

The following document was submitted “for the record” to the Intermodal Container Transfer Facility (ICTF) Joint Powers Authority (JPA) during the Notice of Preparation/Initial Study (NOP/IS) comment period for the ICTF Modernization and Expansion Project.

The document was submitted by:

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South Coast Air Quality Management District

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February 17, 2009

To: I-710 Technical Advisory Committee

Re: I-710 Project EIR Alternatives

We are writing to provide comments of the South Coast Air Quality Management District (AQMD) staff regarding project alternatives to be considered in the I-710 project EIR. We intend these comments to assist the lead agency in developing an EIR and achieving a project approval that will address the region's serious environmental and congestion challenges, and receive the broad public and governmental support needed for successful implementation. In brief, our comments recommend that the EIR include and evaluate three zero-emission transport technology alternatives. These technologies are (1) electrified rail, (2) a fixed-guideway advanced technology such as maglev, and (3) electric trucks. The optimal project may include a combination of these technologies and highway lanes. Thoroughly evaluating all of these alternatives in the EIR will allow the lead agency to identify and adopt such an optimal combination.

Background

AQMD staff views the I-710 project as a critical element of Southern California's efforts to ensure mobility and enhance public health. The project is located in the primary international goods movement corridor in Southern California – a corridor near the marine terminus of rail and highway transport facilities that traverse the region and carry over 40% of the nation's containerized imports. The corridor is heavily impacted by pollution and congestion. The choices of transportation technologies for this corridor will impact millions of persons, locally and regionwide. Moreover, due to its location, the project presents a *singular opportunity* to begin deployment of beneficial technologies regionwide. Properly designed, the project can reduce dangerous emissions, as well as achieve co-benefits in furthering state and federal goals of mobility, energy efficiency, reduced petroleum dependence, and greenhouse gas emissions reduction.

AQMD's primary concern is air quality impacts. The following are key facts about the project's air quality setting:

- *Mobile Sources Contribute to Serious Health Impacts.* Mobile sources such as trucks, locomotives and automobiles create the vast majority of air pollution in the South Coast Air Basin. One type of pollutant, fine particulates, is estimated to cause 6,200 premature deaths in the Basin *every year*.¹ The average reduction in life span for such persons is estimated by the California Air Resources Board and the U.S. Environmental Protection Agency to be 14 years.
- *Health Risks Near Transportation Facilities.* The California Air Resources Board identified diesel particulate matter as a toxic air contaminant in 1998, due to carcinogenic risk. The AQMD *Multiple Air Toxics Exposure Study* (MATES III) shows that diesel particulate matter is the overwhelming contributor to regional cancer risks from air pollution which average 1,200 in a million.² This is hundreds of times higher than risk levels allowed for stationary sources under AQMD rules (between and 1 and 25 in a million). The highest risks from air pollution are found near highways and other transportation facilities such as the I-710, because of heavy reliance on diesel-powered mobile sources. Persons in highly polluted portions of the basin, and persons near transportation facilities anywhere, also suffer greater risks of reduced lung function and many other serious health effects.
- *Federally-Required Emission Reductions & "Black Box."* To attain national air quality standards as required by federal law, this region must reduce nitrogen oxides emissions by approximately two-thirds *beyond the levels that will result from all the stringent rules adopted to date by federal, state and local agencies*. SCAQMD, CARB and SCAG have not been able to identify sufficient specific measures to meet this need, and the region's Air Quality Management Plan thus includes a large "black box" federal Clean Air Act commitment of needed but unidentified control measures. The black box includes over 200 tons of NOx reductions, an amount that exceeds the region's entire federal ozone standard "carrying capacity."³ Under federal law, the black box will need to be replaced by specific emission control strategies. Emissions from trucks and locomotives will comprise a substantial portion of total emissions in 2024, the year federal law requires attainment of the ozone standard. The region's Air Quality Management Plan thus identifies non-combustion zero-emission transport technologies as a potential means to fill the black box.

In sum, this region needs every possible emission reduction from goods movement and other mobile sources. This must include zero-emission technologies wherever possible.

¹ California Air Resources Board, 2008 (mean estimate).

² SCAQMD Mates III analysis, 2008

³ I.e. the maximum level of emissions that can occur if the region is to meet the federal standard

Comments on Alternative Technology Alternatives

For the above reasons, AQMD staff urges that the I-710 project EIR provide decisionmakers with thorough information regarding the feasibility and impacts of employing zero-emission technologies. Our specific comments are provided below:

- ***A sufficient variety of alternatives involving transport powered by electricity should be included in the EIR to maximize the potential for inclusion of such technologies as part of the project.*** “Alternative” technology transportation systems powered by electricity would provide substantial air quality benefits due to the lack of any diesel particulate emissions (which cause significant local cancer risks), and the greatly reduced criteria pollutant emissions – particularly since emissions from electric generating plants in this region are well-controlled through use of selective catalytic reduction NOx controls and natural gas fuel. Electrification would also create substantial co-benefits in reducing carbon emissions, which would assist the state and region in implementing AB 32 and SB 375. *We thus strongly urge that a sufficient variety of zero-emission alternatives be included in the EIR, as discussed below, to maximize the potential for identification of a system that could successfully be incorporated into the final approved project.*
- ***At least two zero-emission fixed-guideway alternatives – an advanced technology such as maglev and electrified rail – should be evaluated in the EIR.*** The types of fixed-guideway systems to be thoroughly evaluated as EIR alternatives should, at a minimum, include (1) a broadly-proven technology, electrified rail, and (2) an advanced technology such as maglev that may provide additional benefits or be more suited to regional needs. Evaluating both types of fixed-guideway technologies will maximize the possibility of identifying a configuration that can be successfully implemented. The two types of technologies would likely pose differing advantages and disadvantages, e.g. cost, ability to incorporate into existing transport routes, and ability to implement through an elevated guideway if that is determined necessary. The two types of technologies also may have differing potential for phased expansion to the rest of the region. *We strongly urge that potential for expansion be a key criterion for the ultimate technology decision* since a regionwide zero-emission system may be the only way to achieve long-term pollution, energy, congestion and climate needs. Consistent with these needs, the Regional Transportation Plan proposes a regional transport system that would be electrified.

Alameda Corridor Electrification. One configuration that should be evaluated, at least as a partial solution, is electrification of the Alameda Corridor. The Corridor was constructed so as to accommodate electrification. We recognize that the Corridor is used by trains bound to and from points outside of the region, and that much of the I-710 traffic serves points within the region. But such additional use for the Corridor should at least be evaluated since this would be an obvious (and

possibly less expensive) means of electrifying a significant portion of cargo transport.

Zero Emission Technologies Are Available Today. Finally we wish to note that, while some zero emission technologies have yet to be commercialized (e.g. electric trucks), technological advances are occurring quickly. In addition, some zero-emission technologies, notably electrified rail, have been widely deployed for decades. To illustrate the point, we have attached photos of electrified freight transport systems in England, France, Russia, Italy, Slovakia, Russia, Australia and Japan (there are examples in many more countries). These systems carry many types of freight, including cargo containers, and in some cases cross mountainous terrain. We found examples of electrified freight rail systems that were constructed as long ago as 1922. Electric locomotives have similar or lower cost and are easier to maintain than diesel locomotives. We have also attached photos of “dual mode” locomotives in operation in U.S. passenger service that operate solely on electricity in New York City stations and tunnels due to restrictions on diesel exhaust in those facilities. New Jersey has ordered similar equipment. Such locomotives “seamlessly” transfer to diesel power when operated elsewhere. This technology can be used to phase-in electrification of current infrastructure since electrified track can be shared by diesel locomotives. The attachment also includes an image of the passenger maglev system currently in operation in Shanghai. *Clearly, electric transport technologies are available today and should be thoroughly evaluated in the I-710 EIR.*

- ***Electric trucks should be one alternative evaluated in the EIR.*** The AQMD supports development and deployment of electric trucks. We currently are engaged in projects, co-funded by the ports and AQMD, to develop electric drayage trucks and yard hostlers. Such technology has the potential to move cargo where fixed rails cannot and would avoid local and regional emissions impacts. The category of heavy-duty trucks is currently the largest source of NO_x emissions in the Basin. Unless cleaner technologies such as electrification are employed, trucks will still be among the top three source categories for NO_x in 2024 (the federal ozone attainment deadline) despite years of implementation of stringent new-vehicle emissions standards and truck replacement/retrofit rules. Zero-emissions technologies thus should be deployed to the extent feasible for this large emissions category.

While we support deployment of electric trucks, we view electric truck technology as a supplement to, not a replacement for, fixed-guideway systems. Our reasons are threefold:

- First, there will always be a need to move substantial cargo from the ports to locations beyond the economic range of trucks.

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- Second, the region should remove as many trucks as possible from the roads, both to reduce traffic congestion, and to cut energy use and associated emissions; *this should be a key design goal of the project.*
- Third, maximizing transport of cargo (and, if possible, passengers) by fixed guideway could reduce the need to construct additional highway lanes; this, in turn could free up space and funds to construct zero-emissions fixed guideway transport systems
- ***The EIR Should Fully and Concurrently Evaluate all Alternatives Described Above.*** Finally, we wish to caution against any unnecessary “phasing” of the evaluation of zero-emission alternatives which could result in other portions of the I-710 project (i.e. lane expansion) proceeding to project-level analysis, possible approval, and construction, prior to full evaluation and potential decision regarding the zero-emission alternative. Highway lanes and alternative transport systems are highly interrelated. The capacity of one could affect the usage of the other, and environmental impacts from expansion of the highway capacity could be mitigated or otherwise altered by deployment of alternative technology systems.

Thank you for your consideration of these comments. We look forward to working with the Committee to fashion an environmental document, and a project decision, which successfully meets the needs of this region.

Please contact Susan Nakamura, Planning and Rules Manager, at (909) 396-3105 or Peter Greenwald, Sr. Policy Advisor, at (909) 396-2100 if you have any questions or comments.

Sincerely,



Barry R. Wallerstein, D.Env.
Executive Officer

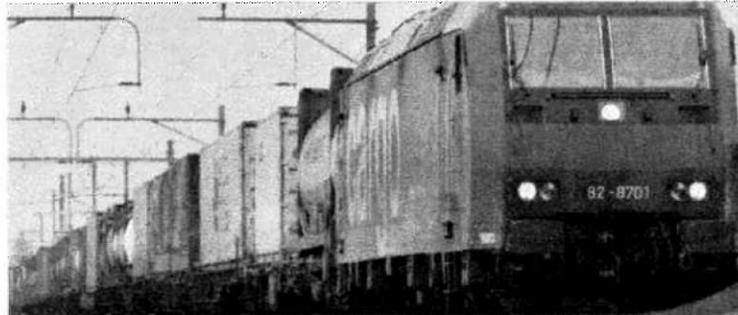
BRW/PG

Attachment

ATTACHMENT

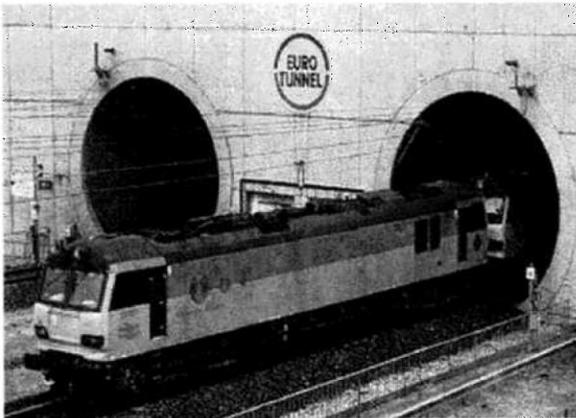
Electrified Freight Rail Examples

Italy



http://www.interportpd.it/scripts/interportpd.asp?cat=intermodalita&tipo=Ferrovionario&tab=intermodalita&sezione=Traffico_Ferrovionario

Channel Tunnel - Britain/France



<http://www.skyscrapercity.com/showthread.php?t=576900&page=2>

Japan



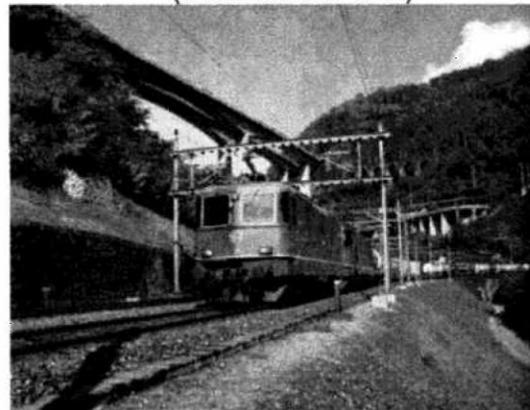
http://picasaweb.google.com/lh/photo/Y_cdNCKULEYQwyv3-FzyFw

Germany



<http://en.wikipedia.org/wiki/File:Db-152073-00.jpg>
<http://creativecommons.org/licenses/by-sa/2.5/>
http://commons.wikimedia.org/wiki/Commons:GNU_Free_Documentation_License

Switzerland (constructed in 1922)



http://en.wikipedia.org/wiki/File:Biaschina_Intermodal.jpg

Russia



<http://www.skyscrapercity.com/showthread.php?t=576900&page=2>



Slovakia



<http://www.skyscrapercity.com/showthread.php?p=31901680>



Austria
(Note trucks being carried)



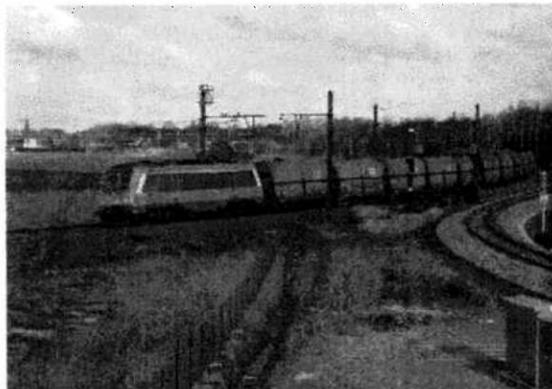
<http://www.skyscrapercity.com/showthread.php?t=576900&page=2>

Britain



http://en.wikipedia.org/wiki/British_Rail_Class_92

France



http://www.rail-be.net/Accessoires/Webs_Files/Alan.htm

Australia

Siemens press release:

Electric locomotives



Feb 10, 2006

Siemens makes the transport of coal more efficient by modernized electric locomotives. A new traction technology offers more power, more effort and more profitability to the fifth continent. In the past five locomotives hauled a train with a length of five kilometers and a weight of more than 13.000 tons. In the future three modernized locomotives will do the work of five former locomotives. The new locomotives which will have an economic lifetime of 20 additional years will do their work at Goonyella in eastern Australia where coal is conveyed by surface mining.

Reference Number: sots200603-02

[http://w1.siemens.com/press/en/pp_ts/2006/sots200603_02_\(innovationnews\)_1352530.htm](http://w1.siemens.com/press/en/pp_ts/2006/sots200603_02_(innovationnews)_1352530.htm)

Note: Siemens states the locomotives pull five-kilometer long coal trains to the coast where cargo is loaded onto ships, a trip of 200 to 300 kilometers.

Dual - Mode Locomotives: Third Rail Power

(Full-electric operation only when in New York City tunnels & stations *due to diesel exhaust restrictions*)



General Electric P32AC-DM operated by Amtrak. In New York City, where diesel emissions in tunnels approaching Penn Station and Grand Central Terminal are not permitted, operates on “third rail” electric power. Elsewhere, operates as a diesel-electric locomotive. Seamlessly transitions while underway. Rated at 3,200 hp (2,390 kW) and can obtain a maximum speed of 110 mph.

http://tripatlas.com/GE_Genesis#P32AC-DM

Dual - Mode Locomotives: Overhead Catenary Power

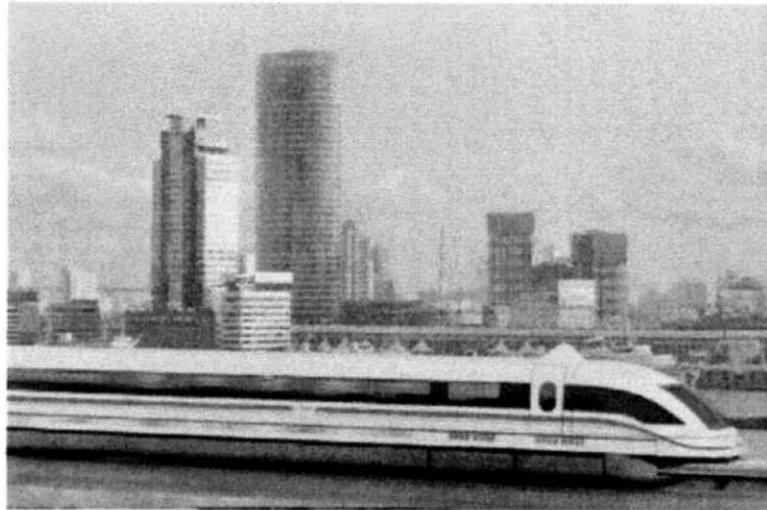


http://en.wikipedia.org/wiki/SNCF_Class_B_82500

Bombardier B 81500: dual-mode variant, capable of running on both diesel (by means of a diesel-electric engine) and 1.5 kV DC (by means of a pantograph). It has been in operation since

2005 on passenger lines in France. In July 2008, New Jersey Transit approved the purchase of 26 Bombardier dual-mode locomotives to replace its aging diesel fleet.

Shanghai Passenger Maglev System



http://www.drives.co.uk/news/worldnews/news_worldnews208.htm

