
Critique of the 2003 CenterLine Project SDEIR/RDEIR. Failure to consider a reasonable range of alternatives.

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Abstract

In October 2003, the Orange County Transportation Authority (OCTA) published the third Draft EIR/S for their revised CenterLine project ["DEIR", 1]. The report was intended and designed to meet the mandatory requirements of the California Environmental Quality Act (CEQA) and National Environmental Protection Act (NEPA). Prominent among these is the requirement for *alternatives*; quoting from CEQA:

Section 15126.6 Consideration and Discussion of Alternatives to the Proposed Project. ... *An EIR shall describe a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.*

The 2003 EIR failed to consider and analyze an obvious, reasonable and feasible alternative to the proposed project which is *equally or more feasible* than those proposed, would predictably result in *greater* transportation mobility benefit (the primary stated goal), would significantly *reduced* adverse environmental impact, and significantly *reduce* cost. In having failed to consider this win-win-win alternative, the EIR is significantly deficient in a fundamental mandate of CEQA and should be found invalid until corrected.

1. Explanation

In this third CenterLine DEIR, the CenterLine *project* was, for the first time, defined to include *three* major transportation additions:

1. **LR**, A 9.3 mile Light Rail system, (previously all of CenterLine)
2. **BUS**, A bus system expansion of 185,000 vehicle service hours per year (12%) [1].
3. **BSW**, A Bristol Street Widening comprising approximately twelve lane-mile expansion of that arterial street.

These elements are described [1, sec. S.6-1] as being of "independent utility", meaning that while all three are incorporated into the CenterLine project, each could stand on its own and their individual benefits are essentially additive. The newly added elements, 2 and 3, are more than significant. It will be shown that they are primarily if not wholly responsible for any transportation benefits claimed for the CenterLine project.

Four alternatives were defined. However, these involved nothing more than minor changes in route alignment, with otherwise identical LR, BUS and BSW elements.

The proposed LR element is mostly at-grade (meaning at street-level) and as such, would have adverse impacts on downtown Santa Ana traffic mobility including:

- taking approximately 12 lane-miles of arterial street capacity for the LR right-of-way,
- requiring permanent blocking-off of 28 existing unsignalized cross streets, and,
- causing fractional capacity reduction of 20 signalized cross streets due to LR traffic signal preemption.

These adverse transportation impacts of LR are significant and there is reason for concern that they might outweigh the transportation benefits of the LR element. However, the 2003 EIR system performance analysis was carried out *only* on the *bundled* project as described so from this latest data alone there is no way of separating out and knowing directly the net contribution of the light rail element, or even whether it is beneficial or detrimental.

However, a prior, year 2000 EIR [2] consisting of an *essentially identical* LR component alone, without mitigating street widening and rebuilding or bus additions, provides clear if indirect evidence (to be detailed below), that these adverse impacts do outweigh the beneficial new transit ridership of the LR element, with the result that the net impact of the Light Rail itself (including its inseparable adverse street capacity impacts) is to make traffic congestion, and its consequential air quality, and energy consumption impacts *worse*. The detailed objective findings of that year 2000 EIR, to be discussed below show that the no-build alternative was superior to all of the every one of the LR build alternatives in terms of transportation mobility benefit, the primary project goal. The 2000 EIR itself summarized:

Compared to the No Build Alternative, all three build alternatives would have more adverse impacts on the environment (without mitigation) for traffic circulation, displacements, public services, visual quality, cultural resources, noise/vibration, hazardous materials, water resources, natural resources, parks/trails, and environmental justice. Mitigation measures are proposed to reduce these impacts.

(Note: the phrase "without mitigation" means without additional road building to compensate for the street traffic disruption that is an inseparable part of the light-rail system)

The above observations strongly suggest that for the 2003 CenterLine EIR, a *fifth*, "NO-LR", alternative, consisting of *only* the Bristol Street Widening and BUS expansion elements, but *omitting* the Light Rail element would provide *more* mobility and travel time improvement (the fundamental project purpose [DEIR p.1.2]), and significantly *reduced* environmental impact, at a total capitalized cost *reduction* of approximately \$900 million.

By failing to analyze this obvious, reasonable, feasible and predictably superior alternative, the 2003 DEIR is in violation of the fundamental CEQA requirement for alternatives [section 15126.6 quoted above].

Correction requires:

1. that the EIR be declared invalid in its present form,
2. that the EIR be required to include a fifth alternative which includes only the BSW and BUS elements, omitting the LR element,
3. that the performance comparison of the alternatives be required to include overall corridor travel time savings, representative freeway and arterial average speeds, and representative point-to-point travel times within the corridor.

Detailed evidence of the above claims, from the OCTA documentation follows.

2. Evidence From the 2000 EIR

The 2003 CenterLine EIR [1] analyzes *only* the *bundle* of

- Light Rail, plus
- an 11 lane-mile Bristol Street Widening, plus
- a 14% BUS service expansion

so there is no way of inferring from it how much or little of the project benefit is ascribable to the separate elements, particularly, LR.

However, the prior, year 2000 EIR [2], incorporated by reference into the 2003 report, analyzed an essentially identical LR element alone. So between the two analyses, there is a great deal of evidence bearing on the transportation performance, environmental impacts, and cost advantages of a fifth NO-LR alternative.

For the 2000 CenterLine EIR [2], the project analyzed consisted of the Light Rail element *alone*, without bus or street expansion additions. Major street impacts were identified and rebuilding mitigation was planned generally, but not yet designed in sufficient detail, so the performance analysis treated only the beneficial and adverse impacts of the LR element itself including its inseparable street traffic impacts. Read and understood in depth, those results showed that the net transportation impacts were uniformly negative as indicated by the following:

Loss of Street Capacity Exceeds LR Capacity added

A detailed DHS analysis of street capacity loss, [3] based on actual street lane usage and the street area preempted for LR ROW, found that for all alternatives, either at-grade or elevated, the capacity loss due to street lanes taken for LR ROW, (even without including the further adverse effects on cross traffic) exceeds the volume of traffic, *V*, projected to be removed from the roads by LR ridership. This means the regional Volume/Capacity ratio (*V/C*) and congestion and mobility would be made worse by the LR.

Link and Intersection Analyses

Using their regional traffic model, "OCTAM", OCTA analyzed in detail the effect on street traffic along the ROW, taking into account both the reduction in capacity (**C**) due to lanes taken and reduction in traffic volume (**V**) due to cars removed from the road, and determined the resulting *V/C* ratios of 82 links and

32 intersections, under the “no-build” and “build” (before and after) conditions. The results were summarized as no “significant” difference [2., V. 2, Apx.. A]. Careful analysis of the raw data, however, reveals a small (arguably “insignificant”) but *uniformly adverse, increase (never a decrease)* of V/C under *all* LR alternatives, for links and intersections, for AM and PM. Increased V/C invariably means *increased* congestion and emissions. What is very significant about this is not the size of the impact, but rather that it is *uniformly adverse*. A transportation improvement is *supposed* to have a *beneficial* impact on traffic.

Air Quality is Made Worse

In making congestion worse, LR has an adverse effect on air quality. In the 2000 EIR [2], local air quality impacts of LR were estimated in terms of Carbon Monoxide (one- and eight-hour concentrations) at standard sensor locations for a dozen or so intersections along each alternative alignment. For the elevated alternative (EA2) which is the most nearly comparable to the present “tri-cities” alignment, only 5 intersections were common to, and could therefore be compared between the “no-build” (NB) and elevated (EA2) build alternative to permit before/after comparisons. With 12 sensor locations specified around each intersection, this provided 60 before/after comparative locations.

The OCTA analysis [2., Table 4.9] showed that none of the one-hour or eight-hour concentrations at any of the 60 comparison locations exceeded either the federal or state standards for CO concentration, either before or after build, and therefore simply dismissed them as “not significant.” However, this hides the important question, of whether *any* improvement was realized. Comparing No-Build to (before to after) the data show for the change from no-build to CenterLine build”.

# of locations for which CO2 concentration was:		
Worse	Same	Better
39	21	None

Thus *every* test location showed CO concentrations after the EA2 build either the same (within 0.1 ppm) or worse than doing nothing (i.e. the No-Build alternative). This was computed only for the EA2 (elevated) alternative which would certainly have less adverse impact than the present mostly at-grade alternative.

Again the significance of this is not the size of magnitude, but the sign or sense of the impact. Transportation improvements are supposed to make these things better, not worse.

3. Environmentally Superior Alternative.

CEQA guidelines at Section 15126.6(e)(2) require that *if no-build is the environmentally superior alternative*, the EIR must identify the environmentally superior alternative from among the other alternatives. The December 2000 OCTA DEIS [2, section 4.21.3] acknowledges that this is the case by providing that exact required statement. Identifying No-Build as the "Environmentally Superior" alternative, it is explained away in these words:

"However, the No-Build alternative would not offer the benefits of increased transit availability, improved mobility, and transportation system capacity improvement."

"Increase transit availability of course, but that in itself is not a fundamental benefit. The underlined *subjective* rationale for dismissal, are soundly contradicted by the objective findings of the same report. All the objective findings make it clear: the LR system does **not** afford improved mobility or transportation capacity improvement.

4. Environmental Impact Summary

The report Summary Statement, on page S-27 provides this remarkable summary of impacts:

"Compared to the No Build Alternative, all build alternatives would have more adverse impacts on the environment (without mitigation) for traffic circulation, displacements, public services, visual quality, cultural resources, noise/vibration, hazardous materials, water resources, natural resources, parks/trails, and environmental justice. Mitigation measures are proposed to reduce these impacts."

In other words, in all these respects, all CenterLine LR build alternatives (by themselves, without additional road building to make up for their adverse effects on transportation capacity) were worse than doing nothing.

5. Costs Savings

Based on the element cost summaries [1, Tables 5-5,

The CenterLine element cost breakdown is as follows, 1999 dollars

Comparing IOS (preferred) to No-LR Alternative Costs million 1999 \$

	Capital	Annual Operating	
LR	\$706	\$27	T. 5-5
BSW	\$147	-	T5-10
Bus (Centerline Only)	\$5.5	\$12.1	
CenterLine IOS Alt	\$858	\$39.1	
No-LR Alt	\$152	\$12.1	
No-LR Saving	\$706	\$27.0	
Ratio: CL IOS / No-LR	5.6	3.2	

LR and BSW costs are from the referenced tables in [1]

CenterLine bus costs not given in EIR, are based on OCTA 2001 Section 15 reported actual capital and operating costs per vehicle service hour and the stated 185,000 annual vehicle service hours for CenterLine BUS element.

Bottom line: a NO-LR alternative would be 1/5 the capital cost and 1/3 the operating cost, total capitalized cost saving approximately \$900 million (1999\$)

6. Other Environmental Impacts

The 2003 EIR [2, sec 4] does a thorough job of tabulating the many diverse environmental impacts of the project. These are summarized in table 4.22-1 which lists 84 potential impacts and their summary evaluations for each of the build alternatives. Based on the underlying considerations and evaluation set forth for each item and in the light of the performance differences listed above, we evaluated the impacts of a fifth, No-LR alternative, and compared it against the IOS (currently preferred) OCTA alternative, Table 8-1 following here.

Summarizing the comparative evaluation

No-LR better than IOS	42 items
No-LR same as IOS	37
No-LR worse than IOS	1
Inapplicable	4

The one item for which No-LR was worse than IOS LR was "Estimated Short-Term Job Opportunities", a direct result of the saving of some \$706 million capital costs (1999\$) (see #5 above).

Four impacts in the original list are judged inapplicable in the context of multimodal, or No-LOR alternatives; these include "Increased Light Rail Ridership", "Decreased auto DVMT", "Decreased auto Daily trips", and "Increased Countywide Transit Trips",

Summarizing, the No-LR alternative would reduce the adverse environmental impacts by more than one-half.

7. References

1. "Supplemental Draft Environmental Impact Statement and Revised Draft Environmental Impact Report", OCTA October, 2003.
2. "Supplemental Draft Environmental Impact Statement and Revised Draft Environmental Impact Report", OCTA, December, 2000
3. "The Effect of Street ROW Taking" DHS, January 2001. On line at www.urbantransport.org/taking5.pdf
4. "The Corridor, Major Investment Study Evaluation Report" OCTA, December 1996 and June 1997
5. "The CenterLine Light Rail Transit Project, Section 5309 New Starts Report to Federal Transit Administration", OCTA, November 2000; September 2002, August 2003.

8. Table 8-1 Comparison of Environmental Impacts CenterLine IOS vs No-LR Alternative

Italic font denotes additions to EIR [1], Table 4.22

	IOS Alt (LPA)	No-LR Alt	Better Same or NA Worse	↑ » ↓
Transportation (Chapter 3)				
Aggregate Travel Time	Not Reported	Significantly better		↑
Increased Light Rail Ridership	Yes, 27,200	Yes 21,700 NA		»
Decreased Auto DVMT	-0.23%	No NA		»
Decreased Auto Daily Trips	-0.23%	No NA		»
Increased Countywide Transit Trips	+12.2%	+12.1% NA		»
Removal of On-Street Parking	Yes. 230 Spaces	No.		↑
Removal of Off Street Parking	Yes. 330 Spaces	No		↑
Number of Intersections Impacted	Yes 11 "Significantly" 89 Adversely.	None		↑
Number of crossing Intersections Blocked	43	None		↑
Land Use and Planning (Section 4.1)				
Impacts to Plans and Policies	Yes , City of Irvine	No		↑
Zoning Conflicts	No	Same		»
Neighborhoods (Section 4.2)				
Loss of Neighborhood amenity	Yes 4 Neighborhoods	Same		→
Neighborhood divided	No	Same		»
Neighborhood access impacts	No	Same		»
Acquisition and Displacements (Section 4.3)				
Residential	Yes 108 units	Yes 46 units		↑
Non-Residential	Yes 101 units	Yes 64 units		↑
<i>Population Growth and Housing (Section 4.4)</i>				
Facilitate or Accelerate Growth.	No	Same		»
Achieve Housing Goals	No	Same		»
Economic and Fiscal Conditions (Section 4.5)				
Jobs Lost by Displacements	Yes, -600 jobs	Yes, = -380 jobs		↑
Long Term Job Opportunities Created	Yes, 1080 jobs	Same		»
Loss of Property Tax Revenue	Yes, -\$515,600	Yes - \$288,350		↑
Loss of Annual Sales Tax Revenue	Yes, -\$289,690	Yes -\$162,000		↑
Public Services and Utilities (Section 4.6)				
Increased emergency Response Time	No (??)	Reduced Emergency Response Time		↑
Improved Access to Public Facilities	Yes 33 Facilities	Same		»
Removal of a Public Facility	Yes. Johnson Chapel	Same		»
Visual Quality and Aesthetics (Section 4.7)				
Implementation of Bristol Street Corridor	Yes	Same		»

Significant Removal of Landscaping	Yes Santa Ana College	No	↑
Degrade Scenic Highway	No	Same	»
Impairs Business Visibility	No	Same	»
Incompatible with Visual Character	No (??)	Better	↑
Safety and Security (Section 4.8)			
Improve Pedestrian Safety	Yes (??)	Safer. No rail-pedestrian accidents	↑
Localized ped. safety Impacts	Yes	No	↑
Impacts to Safe Routes to School	Yes	No	↑
Removes Student Drop-off Zone	Yes St. Josephs School	No	↑
Reduces sidewalk to less than ADA rqmt.	No	No	»
Cultural Resources (Section 4.9)			
Proximity Impacts	Yes	No	↑
Air Quality (Section 4.9 and Footnote 4)			
Satisfies EPA Conformity	Yes	Yes	»
Exceeds CO Rqmt	No	No	
Reduced Countywide Air Quality Emissions	Yes. -56 Tons per yr (??)	Yes. More reduction	↑
Noise and Vibration (Section 4.11)			
Severe Impacts on Structures	Yes	No	↑
CEQA Noise Impacts on Resources	Yes	No	↑
Vibration Impacts on Structures	No	No	»
Geology and Seismicity (Section 4.12)			
Affect Unique Geologic Features	No	No	»
Increased Exposure to Seismic Hazards	No	No	»
Hazardous Materials (Section 4.13)			
Increased Exposure	No	No	»
Water Resources (Section 4.14)			
Structures within 100 yr Floodplain	No	No	»
Degradation of Water Quality	No	No	»
Natural Resources (Section 4.15)			
Impacts to Sensitive/ Endangered Species	No	No	»
Impacts to Natural Vegetation	No	No	»
Impacts to Jurisdictional Waters	No	No	»
Energy (Section 4.16)			
Reduced Operation Use	Yes. 53,300 barrels (??)	Yes. More Reduction	↑
Increased Electricity Use	Yes. 1.44 MW	No	↑
Increased Electromagnetic Field Exposure	No	No	»
Recreation (Section 4.17)			
Increased Access to Recreational Facilities	Yes	Yes. More	↑
Demographics, Environmental Justice etc. (Sec 4.19)			
Additional Travel Choices	Yes	Yes	»
Increased Employment Opportunities	Yes +56,405 jobs ST - 1080 Jobs LT	Yes (More)	↑
Displacement of Businesses serving EJ Population	Yes	Yes	»
Construction (Section 4.21)			
Temporary Impacts on Transit	Yes	Yes	»
Temporary Impacts on Intersections	Yes	Yes	»
Temporary Reduction in	Yes	Yes. Less	↑

Parking			
Estimated Short Term Job Opportunities	Yes +71,450 ST Jobs	Yes +21,980	↓
Temporary Reduction in Business Visibility	Yes	Yes Est 1/3 x IOS	↑
Relocation of Underground Utilities	No	No	»
Temporary Visual Impacts	Yes	Yes	»
Temp. Vis. Impacts from Nighttime Elevated Construction	Yes	No	↑
Potential Damage to Landscaping	Yes	No	↑
Temporary Visual Obstruction John Wayne	Yes	No	↑
Potential Damage to Human Remains	Yes	No	↑
Potential Damage to Archeological Sites	Yes	No	↑
Dust and Tailpipe Emissions	Yes	Yes (Less)	↑
Temporary Severe Noise Impacts	Yes	Yes (Less)	↑
Potential Damage to Fragile Historic Buildings	Yes	No	↑
Vibration Interference with Sensitive Land Use (Segerstrom Hall)	Yes	No	↑
Potenti. Risk from Shallow Groundwater	Yes	No	↑
Potenti. Damage from Settlement	Yes	No	↑
Potenti. Damage to Paleontological Sources	No	No	
Exposure to Underground Hazardous Materials	Yes	No	↑
Exposure to Known Contaminated Soil and Groundwater	Yes	No	↑
Temporary Degradation of Surface Water Quality	Yes	No	↑
Noise Impacts to Wildlife	No	No	»
Sensitive, Threatened and Endangered Species	No	No	»
Jurisdictional Waters	No	No	»
Non Renewable Energy Resources	No	No	»
Temp. Access to Recreational Facilities	No	No	»
Temp. Closure of Recreational Facilities	No	No	»
Potenti. Damage to Recreational Resources	No	No	»

SUMMARY: Comparing No-LR Alt 5 with IOS :

Better ↑ 40
Same » 37
Worse ↓ 1
NotApplicable 4

[a] Four criteria inapplicable to a multimodal alternatives comparison.