

January 27, 2016

To: California State Assembly Sub-Committee 3
Resources and Transportation (Chair, Richard Bloom)

From: Elizabeth Alexis, Co-Founder
Californians Advocating Responsible Rail Design (CARRD)

Re: High Speed Rail Oversight Meeting
January 27, 2016, 9:30 AM

Respectfully, we would like to submit the following comments for the committee's review.

Californians Advocating Responsible Rail Design (CARRD) was founded in 2009 to advocate for more inclusive and effective transportation planning methods like Context Sensitive Solutions. We still strongly support the development of a viable and vibrant passenger rail network for California but we continue to have concerns about Authority's transparency and ability to complete this project.

The upcoming 2016 Business Plan will provide additional information about the potential direction the project will take, given updated information about funding sources, costs and progress-to-date.

The Authority has made statements indicating that the bids for the initial construction packages have come in under forecasts and thus the Authority is under budget. However, there has never been a common understanding of baseline numbers and performance measures to validate the Authority's claims. We attempt to clarify the issue below.

2012 vs. 2014 Business Plan

It is important to note that while the 2012 Business Plan contained hundreds of pages of reference and supporting documentation, the 2014 Business Plan did not. When we inquired about this, the Authority explained that despite 2 years of additional engineering work being completed, the 2014 plan simply included the 2012 estimates with adjustments for inflation.¹

By not updating the 2014 Business Plan numbers to accurately represent the Authority's engineering work that progressed between 2012 and 2014, the Authority violated their own policies contained in the project's [Technical Memoranda on costing](#), the Risk Management Plan (Exhibit F) submitted to the legislature in July 2013 to comply with SB1029, as well as [GAO guidelines for cost estimating](#).

¹ *The Los Angeles Times* published an article on October 24, 2015 entitled "\$68-billion California bullet train project likely to overshoot budget and deadline targets" that revealed a detailed budget had been created but later jettisoned for reasons that are still unclear.

In the Risk management report (Exhibit F) the Authority submitted to the Legislature in 2013, Section 4.1.1 – “Updating Capital and Support Cost Estimates” - says in part:

“Program-wide estimates will be re-estimated every two years as part of the updates to the Business Plan. The revised estimate will be established as the current baseline estimate for the program. Prior to adoption of the revised business plan estimate, the estimate will be reconciled to the previous business plan estimate.

Subsequent to the adoption of the baseline estimate all revisions to the baseline estimate as a result of configuration changes resulting from changes to alignment, development of more detailed plans, or actual bid costs will be tracked and approved through the Authority's change management procedure. The current baseline estimate together with all approved changes will be the basis by which the revised business plan estimate is reconciled.”²

The Initial Construction Segment, when complete, will not be ready for service

The 2012 (and 2014) business plans had estimates for the “Initial Construction Segment” (ICS), which were used to establish the initial budget for Central Valley construction.³ They included allowances for environmental mitigation, program and construction management, final engineering design and agency costs, but the scope of the work was only for bare-bones civil infrastructure.

The estimates did not (and still do not) include funds for electrification, stations, signaling, positive train control, sound walls, passing tracks, maintenance facilities, and trains. Most of these would be required to run high speed rail trains if the intention is to use what is being constructed as a **“test track.”** Even if the tracks are used by Amtrak, significant additional infrastructure would have to be added, which would likely cost more than the \$108 million reserve.

The Authority has not yet determined what will happen with the infrastructure in the Central Valley once complete. Hopefully, this issue will be addressed in the upcoming Business Plan. Until then, it is important to understand that ***further investment will be required to make the tracks useable.***

Costs of the “Initial Construction Segment” (ICS) are higher than initially estimated

The Authority has defended the decision to re-use the 2012 Business Plan capital cost estimates in the 2014 Business Plan. They point to aggressive construction bids to give comfort to the public and the Legislature that the project can be completed at or under original projections.

² Report Pg. 16 of CAHSR Risk Management Plan submitted for SB 1029 in June 2013

http://www.hsr.ca.gov/docs/about/legislative_affairs/Final_June_5_Risk_Management_Report.pdf

³ Exhibit A, received by CARRD through a Public Records Act request. This does not include inflation adjustments

Here are our main points of concern:

1. In this case, construction bids and construction estimates are not (and have never been) apples-to-apples comparison.
2. There is no public document that incorporates, tracks and forecasts all relevant costs for the ICS project, relative to funding and baseline estimates in the 2012 (and/or 2014) business plans (a minimum standard for mega-project management).
3. Our comprehensive tally of ICS costs (exhibit I) shows the \$5.8 billion project now closer to \$7 billion

1. Construction bids and construction estimates are not apples-to-apples comparison

The committee report concludes that the Authority has overestimated costs, based on a comparison of Authority actual and predicted construction contract bids. Unfortunately, the question about whether costs are higher or lower than forecasted is actually quite difficult to answer. The estimates have never been reconciled back to the original figures and the methodology used to categorize costs has changed over the years.

In the 2012 Business Plan, the Authority anticipated issuing fixed price design-build construction contracts that would include all of the work required for the civil construction of high speed rail tracks in the Central Valley.

The official engineer's estimates were made at the beginning of each procurement process on this basis. However, due to the complexity of the project, plans changed. Limited available information about ground conditions/existing utilities as well as delays in completing agreements with third parties such as the freight railroads and utility companies resulted in a **significant amount of the work being segmented into multiple contracts with multiple vendors and portions of the work scope were converted from a fixed bid basis to time and materials**. Some of these items are included in the adopted contingencies⁴, but many are separate and known costs. This is a well-understood phenomenon of mega-projects.

In order to provide an accurate comparison, the Authority should have either provided adjusted construction bids that included all relevant contracts OR changed the publicly announced engineer's estimates to reflect the reduced scope of the bids. They did neither, which unsurprisingly has led to a significant amount of confusion.

⁴ The Operations Report prepared monthly for the Finance and Audit committee has a breakdown of what is included in the allocated contingency. Exhibit E has the most recent information.

2. We have not seen a document that incorporates, tracks and forecasts all relevant costs for the ICS project, relative to funding and baseline estimates.

Analysis that ties back to original plans is *de rigueur* for mega-projects. It is no guarantee of a successful project, but the lack of such a document made available to the Legislature, the Authority board and the public is very concerning. The Authority's Finance and Audit committee has significantly increased disclosure of certain types of information, but we have not seen anything that fills this critical need. Project updates for mega-projects get very lengthy, very quickly so rigorous project controls are important from the beginning. A recent, publicly available, [project update for the San Francisco Central Subway project](#) is 113 pages long, with a similar sized oversight report, that are themselves summaries of other data.

In a recent article about mega-projects, the global management consulting firm McKinsey & Company highlighted this specific issue:

*"Distressed projects have another thing in common: they lack adequate controls. Specifically, they do not have robust risk-analysis or risk-management protocols and do not provide timely reporting on progress relative to budgets and timelines. The data used to report on project progress are typically outdated (as they generally rely on payments to contractors rather than on actual work performed) and not aligned with the true progress of the project. In addition, baselines get adjusted time and again, and contractors and owners use different metrics to measure progress. It is problematic when there are multiple estimates of the cost and time performance of the project relative to the baseline, which means there is no common understanding of performance. This limits the partners' ability to figure out how to accelerate project delivery and control cost overruns."*⁵ (NB:highlight added)

The Authority's project tracking to date has failed to offer a comprehensive document that adequately serves to provide a common understanding of performance or indicate whether confidence in cost containment is warranted.

3. We estimate that it will cost \$7 billion to build the rail infrastructure in the Central Valley that was originally estimated to be \$5.8 billion.

In 2011, we were concerned about a large disconnect between the official cost estimate for the project and other information which showed much higher costs so we created our own estimate, which is discussed in a *New York Times* article include as Exhibit H.

We have attempted a similar exercise with the costs for the ICS, included in Exhibit I.

Using publicly available documents and recent disclosures about project delays, we created an "apples-to-apples" cost spreadsheet for the project. **This is not designed to be a final word but**

⁵ http://www.mckinsey.com/insights/infrastructure/megaprojects_the_good_the_bad_and_the_better

an illustration of the type of reports this committee should reasonably expect the Authority to provide. It is possible that some items are double-counted, but we know of others that are excluded (completed contracts, for example). We believe it to be a good estimate of what a comprehensive forecast would show.

The official budget and estimate produced by the Authority are derived from calculations made for the 2012 Business Plan. In late 2012, the Authority provided a more detailed breakdown of costs by different geographic segments in [an amendment to the federal grant agreement with the FRA](#).

Later, in a quarterly update to the federal funding plan agreement, there were updated estimates but also changes to categories, making it difficult to compare to the previous version. Since then, **specific line items have been updated with actual bids but there has been no reconciliation to the baseline provided in the 2012 business plan. In addition, there are many very real costs that have not been added to the project budget.**

We have attempted to reconcile the breakdown of costs in December 2012 with our current estimates to understand why the costs are higher now. This is an imprecise exercise, because of a lack of detailed information in the public documents as well as shifting project demarcations but we believe the basic conclusions are useful.

Cost mitigations

- The bid for CP 2-3 incorporated significant design changes that lowered costs
- Construction inflation has been lower than expected

Cost increases

- Consultant costs are higher than forecast due to delays and other challenges, particularly with right of way acquisition
- Utility relocation and freight railroad-related costs were significantly underestimated
- The route was changed in November 2013 to avoid impacting oil well production near Shafter, which would have cost \$268 million to \$945 million to mitigate, which was more than the project contingency⁶

Sources of remaining risk

- Right of way costs. A significant amount of uncertainty remains given the larger than expected number of properties that will be acquired through the eminent domain process
- Additional delays

⁶ [Source: Fresno to Bakersfield Environmental Review, Checkpoint C November 2013](#)

- Designs are still at a very early stage. Required geotechnical studies and environmental re-examinations could require significant changes which the state could be responsible for

NOTE: our estimate is intended to be an apples-to-apples comparison and thus does not include the additional costs required to use the infrastructure as a “test track” for the high speed rail system as described in the 2012 Business Plan. These would be well over \$1 billion based on the Authority’s own estimates. The original cost estimates for the ICS in the 2012 Business Plan (and subsequent 2014 business plan) excluded the price of high speed rail systems such as electrification and signaling, trains, stations and the facilities and equipment required for maintenance.

Future Funding Concerns

The current plan is to use \$3.2 billion of federal grants and \$2.6 billion in state bond funds to pay for construction (assuming the courts permit this). Theoretically, the state could pay for some cost overruns by tapping additional HSR bonds. The \$3.2 billion of federal funds could then be matched by \$3.2 billion in bonds to pay for a \$6.4 billion project. If costs rise above this level, however, additional funds (such as Cap and Trade) must be permanently committed to the project.

Unfortunately, our calculations show that the costs of building a test track in the Central Valley are significantly above \$6.4 billion. We estimate the test track (composed of current ICS cost plus systems/facilities) will likely total more than \$8 billion. This means there will be a requirement of \$4 billion (or more) of matching funds to unlock the equivalent amount of HSR bonds. The state would need to contribute \$1 billion+ in cap and trade revenues for Central Valley construction.

There is one additional wrinkle to the math. **About \$1.7 billion of ARRA funds must be spent on construction in the next year and some months, or else be forfeited.** The current funding plan shows that happening only if construction accelerates significantly AND if exclusively federal funds are used to pay construction bills until then. If the state were to forfeit ARRA funds, these too would have to be backfilled by Cap and Trade revenues. In this case, the Cap and Trade revenues would not be available to accelerate construction in the “bookends” as originally planned.

Exhibits submitted with comments

Exhibit A - Excerpt from 2012 Business Plan showing ICS detailed information

Source: Appendix C - Scc Summary Tables Per Ics/Ios Stage

Exhibit B – Excerpt from Funding Contribution Plan from

[FRA Funding Agreement, Amendment 5 December 2012](#) (Source: Pg 97)

Exhibit C - Quarterly Funding Contribution Plan update December 2013

Exhibit D - FRA Funding Contribution Agreement with CAHSRA from September 2015

Exhibit E - Detailed information about project contingencies excerpt from Operations Report
January 2016

Exhibit F - Excerpt from CAHSR Risk Management Report July 2013 (letters and report page 16)*

Exhibit G - CARRD's Summary of Total Environmental Mitigation

Exhibit H - CARRD in NYT with updated costs on HSRA Project

Exhibit I – CARRD estimate of ICS costs and reconciliation to a December 2012 estimate

* (note full report available at:

http://www.hsr.ca.gov/docs/about/legislative_affairs/Final_June_5_Risk_Management_Report.pdf)

Contact:

Elizabeth Alexis

Co-founder, Californians Advocating Responsible Rail Design

info@calhsr.com

(650) 539-8284

www.calhsr.com

Twitter: @calhsr