SUMMARY AND RECOMMENDATIONS

Following the May 11, 2011 hearing of the Senate Select Committee on high-speed rail, the Peer Review Group was asked to review and comment on the LAO's May 10, 2011 report. While we want to be responsive to the Legislature within the parameters of our statutory responsibility, we also are aware that our comments, no matter how well-intended, are usually viewed as critical of the High-Speed Rail project. The members of the Peer Review Group support the development of high-speed rail in California. In discharging our responsibilities, our input has been focused on constructive suggestions and recommendations that are intended to improve the project and its chances for success. It is in this context that we offer the following comments.

After review and discussion of the LAO Report, we agree that the project is truly at a "Critical Juncture" posing perhaps the last available opportunity for the Legislature and Governor to ensure that the project is on the right course before a commitment to construction is irrevocable. We recommend that the Legislature emphasize the importance of filing the 2011 Business Plan in October, 2011, as planned. The plan should contain the best available answers to a number of requirements, including:

- **A proposed business model.** Who are the parties to the project and what roles will they play? This should include ownership, maintenance and management of infrastructure as well as rolling stock. It should also include an estimate of the financial role each party will play and, if the local, State and Federal Governments are expected to provide uncompensated investment, how much and when;
- **Updated cost estimates**, including allowances for uncertainty and for as yet undefined segments;
- **A well-defined financial plan**, containing confirmed commitments for the anticipated required funding amounts and sources based on existing programs and identification of potential future sources along with analysis of the viability of those sources. If significant private or local money is involved, the amounts should be clearly related to the role each party is to play;
- **Updated ridership, revenue, operations cost and maintenance cost estimates**. This should include estimates of ridership, revenue, operations and maintenance costs (including pricing assumptions) and the range of uncertainty in the estimates that statistical analysis of the data requires. The demand estimates should also support an updated evaluation of the public benefits (consumer surplus, safety, emissions, CO_2 reduction, congestion, etc.) that the project is expected to generate;
- **The risks in undertaking the project** – investment and operating – should be clearly defined and estimated, and the degree of risk of each party should be defined along with an indication that the parties understand and accept the risks assigned to them.

We understand the LAO's observation that, if the project receives no funding beyond the initial Federal contribution, starting the project wholly within the Central Valley poses a higher risk to the State than an approach that does some upgrading at the ends in addition to new construction in the middle. Given current circumstances at the federal level, a case can be made for a request to the Obama Administration by the Authority and the State for more flexibility to apply funding in a way that reduces the State's risk if no addition Federal funding can be confidently expected. If such an application is made, it should also be accompanied by an intensified effort by HSRA with local agencies to develop joint, transparent and acceptable programs for phased development on the local lines. This might result in a "blended" approach that allocates enough funding for significant improvement on the ends while retaining the majority of the funding in the Central Valley.

Pending completion of the 2011 Business Plan addressing the issues discussed above, HSRA **should** proceed with design and planning efforts as needed and not be restricted solely to the $7 million in administrative spending as proposed by the LAO Report. This will avoid unnecessary disruption in project timing. However, HSRA **should not initiate any obligations for construction** until the Legislature and Governor have made an expedited review of the 2011 Business Plan and agreed on a course of action. This would be the best point to address the future management structure and organization of the HSRA.

DISCUSSION

During a hearing before the California State Senate Transportation and Housing Committee on May 11, 2011, Will Kempton, the Chairman of the Peer Review Group, was asked to provide the Group's comments on a report issued by the Legislative Analyst's Office (LAO) entitled "High-Speed Rail Is at a Critical Juncture."[1] Although the legislated mandate of the Group is to comment on materials developed by the High-Speed Rail Authority and not on reports by other Agencies, we will provide comments on the major issues raised by the LAO Report as requested by the legislative committee.

We want to emphasize the importance of "**Critical Juncture**" in the title of the report. It is no exaggeration to say that the next few months may offer the last chance for the Governor and Legislature to assess and influence the overall plans for the project. Although over $250 million has been spent on planning and preliminary design, nothing has been acquired and no commitments have been made for actual construction. That is about to change. Within the next year, the Authority will make large commitments of State and Federal money on a schedule that will significantly raise the cost of any future changes. If there is ever going to be a final assessment and confirmation of the future and structure of the HSR program, **now** is the time to do it.

There is a sense of urgency in the LAO's statement: "Our review indicates that the Legislature lacks a detailed business plan to guide multi-billion dollar decisions it must make about high-speed rail projects. Such a plan would include, at a minimum, updated cost estimates, anticipated funding amounts and sources adjusted to reflect current political and economic realities, a range of forecasted ridership and revenue estimates, a proposed business model, and a discussion of risks the project may encounter."[2] **The Peer Review Group agrees with the statement and has said so in our November and April letters.[3]**

It is worthwhile to discuss some of the implications of this statement and thereby summarize our previously expressed concerns:

- *A proposed business model.* In previous letters we have highlighted this critical issue because the business model brings together the sources of money, allocation of costs and benefits, and

---

[1] Legislative Analyst's Office, "High-Speed Rail Is at a Critical Juncture," May 10, 2011 [called "LAO Report"]

[2] LAO Report, pg 11.

[3] see http://www.cahsrprg.com/documents.html

apportionment of risks. We fully understand that the history of the project has made development of a final business plan difficult. Without a more fully developed business model, though, it is impossible to ensure that each of the parties or agencies involved has in fact understood and accepted the role assigned to it. For example, the Authority's preliminary project approach would have the Authority award Design/Build contracts for the infrastructure (track, signaling, electrification and many stations) while subsequently determining an operating arrangement for HSR services and agreeing on operating rights for provision of local commuter services. We do not necessarily disagree with this approach, but we emphasize that it requires the Authority to have available the entire funding needed to complete the system before any revenue is generated and it requires that the Authority have the staff and managerial ability to oversee the contracts, neither of which is true today. More critically, the approach implies, but does not state explicitly, that a significant part, perhaps all, of the Authority's infrastructure investment will not be recovered from fees charged to, or payments from, the operator(s). If this is correct, then **the Authority's measurement of public benefits should be fully developed and carefully reviewed in order to justify the net public outlay.**

- *Updated cost estimates*. The latest construction cost estimates were published in December, 2009,[4] but were developed nearly two years ago. Much has been learned about the project since, some of it unfavorable. Many critical details (for example alignment and scope between San Francisco and San Jose and between Anaheim and LA, and re-consideration of the Grapevine route) remain undecided. In fact, there is **still** no actual experience that validates either the cost estimates or their range of uncertainty. The Group's experience indicates that preliminary cost projections are likely to be optimistic, but we also acknowledge that the Authority might accomplish a lot with value engineering. **The fact remains that the actual cost of the project is still unknown with any degree of confidence but the cost is "trending upward" according to the Authority: an update is urgently needed.**
- *Anticipated funding amounts and sources adjusted to reflect current political and economic realities.* As the Authority itself has emphasized, completion of the program is primarily based on sources of Federal, State, private and local public funding that do not currently exist. Unless the financial condition of the State and the Federal Government change significantly for the better, such sources may well not exist in the foreseeable future. Neither the State nor the Federal Government has given any guarantee of future funding beyond the amounts already allocated. **This poses the clear risk that whatever is started will not be finished and whatever is finished may have only limited utility. In any event, the State may be faced with a limited utility project (albeit partly funded with federal grants) or may need to decide to complete the project using only its own resources if there is no further Federal funding.**
- *A range of forecasted ridership, revenue and operating cost es timates*. The last ridership and revenue estimates were done in the 2008[5] and 2009 Business Plans and they have both been the subject of sustained and continuing criticism. The Authority is now conducting an in-house peer review of the demand forecasts. In addition, the revenue and related demand and operating cost

[4] CA HSRA Report to the Legislature December 2009 ("2009 Business Plan")

[5] CA HSRA, "California High-Speed Train Business Plan, November 2008"

estimates in the two business plans were quite different because of different assumptions about the competitive pricing strategy to be followed by the eventual operator. The Plans also lacked a detailed analysis of competing transportation systems, which is essential to calculating the competitive value of the HSR system and is an essential input to the ridership study. To be fair to the Authority, demand and revenue estimates for a new mode of transport are always uncertain, partly because underlying economic forces (population and income) are inherently hard to predict, and partly because the data needed to do accurate modal split estimates are rarely complete. Even so, **the current demand forecasting review efforts will in all likelihood no t produce a set of estimates that have been fully subjected to review and comment by all interested parties. These efforts will not produce an output that has been thoroughly and transparently vetted by the various outside agencies involved in the project.**

- *Discussion of risks.* There are no risk free "mega-projects." None. The interaction among sheer size, long time frame of construction and operation, uncertainty of underlying economic factors and an inevitable mixture of often conflicting public and private interests guarantees that outcomes will differ from expectations. Perhaps more important, when risks are not fully understood and discussed at the outset, some (or all) of the parties involved will feel deceived when the inevitable problems emerge, eroding the trust and commitment that is always needed to finish a project of this size when problems are encountered. There are manifest risks to this project, some of which are being sharpened by the experience to date: final route selection is incomplete and local opposition emerges when any route approaches finalization; construction cost and schedules are uncertain and subject to upward pressure; demand estimates are in dispute and subject to a significant range of uncertainty that could produce outcomes ranging from financial profit to economic pain; and, full funding to complete the project is not yet available and may not be forthcoming, certainly not on the schedule proposed. In plain language, there are still significant gaps and problems with Plan A, and there is no Plan B. While the Group fully appreciates that risks can never be eliminated and that there is an understandable element of "vision" in the HSR plan, we question whether all of the parties involved fully understand the degree and allocation of the risks. **Whatever else is accomplished before construction commitments begin, it is essential that major risks be defined, clarified, understood, allocated and accepted to the degree possible.**

Against this backdrop, the LAO Report made two general recommendations. **First**, the Legislature should in effect suspend the project, appropriating only about $7 million in administrative costs, while the Authority requests flexibility from FRA on the spending of Federal money and on the choice of an initial construction segment. During this time, the Legislature would await the submission of the 2011 Business Plan in October and would presumably base a decision to go ahead on the results of the submission. **Second**, responsibility for planning and management of the construction of the railway would be shifted to Caltrans and the authority of the HSRA Board would be trimmed accordingly. In addition, membership on the Board overseeing the HSR project would be recomposed to include appointees with specific skills in the issues posed by the HSR project, such as project finance, mega-project design and construction, major heavy rail operations, management of large business organizations and integration of project requirements with public policy considerations.

Suspending the project while awaiting FRA decisions and the 2011 Business Plan

Any decision to slow down project development work must be weighed in the context of FRA directions and requirements placed on available Federal funding. However, there appears to be little to lose and much to be gained by a requirement from the Legislature that the Authority make no commitments to construction until there are answers to the concerns discussed above. In fact, **a consistent message of the Group's letters has been our doubts whether we could render a favorable opinion on an application for use of Prop 1A funding for construction in the absence of these answers. In any event, we understand the approved 2011-2012 budget does not suspend funding for the HSRA.**

Spending ARRA money first and Prop 1A funds later

The prospects for a successful application to FRA for flexibility either in the spending deadline or in the segments to be started first are not clear.[6] The requirement for obligating funds by September 30, 2012, and the spending deadline of September 30, 2017 is fixed by law and FRA lacks authority to grant a delay. It is possible that a proposal to spend Federal money first and State money later will be workable, but the Authority **and the State** will have to submit concrete plans for assuring that the State's share will be guaranteed. Given FRA's experience in Florida, Wisconsin and Ohio, where the Federal money was accepted and then rejected, something more than statements of good intentions will be required.

Starting on the ends rather than in the middle

Reconsidering the decision to start in the Central Valley rather than in the end segments, such as LA-Anaheim or San Francisco-San Jose (the LAO Report also mentioned San Jose-Merced) may also be problematic for the FRA. The original dilemma was that starting on the end segments would have the advantage of yielding permanent benefits in short haul rail passenger services whether or not the project is ultimately completed. This would lower the risk of achieving an incomplete project with little utility, but have the disadvantages that none of these services would demonstrate high-speed intercity rail service at the outset (the objective of FRA), and that local environmental opposition might postpone completion well beyond the 2017 deadline. Clearly neither of the end sections is today sufficiently prepared to submit environmental documents to meet the expenditure deadline of September 2017 required by ARRA and a focused effort will be required to put them in a better position.

By comparison, starting in the Central Valley offers a chance to construct high-speed demonstration track and appears to have less environmental opposition, but would yield an asset of very little value if the project cannot be funded beyond this segment alone. Subsequent analysis has shown that the Central Valley segment would not actually demonstrate high-speed service because it would not be electrified. Even if the segment were electrified, it would have no operational value because the ends of the segment are not electrified and it is impractical to change locomotives once, much less twice. Moreover, without electrification, the highest attainable speeds would be 110 MPH or less and would involve heavy diesel-powered rolling stock that might substantially damage the track when subsequently

[6] On May 25, 2011, Undersecretary for Policy Roy Kienitz informed Mr. van Ark of the Department's preference for starting in the Central Valley and of the legal requirements for spending ARRA money before the end of 2017.

used by HSR equipment. Experience has cast substantial doubt on the assumption that construction would be subject to less environmental opposition than the end segments. Some perspective would be helpful in understanding the relative stakes.

The existing services that would be improved by starting HSR on the San Francisco-San Jose and LA-Anaheim segments are Caltrain (11.6 million passengers and 266.8 million passenger-miles annually),[7] the Pacific Surfliners (2.6 million passengers and 216.1 million passenger-miles), Metrolink (12.2 million passengers and 419.9 million passenger-miles) and the Capitol Corridor (1.6 million passengers and 101.2 million passenger-miles). By comparison, the only existing service in the Central Valley, the San Joaquin, carries about 1.0 million passengers and 139.5 million passenger-miles.[8] Thus, there are slightly more than **28 times** as many **proven** passengers (7.2 times as many passenger-miles) on the end segments as in the Central Valley so that the benefits if the project is not completed beyond the funds currently available would be much greater by starting on the ends rather than the middle.

Two other advantages might be gained by starting some part of the project on the ends. First, actual construction experience would be gained in time to assess the future of the project if costs are significantly higher than current estimates. Second, some experience with the results of demand estimates would be gained and the on-going efforts to improve the existing demand estimates would have some opportunity to take effect before a commitment to the entire project is made. In addition, the investment on the Peninsula could be related to subsequent triggers supporting added capacity as demand meets specified levels.

Phased development

FRA and the Authority were aware of some of these considerations from the beginning and it is not obvious that anything has changed to encourage the FRA to reconsider even though it has the authority to do so. At the very least, **it will be up to the Authority and the State of California** to make a convincing case to the Obama Administration if the question is to be reopened. If, for example, the Authority and the State could show that a more balanced approach to phased development in the Peninsula and LA-Anaheim would both save money and act to reduce local opposition, this might be convincing. Doing so would require that the Authority aggressively seek to work cooperatively and transparently with local agencies to develop joint investment and operating plans that would much more closely align the interests of HSR with local transport. The Authority and the State would also have to provide assurance that they would proceed with the remainder of the project if the end segments are successful, while the Federal Government should likewise commit to acquire more funding at the Federal level.

A blended approach might also be possible in which essential investments would be made at the ends to support the capacity needed for initial operation of HSR trains along with local services in the beginning years of the HSR system while at the same time getting substantial work started in the Central Valley. This might involve some level of investment at each end for electrification and initial capacity while still

[7] Caltrain, 2011 Annual Passenger Counts, April 2011, pgs 6, 14 and 18.
[8] Amtrak, Monthly Performance Report for September 2010, pg A-3.5 and pg C-1.

leaving enough funding in the Central Valley to gain experience with building high-speed track. We acknowledge that an amount spent on each end would not necessarily provide full capacity for the ultimate HSR system: it could, however, if jointly planned, provide the starting capacity for the initial years of operation and would provide much stronger support for the future investment program once initial HSR demand has been demonstrated. In the meantime, it would be of considerable benefit to far more passengers than investment in the Central Valley alone would yield.

The LAO Report makes a reasonable case that the risk to the State of California of partial completion would be greater by starting only in the Central Valley than on the end segments and that the results of an appeal to FRA for a revision of sequencing and spending should be a significant consideration to the Legislature in evaluating the overall risk of the project. Thus, we recommend that the Legislature await the reaction of the Authority and the final position of the Obama Administration on this issue before making a decision to continue or delay project development activities. In addition, we consider the results to be provided in the 2011 Business Plan addressing the issues defined earlier in this report to be an absolutely essential input to a more confident decision of whether to proceed to construction. For these reasons we recommend that commitments to **construction** should not be made until the results of the above issues have been given expedited review by the Governor and the Legislature. At the same time, we believe that funding of on-going design work, planning, and environmental studies as well as acquisition of adequate Authority staff should continue in order not to lose momentum as the review proceeds. A virtual cutoff of funding could force the total demobilization of the consultant teams on the project with the dispersal of key talent that would be difficult to reassemble later if the decision is made to go forward in a timely and cost effective manner.

Changing the HSRA organization

The Group has consistently taken the position that the current organization of the HSRA does not lend itself to meeting the challenge posed by the HSR project. We agree with the LAO Report that a change is critical. Our conclusion has been based on the clear disjunction between the needs of the project for a very large increase in the range and level of managerial skills in the near term, on the one hand, and the often significant limitations posed by the State bureaucratic requirements, on the other. Transferring the project to Caltrans would do little to remove these crippling restrictions.

Unfortunately, **without an agreed upon business model to work with, it is not possible to develop a better organization with any confidence**. The HSR project is not a simple (albeit very large) highway construction project: if it were, it might be appropriate to shift responsibility for planning and implementation to Caltrans as suggested by the LAO Report. Indeed, certain aspects of the LAO's proposal clearly do deserve consideration. Caltrans may well be the best State agency to complete the environmental studies and requirements along with basic ROW alignment and acquisition and it has long been suggested that this responsibility be sub-contracted from HSRA to Caltrans. The problem is that Caltrans has rightly not been able to accept the task without the kind of staff augmentation (positions, as well as money) that has proven difficult for HSRA to achieve. Another practical difficulty is that some aspects of HSR design, especially track, signaling, electrification and rolling stock, require skills that no existing California State agency possesses. To put this into perspective, during each of the peak four construction years of the project, the annual outlays for the HSR project would be about 20 percent greater than the entire Caltrans capital outlay program, and would involve a skills mix much more diverse than Caltrans has on board.[9] Transfer of the Authority to Caltrans would not be a simple task.

A related problem is the fact that high-speed railways are **systems**, not easily separable parts. Gradients, curvature, track components, signaling, electrification and rolling stock must work together. Ideally the critical elements of all of these would be specified by the future **operator** of the system in order to ensure compatibility and safety of the system. Neither Caltrans nor the HSRA has the required operating expertise. HSRA's consultants may have some of the required expertise, but cannot speak for the viewpoint of the future operator.

The importance of the operator's input into the details of the systems design cannot be overstated. The operator should have major input into the design and siting of the maintenance facility, siting of high speed crossovers, line side signaling and the layout of stations, among other features. Consequently it is the norm to let a concession contract for the operator several years prior to the start of commercial operations and before many critical engineering decisions are made. This is particularly important if the operator will also acquire the rolling stock for the project. Moving rapidly to construction now may well be important to spending Federal money before the 2017 deadline, but it might do so at the cost of disrupting the link between designer/constructor and operator. Among other things, this means that any design decisions that cause (or can be argued to cause) safety or efficiency problems will be the responsibility of Caltrans, or HSRA, or the designer/builder, but not the future operator.

More broadly, the LAO Report identifies a concern with Caltrans' "...lack of expertise in working with private partners on PPPs,"[10] which is exactly the problem that the project faces even now in the issue of the lack of operator/designer/builder feedback, and which will become much more serious when the time comes to develop, award and oversee (or regulate) the operating arrangement. The Authority does not have this expertise either, and the Group is deeply concerned that neither the Authority nor Caltrans will be able to acquire it in a timely way if the Department must stay within existing State agency limitations on positions, salaries and skills. The California Transportation Commission (CTC) is the only state agency that has developed criteria for the review and implementation of PPP projects; to date, the CTC has reviewed and approved only a handful of much smaller projects which are in the early stages of development.

This is a critical issue. At a minimum, California faces a $43 billion investment project involving passenger revenues of over $70 billion in the first 30 years of operation.[11] This would create a rail passenger operator with revenues about 8 times the size of BART and Caltrain combined and about one-third larger than the **entire** Amtrak system. It would have revenues nearly three times as large as the largest U.K. rail franchise – and the experience of the U.K. Government in designing, awarding and overseeing their franchises has been anything but trouble free. It does not encourage unbounded

[9] See LAO May Report, pg 9 and
http://www.catc.ca.gov/meetings/agenda/2011Agenda/11Jan/Tab014_4_2_Rev.pdf
[10] LAO Report, pg 21.
[11] Estimate based on Authority's 2009 Business Plan. Revenues are undiscounted.

confidence in an agency (Caltrans **or** HSRA or the CTC) with limited experience in the rail PPP field and without the skills, resources and authority to do the job.

In fact, the U.K. experience with franchising has highlighted a number of issues that will need to be considered in the HSRA's 2011 Business Plan. First, how will the HSR infrastructure be owned, managed, maintained and operated? Second, if the private sector is to operate the trains on the system, what form will the relationship take? These are not abstract problems for which the answers can be delayed for the present and then allowed to emerge over the years. At least some consistent version of the entire picture is needed before the Group and the Legislature can assess whether the organizational structure, along with the related resources and skills, are appropriate.

The Group continues to believe that the HSR project management will need full flexibility to hire and pay the staff needed for the project over all its phases and will need to handle procurement rapidly and efficiently in a way that the standard public procurement rules do not facilitate. Real trouble lies immediately ahead if the current organization proceeds to awarding construction contracts without being restructured to ensure adequate accountability for taxpayer funds. The project is larger than the entire Caltrans construction program, and will need maximum flexibility in management to ensure quick decision making capability and a minimum of organizational interfaces.

As we have argued in our earlier letters, the organization needed would be more consistent with some form of State-owned corporation in which public oversight would be exercised by public appointment and confirmation of the Board of Directors but with management free to act with the flexibility of a corporation. However, we recognize that the Legislature's desire for direct public control could lead in the direction of continuing the Authority as a public agency. In this case, consideration should be given to the establishment of an organizational structure similar to Caltrans within the overall control of the Business Transportation and Housing agency. The Board of this organization could assume functions similar to the California Transportation Commission, responsible for programming and allocating funds to various segments as proposed by the HSRA staff. The new agency should retain the freedom to contract with both private and public sector entities for various services, and perhaps utilize the creation of public benefit corporations where appropriate.

At best, we conclude that greater short term reliance on Caltrans would only provide a temporary solution to part of the problem. A transition to Caltrans would not resolve the staffing problems related to salaries and staffing issues facing the Authority in acquiring a top quality team within the strictures of the State Civil Service system.