jobs, material sales from the construction of HSR, not to mention the various economic multipliers generated from \$6 billion in spending. Much of this new economic activity will take place in the especially hard-hit Central Valley.

Other Sources

All three phases identify “other sources” of funding in the total amount of \$5 billion. These funds are assumed to be locally and regionally generated through a variety of fees, rents, and economic activity that are supported by the project. This category is very vaguely defined and would not be limited to these sources, but instead would wisely be viewed as expansively inclusive as possible, including the possibility of local or regional taxes and tolls (existing or future) to support various project parts.

¹⁰ Revised Business Plan, P. 7-17.

3. High-Speed Rail and Land Use

Like airports or other major projects that dramatically increase access to major destinations and stimulate new development, California's HSR project has the potential to serve as a major catalyst for land use change. But unlike the rental car, office park and auto-oriented hotel clusters that form around airports, HSR terminals will be focused in existing downtowns. In fact it is arguable that HSR's biggest impact may not be the exact number of trips taken on it or the number of flights replaced, but its potential to strengthen existing downtowns (or in some cases revitalize) and maintain cities as the primary economic centers of the state.

This is a shift that is already happening based on market forces. The development of HSR will not necessarily drive this change, but instead will support and enhance this growing trend. High-speed rail in California will respond to and support a growing preference for urban living in the younger generation – a generation that drove 23% less over the last decade and is increasingly choosing to live without a car.¹¹

By supporting the shift in market demand back towards city centers, and providing passengers to connecting local transit systems, HSR is positioned to support, and make more realistic the compact, transit-oriented growth patterns envisioned in regional Sustainable Communities Strategies (SCS). These Strategies, required under SB 375, are now being produced by California's 18 major regions (several of the largest regions, including Sacramento, San Diego and Southern California have completed their first SCS).

While good land use does not automatically follow new rail systems, it is an important prerequisite to building the economically and environmentally sustainable communities that our state has prioritized. Therefore, policies must be in place to link investments in HSR with supportive land uses and this must be backed up by strong and consistent leadership at the city level. It is also possible that the greater level of access from HSR will accelerate existing patterns of growth outside city centers – such as the ranchette development in the foothills of the Sierra, or intensive development on prime farmland in the Central Valley.

Creating Supportive Local Land Use Patterns

Beyond just building HSR and letting the market determine development around stations, the Authority is utilizing the limited tools it possesses to effectuate land use change. The Authority's primary influence over land use is their ability to decide where stations are located. The Authority is generally committed to locating stations in city centers where HSR can help to revitalize downtowns and create a more compact development. But this commitment is not an absolute, as some stations are currently being considered for greenfield sites (Hanford and Gilroy) or at locations within cities but not in downtown areas (this is especially true for several stations in Riverside and San Diego Counties as part of Phase 2 of the project). Nonetheless, the primary thrust of the Authority's efforts to-date has been to mold land use patterns that strengthen city centers and encourage TOD.

¹¹ U.S. PIRG. [Transportation and the New Generation: Why Young People Are Driving Less and what it Means for Transportation Policy](#), P.1; Demand Institute. [The Shifting Nature of Housing Demand](#), P. 44.

Authority's HSR Station Area Development Guidelines

In 2008, the Authority created [HSR station area development guidelines](#) within their 2008 *Bay Area to Central Valley High-Speed Train Program EIR/EIS*.¹² These guidelines were updated in February 2011 in the Authority's [HSR Station Area Development: General Principals and Guidelines](#) document. While acknowledging that the power to focus growth resides with local governments, the Authority did identify three ways they can influence the process:¹³

- Select station locations that are multi-modal transportation hubs with a preference for traditional city centers.
- Adopt HSR station area development policies and principles that require TOD, and promote value capture at and around station areas as a condition for selecting a HSR station site.
- Provide resources for local governments where potential HSR stations may be located to prepare and adopt Station Area Plans and to amend City and County General Plans that incorporate station area development principles in the vicinity of HSR stations.

While the Authority has demonstrated its ability to select station sites and to provide incentives for good planning, it has proved difficult to **require** TOD, and promote value capture at and around station areas as a condition for selecting a HSR station site. The problem is that the Authority must select station sites now as part of their environmental review process, while the commencement of HSR service to the stations is still 10-15 years off. This situation makes it difficult for cities to develop land use policy now for something that will happen in the long-term. In the absence of the State imposing land use requirements (which is politically infeasible), the Authority must rely on encouraging cities to make good land use decisions through guidelines they have developed for station area development and urban design (described below).

Authority's Urban Design Guidelines

Land uses appropriate for HSR station areas were identified and thoroughly discussed in the Authority's 2011 [Urban Design Guidelines: California High-Speed Train Project](#), especially in the chapter on creating an urban district. Land uses identified include:¹⁴

- regional office and corporate headquarters
- hotel and conference facilities
- large-scale entertainment facilities
- major civic institutions – government
- major civic institutions – museums
- station supporting retail
- destination retail
- urban plazas
- high-density housing (though not immediately adjacent to station)
- neighborhood parks

¹² Authority. 2008 High-Speed Train Bay Area to Central Valley Program-Level EIR/EIS, Chapter 6.

¹³ Authority. 2011 HSR Station Area Development: General Principals and Guidelines.

¹⁴ CHSRA. [Urban Design Guidelines: California High-Speed Train Project](#), P. 36-37.

Authority's Station Area Planning Program

The Authority initiated a program to promote station area planning in 2011. This program set aside an initial fund made up of ARRA monies and other funding sources for seven cities. Small cities are authorized to receive up to \$400,000 in funds and large cities up to \$700,000. The scope of each planning effort will be designed to integrate with existing plans and current planning efforts of each city. Some cities are farther along with downtown planning, so they may want more detailed efforts, whereas other cities may be more at a conceptual level. Below is the status of each of the seven cities currently engaging with the Authority in the process:

- San Jose – nearing completion of funding agreement.
- Gilroy – nearing completion of funding agreement.
- Merced – resubmitting application due to the loss of redevelopment.
- Fresno – funding agreement signed and will likely issue a consultant RFP in the near future.
- Hanford/Kings and Tulare Region – no application submitted.
- Bakersfield – no application submitted.
- Palmdale – revising application for re-submittal.

Cities have until September 2017 to spend these funds. The Authority is now considering extending the program to other cities.

The Risk of Displacement

A significant risk at certain station areas is that existing residents and small businesses will be displaced as land values and rents have the potential to skyrocket when HSR is constructed. There are a host of policies that can help to mitigate these impacts, and it will be essential for the Authority, cities and advocates to bring these policies to the fore early; by the time stations actually open and service begins a fair amount of escalation will likely have already taken place.

Some of the policies that could be implemented include:

- Condo conversion requirements that help preserve existing affordability.
- Inclusionary zoning for affordable homes in the area surrounding the station.
- Prioritization of affordable housing funds towards cities and surrounding areas with stations.
- Dramatic reduction in residential parking requirements for affordable homes near areas with strong transit access.

High-speed rail will help build ridership and thus enable higher frequencies on local transit. It is critical that existing low-income residents are the beneficiaries of that improved access, and are not priced out due to higher transportation costs.

Central Valley: Unique Opportunity for Land Use Transformation

Given the first HSR service will begin in the Central Valley, HSR's influence on land use is very relevant in the early phases of project implementation. Central Valley cities with planned HSR stations have tremendous opportunity to strengthen their downtowns by transforming land use around stations. City

centers in the Central Valley contain numerous vacant or underutilized parcels of land near planned HSR station sites. Therefore, tremendous opportunity exists for large-scale TOD.

Central Valley cities (Fresno, Bakersfield and Merced during the first phase) are uniquely positioned to benefit economically from HSR stations due to their location between the San Francisco-Los Angeles and Sacramento-Los Angeles metropolitan pairs. The increased access from HSR would make it more feasible for businesses to locate in Central Valley cities, especially with the large supply of affordable downtown land and existing office space in the downtowns. HSR rail station areas in the Central Valley can also serve as a mid-point for business meetings and as gateways to tourist destinations in Sierra Nevada mountains, furthering economic activity.

HSR also has potential to influence land use beyond the downtown station areas. Since HSR stations will also service as hubs for connecting public transportation systems, there is opportunity to make more walkable, compact communities around these secondary transit systems.

Of course without good planning, poor land use choices may result, such as allowing low density development near stations in the short-term, which could reduce the ability to fully realize the benefits from station area development. The examples of Fresno and Bakersfield, described below, illustrate both sides of this issue.

Example of Progress toward Good Land Use – Fresno

Fresno has embraced strong station area planning. In fact, they initiated station area planning well ahead of the Authority's planning grants as part of the [Fulton Corridor Specific Plan \(FCSP\)](#). Fresno identifies HSR as an important impetus for creating a downtown plan that will add 7,000 residential units, 3.9 million square feet of office, 1.5 million s.f. of retail, and 145,000 s.f. of industrial, all of which will quadruple the number of residents in downtown and generate 20,000 new jobs in support of a vibrant, walkable downtown.

Fresno is also in the process of updating their *2025 General Plan*. As part of this process, [Fresno's City Council adopted the core of the plan – the A-2 Alternative Scenario – on April 19, 2012](#). This scenario envisions a series of corridors and centers, or nodes of TOD along main corridors (including some with BRT lines) that would lead to downtown and the HSR station (see Figure 3-1). Especially with the loss of Redevelopment Agencies to help drive this kind of downtown revitalization, HSR could prove to be an important economic catalyst.

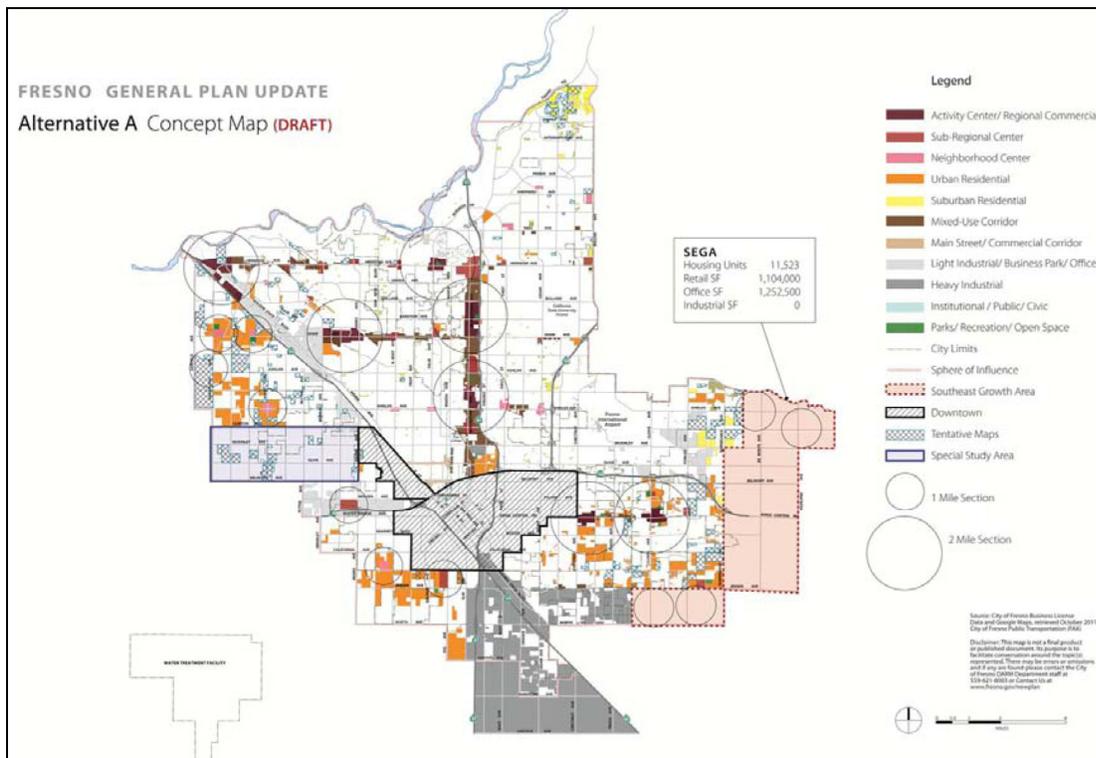


Figure 3-1.

Source: [Fresno General Plan and Development Code Update – Administrative Draft Report](#)

Example of Challenges in Achieving Good Land Use – Bakersfield

After years of supporting a downtown station adjacent to the existing Bakersfield Amtrak station, the City of Bakersfield has now taken a position against HSR. Unfortunately, this opposition has caused Bakersfield to abandon applying for station area planning funds. This example demonstrates the difficulty of maintaining good planning related to long-term projects such as HSR in the face of shifting political leadership and politics. While there is still time for Bakersfield to re-engage, it does make it difficult in the short-term. In fact, right now a new housing development is going in right where the HSR tracks may travel. Even if this development is saved through alignment adjustments, the density is far lower than ideal. The entirely residential focus is not ideal either, as mixed use with a focus on business and other commercial uses works better for HSR stations.

Bakersfield’s actions do not indicate a failure of HSR to support good land-use, merely a delay in receiving the benefits from this project, however, it is a cautionary tale that highlights the importance of community outreach and securing important right-of-ways before decisions are made that make future plans difficult and more expensive.

Vision California

Vision California is statewide study commissioned by the Authority in partnership with the California Strategic Growth Council that looks at three land use scenarios – business as usual, mixed growth, and smart growth – and projects how each scenario impacts a variety of trends through 2050, such as land

consumption rates, vehicle miles travelled, and greenhouse gas emissions, etc. A variation of the smart growth scenario, called green future is also examined, but this has no impact on land use patterns. Results of this study were released in a report, [*Vision California: Charting Our Future*](#) in June 2011.

Vision California does not calculate HSR impact per se. It does assume that the smart growth and green future scenarios would include development of necessary transportation infrastructure such as increased transit, bicycle, pedestrian, streetscape, and livability investments.¹⁵

Vision California produced projections that show that in the Central Valley, and across the state, there is great potential to achieve significant economic, health and environmental benefits from shifting future development patterns. The Central Valley summary is on the next page. While Vision California did not calculate the direct impact of HSR per se, Fresno stands as a perfect example of the power and impact of the HSR project on supporting land uses and planning that will provide these significant benefits.

Because of the higher growth rate in the Central Valley, it is appropriate that the HSR project get its start here. There is tremendous potential in their downtowns, and HSR will provide a significant new level of transportation access given the limited transit infrastructure that currently exists and the costly and limited regional air access.

¹⁵ Calthorpe Associates. June 2011. *Vision California: Charting Our Future*, P. 10.

Vision California Results for the San Joaquin Valley

SAN JOAQUIN VALLEY SCENARIO RESULTS

BUSINESS AS USUAL: Growth pattern based on trend land use patterns of past decades, characterized by lower density, single-use dispersed development oriented primarily toward private auto use

SJV GROWING SMART: Growth pattern that sees an increasing proportion of urban infill and compact growth in the San Joaquin Valley – forms of development likely to be stimulated and supported by high-speed rail infrastructure.

2050 SCENARIO RESULTS
 Scenarios analyzed using Calthorpe Associates' Vision California RapidFire Model.
 Both scenarios assume population growth to 7.6 million by 2050 in the eight-county San Joaquin Valley.

BUSINESS AS USUAL **GROWING SMART**

HOUSEHOLD COSTS

More centrally located homes can dramatically reduce household driving and utility costs. Households in the Growing Smart scenario spend **\$9,500 less per year*** on auto-related costs and utility bills.

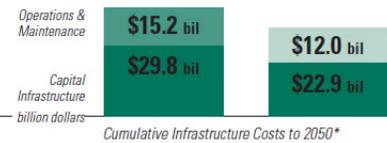
Saves over \$9,500 per household on auto costs and utility bills.



INFRASTRUCTURE COSTS

Infrastructure costs rise in line with land consumption, as dispersed development calls for longer extensions of sewers, water pipes, local roadways, and utility lines. Through 2050, the Growing Smart scenario **saves \$10.1 billion** in infrastructure capital and operations and maintenance costs, more than \$7,750 per new housing unit.

Saves \$7,750 per new housing unit, or over \$220 million per year.



WATER

More compact development patterns, with more smaller lot single family homes, townhomes, and multifamily housing, save water. By 2050, the average new household in the Growing Smart scenario **saves 3.2 million acre-feet of water.**

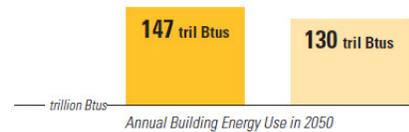
Saves 3.2 million acre-feet of water, enough to supply over 7 million households for a year.



BUILDING ENERGY USE

The Growing Smart scenario **cuts annual energy use by 17 trillion Btus** in San Joaquin Valley homes and businesses. This leads to lower household utility bills, greater energy security, and lower carbon emissions.

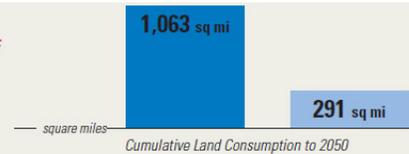
Saves enough energy annually to power over 235,000 homes.



LAND CONSUMPTION

Trend development patterns will expand the San Joaquin Valley's urban footprint by 2050, consuming 1,063 square miles of farmland, open space, and recreation areas. The Growing Smart scenario **saves 770 square miles** of this precious and finite resource.

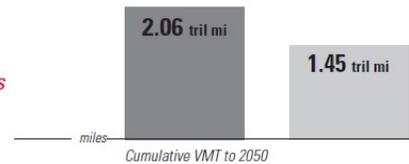
Saves over seven times the land area of Fresno.



VEHICLE MILES TRAVELED (VMT)

Automobile emissions account for about 40% of carbon emissions in California. They are also a primary cause of asthma and respiratory illnesses. How much we drive also impacts how much we spend on fuel, insurance, and maintenance. The Growing Smart scenario, with more walkable, transit-oriented development, reduces VMT by **over 610 billion miles** to 2050.

VMT reduction equivalent to taking ALL cars off the San Joaquin Valley's roads for 20 years.



PUBLIC HEALTH

Auto-related air pollution results in a spectrum of respiratory and cardiovascular health issues, leading to hospital visits, work loss days, and premature mortality. Health incidences, and their related costs, are reduced along with VMT. The Growing Smart scenario avoids **over 45,000 health incidences and \$1.2 billion in health costs** in 2035.

Less pollution avoids over \$1.2 billion in health costs.



Analysis

HSR has great potential to catalyze positive changes in land use, magnifying the benefits of building the system far beyond benefits directly related to transportation. Speeding changes to land use patterns, especially in the Central Valley, is a key potential benefit of HSR. As can be seen in the Vision California results, it is important to analyze the potential land use benefits of HSR in terms of personal health, economic and environmental sustainability, and community-wide quality of life.

Still, much has to change to leverage the potential land use benefits. Starting now, as growth has slowed in the Central Valley, will help support current planning for downtown revitalization, such as in Fresno

The challenges are clear. The Authority's inability to dictate good land use policy to cities illuminates the need for strong advocacy outside of Authority programs amongst land use and environmental advocates. In cases where cities or regions are not even interested in participating in the land use planning process (e.g. Bakersfield and Hanford), the challenge is even greater. But by engaging fully in the project and getting involved constructively, advocates can help to encourage better planning.

The risks of an absence of good planning are numerous. HSR would not only suffer from reduced ridership without good land use, it could help to further sprawl, as it just becomes an HSR station with mega parking structures surrounding it. Additionally, while HSR could also encourage some long-distant daily commuting, given the higher ticket costs of HSR compared with commuter rail systems, travel would likely be limited to intermittent business travel, maybe one to two times a week for frequent users.

It should be noted that HSR stations in regions where low-density is the norm and public transportation systems are skeletal, e.g., in the Central Valley, additional parking structures may be necessary. However, if a "parking district" approach is used, and existing lots slightly further away are included, the amount of parking could be minimized and should be maintained as market rate.

4. Routing – Altamont v. Pacheco

One of the most controversial decisions related to the HSR project has been the routing into the Bay Area. While there are clear advantages and disadvantages to both alignments, most transit and environmental organizations, including TransForm, have long expressed a preference for Altamont. The Authority has approved the Pacheco route, over the Altamont.

Two, but certainly not all, of the most significant concerns with the Pacheco alignment were dealt with in Prop 1A. The first was a commitment, at the insistence of the environmental community, that there would be no station in Los Banos – which had the potential to be a tremendous sprawl generator in an area with significant critical habitat. It would have been just a two-stop ride to San Jose.

The other was a commitment by the Authority to a number of environmental mitigations along the corridor where HSR would pass through the Grasslands Ecological Area – Henry Miller Road (a few miles north of Hwy 152, see Figure 4-1 below). These mitigations include¹⁶:

- The Authority, or other entities designated and supported by the Authority will acquire, from willing sellers, agricultural, conservation and/or open space easements encompassing at least 10,000 acres and generally located along or in the vicinity of the HSR alignment and within or adjacent to the designated Grasslands Ecological Area.
- The focus for these easements will be in areas undergoing development pressures, such as the areas around Los Banos and Volta, and/or areas that would be most appropriate for ecological conservation or restoration. The eventual locations and total acreage for these easements would be determined in consultation with the California Department of Fish and Game (CDFG), the U.S. Fish and Wildlife Service (USFWS), and the Grassland Water District and in conjunction with project-level decisions addressing the Gilroy to Merced portion of the HSR system.
- The Authority committed to construct an elevated structure along an approximate three-mile portion of Henry Miller Road to minimize impacts on sensitive areas, including wetlands and habitat.

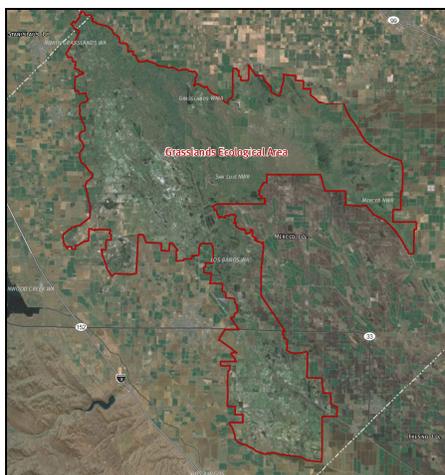


Figure 4-1.

Source: [Audubon](#)

¹⁶ <http://cahighspeedrail.ca.gov/assets/0/152/232/365/b5e0d65d-198c-4219-a01c-aa48ad3dcdb7.pdf>

While improvements have been won for the Pacheco alignment, significant advantages remain for the Altamont alignment:

- Would service the more densely populated areas in the East Bay and Tri-Valley. This is illuminated in the map produced by TRANSDEF shown in Figure 4-2 below.
- Travel times between Bay Area cities and Sacramento would be significantly faster as the route is much shorter than Pacheco. For example, travel times between San Francisco and Sacramento were estimated to be 1:06 hours via Altamont versus an estimated 1:51 hours for the current proposal.
- Reduced opposition from peninsula communities.
- Reduced impacts on sensitive habitats (though would likely need a Dumbarton crossing as mentioned below)



Figure 4-2.

As can be seen in this map, the Altamont route (yellow line) follows the lights which indicate population centers. The Pacheco route (blue line) is traversing area with few lights, or less populated areas.

Source: TRANSDEF, <http://www.transdef.org/HSR/HSR.html>.

But the Altamont alignment is not popular among many in the Tri-Valley where it passes through, and opposition to routing it too close to the cities of Livermore and Dublin could require it to go into more sensitive habitat nearby.

While Altamont is TransForm's preferred route, Pacheco would admittedly have certain advantages as well; the largest being that each train from Southern California would connect the Bay Area's two largest cities, San Jose and San Francisco.

The Pacheco route would also connect the Bay Area's two largest cities with frequent, incredibly fast rail service. It also eliminates impacts to the Bay by avoiding the wetlands within the Don Edwards Wildlife Refuge. The Altamont route would require a Bay crossing on a new HSR bridge paralleling the existing Dumbarton Rail Bridge.

Analysis

Construction will not begin between the Bay Area and the Central Valley for at least 10 years (potentially much longer) due to a recent decision by the Authority to prioritize extending the Initial Operating Segment (IOS) from the Central Valley to the Los Angeles, rather than to the Bay Area.

While the Authority has adopted the Pacheco as their preferred route, there is still sufficient time, and potentially some opportunities, to explore a change of alignment. Most importantly, the construction of this alignment is very far off; approximately \$25 billion needs to be procured just to complete the IOS. According the *Revised Business Plan*, the earliest that construction could begin on the link to the Bay Area is 2022, and that is clearly a best case scenario.

Just as importantly, existing rail service and ridership will be growing over the Altamont Commuter Express (ACE) over the next ten years as improvements to the existing ACE corridor will lead to faster and more frequent service as part of the Unified Northern California Service. When faced with a year-of expenditure cost of \$19.9 billion¹⁷ for constructing Pacheco, the Authority may be forced to reevaluate their options and look for a most cost-effective route – one that can maximize the use of existing right-of-way and provide service to additional Central Valley cities, i.e. Altamont.

¹⁷ Revised Business Plan, P. ES-14.

5. The “No Project” Scenario: Examining California’s Future without High-Speed Rail

California faces real challenges, such as loss of sensitive habitat and farmland from sprawl and a transportation system that leads to high-levels of pollution and human health and safety problems. While some of these trends are beginning to slow as a result of local action and legislation, especially in response to SB 375, the trends are still overwhelmingly environmentally negative.

One way to examine the impact HSR will have on these trends is to look into the future where HSR is absent and assess what is likely to occur.

Implications for Transportation Trends

Though recent projections show California’s rate of population slowing some, it is still projected to continue rapid growth. Population is expected to grow by another 13 million people [by 2050, to 51 million](#).¹⁸

Given steady and significant population growth, transportation capacity will need to be substantially and continually expanded. In the short-term, the pressure to expand highways and airports will likely continue as the development of HSR and mass transit systems have significant lead times. Some argue that short-term highways and airport expansion will negate the need for HSR. However, with ever increasing demand for transportation capacity, the additional capacity HSR would provide will still be needed, and if it is not provided by HSR, other transportation infrastructure will have to be built.

This isn’t theoretical. Even while the framework of growth starts to shift because of SB 375 plans continue apace for major intercity highway projects.

- In April 2012, plans were solidified to move forward with a study examining the widening of Highway 152 to four lanes from near Los Banos to Gilroy.¹⁹
- In San Diego County, a massive I-5 expansion is moving forward, though not quite as large as the original proposal, which included 14 lanes in some areas. And several organizations are challenging the San Diego Association of Governments (SANDAG) recently prepared Sustainable Communities Strategy on the basis that it prioritizes highways over public transit, bicycle and pedestrian uses.
- In the Central Valley, Caltrans is coordinating efforts to "enhance" Highway 99 at the cost of \$6 billion. The investments in this enhancement plan induce expanding capacity to 6 lanes along the route to support growth. Many of these land use changes will be the same multi-garage tract home/mall/office park that fits so nicely with auto-oriented infrastructure. Economic leaders in the valley are also calling for 99 to become an interstate, which would have an

¹⁸ California Department of Finance. May 2012. [Interim Population Projections for California and Its Counties 2010-2050](#).

¹⁹ <http://www.mercedsunstar.com/2012/04/21/2316721/los-banos-toll-road-critics-give.html>

additional cost of \$16-\$19 billion. Clearly there is not the money for that now; the \$6 billion of projects won't be finished until the early 2020s. But that is what would likely be next with no real transit relief valve and no shift towards smarter growth.²⁰

There is no way to know exactly how much less highway or airport expansion would actually happen if HSR is built. Road pricing will likely become more common, reducing demand by increasing the cost of driving. But it is possible to calculate what the equivalent capacity to HSR would be.

The Authority commissioned such a paper, released in April 2012. The methodology used to arrive at the numbers above assumes a large capacity for HSR system, with 12 trains per hour in each direction and trains 70% full on average. This results in ridership higher than current ridership estimates from the *Revised Business Plan*. But even if ridership is projected to be lower it would likely continue to grow over time, especially as long-term land uses change and the population grows. The report calculated that 520 miles of HSR provides the equivalent of:

- Many new highways! – [4,295-4,652 lane miles at cost of \\$119-145 billion](#).²¹
- Significant new airport and runway capacity – [115 new gates and 4 new runways at cost of \\$38-41 billion](#).²²

Since some of these modes access different sources of funds what gets built is not like a zero-sum game.

Potentially most important is in Central Valley, where little transit exists beyond modest local bus service. HSR would create a whole new magnet for potential transit riders, and help to justify shifting transportation investments toward Bus Rapid Transit or (ultimately) Light Rail along the heavily travelled urban corridors. With the current high levels of auto-dependence in the Central Valley, it is hard to see a significant change in transportation investments without the catalytic investment of HSR.

Implications for Land Use and Environmental Trends

The implications of a future with HSR for the transportation system extends far beyond what new transportation infrastructure will be built. The implications of continued investment in a highway/runway-based system have potentially much greater significance for land use and the environment in terms of encouraging sprawl. We know from experience that highway and airport investments don't typically lead to walkable mixed-used developed focused in city centers, rather the opposite is true.

Current trends indicate a continual loss of land to sprawl, much of it farmland loss and some of it sensitive habitat.

- According to the American Farmland Trust report [Paving Paradise](#), starting in 2004, over 2,000,000 acres of land will be lost to urbanization (sprawl, highway expansions, etc.) in

²⁰ See the Route 99 Corridor Enhancement Master Plan at <http://www.dot.ca.gov/dist6/99masterplan/> Chapter 3 has current projects and future costs.

²¹ Authority. *Comparison of Providing the Equivalent Capacity to HSR through Other Modes*. P. 6.

²² Ibid.

California by 2050, with a large percentage of that being agriculture land or high-quality farmland.²³ Some land will surely be sensitive habitat as well.

- While HSR would cause some direct farmland loss – around 5,000 acres according to Authority environmental documents²⁴ – by catalyzing land-use change and revitalizing cities and corridors leading to them, it may make it more feasible for the cities in the Valley to have thriving downtown focused economies and great places that more people will want to live in. Ideally this takes the pressure off of constant farm and open space development. Additionally, the environmental mitigation programs being undertaken will be set aside, possibly resulting in significantly more acreage preserved than is lost.

While the landmark legislation SB 375 ([see TransForm fact sheet](#)) will likely lead to some improvement in land-use and transportation planning, the new law does not directly prohibit or stop sprawl. Rather it creates a strong framework to plan and provide incentives to encourage sustainable land use patterns and transportation investments. However, absent major investments in supporting alternative transportation, implementing SB 375 may be difficult.

Implications for Greenhouse Gas Emissions

The potential greenhouse gas (GHG) reduction potential of HSR is of major interest to many stakeholders. The question of GHG benefits has taken on added urgency as the Authority's Revised Plan looks to AB 32 Cap and Trade revenues as a funding source.

The California Air Resources Board included HSR in the AB 32 scoping plan as a way to help the State meet the 29% reduction in GHG emissions by 2020. Still, if it does use these revenues, it may, like other recipients, have to prove the project's GHG reduction potential in court.

Current analysis show that overall, the project operation would have a net beneficial impact on GHG.²⁵ This methodology included the benefits of reduced vehicle travel and plane trips diverted. The energy associated with rail operations (including stations and maintenance facilities) was deducted.

The estimate total reductions are projected to be -3.9 to -2.5 MMT per year of CO₂ in 2035. By comparison, In December 2007, CARB approved the 2020 emission limit of 427 MMT CO₂e of GHG. The potential benefit is significant.

²³ American Farmland Trust. [Paving Paradise](#). P. 15.

²⁴ Authority. [Merced-Fresno Final EIR/EIS](#), P. 3.14-25; [Fresno-Bakersfield Draft EIR/EIS](#), P. 3.14-33.

²⁵ The California High Speed Rail Authority carried out **GHG** analyses statewide for the Air Quality Technical report (<http://www.cahighspeedrail.ca.gov/assets/0/152/407/432/fff843dc-ba93-4a9c-ad6d-eae7459a8df8.pdf>) and for project-level construction emissions for the Merced to Fresno Final EIR Page 7-31 has statewide impacts.

Table 7-38 of the Merced to Fresno Air Quality report also shows the amortized GHG emissions during project construction and the anticipated payback period of these emissions. If the HSR project life is assumed to be only 25 years, and construction impacts amortized over that time, the payback time for construction impact on this segment would be 2-4 months.

Can we trust ridership and thus GHG benefits?

Much has been made of ridership projections being optimistic. The Authority's latest models have received much higher marks from outside analysts. Still, the GHG projections use the scenario where the range of ticket prices is just 50%-83% of air fares. It is possible that the train is not that competitively priced, or a host of other factors conspire against the ridership and GHG figures here.

But it is also important to note that the model has some inherent limitations that may underestimate emissions, especially over the very long-term. Some of these limitations include:

The base land use scenario was set based on projection for land use patterns based on 2006 and 2007 projections (though overall population projections were updated the population distribution was not). These land use projections were recently updated in several regions. The Sacramento, Southern California, and Bay Area Association of Governments (SCAG, SACOG and ABAG) recently adopted more transit-oriented, compact growth scenarios. The latter two are the two highest ridership HSR regions and these projections call for more jobs and housing close to HSR stations, and to transit that feeds the stations. If the new land use projections were to be used we assume the model would predict higher ridership (all else being equal.)

The land use scenario that was used did not vary between the HSR and no HSR alternative. As stated in the chapter on land use, HSR has been a catalyst for growth, especially for employment centers, in the vicinity. But since predicting exactly where that growth would occur with HSR, vs. without, is highly speculative beforehand, the modeling rightly keeps the same base case. If this was able to be represented in the model it would create a greater relative benefit for the HSR scenario.

Looking into Life Cycle Emissions

Another way to analyze GHG emissions is through a life-cycle assessment. ^[1] This is a technique to assess environmental impacts associated with all the stages of a product's life from-cradle-to-grave (i.e., from raw material extraction through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling).

This could be done, for example looking at the energy inputs for developing, maintaining and disposing of the train sets. But this would only make sense if there was a countervailing scenario that looked at reduced auto and plane ownership (and therefore production, maintenance and disposal).

There are a host of other inputs to these assessments, such as road and airport runway construction, parking provision, etc. The problem is essentially that unless there are two distinct land use and transportation scenarios, HSR will be greatly penalized, i.e., there will be the same number of cars, planes, highway lane miles etc, but we'd be adding all of the emissions of HSR. TransForm believes a

life-cycle assessment could be done, but is only useful if there are distinct transportation and land use scenarios for each.

Implications for Public Health and Safety

Our transportation choices have a profound effect on our health and safety. HSR is one of the safest forms of transportation ever invented. Our current automobile-focused system is the most dangerous. A future without HSR would likely have:

- **More transport deaths and injuries** – Given the [high rates of deaths from automobile-related accidents](#)²⁶ in the United States it will clearly be safer to displace auto trips with HSR, especially if the comparison is with the excellent [safety record of HSR in Europe](#)²⁷ and in Japan, where there has [never been a HSR fatality](#)²⁸. In fact the potential savings from death and injury could be over \$5.5 billion during the life of the project, the second highest benefit after economic competitiveness.²⁹
- **Higher rates of respiratory disease** – Continued reliance and expansion of the automobile- and aviation-based transport will lead to higher levels of air pollution without HSR, especially given that the Authority is [committed to running HSR on 100% renewable energy](#).³⁰ This additional pollution will lead to more respiratory disease. In fact, as of 2004, over 15% of children and adolescents (ages 0-17) were diagnosed with asthma in the eight-county San Joaquin Valley according to the report [Struggling to Breathe: The Epidemic of Asthma Among Children and Adolescents in the San Joaquin Valley](#).

If the tradeoffs and risks associated with building HSR are in fact worth it, then moving ahead at this time would make sense. After 19 years of study and planning it seems like it would be delayed for at least a generation, if anyone did revive the idea. The costs would be much higher as new development would have taken place, or it may just be forced to go down I-5, with more of an airport style system, with fields of rental cars and shuttles available at the stops.

²⁶ National Highway Traffic Safety Administration. <http://www-fars.nhtsa.dot.gov/Main/index.aspx>.

²⁷ European Transport Safety Council. "[Transport Safety Performance in the EU a Statistical Overview](#)." P. 7-8.

²⁸ JR Central Japan Railway. <http://english.jr-central.co.jp/about/safety.html>

²⁹ Authority. California High-Speed Rail Benefit-Cost Analysis, April 2012.

³⁰ Authority. [California High Speed Rail Authority Strategic Energy Plan](#). P. 1.

6. HSR and CEQA relief

Governor Brown has proposed changing certain requirements of the California Environmental Quality Act (CEQA) to make it easier to move forward with development of the first construction segment and the “urban bookends” of the high-speed rail line. While the Administration has not proposed a full CEQA exemption, there are strong concerns within the environmental community about limiting the application of CEQA at all, especially with regard to a massive project like high-speed rail.

The outlines of the three CEQA modifying provisions proposed by the Governor (as of this report’s publication):

To declare the program level EIR certified on April 19, 2012 to be complete and in compliance with CEQA and not subject to further review or revision. Changes to the project would not require revision of the program level EIR but rather only require project level environmental review (on the nine project level EIR segments)

To allow individual segments of the blended approach at the bookends of the system, such as with the Caltrain corridor in the Bay Area and other systems in Southern California, to be considered separate projects for purposes of doing environmental review. This provision would allow separate analysis of these segments to not be considered “improper piecemealing.” Full project level CEQA review, including an analysis of cumulative impacts, would still be undertaken on these segments. The same would apply to regional or local rail projects that facilitate connections to HSR.

For actions or proceedings brought after January 1, 2012 alleging CEQA noncompliance regarding the portion of the high speed rail line to run between Kern and Madera counties, to “prohibit a court from granting relief that would have the effect of suspending or stopping any work or activity on the project, unless the court finds that the harm to the state, the public, and those employed in connection with the project resulting from the suspension or stoppage is substantially outweighed by the likelihood that suspension or stoppage will result in avoidance of greater harm, as specified.”³¹

TransForm shares the concerns that modifying CEQA to benefit specific projects is a very risky endeavor, particularly with a project as large and potentially impactful -- positively or negatively -- as high speed rail. Our concerns are heightened because of years of mismanagement by the Authority and years of CEQA-weakening legislative reforms that have created bad precedent and further muddled the already murky CEQA case law landscape. The Brown Administration and the Legislature must exercise extreme caution with regard to consideration of any modifications to CEQA.

However, it is also important that high speed rail is an environmentally preferable alternative to increased highway and air traffic capacity and that construction of the high speed rail line is dependent

³¹ Description taken from Legislative Counsel Digest.

on complex funding and timing. The project could be placed in jeopardy by a lawsuit challenging one small portion of one segment of the system.

High-speed rail is unlike many other massive infrastructure projects, such as the possible north-to-south water conveyance project. To take the water project as an example, there is a clearly environmentally superior alternative to that entire project: conservation and efficiency programs that would free up as much water as the additional conveyance would deliver. Efficiency programs have dramatically lower direct environmental impacts, plus a host of other co-benefits such as reduced energy consumption.³² In the case of the water conveyance project, changes and additions to portions of the project may very likely exacerbate what are already very questionable environmental bona fides of the project and make it clear, via the disclosures that would be required at the program level of review, that the environmentally preferable alternative is actually a program centered on conservation and efficiency.

The same conditions do not apply to the high-speed rail project. Unlike the ability to build a “virtual river” out of conservation and efficiency (to continue the comparison to the water conveyance project), video-conferencing and other substitutes to personal interaction and travel will never be a sufficient alternative for regional, inter-regional and north-to-south state travel for people. Many people are interested in actually getting to some other physical location. High-speed rail will be substituting for automobile and air trips, reducing demand for those modes, and potentially slowing or obviating some associated highway or airport expansion. A change or addition to a portion of one segment won’t change that basic fact.

Given the particular and highly unusual circumstances surrounding the high speed rail project, some very minimal and narrowly tailored streamlining to CEQA may be possible that avoids harm to the environment and communities while facilitating the broader environmental and other benefits of high speed rail. For example, not requiring a new program level EIR every time a change is made to the project seems to make sense and does not create a greater risk of harm. And the modification of the usual prohibition against piecemealing, particularly if limited by a sunset date, also might be done in a balanced way that does not create a risk of greater harm to the environment.

TransForm does not support the proposal to change the standard of review for injunctive remedies with respect to HSR. The trial courts are already supposed to consider “are the plaintiffs likely to suffer greater injury from a denial of the injunction than the defendants are likely to suffer from its grant.”³³ If by chance an injunction is issued against HSR there remains the right of immediate appeal that would enable timely review. Legislative action would remain an option, if and when there is no other alternative.

³² NRDC. http://switchboard.nrdc.org/blogs/bnelson/tapping_into_californias_virtu_1.html

³³ Cal. Code of Civil Procedure §§ 526-529 and Cal. Rules of Court 3.1150 et seq.

7. Understanding Risks and Risk Management

Risk is inherent in any major endeavor. Given the magnitude of the scope and cost of the California's HSR project, and the constrained funding environment, there is no doubt significant risk to California in pursuing HSR. These risks can't, and shouldn't be understated. In fact, the Peer Review Group, in their more supportive [May 18, 2012 letter](#) to the Legislature stated that transparency of, and clear acceptance of, risks by the legislature should be a prerequisite to moving forward.

This section outlines some of the most significant risks of the HSR project and key risk management strategies as identified in the Authority's [Revised Business Plan](#) (see Chapter 8) and the Peer Review Group's May 18th letter. However, for a more thorough discussion, please refer directly to these two documents. Both delineate a wide range of risks and mitigations, and discuss each one in detail.

Seven Key Risks of the HSR Project

The assessment of risks in the Peer Review letter and in the Authority's *Revised Business Plan* generally reinforce each other, as delineated below.

Key Risks Identified in the May 18th Peer Review Letter:

1. No dedicated source of federal or private funding to finance construction beyond the work in the Central Valley (and the early investments in the bookends).
2. Staff and management resources are inadequate to the immense task ahead. The Authority will have difficulty in meeting the challenge (e.g. construction and contractor oversight) within current State bureaucratic limitations.
3. Projections of operating and maintenance (O&M) costs are based on a relatively simple model.

The *Revised Business Plan* identifies the two first items above as the biggest risks facing the project (page 8-21).

Additional Risks Identified from Revised Business Plan:

4. Underlying cost assumptions could change.
5. Capital cost could change further as environmental and design processes are completed.
6. Delays in receiving the funding may lead to higher costs if land and construction costs rise (faster than other costs and revenues).
7. Delay or inability to receive environmental approvals could lead to increased costs, and if significant enough, could result in a loss of federal grants.

Beyond these direct risks, there is concern that the risks can be self-perpetuating. For example, if there are cost increases during the initial construction segment, then people may lose faith in the project, which would make it harder to identify and aggressively pursue additional funding sources. This in turn would lead to additional delay which is likely to result in even greater cost increases.

Authority's Approach to Risk Management

In the past the Authority often downplayed risks of the project, but with more demands for accountability there is a growing focus on risk management. Some of the Authority's key mitigations strategies for the risks above include:

Cost Inflation Mitigations

- Accommodate some risk of cost in inflation by the inclusion of large contingencies in Phase 1 Blended project budget – 15 to 25%.
- Develop cost estimates that represent a range of alternatives, underlying cost assumptions, escalation factors, and implementation timing.
- Continue value engineering throughout project implementation.
- Transfer some risk to design-build contractors so that some delays and cost increases will be the responsibility of the contractor.

Mitigation of Overall Risk to State

The Authority's phasing plan ensures what is built has a high-level of utility. For example, the early investments in the planned Northern California Unified Service will allow other operators to use the first IOS segment before commencement of HSR service.

Mitigation of Institutional Capacity Risk

The Authority plans to significantly increase their staffing levels while coordinating the continued use of consultants with expertise the state may not have. The goal is that staff and consultants become a "seamless, integrated structure." With Jeff Morales as the new Authority CEO, there may be greater faith within the legislature that an experienced hand is at the helm, and that may help to free up funding necessary for proper staffing levels.

Risk Tracking

The Authority is identifying how risk will be managed, including a clear line of staff authority that includes regional risk managers, risk assessment workshops, and a "risk register." This register is a dynamic document that helps identify, assess, manage and track mitigation status of risks.

Analysis

It is absolutely critical to identify and understand the risks of HSR, and there are many. One way to approach it, when considering whether to support moving forward with the first construction segment, is to consider the Worst Case Scenario. The Peer Review Group seems to get it right on this front; with the new blended and phased approach in place, a worst case scenario would now represent, "a poor use of resources and an embarrassment, but not a financial disaster for the state."

The phasing mitigations, which are designed to ensure utility after each section of construction, allows the State to pursue a dual strategy of incremental improvements while continuing to work toward completion of the larger transformative project. It will be the task of advocates to not only demand transparency about the risks and supposed mitigations, but to advocate for intelligent implementation of the project so risk is mitigated to the greatest extent possible.

8. Conclusions and Recommendations

Conclusions

The decision on whether to move ahead with high speed rail is one of the biggest facing the California Legislature, with huge stakes for the state. There is a crazy combination of deadlines and constraints. To say it is suboptimal from a planning, community engagement, risk management, or almost any other perspective, is an understatement.

There are just a few paths at this point:

Pull the plug on it. Not moving ahead with bond allocation and losing the funds is a real possibility. Risk to taxpayers would be dramatically reduced.

Call for a “Do Over”. Some who support high speed rail in concept – but who have squirmed at the missteps (and earlier misrepresentations) by the Authority – are saying we need to fully change the governance, and start all over.

This actually seems the least feasible of any option. To lose the value of the studies, Prop 1A and over \$3 billion in federal funding would likely lead to a dissolution of this enterprise for a generation. In other words, a “do over” is likely the same as pulling the plug.

Move ahead with the first construction segment. There are a host of risks and problems with moving ahead, as outlined in the previous chapters. Ultimately, there are a couple of critical factors that we can only guess at the outcome. The first is whether the “first construction” segment is all that gets built. The project would not be worth \$6 billion if it does not get past Bakersfield. Additionally, because of the rush, there is the huge risk that mitigations for the environment and communities, especially low-income communities in the Central Valley, won’t be sufficient.

On the other hand, it is likely that beginning the first segment will lead to excitement about the next and arguably most critical segment – closing the rail gap between Bakersfield and Palmdale to initiate statewide train service. Without the will to start now, the impetus to close this gap will likely vanish.

As the Legislature considers whether to move forward with HSR, it should do so with a view towards California in 2050 and beyond – the California we will leave our children and grandchildren.

When TransForm has fought rail projects we’ve always outlined specific alternative proposals, often commuter rail or Bus Rapid Transit instead of expensive BART or monorail proposals. Unfortunately, there isn’t a good alternative transit project to knit the state together and reduce reliance on highway and airport expansion.

There are some future scenarios that reduce the need for highway and airport expansion. Probably the most realistic is that by 2050 or 2060 we will be able to use intelligent vehicles that sense the car in front of them, allowing cars to go at the speed limit, but much more closely together. But trying to identify

enough parking, and expanding arterials and local roads to accommodate this long line of closely linked cars is not the future TransForm envisions for California.

To support moving ahead with high speed rail's first construction phase requires an inherently optimistic view, a view that believes we'll somehow figure out the funding if the project is in fact, going well. As an organization committed to a sustainable future, we are willing to try and get this done, and done in an intelligent, positive way.

Recommendations for the State Legislature

1. Support appropriation of first round of Prop 1A bonds.

Federal requirements attached to the ARRA funds require that budget decisions, related to the issuance of HSR bonds, be made in this fiscal year. It is unfortunate that there are a host of uncertainties that cannot be immediately resolved, however, the legislature should appropriate the \$2.7 billion of funding to match the federal government's \$3.3 billion for the first construction segment.

As a part of this appropriation, the legislature should set project milestones that have to be met that could include requirements that the Authority produce more robust risk-analysis and risk management plans, adhere closely to the construction schedule, as well as obtaining adequate management resources to effectively conduct a program of this magnitude—as recommended by the Peer Review Group.

2. Ensure the Authority has appropriate staff levels to oversee a project of this magnitude.

For over a decade the Authority has been dramatically understaffed for a project of this scope. It is critical for the Authority to be fully staffed to manage this complex project. The legislature should facilitate hiring, and work to eliminate bureaucratic impediments where they exist.

3. Limit Cap and Trade revenue for HSR made before 2015 to early upgrades to the bookends.

Legal concerns regarding the use of Cap and Trade money for future construction require that the HSRA and legislature act with an abundance of caution in funding this project using Cap and Trade money. While challenges to the Cap and Trade make their way through the courts, the legislature should limit the use of this funding to upgrades on existing transit services in the San Francisco Bay and Los Angeles areas. They will bring significant mobility and clean air benefits to the millions of existing residents in these areas, and they will do it before 2020. These upgrades are core to the first phase of the HSR plan, but will not have the same legal issues as future HSR construction.

In doing this, there is the potential for these funds to offset the need for some of the Prop 1A funds that are currently assumed to be funding these upgrades. Beyond being legally sound, this strategy will reduce borrowing costs for the state, while providing for additional Prop 1A funds for the next segment if the project continues.

As the legal issues surrounding Cap and Trade become clearer, the legislature should consider additional high speed rail funding likely in 2014 or 2015. This approach does mean building the first construction phase (i.e. appropriating Prop 1A bonds), without knowing whether there is a dedicated funding stream to finish the Initial Operating Segment (Merced to San Fernando Valley), but it assures that meaningful upgrades to our rail infrastructure are completed.

4. Focus additional Cap and Trade revenue on Central Valley cities that are projected to receive early phase stations.

Some early Cap and Trade funds should be considered for use where transit systems are lacking, especially in the Central Valley. Specifically, focus on upgrading existing multimodal infrastructure especially local transit, that are expected to feed the future stations e.g. with Bus Rapid Transit as proposed in Fresno, would be a great use of early Cap and Trade funds.

5. Enable new forms of value-capture of development around HSR stations.

Revenues generated from TOD around HSR stations could help fund high-quality station designs and other public improvements, such as streetscape projects. Enabling legislation may be required however, due to the elimination of redevelopment agencies in California.

Recommendations for the Authority

1. Establish an Environmental and Environmental Justice Advisory Committee that provides reports directly to the Authority Board

Over the last decade there has been erratic stakeholder outreach, typically responding to complaints and often when political support is needed rather than providing early input and building trust in the planning process. A more robust outreach plan will include an Environmental and Environmental Justice Advisory Committee (EEJAC) that can provide direct feedback to the Authority on its policies and plans. Most importantly the EEJAC could review the approach on:

- Proposed mitigations on the first construction segment in low-income and underserved communities.
- Environmental mitigations.
- Urban land use policies and approaches.
- Sensitive habitat and farmland mitigations.
- Funding and revenue.

In order to be successful, the EEJAC should have direct access to a staff liaison that has the ability to get timely responses and the authority to speak legitimately on HSRA issues. The scope of this committee should create a transparent dialogue that will help stakeholders understand the wide cross-section of issues, many of which are related and even intertwined. In the long-run, such a process will strengthen the project and build meaningful committee support and buy-in to it.

Critically, the EEJAC chair or co-chairs should report directly to Authority on a regular basis, possibly quarterly.

2. Have an intensive focus on transparent engagement of disadvantaged and historically excluded communities, and prioritize mitigations for these areas.

Chapter 3.12 of the Draft Environmental Impact Report (DEIR) identifies eight primary mitigation measures. As pointed out by key stakeholders³⁴, many of the measures are listed as “suggested or considered.” HSRA should insist that these be implemented. These should include requiring that residents who are displaced by the construction of this project be given the ability to remain in their community, not just given cash payouts for their homes. Given that some of the affected communities are likely to be small, this will not only protect families from uprooting children out of schools, but will protect the communities themselves from potentially significant hardship.

3. Build strong, early services and ridership over the Altamont.

Even though the Pacheco has been adopted as the preferred route into the Bay Area there are a host of reasons the Altamont makes more sense. Reevaluating this route versus Pacheco, while not making sense today, should remain an option as the project moves forward. However, maximizing ridership in the Altamont corridor on existing services will be a key need no matter which alignment is finally built.

The Authority needs to work with Altamont Commuter Express (ACE) and Caltrans on creating a more robust service in the short-term, and by 2018 a Bakersfield to San Jose route as part of the Unified Rail Plan. Second, the Authority should plan on re-evaluating the alignment into the Bay Area at the time the Bakersfield-Palmdale sections begins construction.

4. Maintain a strong land use-planning program as part of HSR project.

The Authority should continue to prioritize their land use planning grants and technical assistance to support local governments that are getting stations. There needs to be an increased focus beyond the station areas and on reducing the need for new parking structures. This can be done by a combination of:

- Upgrading the pedestrian environment in the mile surrounding the stations, implementing bicycle route improvement in the 3-5 mile radius, and increasing feeder transit services concurrent with station openings.
- Designating space for future carshare and bikeshare in station areas and supporting these with planning and implementation funding to ensure they can open concurrent with the first segment in 2017.
- After implementing these, utilizing parking within the larger district and charging market rates will help to reduce the size of the parking structures that will be provided, thus saving on cost and keeping space for higher value uses.

³⁴ California Rural Legal Assistance Inc., and Center for Race, Poverty and the Environment, *Comment letter on Draft EIR/EIS*, October 13, 2011.

In addition, HSRA must develop a more robust strategy for stations not directly in downtown areas in order to assure that these will become new dense development areas.

Building high-speed rail in California could reinforce cities as the hubs of our economies, significantly reduce greenhouse gas emissions, get commuters off congested roads, *and* cost much less than highway and airport expansion. But as we have seen, this result is not guaranteed and is more likely with strong, productive engagement.

TransForm may come to regret this position; we may change it at some point, but at this point we would rather engage the Authority, watchdog the project, and see if we can turn it around than to pull the plug. The potential benefits are just too great not to.

We can only hope that the excitement that has swept Los Angeles County for public transit and walkable communities – as a path to create jobs, retain employers, protect the environment and redirect growth away from open lands by creating value in urban and suburban core areas – is also true of high speed rail’s potential transformative power.