California High-Speed Rail Peer Review Group

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The Honorable Toni G. Atkins
Senate President Pro Tem
State Capitol Building
Room 205
Sacramento, CA 95814

The Honorable Anthony Rendon
Speaker of the Assembly
State Capitol Building
Room 219
Sacramento, CA 95814

The Honorable Shannon Grove
Senate Republican Leader
State Capitol Building
Room 305
Sacramento, CA 95814

The Honorable Marie Waldron
Assembly Republican Leader
State Capitol Building
Room 3104
Sacramento, CA 95814

Dear Honorable Members:

The Peer Review Group (PRG) is required by law to report to the Legislature on its assessment of the Business Plans issued by the California High-Speed Rail Authority. This letter fulfills that requirement with respect to the "2020 Business Plan: Delivering the Vision" issued by the Authority on February 12, 2020 (the Business Plan). In addition, the Authority issued reports produced by KPMG entitled "California High-Speed Rail Merced to Bakersfield Business Case Study," dated February 2020 (the KPMG Business Case Study), and by the Early Train Operator (ETO) entitled "Side-by-Side Study, Quantitative Report, February 8, 2020" (the Side-by-Side Study). The comments below reflect the contents of those reports as well. The Legislature also has available a report by the Legislative Analyst's Office (LAO), "Review of the Draft 2020 High-Speed Rail Business Plan." This report deserves careful review.

The Peer Review Group received the draft 2020 Business Plan and began its review prior to the extremely disruptive public health emergency caused by the Covid-19 virus. We submit this report in compliance with legislative requirements though the enormity of the social and economic disruption may result in huge uncertainty regarding the future of the high speed rail program regarding its schedule, costs, and priorities in ways that we cannot yet assess. Cap and trade revenues, construction schedules, resolutions of pending litigation, federal stimulus packages, and state priorities over the coming months are all yet to be addressed and will almost certainly require that the 2020 Business Plan be reassessed. Our substantive comments document our views prior to the current emergency. The Peer Review Group recognizes the impo1iance of responding appropriately as required by events yet to occur. We offer to be of service to the extent that our participation can assist in addressing any changes in the planning due to emergency conditions.

In this letter we focus on the major points for legislative consideration. We will send more detailed comments separately to the Authority on the three studies.

The 2020 Business Plan reviews the history of the project to date and recommends completion of a fully electrified, high-speed link from Merced to Bakersfield operating at 180 miles per hour. This entails completion of the 119-mile Madera to Poplar Avenue segment already underway along with an added 19-mile segment from Poplar Avenue into Bakersfield and a 33-mile segment from Merced to Madera. The entire 171-mile length would be electrified, and high-speed electric trainsets would be acquired to serve the section. Existing Altamont Corridor Express (ACE) and San Joaquin services would be connected to the high-speed link with coordinated schedules at a proposed cross-platform transfer station in Merced. The Business Plan states that the Authority's portion can be funded within the current budget and projected financing sources. Based on conclusions in the Side-by-Side Study, the Business Plan argues that the total operating subsidy paid by the state and local authorities to operate the combined services could be reduced below the level they would face otherwise because of increased demand generated by the improved speeds from Merced to Bakersfield.

Capital costs in the Business Plan are largely based on information provided in the 2019 Project Update Report and include only limited new information relating to the proposed added links. In particular, cost estimates for the parts of the system in Phase I but outside the Merced to Bakersfield section have been adjusted for cost inflation but have otherwise not been updated to the same standards as the parts within the section. Full project costs are not scheduled to be comprehensively updated until the 2021 Project Update Report.

The KPMG Business Case Study reviews the proposal emerging from the Side-by-Side Study and highlights the issues that will need to be addressed if the Business Plan proposal is adopted. The PRO finds the KPMG Business Case Study to be a well prepared and extremely informative document that deserves careful review.

The three studies make it clear that the Legislature faces critical decisions on the future of the project. Currently planned actions by the Authority - award of the Trainset contract and award of an integrated Track and Systems agreement, both scheduled for Board approval in late 2020 -will set the course of the project for the foreseeable future. When these contracts are awarded, completion of the 171-mile Madera to Bakersfield section, and at least the next five years of the project, will be committed.

As we have discussed in previous letters and testimony, the Legislature has alternatives to the Authority's proposal. One proposed alternative that has been raised would be to limit spending in the Central Valley to the work needed to retain the 2.6 billion in American Recovery and Reinvestment Act of2009 (ARRA) money. This would essentially include completion without electrification of the 119-mile section of tracks between Madera and Poplar Avenue by the end of2022, while shifting the funds made available by the reduction in construction costs to the commuter systems in southern and northern California. This issue is discussed in more detail in the LAO report cited above. We do not discuss it further in this letter because there is no specific plan put forward.

THE AUTHORITY'S PLAN

As the Authority recommends, completion of the proposed 171 mile fully electrified system from Merced to Bakersfield would demonstrate a modern electrified high-speed rail system and would give the first experience with actual ridership and revenue (as opposed to demand and operating cost forecasts based on models) for high-speed rail in the state. The service would bring immediate benefits to the Central Valley and significantly improve the rail connections from Sacramento and the East Bay area to Bakersfield. It would keep the high-speed rail concept alive and preserve future options for extensions to San Francisco and Los Angeles/Anaheim if new sources of financing become available. It would provide productive use of the trainsets and track before service to Silicon Valley can begin and would facilitate full testing of the new trainsets and track systems. Finally, the experience gained in construction planning and management would build the knowledge base of the Authority and its consultants and could add credibility to future cost and schedule plans so that a future proposal to extend lines north or south could be based on demonstrated project management competence by the Authority.

ISSUES IN THE AUTHORITY'S PLAN

Although the Authority's plan is based on analysis by the ETO and KPMG, the demand and operating cost forecasts for the interim service are necessarily not based on the same quality of analysis as the forecasts for the full system presented in prior Business Plans. They are also based on a number of assumptions including the assumption that reliability of the connecting services will be far better than the current 75 percent on-time performance of the San Joaquin services. As a result, the plans still have a significant range of uncertainty.

The plan critically requires that the high-speed line be "leased" to another operator, potentially either a state or local agency such as Cal ST A or the San Joaquin Joint Powers Authority. Proposition A1 prohibits the Authority from subsidizing operations, so the terms of the lease may need to require that the lessee pay full compensation for all of the Authority's costs of operating and maintaining the line and trainsets The terms for this lease have not been defined and there is no clear expression of commitment from, or negotiation of terms with, any of the potential lessors. Moreover, since design and operating decisions are being made by the

Authority in advance of full concurrence and commitment of the lessee/operator(s), it is possible that the costs and revenues of the interim system will be different than expected. Estimates of costs are preliminary and could turn out to be higher than lessors are able or willing to pay. For these reasons, it may be difficult to implement an interim arrangement that does not violate the terms of Proposition 1 A. The approach could also lead to litigation - and project delay - over whether it is legal under the no-subsidy strictures of Proposition 1 A.

Success of the proposed interim operation is also dependent on action by the state and local authorities to plan and fund construction of connecting lines and a station in Merced that will integrate ACE and the San Joaquin services seamlessly with the connecting high-speed service. The required plans and commitments to construct and operate do not yet exist and the existing services do not operate at the high level of reliability assumed in the plan for interim service. Unless the connecting service is as reliable as envisioned, the demand could fall below estimates and the potential support could consequently be higher. Because the reliability of connecting services is a significant factor, the Authority should more explicitly indicate the impact on demand and subsidy of different levels of on-time performance by the connecting carriers.

Completion of the added links from Merced to Madera and from Poplar Avenue to Bakersfield and acquisition of the high-speed trainsets may strain the Authority's managerial and financial capability to meet the basic ARRA agreement requirements. Completing the ARRA requirements within the 2022 deadline is already subject to question as it requires a dramatic increase in the construction spending now underway. According to the Authority's dashboard report of November 30, 2019, average spending to meet the ARRA schedule will have to average \$184.6 million/month as compared with \$112.3 million/month in the latest quarter and the previous 12-month average of\$76.1 million/month. Although the spending rate has increased in recent quarters, it is still only 60 percent of the required level, and each month of shortfall makes eventual completion on schedule even more challenging.

Capital cost estimates for the added links to Merced and Bakersfield are not as well developed as those for the existing 119-mile segment, nor have there yet been any bids for the trainsets or the required electrification, signaling and trackwork covered by the Track and Systems contract. Further cost increases could threaten completion of the planned work within existing resources. To date, the Authority is projecting a 70 percent increase over the award value of the five construction packages underway so far. These costs are considered to have a "P70" level of confidence, which means that the Authority believes there is a 70 percent probability that the completed costs will fall within the estimate to complete. With the exception of the SR 99 relocation, which is now finished, completion dates are two to three years beyond the date expected when the contracts were awarded. Given this history, the possibility of schedule stretches and increases over budgets for completion of the 171-mile segment is significant.

The Authority believes it has learned lessons from its experience with the initial contracts and intends to apply these lessons to future contracts. There remains a valid question as to how much the experience to date will, or can, reduce uncertainty in future contracts, especially for elements such as electrification, signaling, and trainsets where the Authority has no past experience. Longer term challenges and uncertainties, such as the extremely costly tunneling needed to connect to San Francisco and to the Los Angeles Basin, also remain if extension beyond the Central Valley is to be accomplished.

A potential budget limit would be even more severe if the Authority fails to recover the $929 million in FY 2010 money that the Federal Railroad Administration has already de-obligated. This issue is in litigation and the outcome is not clear, though it is now likely that the litigation will be extended into 2021. If there is significant delay in the award and initiation of the proposed Track and Systems agreement, meeting the ARRA deadline could be endangered and, if the ARRA money is lost or reduced, completion of the proposed 171-mile segment within available resources would be further weakened. The actual funding at risk in a possible federal claw-back of the ARRA money is also not clear though it may not be as large as it appears because a federal claim could be limited to the percentage of the system that has not been completed by the end of2022 rather than an all-or- nothing risk of the federal money. This would also presumably be determined by litigation if the federal position is actively pursued.

The planned Track and Systems agreement would integrate the designs of track, signals and overhead catenary with the trainsets, and potentially also bring greater predictability to maintenance costs of the infrastructure system. The complexity of the agreement may also raise a risk of delay if there are protests, or if the contract terms or costs need to be negotiated before award. The Track and Systems agreement also envisions a 30-year (or longer) maintenance commitment during which changes in scope and schedule and unpredictable operational, economic and technical factors must be accommodated. This has proven difficult in many long-term contracts elsewhere and may challenge the Authority since it depends on many decisions yet to be made.

Awarding the Track and Systems agreement contract and especially the Trainset contract will effectively commit the state to completing the 171-mile segment regardless of what the eventual cost may be. This could require finding new sources of finance should current budgets be overrun. In any case, The Authority has acknowledged that there may be a temporary funds flow timing issue even if current budgets are proven correct.

DECIDING

The Legislature should consider whether completion of the Merced to Bakersfield system would increase the probability of eventually completing the links to San Francisco and Los Angeles/Anaheim, given that added sources of financing will clearly be required if the system is to be extended beyond the Central Valley. It there is a low likelihood that the full system will be completed eventually, the case for the Authority's plan would be weaker and the argument for considering other options would be strengthened. If the Legislature concludes that the project probably will eventually be extended to the north and south, even though additional sources of financing will be required, then the case for the Authority's plan would be stronger.

The only time-limited requirement is completion of the ARRA obligations in order to ensure that the federal funding is not lost. Other than this, the Legislature could take the time it needs before making irrevocable commitments. In particular, the Legislature could request that the Authority pause before awarding the Trainset contract, and possibly the Track and Systems contract, until the state and local agency partners present appropriately developed plans and commitments with respect to the proposed lease of the high-speed infrastructure and the trainsets along with the planning and funding of the required station and cross-platform connection at Merced. The commitment should include estimates of the amounts and shares of capital and operating funding that would be required based on a reasonable range, agreed by all parties, of estimates of the demand and revenue generated by the interim system and it should clearly indicate how service schedules will be integrated and enforced.

The KPMG Business Case study contains on pages 18 and 19 findings that are especially relevant and that should be quoted in full [emphasis added]:

> The Authority and the Board should secure a **sufficient level of commitment** from the SJJP A/SJRRC, Cal ST A and/or other regional partners in the form of a memorandum of understanding **before** making **any** major long-term commitments and operating decisions with regards to Interim Service. Elements of the agreement should at least include:
>
> - Commitments to invest and develop the regional rail connectivity infrastructure up to and around Merced station
> - Agreement on the operational and performance requirements and associated payment terms of the Track and Systems and Trainset contracts including commitment to utilize and pay for assets as they become available on a segment by segment basis for Interim Service
>
> **Prior to signature** of the Track and Systems **and** Trainset contracts, the Authority should:
>
> - Ensure stakeholders, including SJJPA/SJRRC, Cal STA, and/or other regional partners are **formally committed** to Interim Service prior to the execution of additional major contracts ...
> - Include flexibility in the first NTP to allow the Authority to comply with the minimum scope of the federal grant requirements (i.e. plain-line track and deadline) by setting specific delivery milestones and other control points to mitigate the Authority's financial exposure
> - Ensure the design-build civil works contracts are fully aligned with the Track and Systems contract, including any necessary renegotiation and amendment of existing design-build contracts to allow for the delivery and acceptance of 5- mile sections of the civil works and the associated delivery schedule ...
> - Complete the acquisition of **all** ROW for the 119-mile test track.

We recommend that the Authority follow KPMG's advice.

Our previous letters have affirmed the role for high-speed rail within a properly developed plan for rail passenger service in California. This should be based partly on the time saving, convenience and cost of rail service, and partly on realistic values for the public benefits that rail can generate by lowering air and highway congestion and noise impacts, pollution reduction, reduction in carbon emissions, improved safety, increased access to employment and focusing of travel and development into areas where environmental impact can be controlled. This would have to be based on the willingness of the private sector operator and state and local governments to share appropriately in investment, operating income, and risk. It would also require stable and adequate financing to construct and operate the system.

Much remains to be done to get to this point. In considering the future of the high-speed rail project, the Legislature should review the status of the passenger rail sections of the State Rail Plan to ensure that the Authority, the state and involved local officials share a common understanding of what will be required of each. This is particularly important because the Authority's interim operating plan is conditioned on active roles for the state and local authorities that operate ACE and the San Joaquin services and because longer-term plans for Phase I are dependent on cooperative, blended operations with Caltrain and Metrolink.

Also critical is the continuing. and damaging, impact of inadequate, unstable funding. From the project's beginning, the Authority has struggled to match optimistic initial visions and promises with escalating cost estimates constrained within a financing plan in which the state alone would pay only one-third of the total investment cost. The other two-thirds were supposed to come from federal and private sources that have not materialized. Ensuing analysis has confirmed that private investment can be mobilized only after the system has been completed and actual demand and operating cost have been demonstrated: this means that construction of the system must be financed from public sources before significant private investment will be feasible.

We are unable to assess the impact of the Covid-19 crisis on finances from all sources, but it is likely to be significant. State resources will clearly be challenged. Federal resources may increase to combat the economic impact of the crisis as happened in 2008, but such assistance would likely be conditioned on a very rapid increase in cash outlays, something that the Authority would be challenged to do effectively.

The initial goal of a completed system from San Francisco to Los Angeles and Anaheim has had to contract by painful stages, first to a proposal to connect the Central Valley to the Los Angeles Basin (with a delayed connection to San Francisco), then to a proposal to connect the Central Valley to San Francisco (with a delayed connection to Los Angeles), and now to the current proposal to connect Merced to Bakersfield with no clear capability or commitment to extend either no11h or south. Given the uncertainties in cost estimates for electrification and trackwork and the threat to the federal financing, the Authority may have difficulty completing even this segment without further support from the state.

Some of the project's problems have been due to the kind of "optimism bias" that always affects public mega-projects. As a result, as the project has proceeded, much of the progress to date has been painful and hard-won: much more remains to be learned, especially about the construction and operating costs of the trainsets, electrification, signaling, and tunneling. Actual experience that will clearly demonstrate travel demand and operating costs and validate the demand forecasts and operating economics is also far in the future. Although the Authority believes it has learned from its experience, it has yet to demonstrate that it can actually manage and complete its complex planning and construction commitments within schedule and budget.

If the project is to proceed, the Legislature should assess the impact that inadequate and unpredictable financing has had and will continue to have on the project. It is not possible to manage a project of this size effectively when project scope is continually changing. Contracts cannot be properly scaled due to unpredictable funding and contractors charge a risk premium as a result. It is hard to hire and retain competent and motivated staff when the future is not secure. Commitment of a share of the carbon trading income was a valuable improvement to available funding, but carbon trading revenues are not fully predictable, and the Authority cannot issue bonds against this income stream except with an unusually high-risk premium.

If the Legislature decides to support the Authority's 2020 Business Plan proposal, it should also consider now how the next extension either to the north or south will have to be financed. In past testimony and letters, we have discussed a range of funding options, from guaranteeing the Authority's share of carbon trading revenues to consideration of potential tax or user charge revenue streams. Some combination of these could put the project on a firmer basis. Until this issue is addressed, the future project scope and schedule cannot be stabilized. The financing issue can be postponed, at an increasing cost, but it cannot be avoided indefinitely.

Please let me know if you have any questions about the issues raised in this letter. As stated above, we remain ready to provide further comment as the outcome of the Covid-19 crisis evolves.

Sincerely,

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

cc:
Hon. Jim Beall, Chair, Senate Committee on Transportation
Hon. Patricia C. Bates, Vice Chair, Senate Committee on Transportation
Hon. Jim Frazier, Chair, Assembly Transportation Committee
Hon. Vince Fong, Vice Chair, Assembly Transportation Committee
David S. Kim, Secretary, California State Transportation Agency
Gabriel Petek, State Legislative Analyst
Kate Gordon, Director, Governor's Office of Planning and Research
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