Executive Summary

– To Repeat –
The CHSRA's Train Will Need A Subsidy Forever

August 22nd 2012

– from the Authors of –

The Financial Risks Of California's Proposed High-Speed Rail Project

The March 17th 2012 paper *'The CHSRA Knows Their Proposed High-Speed Train Will Forever Need An Operating Subsidy'* was a call to California's Administration and Legislature to verify the projected operations and maintenance (O&M) costs in California's proposed high-speed rail project. To date, the call goes unanswered. This report brings further evidence to the argument that the proposed high-speed train will continually need a legally forbidden operating subsidy.

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PUBLICATIONS

This entire report, including Appendices and Attachments, is available at
www.sites.google.com/site/hsrcaliffr and at
www.cc-hsr.org, then go to Financial Reports

Major Reports on High Speed Rail by the Authors:
– The Financial Risks of California's Proposed High Speed Rail Project (Oct 2010)
– A Financial Analysis Of The Proposed California High-Speed Rail Project (Jun 2011)
– Revisiting Issues In the October 2010 Financial Risks Report (Sep 2011)
– Twelve Misleading Statements on Finance and Economic Issues in the CHSRA's 2012 Draft Business Plan (January 2012)
– California High-Speed Rail Authority's 2012 Draft Business Plan – Assessment: Still Not Investment Grade (January 2012)
– The CHSRA Knows Their Proposed High-Speed Train Will Forever Need An Operating Subsidy (March 2012)

Briefing Papers:
– Dubious Ridership Forecasts (Oct 2010)
– Six Myths Surrounding California's High-Speed Rail Project (Jan 2011)
– Seven Deadly Facts For California's High-Speed Rail Authority (Jan 2011)
– A Train To Nowhere But Bankruptcy (Feb 2011)
– Big Trouble For California's $66 Billion Train (Mar 2011)
– Will The Train Benefit California's Middle Class? (Apr 2011)

Brief Notes: Twenty-three one page, single subject papers on various aspects of financial issues related to the proposed high-speed rail system, Oct 2010 - Aug 2011

Any fault found in this report is solely the responsibility of the Authors.

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Preface

This report, posted shortly after California's government authorized starting construction of its high-speed rail (HSR) project, is a sequel to 'The CHSRA Knows Their Proposed High-Speed Train Will Forever Need An Operating Subsidy' (the 'Forever' report).[1] That report showed how little was known about the California High-Speed Rail Authority's (CHSRA) Operating and Maintenance (O&M) expenses, and held that the Authority knew their O&M estimates should be higher.[2] It also pointed out that, if the Authority's estimated revenues are too low relative to its O&M estimates, AB3034's prohibition on an operating subsidy will be violated.[3] Only the LAO's May 4th letter, and the May 18th Peer Review Group (PRG) findings question the CHSRA's projections.[4]

While the CHSRA will spend an average of $6Million per working day over the next five years on California's HSR project, there is no independent answer on AB3034's key financial question – will the California HSR train's revenues cover its O&M costs? [5] While investigating that key question, this report follows a business analysis format, first analyzing revenues, then O&M costs, then whether the former exceeds the latter.

Throughout this report, revenues and O&M costs are calculated in the common denominator of per passenger mile (PPM) – DOT/FRA's preferred metric to determine whether existing HSR systems and California's HSR's project are financially viable.

Revenue from fares is easily attainable. But any company is resistant to public scrutiny of its O&M costs, and the Authority is no exception. As will be shown, it is difficult to precisely estimate O&M costs from publically available data, but the DOT/FRA's guidelines for ARRA grants required a *". . reasonableness of revenue and operating and maintenance cost forecasts"* [6] Reasonableness sets the standard for this report; that is, CHSRA's projected revenues and O&M costs on a per passenger mile (PPM) basis might differ from the findings herein, and still be considered reasonable by different independent analysts.

Is it unreasonable to demand the State find the political resolve to independently assess what could be a very large financial risk? Without verifying what will be demonstrated as low revenue and even lower O&M cost estimates on a PPM basis, Californians run the high risk of having to illegally subsidize the train's operations. Billions of dollars are at risk. Forever.

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[1] The 'Forever' report was posted on March 17th 2012 and can be found at www.sites.google.com/site/hsrcaliffr and at www.cc-hsr.org and go to Financial Reports.

[2] The basis for this claim is two separate references to Spanish data sources; both in the 'Forever' report. The two BBVA Foundation reports, and the RENFE presentation given to the Authority's Board in June 2011 showed high-speed rail operating costs were multiples of those projected in the CHSRA's Draft 2012 Business Plan (November 2011). The Authority has challenged all of the O&M data in the BBVA reports. That data came from the Union Internationale des Chemins des Fer/International Union of Railways. Despite repeated requests to verify the CHSRA's claim of 'flawed data', the UIC/IUR has neither officially verified that claim, nor produced the 'correct' data.

[3] Section 2704.08 (c) (2) (J) and Section 2704.08 (d) (2) (D) of AB3034 demand no operating subsidy. The 'Forever' report said the CHSRA's unverified O&M costs are a serious problem.

[4] See Appendix 1 and Appendix 2

[5] In July 2012 California's Legislature authorized spending $7.27 Billion (SB1029) and another $819.3 Million (AB1464 and AB1497) on HSR plus local transit capital improvements – a total of $8.046 Billion. With 250 working days per year, and the requirement to spend the HSR funds by 30 September 2017, or within 1,292 working days, the daily expenditure will be $6,229,431

[6] See ARRA HSIPR Requirements Federal Register/Volume 74, No. 119/Tuesday, June 23, 2009/Notices, Section 1.5 (page 28)

A Glossary of Some Terms Used In This Report

Acela Express – Amtrak's high-speed rail service in the Northeast Corridor

Adif – Administrador de Infraestructuras Ferroviarias, Spain's track ownership and track maintenance agency

Amtrak – the USA's National Railroad Passenger Corporation

ARRA – American Recovery and Reinvestment Act of 2009 – source of about half the existing funding for the Central Valley section of the HSR project.

BBVA – the Spanish bank, Banco Bilbao Vizcaya Argentaria

CC-HSR – Community Coalition On High-Speed Rail

CHSRA – California High-Speed Rail Authority

DOT – US Department of Transportation

FRA – Federal Railroad Administration

GAAP – Generally Accepted Accounting Principles

HSR – high-speed rail

ICE – InterCity Express, Germany's high-speed rail brand

IOS – Initial Operating Segment

LAO – Legislative Analyst's Office

O&M – Operating and Maintenance

PPM – per passenger mile

PRG – Independent Peer Review Group

PSM – per seat mile

NEC – The Northeast Corridor Region of the USA

Rail Network – the UK's rail owners and maintenance agency

RENFE – the Spanish rail operator, Red Nacional de los Ferrocarriles Españoles

SNFC – Société Nationale des Chemins de fer français; France's conventional and high-speed rail operator

TGV – Train à Grande Vitese; one division of France's high-speed train system

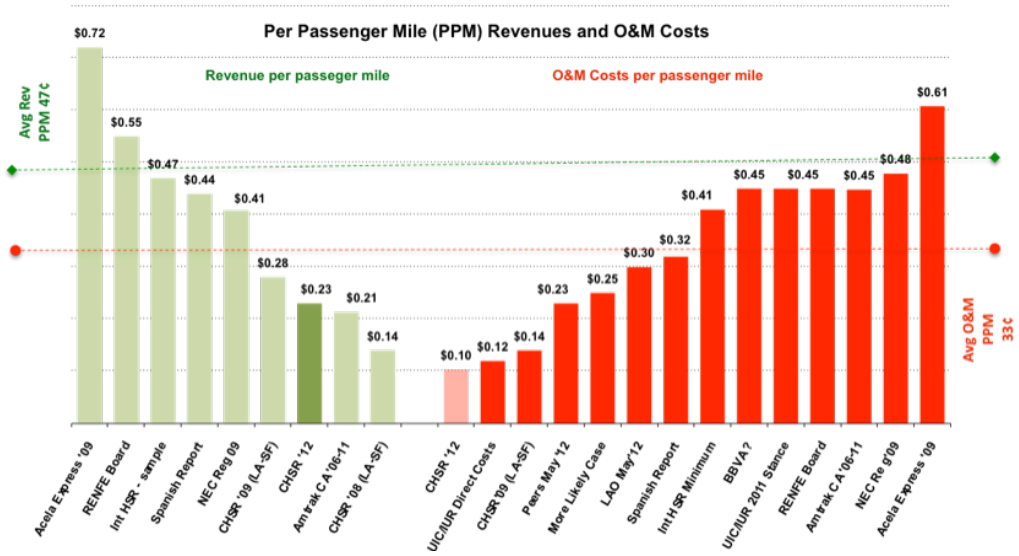
UIC/IUR – Union Internationale des Chemin des Fer/International Union of Railways

An Overview

Will California's HSR train's revenues cover its O&M costs? Unlikely. Why? Because the CHSRA's train is in the untenable position of having to compete in California's extremely cheap transportation marketplace while simultaneously meeting AB3034's requirement to be profitable.

Study the left side of figure below – revenue per passenger mile. To compete against the low costs of driving and cutthroat intra-California airfares, the state's HSR operator must keep the per passenger mile (PPM) fares somewhere in the 20¢ PPM range. The average PPM fare for existing HSR systems is more than twice what CHSRA projects – 47¢ versus 23¢.

Figure 5 from Section Three (in 2010 $'s)



Study the right side of figure above – operating and maintenance (O&M) costs per passenger mile (PPM). The CHSRA's latest O&M costs, 10¢ PPM, are less than a third of the average O&M costs of existing HSR systems. And they're a sixth of Acela's, the nearest equivalent because that Northeast Corridor train has similar labor, power and maintenance costs as will the California HSR system.

Both CHSRA's revenues and O&M costs are 'outliers' when compared with actual HSR operations. Even disregarding that some, if not much, of European HSR systems' O&M costs don't land on their operators' accounts, the CHSRA's revenues and O&M costs are unreasonably low. In short, the CHSRA 'low balled' both revenues and O&M expenses – revenues to seem to be competitive with airline fares, and O&M costs to seem to produce profits.

Once the IOS South is built, there will be strong political pressure to operate it, whether or not that segment proves profitable. But even if the voter approved HSR project is built with no capital servicing requirements, operating losses could run from over $125 Million to nearly $3 Billion per year. Whatever that loss is, it will last forever.

Summary Of The Report

This report brings together previous and new revenue data, plus operating and maintenance (O&M) data of existing rail systems as benchmarks to measure the financial viability of California's proposed high-speed rail system.[7] It finds that both CHSRA's estimated revenue and O&M costs for the proposed system are out of line with the experiences of operating high-speed rail systems in Europe, Japan and in the USA.

Section One is based on two separate sources of revenue data. First it analyzes Europe, Japan and the USA's HSR web-based fares on a per passenger mile (PPM) basis. Second it discusses nine data sources on revenues, six of which come from reports on existing rail systems. Then it compares existing operations with CHSRA's projected revenues on a per passenger mile (PPM) basis.[8] Appendix 3 analyzes relationships between revenues and costs per seat mile, Load Factors, and revenues and costs per passenger mile. This section shows that five of the six per passenger mile revenues are higher than the two CHSRA estimates. Even the most proximate PPM revenues, Amtrak's conventional rail in the NE Corridor, are about twice as high as those in the CHSRA's April 2012 Revised Draft Plan.

Section Two discusses O&M costs from eleven sources based on actual operators' data. Five are from operating rail systems; including Acela Express, the USA's 'cousin' to HSR, as well as Europe and Japan's high-speed rail systems. Every actual O&M cost data benchmark is higher than the CHSRA's 2012 O&M expense estimates. The difference is striking – varying from a minimum of three times (Peer Review, May 2012) per passenger mile to four times higher (the UIC/IUR Letter of 2011).[9] In the US that climbs to Acela Express' six times the CHSRA's projections.[10]

Section Three compares and contrasts revenue and O&M data. Even acknowledging non-GAAP accounting methods, the discrepancies between what the Authority proposes and actual operating realities are clear. From these analyses, and the sixteen appendices' detailed explanations of how

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[7] This report includes sixteen appendices and thirteen attachments. Most appendices are referenced in the course of the analytical text - one is not. Appendix 15 asks, as in the 'Forever' report, for complete and publically-accessible information on both the direct and indirect O&M variables used in the CHSRA's O&M calculations, and what values were assigned to those. Attachments largely document the submissions of information to CHSRA's directorate and the Governor, as well as the Peer Review Group's report and the LAO's letter to Assembly Members. Appendix 15 is referenced in Appendix 8.

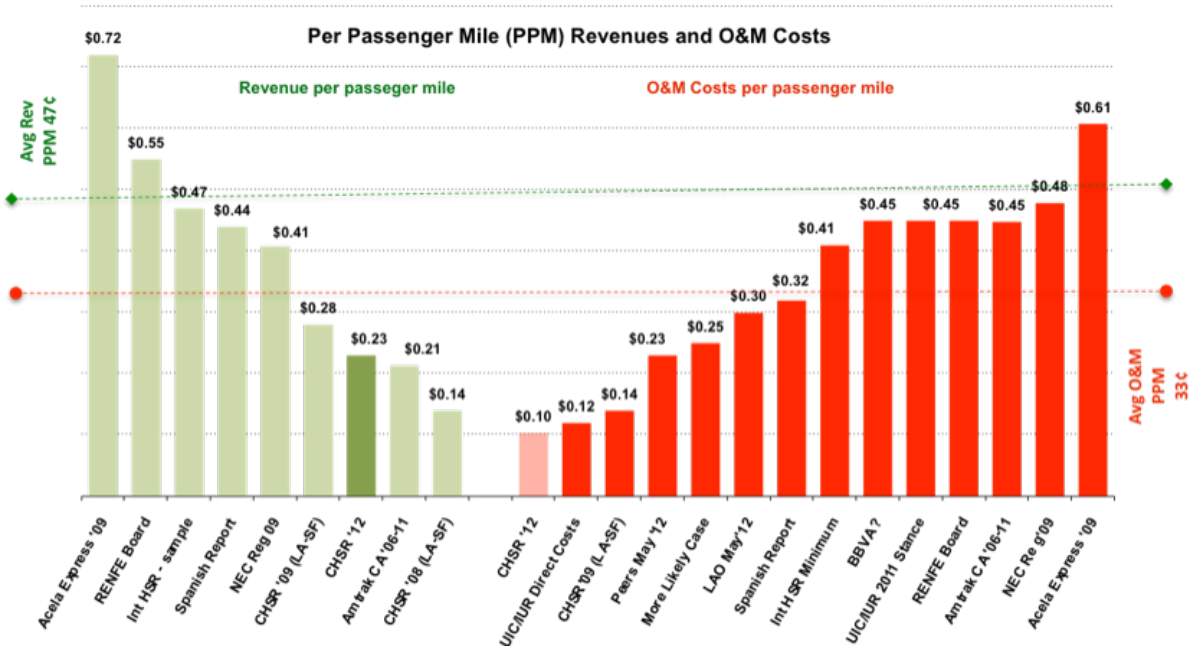
[8] Appendix 3 describes why per passenger miles (PPM) is the financial metric used universally in the rail and airline industries and is recommended by the DOT/FRA. Also see Appendix 16 for DOT/FRA guidance on this subject.

[9] See Appendix 2 for a summary of the Peer Review Group Report. Their entire May 18th 2012 report is found at http://www.cahighspeedrail.ca.gov/ Discussions of the UIC/IUR's O&M expenses, are in Appendices 12 and 14

[10] See Appendix 11 for an analysis of CA Amtrak's Operational Results

such calculations were made, it is extremely difficult to conclude that the proposed high-speed train can operate without a legally prohibited subsidy.

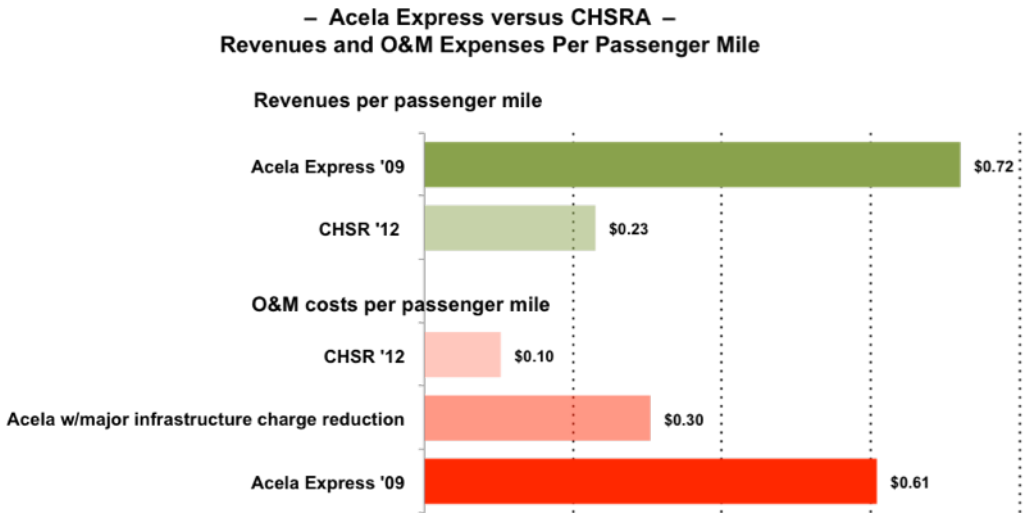
The following figure, also Figure 5 in Section 3, displays findings on revenues and O&M costs on a PPM basis. Appendix 7 discusses the sources of these revenues and O&M costs. [This report's data is in 2010 non-inflated dollars.]



A USA analogy hiding in plain sight – For nearly a dozen years Acela Express has collected fares and paid O&M expenses.[11] The Peer Review Group thought the Acela Express experience analogous to CHSRA's plans when it said; "*the overall results of the* [CHSRA's O&M] *model appear optimistic by comparison with readily available data on the closest comparable U.S. HSR operations (Amtrak's operations in the Northeast Corridor)"* [12] The figure below shows how disconnected CHSRA's projected revenues and O&M costs are from Acela Express', even with large reductions of Acela's O&M costs.

[11] While there is controversy as to whether Acela Express absorbs all the indirect costs it should from shared Amtrak services, or is overcharged by the owners of some of the infrastructure it uses, that is largely moot when compared with the overall differences with CHSRA's planned revenues and O&M costs – even if non-applicable infrastructure use charges may represent a large part Acela's total O&M costs

[12] See Appendix 2, or see pgs 7-8 of the May 18th 2012 Peer Group Report found at http://www.cahsrprg.com/files/bus_plan.pdf



Facing similar labor, energy, tax, and insurance cost structures; in similarly competitive airline markets, Acela Express charges more than three times CHSRA's estimated fares and pays six times the CHSRA's estimated O&M costs. Acela's revenues and costs represent USA reality.

The alternative to continuous subsidies – CHSRA could choose to meet the strictures of AB3034 and not require a subsidy. It's a simple formula: charge passengers the fares that will fully cover realistic O&M costs. That choice would violate the promise to 2008's Prop1A voters to transport them one way between LA to San Francisco for *"about $50"* and it would probably put the HSR train out of competition with airline fares. But it would avoid eternal subsidies.

What might an unsubsidized, one-way inter-metropolis fare be? Based on analyses in Section 2 and international HSR operators' experience, a one-way LA-SF fare would be around $200, about 50¢ per passenger mile (PPM); more than double CHSRA's present estimated PPM fare of 22¢ PPM.[13] If CHSRA's O&M expenses reflected Acela Express' NY-Washington experience, the one-way fare would be nearly $340, at 90¢ per passenger mile (PPM) is nearly that of Japan's Shinkansen PPM charge.

[13] This 50¢ PPM fare would be very close to that charged on the London-Edinburgh route, £121 or US$189: and the driving distances are similar – 404 and 383 miles for London-Edinburgh and SF-LA respectively. See: Oliver Smith; Planes cheaper than trains on half of routes, The Telegraph, August 16th 2012 found at http://www.telegraph.co.uk/travel/travelnews/9479994/Planes-cheaper-than-trains-on-half-of-routes.html

What would be the market's reaction? Immediately the train becomes the purview of the affluent and the high-end business traveler. That's already the case in Europe. In a mid-2012 book, two noted European HSR analysts described not only what Section 3 discusses as accounting legerdemain, but also that HSR trains' passengers are not traveling families.

> *". . if we keep in mind that the public resources used in high-speed rail imply a regressive transfer of income, in that taxpayers are subsidizing journeys realized above all by users belonging to the upper-middle and upper income brackets, who usually travel for business reasons and whose ticket (the amount of which is far from covering the total cost of the service) is paid for by their employers."* [14]

This report's authors earlier explored the same, skewed HSR passenger demographics.[15] That 2011 Briefing Paper concluded that California's middle class would only infrequently be able to afford to use the HSR train between the state's metropolises if fares are priced to cover O&M costs. Given such a rise in the price of tickets – doubling or more as shown in Figure 1 – would lower the CHSRA's ridership forecasts dramatically, possibly by a third to a half. The Authority is stuck in a conundrum of their own making – charging too little while 'low balling' O&M costs on a PPM basis.

The Authority's position on revenues and O&M costs is clear and official. According to then-CEO van Ark, CHSRA had spent time; *" . . cross checking to all the* [HSR] *systems in the world . . including the Acela system in the Northeast Corridor . ."* [16] With such inordinately low projected per passenger mile fares and O&M costs, and the above assertion by independent European investigators that even much higher PPM fare do not cover costs; the probability of the need for ongoing subsidies is extremely high. Couple these facts with the 'disconnect' between the CHSRA's projections and Acela's realities examined above, and the only conclusion to be made is that subsidies will be required. The only question remaining is how big the annual subsidy will be?

Section Four addresses the cumulative financial impacts if revenues fall short of O&M costs. Figure A14-3 (repeated below) shows the dynamics of

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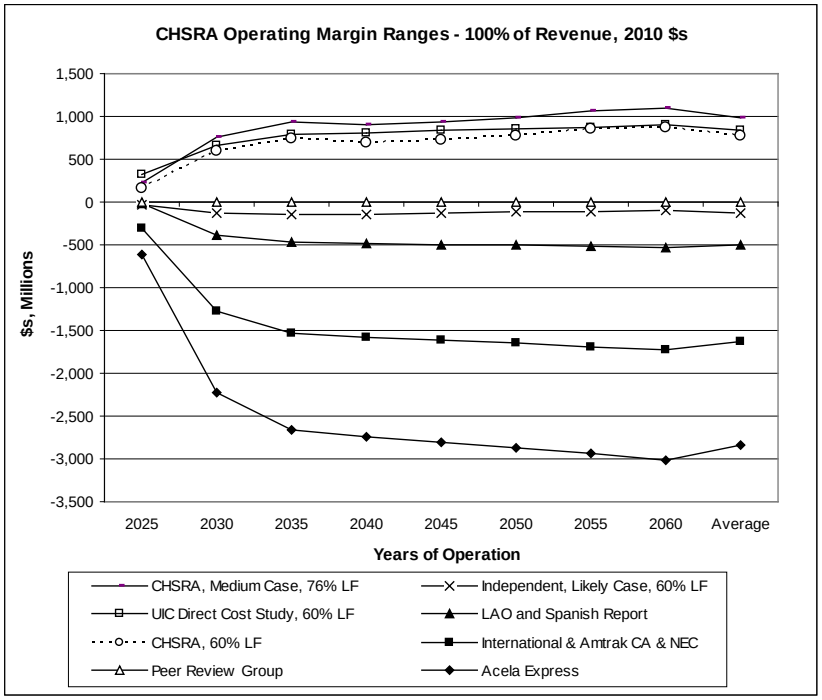
[14] See: Albalate, Daniel and Bel, Germa; The Economics and Politics of High-Speed Rail; Lessons From Experiences Abroad; Lexington Books, 2012, page xiii.

[15] 'Will High-Speed Rail Benefit California's Middle Class'; April 4th 2011, A Briefing Paper, posted at www.sites.google.com/site/hsrcaliffr and at cc-hsr.org, then go to Financial Reports.

[16] See Attachment 12. CHSRA's then-CEO, Roloef Van Ark, stated before the Congress on December 15th 2011, six weeks after the release of the Authority's Draft 2012 Business Plan. While Mr. Van Ark left that position in early 2012, no change was made in either CHSRA's forecasted per seat mile or per passenger mile revenues or its O&M costs in the Draft Revised Business Plan of April 2012. The ex-CEO's claim is also not supported by the Peer Review Group's May 2012 finding that Acela's O&M costs seem to not have been analyzed.

the potential magnitude of financial losses if CHSRA's revenues per passenger mile are as presently forecasted, but O&M costs are much closer to existing operators' reality.

The Peer Review Group concluded that, at best, revenues and costs would be equal. But if the CHSRA (with their 76% Load Factor), the IUC/UIR, and CHSRA (at a more reasonable 60% Load Factor) O&M cost models' results aren't realistic, the HSR train's operations could lose between $4Billion and nearly $100 Billion over the Authority's 35-year forecasting period (2025-2060).[17]



That would be <u>$123 Million to $2.8 Billion per year</u> that must be financed from some as yet unknown source.

What happens when the CHSRA's operating expenses exceed the train's revenues? – Losses will be unavoidable and recur annually once they begin. And once the State 'steps across the line' for even a single year to subsidize HSR operations; the die will be cast. There will be no incentive for the operator to lower those losses. Amtrak's history is replete with

[17] See Appendix 14. See Figure A14-2; this shows the average annual profits and losses under eight scenarios of financial models for the HSR train. For example, in the Phase 1 Blended pair of columns, the left column shows average yearly losses or gains, the independent Likely Case estimate projects a $123 million annual loss, while the Acela Express comparison shows a $2.8 billion annual loss. These results are show in Figure A14-3 (above). The cumulative losses for the 35 years of the forecasting period results in the figures quoted are shown in Figure A14-6.

unsuccessful efforts to tame its operating deficit, undermined by Congress' continued willingness to subsidize its operations.

By law and by the 2008 promise to voters that *"the users of the system pay for the system"* California's HSR train cannot have an operating subsidy.[18] Whether the State's Legislature and Administration see fit to abrogate that provision remains to be seen; but there is no escape from subsidizing losses once they are started.

The impact on the State's financial position will be substantial, if not dangerous in any of the cases where losses occur. This is even more accurate if the difference between Acela's actual financial picture and the Authority's forecasts becomes the reality. The only known way to fund such negative impacts on the General Fund are additional taxes and fees, dramatic reductions in other State functions, such as education, public and social services; or both.

Hopefully that choice never arises, but the potential for losses seems very real. If California's leadership continues to abrogate its fiduciary responsibility and prefers spending on a project that appears to demand a 'cash feeding tube' once built, they will not only have broken the State's law, but will put the State on a collision course with more financial difficulties.

In Conclusion – HSR supporters' oft-repeated claim is that 'all HSR Systems are profitable; therefore California's HSR system will be profitable.' The claim about California's HSR system's profitability is challenged by recent Congressional Research Service findings.[19]

> *"The organizational structure of passenger rail is not conducive to a market environment in which competition among carriers exerts downward pressure on operating costs. The "low-cost carrier" phenomenon in the airline and intercity bus industries, in which multiple carriers compete with one another over the same infrastructure, is not practicable in the passenger rail industry."*

There are several existing international HSR routes that may cover their operating costs; but there are no known HSR systems that cover all of their O&M costs without government assistance. And there is no evidence that existing HSR systems earn profits equal to 50% of their revenues. Yet this is CHSRA's claim for the state's HSR system.

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[18] See The Official Voter Information Guide of the Tuesday, November 4, 2008 California General Election at http://www.voterguide.sos.ca.gov/past/2008/general/argu-rebut/argu-rebutt1a.htm

[19] Peterman, D. R., Frittelli, J., Mallett, W.; Congressional Research Service; The Development of High Speed Rail in the United States: Issues and Recent Events; June 28, 2012, 7-5700 R42584. Found at http://www.hsdl.org/?view&did=715491

HSR proponents' false-premised, *post hoc ergo propter hoc* argument misses the fundamental challenge to any new transport system in California: that the marketplace will not allow California's HSR system to generate revenues that are comparable with existing HSR revenues on a PPM basis because air transport prices and driving costs are so low.[20] To seemingly avoid that conundrum, the CHSRA's forecasts its per passenger mile (PPM) revenues at half the worldwide PPM revenue rate. Simultaneously, it seems highly improbable that California's HSR train will attain O&M costs PPM dramatically lower than current HSR systems O&M costs on a per passenger mile (PPM) basis. It's a trap of CHSRA's own making.

In short, unless worldwide HSR systems are profitable, to the tune of about 50% of revenues, the CHSRA's train's O&M costs will exceed their revenues. And there is no solid evidence that existing HSR Systems are that profitable!

Because more than half the present HSR capital development funds come to California as a 'gift of the people of the United States', it's important to know that those Federal grants were based on *"The quality and reasonableness of revenue and operating and maintenance cost forecasts for the benefiting Intercity Passenger Rail service(s)."* [21] The vast majority of the DOT/FRA-ARRA grants were based on CHSRA's 2008 Business Plan, which was not only discredited by the LAO, the Peer Review Group, the State Auditor, but also the State's Office of Inspector General established to oversee ARRA grants. Equally important, in 2010 a CHSRA Board member admitted the substandard quality of that Plan.[22]

Yet Federal funding and support continued alongside the State's. To this report's authors, CHSRA's claim that their HSR train will earn a 50% profit while charging half the PPM fares and incurring operating costs at a third or less PPM than the worldwide evidence is not reasonable: and it's a prelude to serious fiscal trouble.

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[20] Europe, with higher PPM fares than California is finding similar market-driven conditions can apply there. According to Google maps, the London to Edinburgh distance is 404 driving miles, similar to the San Francisco to Los Angeles HSR corridor. A recent UK news article said the fare is £121, about US$189 in mid-2012. That's about 47¢ PPM for a rail ticket, near what Figure 1 and Figure 5 show for other European HSR systems PPM fares. For three of twelve intra-UK air segments reviewed in the article, airlines are discounting their fares up to 50% for advance bookings, ie. 'cherry picking' the first routes. Competition has entered the UK market, as it will eventually in Europe and in California if the CHSRA's train ever gets built. See: Oliver Smith; Planes cheaper than trains on half of routes, The Telegraph, August 16th 2012 found at http://www.telegraph.co.uk/travel/travelnews/9479994/Planes-cheaper-than-trains-on-half-of-routes.html

[21] See pg. 20 Federal Register/Volume 74, No. 119/Tuesday, June 23, 2009/Notices – 299229929

[22] CHSRA Board member Lynn Schenk said that the 2008 Business Plan was *"...pulled together with Scotch tape and hairpins because we had to get something to the Legislature, but we didn't have the money, the resources, the people to pull together, so there were a lot of errors"* View a YouTube of the statement at http://www.youtube.com/watch?v=jGyUxBnoVpc. Also note that Federal ARRA grants were supposedly for 'shovel ready' construction projects, which three years later appears to be a hollow phrase.