

California High-Speed Rail System



2024 BUSINESS PLAN
Technical Supporting Document

High, Medium and Low Cash Flow Analysis

March 2024



SIGNATURE/APPROVAL SHEET

TO: Brian Annis

FROM: Guy Wilkinson

SUBJECT: Approval of the 2024 Business Plan: High, Medium, and Low Cashflow Analysis

DESCRIPTION OF ENCLOSED DOCUMENT(S): 2024 Business Plan: High, Medium, and Low Cashflow Analysis

REVIEWER	REVIEWER'S INITIALS/DATE:	COMMENTS
Signer #1 Name (Print): Brian Annis	Signature on file	
Signer #2 Name (Print): Bill Casey	Signature on file	
Signer #3 Name (Print): Thomas Meinl	Signature on file	
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March 26, 2024

Brian Annis
California High-Speed Rail Authority
770 L Street, Suite 1100
Sacramento, California 95814

Dear Mr. Annis:

Contract #HSR19-41 (“Contract”)

Deliverable: 2024 Business Plan Cash Flows

KPMG LLP is pleased to provide the following deliverables pursuant to our Contract:

- 2024 Business Plan Cash Flows – High, Medium, and Low Cash Flows

The attached documents provide a description of the forecast cash flows from operation of the California high-speed rail system for the high, medium, and low ridership projections. The cash flow analysis presented in the attached document is based on assumptions related to revenues, operations and maintenance costs, and capital replacement costs provided by the California High-Speed Rail Authority (“Authority”) and its consultants.

The attached deliverables have been developed pursuant to our contract awarded in October 2020. We look forward to continuing to work with the California High-Speed Rail Authority on financial, commercial, and strategic initiatives as design and construction proceed on the program.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Guy Wilkinson', with a long horizontal flourish extending to the right.

Guy Wilkinson

Attachments:

2024 Business Plan High, Medium and Low Cash Flow Analysis

2024 Business Plan
High, Medium and Low Cash Flow Analysis

High, Medium and Low Cash Flows – 2024 Business Plan

This document provides a description of the forecast cash flows from the operation of the high-speed rail system for the high, medium, and low ridership projections. Two versions of the net operating cash flows for Phase 1 through 2060 are provided in this analysis. The first is in Year of Expenditure (“YOE”) dollars which includes escalation to the year that funds are collected or spent. The second version provides the cash flows in 2023 dollars which removes the effect of escalation from all values. These estimates illustrate the potential net cash flows that may be available from operating the project that can be applied to future development costs or future financing.

Net operating cash flow after capital replacement is determined by calculating the net cash flow from operations (revenue less operations and maintenance costs (“O&M”). Revenues include those generated from high-speed rail passenger service (farebox revenue), feeder and connecting bus service, as well as ancillary revenues. Depreciation and amortization are non-cash items and are excluded from this calculation. To account for capital replacement needs, the projected annual expenditures for repairing and replacing capital assets over time, including trains, equipment, facilities, and rail infrastructure, are then deducted to arrive at net operating cash flow after capital replacement. This represents the net cash flow available to be used for capital purposes and is before consideration of any debt service or investment returns. Net operating cash flow after capital replacement is the free cash flow available for capital financing purposes or other capital costs.

O&M and capital replacement cost forecasts were provided by the Authority’s technical consultants. This analysis is consistent with the methodology previously used in the 2022 Business Plan.

The net operating cash flow after capital replacement included herein are based on assumptions related to revenues, operating and maintenance costs, and capital replacement costs provided by the Authority’s technical consultants as described in the 2024 Business Plan. Construction funding outside the Central Valley is currently not identified, and the start date for passenger service between the San Francisco Bay Area and Los Angeles / Anaheim is therefore unknown. While the completion date is unknown, the estimates calculated here retain an assumption that the Silicon Valley to Central Valley Line (San Francisco to Merced / Bakersfield) will start full-year operations in 2031, with Phase 1 (San Francisco to Anaheim) opening in 2033. For the purposes of this analysis, the Authority assume that at the opening dates the project is financially unconstrained (i.e., that the funds needed to build the project are available when they are needed).

Escalation assumptions were provided by the Authority are consistent with the 2023 Project Update Report. The escalation assumptions in the 2023 Project Update Report leverages forecast from the California Department of Finance and United States Federal Reserve.

Figure 1. Escalation Assumptions

Assumptions	2023	2024	2025	2026	2027 to 2060
Revenues	Base Year	3.61%	3.24%	3.14%	2.00%
O&M Cost	Base Year	3.61%	3.24%	3.14%	2.00%
Capital Replacement	Base Year	3.61%	3.24%	3.14%	2.00%

High, Medium and Low Cash Flow Analysis
(Millions of Dollars in Year of Expenditure, \$'MM YOE)

Exhibit 1. Net Operating Cash Flow after Capital Replacement through Phase 1 (YOE dollars in millions) HIGH Case

Financial Metric (\$'MM YOE)	Total Cash Flow through Year 30	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Revenue	132,183	1,119	1,145	3,399	3,475	3,554	3,634	3,716	3,800	3,886
Less: O&M	(65,611)	(805)	(821)	(1,718)	(1,754)	(1,790)	(1,826)	(1,864)	(1,902)	(1,941)
Net Cash Flow from Operations	66,572	314	324	1,680	1,722	1,764	1,808	1,852	1,898	1,945
Less: Capital Replacement	(11,234)	-	-	-	-	-	-	-	-	-
Net Operating Cash Flow After Capital Replacement	55,337	314	324	1,680	1,722	1,764	1,808	1,852	1,898	1,945

Exhibit 1. Net Operating Cash Flow after Capital Replacement through Phase 1 (YOE dollars in millions) HIGH Case (continued)

Financial Metric (\$'MM YOE)	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Revenue	3,973	4,061	4,151	4,243	4,337	4,433	4,531	4,632	4,734	4,839	4,946
Less: O&M	(1,981)	(2,021)	(2,062)	(2,103)	(2,146)	(2,189)	(2,234)	(2,279)	(2,325)	(2,372)	(2,420)
Net Cash Flow from Operations	1,993	2,040	2,089	2,140	2,191	2,244	2,298	2,353	2,409	2,467	2,526
Less: Capital Replacement	(0)	(0)	(231)	(236)	(25)	(26)	(235)	(4,281)	(297)	(81)	(259)
Net Operating Cash Flow After Capital Replacement	1,992	2,040	1,858	1,904	2,166	2,218	2,062	(1,929)	2,112	2,386	2,267

Exhibit 1. Net Operating Cash Flow after Capital Replacement through Phase 1 (YOE dollars in millions) HIGH Case (continued)

Financial Metric (\$'MM YOE)	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Revenue	5,051	5,157	5,266	5,377	5,490	5,606	5,724	5,844	5,968	6,093
Less: O&M	(2,469)	(2,520)	(2,570)	(2,621)	(2,674)	(2,729)	(2,783)	(2,839)	(2,896)	(2,956)
Net Cash Flow from Operations	2,581	2,637	2,696	2,755	2,816	2,876	2,941	3,005	3,071	3,137
Less: Capital Replacement	(264)	(606)	(618)	(198)	(167)	(170)	(403)	(268)	(274)	(2,593)
Net Operating Cash Flow After Capital Replacement	2,317	2,031	2,078	2,557	2,649	2,706	2,537	2,737	2,797	544

Note: Totals may not sum due to rounding

Exhibit 2. Net Operating Cash Flow after Capital Replacement through Phase 1 (YOE dollars in millions) MEDIUM Case

Financial Metric (\$'MM YOE)	Total Cash Flow through Year 30	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Revenue	121,009	1,016	1,039	3,114	3,184	3,257	3,331	3,406	3,484	3,563
Less: O&M	(59,977)	(735)	(750)	(1,571)	(1,603)	(1,636)	(1,669)	(1,704)	(1,739)	(1,774)
Net Cash Flow from Operations	61,033	280	289	1,543	1,581	1,621	1,661	1,703	1,745	1,789
Less: Capital Replacement	(10,315)	-	-	-	-	-	-	-	-	-
Net Operating Cash Flow After Capital Replacement	50,718	280	289	1,543	1,581	1,621	1,661	1,703	1,745	1,789

Exhibit 2. Net Operating Cash Flow after Capital Replacement through Phase 1 (YOE dollars in millions) MEDIUM Case (continued)

Financial Metric (\$'MM YOE)	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Revenue	3,644	3,724	3,806	3,889	3,974	4,062	4,151	4,242	4,335	4,430	4,527
Less: O&M	(1,811)	(1,847)	(1,885)	(1,923)	(1,962)	(2,001)	(2,042)	(2,083)	(2,126)	(2,169)	(2,212)
Net Cash Flow from Operations	1,833	1,877	1,921	1,966	2,013	2,060	2,109	2,158	2,209	2,261	2,315
Less: Capital Replacement	(0)	(0)	(212)	(217)	(23)	(24)	(216)	(3,931)	(273)	(74)	(238)
Net Operating Cash Flow After Capital Replacement	1,833	1,877	1,709	1,750	1,990	2,037	1,893	(1,773)	1,937	2,187	2,076

Exhibit 2. Net Operating Cash Flow after Capital Replacement through Phase 1 (YOE dollars in millions) MEDIUM Case (continued)

Financial Metric (\$'MM YOE)	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Revenue	4,622	4,719	4,818	4,919	5,022	5,127	5,235	5,344	5,456	5,571
Less: O&M	(2,257)	(2,304)	(2,349)	(2,396)	(2,445)	(2,495)	(2,544)	(2,595)	(2,648)	(2,702)
Net Cash Flow from Operations	2,365	2,415	2,469	2,522	2,577	2,632	2,691	2,749	2,809	2,869
Less: Capital Replacement	(243)	(556)	(567)	(182)	(153)	(156)	(370)	(246)	(251)	(2,381)
Net Operating Cash Flow After Capital Replacement	2,122	1,859	1,902	2,341	2,424	2,476	2,320	2,503	2,557	487

Note: Totals may not sum due to rounding

Exhibit 3. Net Operating Cash Flow after Capital Replacement through Phase 1 (YOE dollars in millions) LOW Case

Financial Metric (\$'MM YOE)	Total Cash Flow through Year 30	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Revenue	88,360	775	793	2,274	2,325	2,378	2,431	2,485	2,541	2,598
Less: O&M	(57,716)	(707)	(722)	(1,512)	(1,543)	(1,574)	(1,607)	(1,639)	(1,673)	(1,707)
Net Cash Flow from Operations	30,644	68	71	763	783	803	824	846	868	891
Less: Capital Replacement	(9,356)	-	-	-	-	-	-	-	-	-
Net Operating Cash Flow After Capital Replacement	21,288	68	71	763	783	803	824	846	868	891

Exhibit 3. Net Operating Cash Flow after Capital Replacement through Phase 1 (YOE dollars in millions) LOW Case (continued)

Financial Metric (\$'MM YOE)	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Revenue	2,656	2,715	2,775	2,836	2,898	2,962	3,027	3,094	3,162	3,232	3,303
Less: O&M	(1,742)	(1,778)	(1,814)	(1,850)	(1,888)	(1,926)	(1,965)	(2,005)	(2,045)	(2,087)	(2,129)
Net Cash Flow from Operations	914	937	961	985	1,010	1,036	1,062	1,089	1,117	1,145	1,174
Less: Capital Replacement	(0)	(0)	(193)	(196)	(21)	(21)	(196)	(3,566)	(247)	(67)	(216)
Net Operating Cash Flow After Capital Replacement	914	937	768	789	989	1,015	866	(2,476)	870	1,078	958

Exhibit 3. Net Operating Cash Flow after Capital Replacement through Phase 1 (YOE dollars in millions) LOW Case (continued)

Financial Metric (\$'MM YOE)	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Revenue	3,372	3,443	3,516	3,590	3,665	3,742	3,821	3,901	3,983	4,067
Less: O&M	(2,172)	(2,217)	(2,260)	(2,306)	(2,352)	(2,401)	(2,448)	(2,498)	(2,548)	(2,600)
Net Cash Flow from Operations	1,200	1,226	1,255	1,284	1,313	1,341	1,372	1,403	1,435	1,466
Less: Capital Replacement	(220)	(504)	(515)	(165)	(139)	(142)	(336)	(224)	(228)	(2,160)
Net Operating Cash Flow After Capital Replacement	980	722	741	1,119	1,174	1,199	1,036	1,180	1,207	(694)

Note: Totals may not sum due to rounding

High, Medium, Low Cash Flows
(Millions of Dollars in 2023, \$'MM 2023)

Exhibit 4: Net Operating Cash Flow after Capital Replacement through Phase 1 (2023 dollars in millions) HIGH Case

Financial Metric (\$'MM 2023)	Total Cash Flow through Year 30	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Revenue	79,132	919	921	2,682	2,689	2,695	2,702	2,709	2,716	2,723
Less: O&M	(39,464)	(661)	(661)	(1,356)	(1,357)	(1,357)	(1,358)	(1,359)	(1,359)	(1,360)
Net Cash Flow from Operations	39,668	258	260	1,326	1,332	1,338	1,344	1,350	1,356	1,363
Less: Capital Replacement	(6,139)	-	-	-	-	-	-	-	-	-
Net Operating Cash Flow After Capital Replacement	33,529	258	260	1,326	1,332	1,338	1,344	1,350	1,356	1,363

Exhibit 4: Net Operating Cash Flow after Capital Replacement through Phase 1 (2023 dollars in millions) HIGH Case (continued)

Financial Metric (\$'MM 2023)	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Revenue	2,729	2,735	2,741	2,747	2,752	2,758	2,764	2,770	2,776	2,782	2,787
Less: O&M	(1,361)	(1,361)	(1,361)	(1,362)	(1,362)	(1,362)	(1,363)	(1,363)	(1,363)	(1,364)	(1,364)
Net Cash Flow from Operations	1,369	1,374	1,380	1,385	1,391	1,396	1,401	1,407	1,412	1,418	1,423
Less: Capital Replacement	(0)	(0)	(153)	(153)	(16)	(16)	(143)	(2,560)	(174)	(47)	(146)
Net Operating Cash Flow After Capital Replacement	1,369	1,374	1,227	1,232	1,375	1,380	1,258	(1,153)	1,238	1,371	1,277

Exhibit 4: Net Operating Cash Flow after Capital Replacement through Phase 1 (2023 dollars in millions) HIGH Case (continued)

Financial Metric (\$'MM 2023)	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Revenue	2,790	2,793	2,796	2,799	2,802	2,805	2,808	2,811	2,814	2,817
Less: O&M	(1,364)	(1,365)	(1,364)	(1,365)	(1,365)	(1,366)	(1,365)	(1,366)	(1,366)	(1,367)
Net Cash Flow from Operations	1,426	1,428	1,432	1,434	1,437	1,439	1,443	1,445	1,448	1,450
Less: Capital Replacement	(146)	(328)	(328)	(103)	(85)	(85)	(198)	(129)	(129)	(1,199)
Net Operating Cash Flow After Capital Replacement	1,280	1,100	1,104	1,331	1,352	1,354	1,245	1,316	1,319	251

Note: Totals may not sum due to rounding

Exhibit 5: Net Operating Cash Flow after Capital Replacement through Phase 1 (2023 dollars in millions) MEDIUM Case

Financial Metric (\$'MM 2023)	Total Cash Flow through Year 30	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Revenue	72,450	834	836	2,457	2,463	2,470	2,477	2,483	2,490	2,497
Less: O&M	(36,075)	(604)	(604)	(1,240)	(1,240)	(1,241)	(1,241)	(1,242)	(1,243)	(1,243)
Net Cash Flow from Operations	36,374	230	232	1,217	1,223	1,229	1,235	1,241	1,247	1,253
Less: Capital Replacement	(5,636)	-	-	-	-	-	-	-	-	-
Net Operating Cash Flow After Capital Replacement	30,738	230	232	1,217	1,223	1,229	1,235	1,241	1,247	1,253

Exhibit 5: Net Operating Cash Flow after Capital Replacement through Phase 1 (2023 dollars in millions) MEDIUM Case (continued)

Financial Metric (\$'MM 2023)	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Revenue	2,503	2,508	2,513	2,518	2,522	2,527	2,532	2,537	2,541	2,546	2,551
Less: O&M	(1,244)	(1,244)	(1,244)	(1,245)	(1,245)	(1,245)	(1,246)	(1,246)	(1,246)	(1,246)	(1,247)
Net Cash Flow from Operations	1,259	1,264	1,268	1,273	1,277	1,282	1,286	1,291	1,295	1,300	1,304
Less: Capital Replacement	(0)	(0)	(140)	(140)	(15)	(15)	(132)	(2,351)	(160)	(43)	(134)
Net Operating Cash Flow After Capital Replacement	1,259	1,264	1,128	1,133	1,263	1,267	1,155	(1,060)	1,135	1,257	1,170

Exhibit 5: Net Operating Cash Flow after Capital Replacement through Phase 1 (2023 dollars in millions) MEDIUM Case (continued)

Financial Metric (\$'MM 2023)	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Revenue	2,554	2,556	2,558	2,561	2,563	2,566	2,568	2,571	2,573	2,575
Less: O&M	(1,247)	(1,248)	(1,247)	(1,248)	(1,248)	(1,249)	(1,248)	(1,248)	(1,248)	(1,249)
Net Cash Flow from Operations	1,307	1,308	1,311	1,313	1,315	1,317	1,320	1,322	1,324	1,326
Less: Capital Replacement	(134)	(301)	(301)	(95)	(78)	(78)	(182)	(119)	(119)	(1,101)
Net Operating Cash Flow After Capital Replacement	1,172	1,007	1,010	1,219	1,237	1,239	1,138	1,204	1,206	225

Note: Totals may not sum due to rounding

Exhibit 6: Net Operating Cash Flow after Capital Replacement through Phase 1 (2023 dollars in millions) LOW Case

Financial Metric (\$'MM 2023)	Total Cash Flow through Year 30	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Revenue	52,916	636	638	1,795	1,799	1,803	1,808	1,812	1,816	1,820
Less: O&M	(34,715)	(581)	(581)	(1,193)	(1,193)	(1,194)	(1,195)	(1,195)	(1,196)	(1,196)
Net Cash Flow from Operations	18,201	56	58	602	606	609	613	617	620	624
Less: Capital Replacement	(5,113)	-	-	-	-	-	-	-	-	-
Net Operating Cash Flow After Capital Replacement	13,088	56	58	602	606	609	613	617	620	624

Exhibit 6: Net Operating Cash Flow after Capital Replacement through Phase 1 (2023 dollars in millions) LOW Case (continued)

Financial Metric (\$'MM 2023)	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Revenue	1,825	1,828	1,832	1,836	1,839	1,843	1,847	1,850	1,854	1,858	1,861
Less: O&M	(1,197)	(1,197)	(1,197)	(1,198)	(1,198)	(1,198)	(1,199)	(1,199)	(1,199)	(1,200)	(1,200)
Net Cash Flow from Operations	628	631	634	638	641	645	648	651	655	658	662
Less: Capital Replacement	-	-	(127)	(127)	(13)	(13)	(120)	(2,132)	(145)	(39)	(122)
Net Operating Cash Flow After Capital Replacement	628	631	507	511	628	631	528	(1,481)	510	619	540

Exhibit 6: Net Operating Cash Flow after Capital Replacement through Phase 1 (2023 dollars in millions) LOW Case (continued)

Financial Metric (\$'MM 2023)	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
Revenue	1,863	1,865	1,867	1,869	1,871	1,872	1,874	1,876	1,878	1,880
Less: O&M	(1,200)	(1,201)	(1,200)	(1,201)	(1,201)	(1,201)	(1,201)	(1,201)	(1,201)	(1,202)
Net Cash Flow from Operations	663	664	667	668	670	671	673	675	677	678
Less: Capital Replacement	(122)	(273)	(273)	(86)	(71)	(71)	(165)	(108)	(108)	(998)
Net Operating Cash Flow After Capital Replacement	542	391	393	582	599	600	508	567	569	(321)

Note: Totals may not sum due to rounding