California High-Speed Rail Peer Review Group

Kome Ajisi	William Ibbs	Fredrick Jordan	Stacey Mortensen	Bijan Sartipi	Beverly Scott	Lou Thompson Chair

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The Honorable Mike McGuire
Senate President Pro Tem
1021 O Street, Suite 8518
Sacramento, CA 95814

The Honorable Robert Rivas
Speaker of the Assembly
1021 O Street, Suite 8330
Sacramento, CA 95814

The Honorable Brian Jones
Senate Republican Leader
1021 O St. Suite 7640
Sacramento, CA 95814

The Honorable James Gallagher
Assembly Republican Leader
State Capitol Building
Room 4740
Sacramento, CA 95814

Dear Honorable Members:

The Peer Review Group is required to report to the Legislature on selected reports and documents published by the California High-Speed Rail Authority. In this letter we provide our comments on the 2024 Draft Business Plan issued by the Authority on February 9, 2024.

Since inception in 2008, the Group has issued 19 letters and members have testified before Legislative and Congressional committees 17 times. All of our documents can be found on the Group's website at www.cahsrprg.com. In our letter and testimony on the 2023 Project Update Report (2023 PUR), we emphasized three themes: 1) project costs, schedules, and ridership estimates are uncertain, and projections are subject to significant risk of deteriorating; 2) the project is underfunded, and its financing is unstable, raising costs and making effective management difficult if not impossible; 3) more legislative oversight is needed to promote better fiscal and policy awareness of the critical issues that the future of the project poses. There is nothing in the 2024 Draft Business Plan to change the thrust of these themes.

Some of the uncertainties we discussed in the 2023 PUR have been clarified. For example, the $3.3 billion the Authority received from the Federal Railroad Administration plugged part of the gap in funding needed for the proposed section from Merced to Bakersfield. Another year of work has brought the construction work, property acquisition and utility relocations in the current 119-mile program closer to completion. The experience the Authority has gained has led it to propose new procurement strategies that are expected to ameliorate some of the problems encountered in the first set of construction packages. There has been progress, but 15 years after project inception, the State is still at the beginning of an immense and technically challenging megaproject impacting many common and often conflicting public and private interests. The experience and progress so far should be weighed against the manifest challenges ahead.

ASSESSMENT OF THE DRAFT 2024 BUSINESS PLAN

		Medium (P50) Estimates ($ billions)				
		2018 BP	**2020 BP**	**2022 BP**	**2023 PUR**	**2024 BP**
NORTHERN CALIFORNIA						
	San Francisco to San Jose	2.1	2.1	1.7	5.0	5.0
	San Jose to Carlucci Road	13.5	14.2	19.6	19.6	19.6
	Central Valley Wye balance	2.4	2.5	2.2	2.2	2.2
	Other (Design and bookends)	*1.0*	*1.0*	1.0	1.0	1.0
	subtotal	18.9	19.8	24.5	27.9	27.9
CENTRAL VALLEY						
	Merced to Madera		3.7	2.3	5.9	5.9
	Madera to Poplar Ave.	13.7	12.4	13.9	17.8	17.8
	Poplar Ave to Bakersfield			1.3	4.1	4.1
	Other (Shops, Trainsets, etc)	2.2	1.8	3.5	3.7	3.7
	subtotal	15.9	17.8	21.0	31.5	31.5
SOUTHERN CALIFORNIA						
	Bakersfield to Palmdale	16.3	16.3	18.4	17.1	17.1
	Palmdale to Burbank	17.5	17.5	16.8	16.8	16.8
	Burbank to Los Angeles	1.5	1.5	2.9	2.9	2.9
	Los Angeles to Anaheim	3.6	3.6	2.9	2.9	2.9
	Other (Design and bookends)			0.4	0.9	0.9
	subtotal	39.0	39.0	41.4	40.7	40.7
PROGRAM WIDE						
	Program Wide	4.3	4.3	5.1	6.2	6.2
TOTAL		78.1	81.0	92.1	106.2	106.2

Project costs. The table above is an estimate because the numbers for prior years are not on a consistent basis. It shows that project costs have risen in every Business Plan, with no clear end in sight. Overall project costs (P50 level) have grown by about 15 percent since the 2022 Business Plan. This does not tell the entire story, however, as the costs of the Southern California section have not materially changed in the six years since the 2018 Business Plan.

A second issue is that most of the project cost estimates are not based on actual bids but are instead supported by various degrees of design completion, usually 30 percent or less. This is true both for the type of civil works (property acquisition, utility relocation and large viaducts) that are not yet started but that the Authority has experience with and, more important, for major elements (electrification, signaling, tunneling, and rolling stock) where there is no experience at all. For example, no bids have been received on the added civil works between Merced and Madera (33 miles) and between Poplar Avenue and Bakersfield (19 miles), which will amount to about $5.4 billion. There are also no bids at all on most of the work outside the Central Valley (323 miles), which is over 70 percent of the Phase I cost.

		Original Contract Price	Current Contract Amount	Percent Current Overrun	Award Date	Original Completion Date	Current Forecast Completion Date	Completion Delay
		$ billions	$ billions	%	Mo-Yr	Mo-Yr	Mo-Yr	Years/Mos
CP 1	32 Mi Madera to Fresno	1.023	3.613	253.2	Aug -13	Mar-18	Nov-26	6/7
CP 2-3	65 Mi. Fresno to near Kern co. Line	1.365	3.225	136.3	June-15	Aug-19	May-26	6/9
CP 4	22 Mi Near Kern Co. Line to Poplar Ave	0.444	0.783	76.4	Feb-16	Jun-19	Jan-24	4/7
SR-99*	Relocate SR 99 in Fresno	0.23	0.296	28.7	Feb-13	Jun-19	Dec-21	2/6
Total		3.062	7.917	158.6				

The current contract values for Construction Package One (CP 1), CP2/3, CP4 and the State Road 99 relocation are 158 percent higher than the original award values, up from a 97 percent increase a year ago. The Phase I system cost (P50) level grew from $81 billion in the 2012 Business Plan to $92 billion in the 2022 Business Plan and to $106 billion in the Draft 2024 Business Plan. This is a 31 percent increase from 2020 to 2024 (in YOE $), and a 15 percent increase from 2022 to 2024. While this does not differ greatly from experience with other megaprojects, it does not lend much confidence to projections of future performance.

To be fair to current Authority management, CP1, CP2-3, and CP4 were early contracts awarded in a hurry without adequate preparation and using a method of management (Design/Build) that the Authority may not be using in future contracting. With the benefit of experience and a strengthened construction management team, the Authority has a better handle on project sequencing (e.g. acquire the right-of-way before commencing construction) and on the appropriate forms of contracting, so the extreme experience shown above may not recur. With this acknowledged, it will be some years before we can conclude that the Authority's construction problems on the project are under control.

Schedules. The table above shows that the construction projects underway so far have experienced delays of between 2 years 6 months and 6 years 9 months (a weighted average of 6 years 3 months). Completion of the Merced to Bakersfield section is now scheduled between 2030 and 2033, but this assumes that future contracts will come closer to meeting projections than past contracts have. There is no longer a projected completion date for the full Phase I system because there is no funding on which to base a credible schedule.

Ridership. Demand forecasts have fallen. The forecast ridership for 2040 in the 2009 Business Plan was 41 million. In the 2012 Business Plan it was 37 million, in the 2022 Business Plan it was 38.6 million, and in the Draft 2024 Business Plan it is now foreseen as 28.4 million. These changes have come about partly because of a change in the model used to forecast ridership and partly because of changes in the economic and demographic factors that generate ridership.

To put the projections in perspective, the Authority states (pg. 11) "When the project is extended into northern California and Silicon Valley from the Central Valley, ridership is anticipated to jump to more than 12 million riders annually, roughly the equivalent of the current Northeast Corridor intercity service on the East Coast. When operational between Los Angeles and San Francisco, California's high-speed rail service is projected to carry roughly 29 million riders, almost 2.5 times the current ridership of the Northeast corridor intercity service." The population served in the Northeast Corridor between Washington, DC and Boston is roughly 4 times that of San Francisco to Bakersfield and 60 percent greater than San Francisco to Anaheim, and all the major eastern cities have well-developed mass transit systems and airline competition, except for Washington, DC to Boston, is not dominant. Though we acknowledge that the operations in California between San Jose and Burbank will be at higher speed than in the Northeast, we believe that questions about the accuracy of the models will remain until demand is proven. If these forecasts are not borne out in practice, the impact on the performance of the Merced to Bakersfield operations and on San Francisco to Bakersfield could be significant.

Inflation. The impact of inflation has been significant. The values used are based on the best available official sources, but necessarily require forecasts of events that are hard to predict. In particular, the estimates for the Southern California segments of the project, approximately 41 percent of the total cost of Phase I, have not materially changed since 2018. Re-estimating them will clearly add billions of dollars to the estimates of project cost.

The Memorandum of Understanding (MOU) of November 2020, among CalSTA, the Authority and the San Joaquin Joint Powers Authority (SJJPA) was a necessary step, but little has been done since to assign planning and funding responsibilities for construction in the Merced and Madera stations. The much more complex high-speed rail operating agreement among CalSTA, the Authority and SJJPA has also not been concluded, which is a matter of concern as the viability of the interim operation of the Central Valley service depends on the way service is determined and costs are managed, computed, and assigned among the parties. The Authority should foster intensive, ongoing consultations with SJJPA and the State to ensure the best balance of costs and service concepts based on SJJPA's operating expertise.

The terms of Proposition 1A prohibit the Authority from generating deficits, so **all** of its costs must be covered by SJJPA, presumably through some form of cost-reimbursable lease. If those costs are higher than expected, as is likely to be the case for the operation and maintenance of 220 mph rolling stock and maintenance of the highly precise tracks capable of 220 mph service, and if demand and revenue do not reach the levels projected (see discussion above), the initial burden would fall on SJJPA. SJJPA would certainly have to transfer that burden directly to CalSTA and thus to the State budget. The operations planning discussion on pages 35 and 36 lays out a conceptual path forward but is probably too slow given that the eventual outcome may interact with near-term decisions.

LinkUS. We note with dismay the news (pg. 46) that the LinkUS project has encountered a "significant budget shortfall." LinkUS is intended to create a direct routing through Los Angeles Union Station, and is one of the elements, along with electrification of Caltrain (to be finished in 2024), of greatest and most immediate benefit to local rail passenger services as well as high-speed services. We urge the Authority, LA Metro, the State and the Legislature to work together in remedying the shortfall before issuance of the 2025 PUR.

New federal money. The total award target of $8 billion in new federal grant funding is speculative because the total potential federal "pot" has many claimants. While California did recently receive an additional $3.3 billion in federal grants (and that is good news) and will surely receive some of the remaining money, the outcome is unpredictable, especially year-to-year. More important, we join the Authority in re-emphasizing the fact that this kind of unreliable and fluctuating, year-to-year funding is not compatible with the stable and predictable funding that the management of a large infrastructure project must have.

"Mind the gap." The unfunded gap between identified credible sources of funding, on the one hand, and project costs on the other continues to grow. In the early years of the project, the Authority argued that state funds of $9 billion would be combined with federal, local and private sources to finance the project in roughly one-third proportions. The 2009 Business Plan even argued that there would be no need for state funding beyond the $9 billion in Prop 1A funding. Since then, the gap has grown with every Business Plan. This is partly because potential private investors have said that private involvement must await system completion and several years of operation to demonstrate actual demand and operating costs. More important, neither the federal contribution nor state (or local) funding have kept pace with rising project costs.

The 2024 Draft Business Plan now shows that for the Merced to Bakersfield section the **unfunded gap (P65) could be up to $6.7 billion**, including the recent $3.3 billion in federal funding. Most of this gap might be closed by winning the hoped-for $4.7 billion in added federal funds and by assuming an average of $1.25 billion annually in Cap-and-Trade receipts rather than the $1.0 billion as currently assumed. Crucially, though, this also assumes that the estimates for the remaining construction as well as for electrification, signaling, rolling stock and stations will prove correct. More important, the 2024 Draft Business Plan shows a **Phase I unfunded gap (P65) of $93 billion to $99 billion**, again depending on success with meeting the target for additional federal grants and receipts from Cap-and-Trade funding.

The dilemma. The dilemma the project now poses is that, given the expected cost increases, delays, and demand decreases for the Merced to Bakersfield segment, there are few who would argue that completing a complex, high-speed section, by itself, at a cost of up to $35 billion, can be justified. Rather, it would make sense only in the context of a commitment to building the complete Phase I system. At the same time, completing the full Phase I system poses a growing financial challenge for the State because the funding gap is already large, and costs have been increasing faster than identifiable potential financing while forecast ridership has fallen. *There is no existing federal or state program that would fill this gap, either as to size or stability.*

CONSIDERATIONS FOR THE LEGISLATURE

In our letter discussing the 2023 PUR we noted that the full Phase I system will cost at least three times as much, will take 15-20 years longer, will not meet the trip times specified and will carry only about 70 percent of the passengers – far short of the promises when Proposition 1A was passed. This has not changed in the 2024 Draft Business Plan. Given that there will be many large claims on the State's budgets in the coming decades, we suggested that the Legislature might want to commission an **independent** review of the economic and financial justification for the project, including the ability to operate without subsidy as required by Proposition 1A, before recommitting to the full Phase I system. *We continue to urge that this be done.*

We also suggested that the Legislature might want to:

- Request that the selection and appointment of the Inspector General (OIG) be given high priority. *We note with satisfaction that the IG has been appointed.*
- Request the Authority to issue updated dashboard information in the format used for the ARRA dashboards so that the cost and schedule experience of awarded contracts can be easily evaluated and updated. *We fully share the IG's concern (pg. 114) that project costs and cost updates be published in a format that clearly identifies which costs have been updated and uses a consistent and comparable basis for the numbers presented. Current presentations are complex and difficult to compare with earlier results. We do note that the Authority has recently re-started the dashboards in the simplified ARRA format. We expect that this approach will be continued in an appropriate form for all significant future contract packages. We recommend that the dashboards be posted more prominently on the Authority's website rather than being listed under Legislative Affairs.*
- Review the reports by the Authority on the award of all large new contracts (track and systems, rolling stock, stations, and the Merced and Bakersfield extensions) showing the contract value and expected completion time as compared with the 2024 Draft Business Plan's values. *No new contracts have been awarded since the 2023 PUR, but we continue to make this suggestion because performance on the new contracts will be an important precursor of future experience.*
- As proposed by the Authority, limit ("phase") contract awards outside the 119-mile Madera to Poplar Avenue section in accord with actual availability of funding. *The planned contracting approach of limited Notices to Proceed will be helpful in this respect though there are some components, such as rolling stock, that are not amenable to partial contracts.*
- Request development (by LAO or another appropriate agency) of an analysis with options and tradeoffs available to the Legislature for how to fund the potential up to $7 billion gap for completion of the Merced to Bakersfield section and the $93 to $99 billion gap between this section and the remainder of the Phase I system. **It is critical that any funding approach be fully funded and stable and predictable from year to year**. *This has not been done and is ever more important. We cannot emphasize too strongly that lack of action by the Legislature and Governor to identify an adequate and stable source of funding for the*

project is increasing costs and hindering management's control of the project. The Authority discusses this issue at several points (pages vii, xii, 49, 57 and 62). The statement on page 49: "No megaproject that will take years to construct and is built to operate for decades can be fully realized with its only ongoing funding source ending in 2030" is particularly relevant. We agree fully.

- Request the Authority to assess changes that could be made to reduce costs in the Merced to Bakersfield section pending decision by the Legislature whether to authorize extension outside the Central Valley. An assessment would be useful because the State still has the option to limit the project to a revised form of the Merced to Bakersfield section if funds run short or if the evaluation of Phase I is unfavorable. *This has not been done. If the Authority awards contracts for rolling stock and for the electrification and signaling in the coming year, it will no longer be relevant as the State will be committed much more firmly to the full, high-speed Merced to Bakersfield service.*
- Request the Authority to identify options for reorganizing the project into more manageable parts. For example, create a separate agency (or designate Caltrans) to award and manage tunnel construction to meet specifications set by the authority. *This has not been done.*
- Request the Authority to assess the current staffing and organizational structure of the Authority to determine if the staffing level and organizational structure match future project requirements, given possible changes in delivery systems, program schedule (including more concurrency of projects), funding conditions and other circumstances. *The Authority has made progress in this regard. The Authority's staffing may be adequate for near-term needs.*
- Commission an **independent** study of the experience of the project and the lessons the State should learn from this (and other recent mega-projects) that must be applied to future megaprojects the State undertakes or supports. *This has not been done. We continue to argue that it could have an important impact on future projects.*

We would like to add a request for the Legislature's consideration. Over the past five Business Plans, the roles of the LAO and the Peer Review Group have converged. LAO's work has been excellent and their conclusions closely parallel ours. The Senate and Assembly transportation staff are unusually experienced and competent, and we have consistently concurred with their summary papers. The creation of the OIG adds another voice to the discussion. The Group has attempted to cooperate closely with all of these, and we believe their work is of great value. The question is what, if any, value the Group can add to the work of these well-staffed and professional agencies. We would appreciate any guidance the Legislature may have.

Please let me know if the Group can provide further information or answer any questions you may have.

Sincerely,

Louis S. Thompson
Chair, California High-Speed Rail Peer Review Group

cc: Hon. Dave Cortesi, Chair, Senate Committee on Transportation
Hon. Roger W. Niello, Vice Chair, Senate Committee on Transportation
Hon. Lori Wilson, Chair, Assembly Transportation Committee
Hon. Vince Fong, Vice Chair, Assembly Transportation Committee
Toks Omishakin, Secretary, California State Transportation Agency
Gabriel Petek, State Legislative Analyst
Samuel Assefa, Director, Governor's Office of Planning and Research
Tom Richards, Chairman, California High-Speed Rail Authority
Brian Kelly, Chief Executive Officer, California High-Speed Rail Authority
Members, California High-Speed Rail Peer Review Group