A Proposal To Constructively Use Federal Grants and State Prop 1A Funds To Build The CHSRA's ICS From Bakersfield Towards Los Angeles

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Summary

Objective – To enhance the impact of the available $6 Billion in ICS funds to prepare for the first California high-speed rail IOS and simultaneously ensure good Independent Utility value of those funds to support Amtrak if additional high-speed rail funding is delayed.

Background and Overview – The ICS's current location only makes sense if over $25 Billion of additional funding is assured. With no additional funding assured the ICS perhaps could be moved to where it would have substantial Independent Utility, and support the build-out of the first IOS in the Central Valley if and when funds become available.

The Proposal's Description – The attached pages are a 'first view' analysis and graphic description that supports this concept. Please see Figure 1 on page 7. The objective would be to build the ICS southward from Bakersfield, to provide immediate utility to Amtrak passengers between the Central Valley and Los Angeles. Currently these Amtrak passengers must ride a bus for two hours and 20 minutes between Bakersfield and Los Angeles. This new track could be eventually used as the first IOS (IOS South). At this level of conceptual thinking there are two alternatives.

Alternative #1 – The I-5 Grapevine Route – Connect Bakersfield to San Fernando via SH-99 and I-5. Passengers then take Metrolink from San Fernando to Los Angeles. This would be the fastest route, but probably cannot be constructed with the available Federal and State ICS funds ($6 Billion).

Alternative #2 – The Palmdale Route – Connect Bakersfield to Palmdale with a currently planned CHSRA route; then use Metrolink to get passengers from Palmdale to San Fernando, and onwards to Los Angeles. The segment from Bakersfield to Palmdale can most possibly be built with the available ICS funds. The drawback is that the current Metrolink travel times from Palmdale to San Fernando will need to be reduced for this to be a reasonable elapsed time alternative to the current Amtrak bus service from Bakersfield to Los Angeles.

Decreasing Metrolink's Elapsed Time Is Key To Alternative #2 – Metrolink seems to take one hour 17 minutes to travel the 43 miles from Palmdale to San Fernando and an additional 34 minutes to travel the 22 miles from San Fernando to Los Angeles – a total of one hour 51 minutes – not appreciatively different from the present bus service. Using some of Prop 1A intercity and commuter rail funds and DOT regional rail funds to install an Express Metrolink Train Service could reduce these travel times.

Three Next Steps To Achieve Buy-In And Proof Of Concept –

1. Confer with Congress and DOT/FRA about moving the ICS south of Bakersfield.
2. Get independent-of-CHSRA engineering resources to evaluate the alternatives.
3. Determine if Metrolink can reduce its travel time from Palmdale to Los Angeles.

A Proposal To Constructively Use Federal Grants and State Prop 1A Funds To Build The CHSRA's ICS From Bakersfield Towards Los Angeles

Description And Analysis

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1.0 Objective – To enhance the impact of the available $6 Billion in ICS funds to prepare for the first California high-speed rail IOS and simultaneously ensure good Independent Utility value of those funds to support Amtrak if additional high-speed rail funding is delayed.

2.0 Background and Overview – CHSRA's November 2011 Draft 2012 Business Plan shows the $6 Billion ICS (Initial Construction Section) to be built from a northern point between Merced and Fresno southwards to a point between Fresno and Bakersfield, about 130 miles. The presently proposed ICS will not be electrified, and has neither Positive Train Control (PTC) nor rolling stock.

Analysts point out that planning to build the ICS so far north in the Central Valley and away from population centers is only rational if there is at least another $25 Billion of committed funds to expand the ICS into a useable IOS (Initial Operating Section) segment. Since additional funding for an IOS may be years in the future, it seems more prudent to spend the ICS money where it could soon complement and extend existing Amtrak track, and create economic and social benefits; not simply be a rail bed 'parallel' to Amtrak's.

As a result of these issues, we have prepared this proposal to use the $6 Billion of FRA-ARRA and Prop 1A Bonds funds to connect the Amtrak service that currently terminates in Bakersfield to downtown Los Angeles. If and when more money becomes available, high-speed rail can expand northward after converting this link from conventional rail to high-speed rail.

2.1 The FRA's Point of View – The ICS was to have Independent Utility functionality under FRA rules, because it could be used for conventional Amtrak service if high-speed rail was not further funded. Therefore the ICS in the northern part of the Central Valley met FRA requirements to use ARRA funds. [NB: A key to this proposal is whether Congress and the DOT will support the ICS being built southwards from Bakersfield in the Central Valley, towards Los Angeles.]

2.2 Legal Challenges To The Present ICS – A serious challenge (Toss, Fukada, Kings County vs. CHSRA et al) has arisen as to whether the current ICS meets legal requirements of AB3034 or Prop 1A requirements, as it has no electrification, no PTC, nor rolling stock. It is not really high-speed rail. Only when an IOS is built for another $25 Billion, would the present Draft Plan meet that AB3034 requirement. [NB. While it is impossible to guarantee legal conformance, this proposal will need to deal with same challenges as the present high-speed rail alignment.]

3.0 Description Of The Proposal – The accompanying Figure 1 graphically outlines the idea for the Bakersfield-southward proposal. Since it connects present day Amtrak service (that currently ends in Bakersfield) onward to the Los Angeles Basin, and the alternatives allow the track to have true Independent Utility in if no further funding for the high-speed rail appears. Two routes are considered:

3.1 Alternative #1 – The I-5 Grapevine Route – This route goes from Bakersfield southward on SH-99 and then southward on I-5 to San Fernando. This highway route is about 92 miles and today takes about 1 hour 40 minutes to drive. Amtrak passengers arriving in San Fernando/Sylmar could board Metrolink to get to downtown LA. The recent CHSRA Plan defined this use of Metrolink for the IOS South and Bay to Basin phases, where high-speed rail passengers would board Metrolink in San Fernando to travel onward to Los Angeles. However these high-speed rail phases of 2015 to 2026 require vastly more Federal money. In the highlighted Alternative box on Figure 1's left side, the estimate of the travel time of Amtrak service from Bakersfield to San Fernando, plus Metrolink service onward to Los Angeles is about 2 hours 4 minutes to 2 hours 24 minutes. This would be similar to the current Amtrak bus service of 2 hours 20 minutes, as shown in the highlighted Amtrak Bus box shown at the bottom of Figure 1. A rail connection would probably be more reliable as traffic issues on the Grapevine often add considerable time to the actual Amtrak bus travel times.

This route alternative goes over the I-5 Grapevine, but was recently rejected by the CHSRA as an alternative to their currently planned Palmdale route. The Authority's objective was to use high-speed track, not Amtrak track, to reduce high-speed rail travel time and cost from the current Palmdale route. Their I-5 study concluded that this route's high-speed rail cost is about $13-$15 Billion, about the same as the cost from Bakersfield to Palmdale to San Fernando. The I-5 study found that high-speed rail travel time would be roughly the same – about 35 minutes.

More funds would need to be available to build the I-5 alternative's ninety-two miles, for the available $6 Billion provides only about $65 Million per mile. Compared with current ICS plans to build about 130 miles for $46 Million per mile, the $65 Million per mile seems high, but the I-5 study estimate of about $14 Billion is about $150 Million per mile. Even assuming a reduced per mile construction cost to be "only Amtrak-ready" would not lower the total costs from $13-15Billion into the range of $6 Billion. Our 2011 analysis of ICS costs concluded that to build "Amtrak-ready" track would be about 83% of building "high-speed ready" track. Assuming that ratio holds, the average of the projected $14 Billion would be about $11.5 Billion, for "Amtrak ready" track. This is still nearly twice the available $6 Billion. The I-5 study also highlighted seismic and environmental issues on this route more serious than the route through Palmdale.

Note that California could increase its Prop 1A bond spending to match existing Federal grants. Since there are $3.3 Billion in Federal grants, California could invest up to $3.3 Billion in Prop 1A bond funds (not the planned $2.7 Billion). While still not enough to complete I-5 Grapevine alternative, $6.6 Billion could be made available, as opposed to the planned $6 Billion for the ICS.

3.2 Alternative #2 – The Palmdale Route – This alternative goes from Bakersfield east to Palmdale, along the currently planned HSR route. It lets Amtrak passengers transfer in Palmdale to Metrolink and ride Metrolink via San

Fernando/Sylmar towards Los Angeles. (The distance from Bakersfield to Palmdale is 96 miles; the driving time is around 1 hour 45 minutes, about the same as from Bakersfield to San Fernando). Compared with the I-5 route in Alternative #1, the passenger is riding two sides of a triangle; on Amtrak from Bakersfield to Palmdale, then Metrolink from Palmdale to San Fernando. This is clearly seen in Figure 1.

The available funds for the Palmdale Route are about the same, so around $63 Million per mile is available. The costs per mile might be somewhat less than the I-5 Grapevine Route since there seem to be fewer mountains. [Perhaps that is why the Authority decided to build the current route via Palmdale, as opposed to switching to the more direct I-5 route from Bakersfield to San Fernando.]

CHSRA's present projected cost to build the Bakersfield to Palmdale high-speed-rail-ready segment ranges from $7 Billion to $ 8 Billion. Following the above logic, a reasonable estimate of the cost to build "Amtrak-ready" track would be about $6.2 Billion (83% of about $7.5 Billion). Note that also in Alternative #2, up to $6.6 Billion can be made available by the state for the ICS.

The problem with the Palmdale Route alternative is that passengers are still 43 miles from San Fernando, which can be driven in about 50 minutes; but Metrolink takes about 1 hour and 17 minutes, with five stops.

Comparing the total time shown in Figure 1, Alternative #1 box to the time in the Alternative #2 box shows that the passenger's 'travel time increase' of the Palmdale Route is about 1 and ¼ hours. This turns out to be about the time Metrolink takes to get from Palmdale to San Fernando, as the Amtrak travel time from Bakersfield to Palmdale and to San Fernando is probably about the same.

Once the passenger has arrived in San Fernando and wants to go to Los Angeles (about 22 miles, and drivable in about 30 minutes), the elapsed travel time on Metrolink is another 34 minutes, with four more stops.

3.3 A more rapid Metrolink is the key to the Palmdale Route Alternative – The long travel times on Metrolink may be due to some combination of low maximum speeds, steep mountain grades to overcome, the multiple stops or some combination of these. To make the Palmdale Route feasible, and travel times reasonable, this Route needs something like an 'Express Metrolink', option from either Palmdale or from San Fernando to Los Angeles. Six or seven Amtrak trains arrive in Bakersfield daily, so there would only need to be as many Express Metrolink trains. Some combination of passing tracks and elimination of stops might reduce the travel time for the Express Metrolink trains.

A good benchmark for the entire Amtrak plus Metrolink trip could be the time the passenger spends on an Amtrak bus today, traveling from Bakersfield to Los Angeles – about 2 hours and 20 minutes seems to be today's best case shown in the highlighted Amtrak box at the bottom of the Figure 1.]

The highlighted Alternative #2 box on the right side of the Figure 1 illustrates the issue. Assuming the Amtrak service from Bakersfield to Palmdale took from about 1 hour an 30 minutes, to 1 hour and 50 minutes, then the Metrolink travel time from Palmdale to Los Angeles would need to be about one hour to 1 hour and 15 minutes, not the 1 hour and 51 minutes currently quoted, over a distance of

about 65 miles. As Figure 1 shows, with the current Metrolink schedule the travel time would be between 3 hours and 20 minutes and 3 hours and 40 minutes. Perhaps by eliminating any Amtrak stops between Bakersfield and Palmdale, improving the Metrolink maximum speeds and eliminating any Metrolink stops between Palmdale and Los Angeles for a Metrolink Express Train the time could be reduced by 15 or 20 minutes, but it will take a detailed analysis to see if it is technically achievable to lower the Metrolink current time by about a third. [Note, it may be possible to use some of the $0.95 Billion set aside in Prop 1A for improving regional and commuter rail systems in support of HSR to reduce these Metrolink travel times for an Express Train.]

4.0 Conclusion – It is not immediately obvious which alternative is better. The I-5 Grapevine Route, directly from Bakersfield to San Fernando is a shorter and faster path; but may be beyond the reach of presently available funds. The Palmdale Route, that is the 'two sides of a triangle path via Palmdale' would probably cost less and can meet the $6 Billion 'budget' easier. But its total travel times may be unreasonable unless both Amtrak and Metrolink services can be made faster.

Both alternatives need to be understood in more detail. However, if the CHSRA current Draft Plan were to be implemented the high-speed rail end point would also be San Fernando, via Palmdale, in the IOS South and Bay to Basin phases. So the Metrolink speed and carrying capacity capabilities will need to be addressed by 2020 for their San Fernando to Los Angeles segment.

5.0 Three Next Steps To Achieve Buy-In And Proof Of Concept –

4.1 Confer with Congress and the DOT and FRA on their willingness to let CHSRA move the ICS starting point to the southern tip of the Central Valley.

4.2 Resolve if there are really two viable alternatives, or is there only one (the Palmdale Route). This should be done outside the realm of just CHSRA and Parsons Brinckerhoff to get independent expertise, bringing in experts from Amtrak, CalTrans, UP, BNSF or others.

4.3 Analyze whether Metrolink has the ability to lower travel times dramatically from Palmdale to Los Angeles, possibly with some of the Prop 1A regional rail funds by 2017 when the ICS construction needs to be completed, per the FRA-ARRA agreement.

Figure 1
How To Get From Bakersfield To LA Basin

A = Amtrak
ML = Metro Link
BK = Bakersfield
PD = Palmdale
SF = San Fernando/Sylmar
LA = Los Angeles

D Miles = Miles Driving
DT = Time in hours and minutes driving
CTB = Cost To Build, 2012 Plan and I-5 Study
est = estimate