



CALIFORNIA
High-Speed Rail Authority

High, Medium, Low Cash Flows

DRAFT 2016 BUSINESS PLAN: TECHNICAL SUPPORTING DOCUMENT



February 18, 2016

Russell Fong
California High-Speed Rail Authority
770 L. Street
Suite 1100
Sacramento, California 95814

Dear Mr. Fong:

Contract #HSR14-01 (“Contract”)
Deliverable: 2016 Draft Business Plan Cash Flows

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

- 2016 Draft Business Plan Cash Flows – High, Medium, and Low Cash Flows

The attached document provides a description of the potential cash flows from operations 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, operating and maintenance costs and capital replacement costs provided by the Authority and its consultants.

This has been developed pursuant to our Contract effective August 24, 2014. We look forward to continuing to provide service to the California High-Speed Rail Authority on this important project.

Sincerely yours,

A handwritten signature in cursive script that reads 'Kurt Ramey'.

Kurt Ramey
Partner

Attachment:

- DRAFT Project Cash Flow Analysis_02 18 2016 FINAL.doc

Cash Flow Analysis – Draft

This document provides a description of the potential cash flows from operations of the high-speed rail system for the high, medium, and low ridership projections. Two versions of the net operating cash flows for full Phase 1 through 2060 are provided in this appendix. The first is in Year of Expenditure (YOE) dollars which include inflation to the year that funds are collected or spent. The second version provides the cash flows in 2015 dollars which removes the effect of inflation from all values. These estimates illustrate the potential net cash flows that may be available from operating the project that can be used for future development costs or financing purposes.

The net project cash flow calculation begins with the net cash flow from operations (revenue less operations and maintenance costs (O&M)). Depreciation is a non-cash item and is 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, and rail infrastructure, are then deducted to arrive at net operating cash flow after capital replacement costs. 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 available after Capital Replacement is the free cash flow available for capital financing purposes or other capital costs.

The cash flows included herein are based on assumptions related to revenues, operating and maintenance costs and capital replacement costs provided by Parsons Brinkerhoff as described in the Draft 2016 Business Plan. All estimates are for an Operations Start Date of 2025. Inflation assumptions were provided by Parsons Brinkerhoff and are as follows:

	2015	2016	2017-2025	2026-2060
Revenues	Base Year	2.00%	3.00%	3.00%
O&M	Base Year	2.00%	3.00%	3.00%
Life Cycle	Base Year	2.00%	2.25%	3.00%

High, Medium, Low Cash Flows
(Year of Expenditure \$)

Exhibit 1: Net Cash Flow from Operations through Phase 1 (YOE dollars in millions) HIGH case

\$'MM YOE	Total Cash Flow through 2060	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Revenue	252,911	343	486	638	798	2,210	2,794	3,426	4,109	4,846	5,062	5,287	5,523
Less: O&M	(76,705)	(306)	(351)	(397)	(446)	(1,197)	(1,276)	(1,377)	(1,467)	(1,563)	(1,625)	(1,682)	(1,739)
Net Cash Flow from Operations	176,207	36	135	241	353	1,013	1,518	2,050	2,643	3,283	3,437	3,606	3,784
Capital Replacement	(18,253)	-	-	-	-	-	-	-	-	-	(46)	(48)	(4)
Net operating cash flow after capital replacement	157,954	36	135	241	353	1,013	1,518	2,050	2,643	3,283	3,390	3,558	3,780

Exhibit 1: Net Cash Flow from Operations through Phase 1 (YOE dollars in millions) HIGH case (continued)

\$'MM YOE	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Revenue	5,769	6,025	6,293	6,574	6,805	7,044	7,291	7,548	7,813	8,088	8,372	8,666	8,971
Less: O&M	(1,799)	(1,848)	(1,924)	(1,985)	(2,034)	(2,105)	(2,176)	(2,238)	(2,315)	(2,377)	(2,463)	(2,549)	(2,613)
Net Cash Flow from Operations	3,970	4,177	4,369	4,589	4,770	4,938	5,116	5,309	5,498	5,711	5,909	6,117	6,358
Capital Replacement	(4)	(106)	(172)	(91)	(94)	(27)	(267)	(369)	(383)	(221)	(124)	(309)	(346)
Net operating cash flow after capital replacement	3,966	4,072	4,198	4,498	4,677	4,912	4,849	4,941	5,114	5,490	5,784	5,808	6,012

Exhibit 1: Net Cash Flow from Operations through Phase 1 (YOE dollars in millions) HIGH case (continued)

\$'MM YOE	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
Revenue	9,286	9,612	9,950	10,300	10,662	11,037	11,425	11,826	12,242	12,672	13,118
Less: O&M	(2,708)	(2,793)	(2,869)	(2,972)	(3,068)	(3,159)	(3,266)	(3,356)	(3,443)	(3,553)	(3,666)
Net Cash Flow from Operations	6,578	6,819	7,081	7,328	7,594	7,878	8,159	8,470	8,799	9,120	9,452
Capital Replacement	(210)	(207)	(211)	(837)	(1,101)	(1,200)	(1,227)	(2,044)	(2,420)	(2,973)	(3,212)
Net operating cash flow after capital replacement	6,369	6,613	6,870	6,491	6,493	6,678	6,932	6,427	6,378	6,147	6,240

Exhibit 2: Net Cash Flow from Operations through Phase 1 (YOE dollars in millions) MEDIUM case

\$'MM YOE	Total Cash Flow through 2060	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Revenue	194,193	241	342	449	562	1,661	2,119	2,614	3,149	3,726	3,892	4,065
Less: O&M	(70,095)	(280)	(321)	(363)	(407)	(1,094)	(1,166)	(1,258)	(1,340)	(1,428)	(1,485)	(1,537)
Net Cash Flow from Operations	124,098	(39)	21	86	155	567	952	1,356	1,808	2,297	2,406	2,528
Capital Replacement	(16,759)	-	-	-	-	-	-	-	-	-	(43)	(44)
Net operating cash flow after capital replacement	107,339	(39)	21	86	155	567	952	1,356	1,808	2,297	2,364	2,484

Exhibit 2: Net Cash Flow from Operations through Phase 1 (YOE dollars in millions) MEDIUM case (continued)

\$'MM YOE	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Revenue	4,246	4,435	4,632	4,838	5,054	5,231	5,415	5,606	5,803	6,007	6,218	6,436
Less: O&M	(1,589)	(1,644)	(1,689)	(1,758)	(1,814)	(1,859)	(1,924)	(1,988)	(2,045)	(2,116)	(2,172)	(2,251)
Net Cash Flow from Operations	2,657	2,791	2,944	3,080	3,240	3,372	3,491	3,617	3,757	3,891	4,046	4,185
Capital Replacement	(4)	(4)	(97)	(158)	(84)	(86)	(24)	(245)	(339)	(352)	(203)	(114)
Net operating cash flow after capital replacement	2,653	2,787	2,847	2,922	3,156	3,286	3,467	3,372	3,419	3,539	3,843	4,071

Exhibit 2: Net Cash Flow from Operations through Phase 1 (YOE dollars in millions) MEDIUM case (continued)

\$'MM YOE	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
Revenue	6,662	6,897	7,139	7,390	7,650	7,919	8,197	8,485	8,783	9,092	9,412	9,743	10,085
Less: O&M	(2,329)	(2,388)	(2,474)	(2,553)	(2,622)	(2,716)	(2,803)	(2,886)	(2,985)	(3,067)	(3,147)	(3,247)	(3,350)
Net Cash Flow from Operations	4,333	4,509	4,665	4,837	5,028	5,203	5,394	5,599	5,799	6,025	6,265	6,496	6,735
Capital Replacement	(284)	(318)	(193)	(190)	(194)	(769)	(1,011)	(1,102)	(1,127)	(1,876)	(2,222)	(2,729)	(2,949)
Net operating cash flow after capital replacement	4,050	4,191	4,472	4,648	4,834	4,434	4,382	4,497	4,672	4,149	4,043	3,766	3,786

Exhibit 3: Net Cash Flow from Operations through Phase 1 (YOE dollars in millions) LOW case

\$'MM YOE	Total Cash Flow through 2060	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Revenue	151,972	188	267	350	439	1,299	1,657	2,045	2,464	2,916	3,046	3,181
Less: O&M	(67,167)	(268)	(307)	(347)	(390)	(1,048)	(1,118)	(1,206)	(1,284)	(1,369)	(1,423)	(1,472)
Net Cash Flow from Operations	84,805	(80)	(40)	3	49	251	540	839	1,180	1,547	1,622	1,709
Capital Replacement	(15,201)	-	-	-	-	-	-	-	-	-	(39)	(40)
Net operating cash flow after capital replacement	69,604	(80)	(40)	3	49	251	540	839	1,180	1,547	1,584	1,669

Exhibit 3: Net Cash Flow from Operations through Phase 1 (YOE dollars in millions) LOW case (continued)

\$'MM YOE	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Revenue	3,323	3,471	3,625	3,787	3,955	4,094	4,238	4,387	4,541	4,701	4,866	5,037
Less: O&M	(1,523)	(1,575)	(1,618)	(1,685)	(1,738)	(1,781)	(1,844)	(1,905)	(1,960)	(2,027)	(2,081)	(2,157)
Net Cash Flow from Operations	1,800	1,896	2,007	2,102	2,217	2,313	2,394	2,482	2,581	2,674	2,785	2,880
Capital Replacement	(4)	(4)	(88)	(143)	(76)	(78)	(22)	(222)	(307)	(319)	(184)	(104)
Net operating cash flow after capital replacement	1,797	1,892	1,919	1,959	2,141	2,235	2,372	2,260	2,274	2,354	2,601	2,777

Exhibit 3: Net Cash Flow from Operations through Phase 1 (YOE dollars in millions) LOW case (continued)

\$'MM YOE	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
Revenue	5,214	5,397	5,587	5,784	5,987	6,197	6,415	6,641	6,874	7,116	7,366	7,625	7,893
Less: O&M	(2,232)	(2,288)	(2,371)	(2,446)	(2,513)	(2,603)	(2,686)	(2,766)	(2,860)	(2,939)	(3,015)	(3,111)	(3,210)
Net Cash Flow from Operations	2,982	3,110	3,216	3,338	3,474	3,595	3,729	3,875	4,014	4,177	4,350	4,513	4,682
Capital Replacement	(257)	(288)	(175)	(172)	(176)	(697)	(917)	(1,000)	(1,022)	(1,702)	(2,016)	(2,476)	(2,675)
Net operating cash flow after capital replacement	2,725	2,821	3,041	3,165	3,298	2,898	2,811	2,875	2,992	2,475	2,335	2,038	2,007

High, Medium, Low Cash Flows (2015\$)

Exhibit 4. Net Project Cash Flow through Phase 1 Blended (2015 dollars in millions) HIGH Case

\$'MM YOE	Total Cash Flow through 2060	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2025
Revenue	100,572	258	354	452	549	1,475	1,811	2,156	2,511	2,875	2,915	2,956	2,998
Less: O&M	(31,411)	(230)	(256)	(281)	(306)	(799)	(827)	(866)	(896)	(927)	(936)	(940)	(944)
Net Cash Flow from Operations	69,161	27	98	170	242	676	984	1,290	1,615	1,948	1,979	2,016	2,054
Capital Replacement	(6,043)	-	-	-	-	-	-	-	-	-	(29)	(29)	(3)
Net operating cash flow after capital replacement	63,118	27	98	170	242	676	984	1,290	1,615	1,948	1,951	1,988	2,051

Exhibit 4. Net Project Cash Flow through Phase 1 Blended (2015 dollars in millions) HIGH Case (continued)

\$'MM YOE	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Revenue	3,040	3,083	3,126	3,170	3,186	3,202	3,218	3,234	3,250	3,267	3,283	3,299
Less: O&M	(948)	(945)	(956)	(957)	(952)	(957)	(960)	(959)	(963)	(960)	(966)	(970)
Net Cash Flow from Operations	2,092	2,137	2,170	2,213	2,234	2,245	2,258	2,275	2,287	2,307	2,317	2,329
Capital Replacement	(3)	(58)	(91)	(47)	(47)	(13)	(126)	(169)	(170)	(95)	(52)	(126)
Net operating cash flow after capital replacement	2,090	2,080	2,079	2,166	2,187	2,232	2,132	2,106	2,117	2,211	2,265	2,203

Exhibit 4. Net Project Cash Flow through Phase 1 Blended (2015 dollars in millions) HIGH Case (continued)

\$'MM YOE	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
Revenue	3,316	3,332	3,349	3,366	3,383	3,400	3,417	3,434	3,451	3,468	3,485	3,503
Less: O&M	(966)	(972)	(973)	(971)	(976)	(978)	(978)	(982)	(979)	(975)	(977)	(979)
Net Cash Flow from Operations	2,350	2,361	2,376	2,395	2,407	2,421	2,439	2,452	2,472	2,493	2,508	2,524
Capital Replacement	(137)	(80)	(77)	(76)	(294)	(375)	(397)	(394)	(637)	(732)	(873)	(916)
Net operating cash flow after capital replacement	2,213	2,280	2,299	2,319	2,113	2,046	2,042	2,058	1,835	1,760	1,635	1,608

Exhibit 5. Net Project Cash Flow through Phase 1 Blended (2015 dollars in millions) MEDIUM Case

\$'MM YOY	Total Cash Flow through 2060	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Revenue	77,151	181	250	318	386	1,109	1,373	1,645	1,924	2,210	2,241	2,273	2,305
Less: O&M	(28,704)	(210)	(234)	(257)	(280)	(730)	(756)	(792)	(819)	(847)	(855)	(859)	(863)
Net Cash Flow from Operations	48,448	(29)	15	61	106	379	617	853	1,105	1,363	1,386	1,414	1,442
Capital Replacement	(5,549)	-	-	-	-	-	-	-	-	-	(26)	(26)	(2)
Net operating cash flow after capital replacement	42,899	(29)	15	61	106	379	617	853	1,105	1,363	1,360	1,387	1,440

Exhibit 5. Net Project Cash Flow through Phase 1 Blended (2015 dollars in millions) MEDIUM Case (continued)

\$'MM YOY	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Revenue	2,337	2,370	2,403	2,437	2,450	2,462	2,474	2,486	2,499	2,511	2,524	2,537
Less: O&M	(866)	(864)	(874)	(875)	(870)	(875)	(878)	(876)	(880)	(877)	(883)	(887)
Net Cash Flow from Operations	1,471	1,506	1,530	1,563	1,579	1,587	1,597	1,610	1,619	1,634	1,641	1,650
Capital Replacement	(2)	(53)	(84)	(43)	(43)	(12)	(115)	(155)	(156)	(87)	(48)	(115)
Net operating cash flow after capital replacement	1,469	1,453	1,446	1,520	1,536	1,575	1,481	1,455	1,462	1,547	1,593	1,534

Exhibit 5. Net Project Cash Flow through Phase 1 Blended (2015 dollars in millions) MEDIUM Case (continued)

\$'MM YOY	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
Revenue	2,549	2,562	2,575	2,588	2,601	2,614	2,627	2,640	2,653	2,666	2,680	2,693
Less: O&M	(883)	(888)	(889)	(887)	(892)	(894)	(894)	(897)	(895)	(891)	(893)	(895)
Net Cash Flow from Operations	1,667	1,674	1,685	1,701	1,709	1,720	1,733	1,743	1,758	1,775	1,787	1,798
Capital Replacement	(125)	(74)	(71)	(70)	(270)	(344)	(364)	(362)	(585)	(672)	(802)	(841)
Net operating cash flow after capital replacement	1,541	1,600	1,615	1,631	1,439	1,375	1,369	1,381	1,173	1,103	985	957

Exhibit 6. Net Project Cash Flow through Phase 1 Blended (2015 dollars in millions) LOW Case

\$'MM YOY	Total Cash Flow through 2060	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Revenue	60,376	142	195	248	302	867	1,074	1,287	1,505	1,730	1,754	1,779	1,804
Less: O&M	(27,505)	(201)	(224)	(246)	(268)	(700)	(725)	(759)	(785)	(812)	(820)	(823)	(827)
Net Cash Flow from Operations	32,871	(60)	(29)	2	34	168	350	528	721	918	934	955	977
Capital Replacement	(5,033)	-	-	-	-	-	-	-	-	-	(24)	(24)	(2)
Net operating cash flow after capital replacement	27,838	(60)	(29)	2	34	168	350	528	721	918	911	932	975

Exhibit 6. Net Project Cash Flow through Phase 1 Blended (2015 dollars in millions) LOW Case (continued)

\$'MM YOY	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048
Revenue	1,829	1,855	1,881	1,907	1,917	1,927	1,936	1,946	1,956	1,965	1,975	1,985
Less: O&M	(830)	(828)	(837)	(838)	(834)	(838)	(841)	(840)	(843)	(841)	(846)	(850)
Net Cash Flow from Operations	999	1,027	1,044	1,069	1,083	1,088	1,095	1,106	1,112	1,125	1,129	1,135
Capital Replacement	(2)	(48)	(76)	(39)	(39)	(11)	(105)	(141)	(142)	(79)	(43)	(105)
Net operating cash flow after capital replacement	997	979	968	1,030	1,044	1,078	991	965	970	1,045	1,086	1,031

Exhibit 6. Net Project Cash Flow through Phase 1 Blended (2015 dollars in millions) LOW Case (continued)

\$'MM YOY	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
Revenue	1,995	2,005	2,015	2,025	2,035	2,045	2,056	2,066	2,076	2,087	2,097	2,108
Less: O&M	(846)	(851)	(852)	(850)	(855)	(857)	(856)	(860)	(858)	(854)	(856)	(857)
Net Cash Flow from Operations	1,149	1,154	1,163	1,175	1,181	1,189	1,199	1,206	1,219	1,232	1,241	1,250
Capital Replacement	(114)	(67)	(64)	(64)	(245)	(312)	(331)	(328)	(530)	(610)	(727)	(763)
Net operating cash flow after capital replacement	1,036	1,087	1,099	1,112	936	877	869	878	688	623	514	487

