

Appendix F

**ACE Ceres–Merced Extension Operations and
Maintenance Cost Technical Memorandum**

ACE Ceres-Merced Extension Operations and Maintenance Cost Technical Memorandum

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Prepared for: San Joaquin Regional Rail Commission

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Program Quality Assurance and Quality Control Review

Reviewers listed in the following table have completed an internal quality review check and approval process that is consistent with procedures and directives previously identified.

Identification of Technical and Administrative Reviewers			
Subtask	Deliverable (list both Draft and Final versions)	Technical Reviewer	Complete
Task 2.2	O&M Cost Estimates	J. Fox	2-23-2021

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Section 1: Overview

1.1. General Introduction

The purpose of this technical memorandum is to provide operations and maintenance cost (O&M) estimates for the expansion of weekday Altamont Corridor Express (ACE) commuter rail service south to Merced from Ceres. The ACE service is sponsored by the San Joaquin Regional Rail Commission (SJRRRC), a joint powers authority.

The methodology for estimating future ACE O&M costs does not represent a detailed financial analysis of fixed and variable costs; however, an effort has been made to develop a preliminary evaluation of fixed and variable costs likely to increase as a result of the ACE service expansion to Merced.

Section 2: Baseline ACE O&M Costs

SJRRRC's FY 2016/2017 costs (i.e. the 2017 cost year) for the ACE service was used to determine the baseline O&M costs for ACE service, which included four round trips on weekdays between Stockton and San Jose (note: current levels have been temporarily reduced due to the COVID-19 pandemic). The O&M cost for the 2017 cost year was \$21.6 million for the commuter rail operation, which generated 174,064 annual train-miles. The FY 2017 cost year is consistent with the previous Valley Rail Expansion O&M calculations. The figure included:

- \$4.4 million in the largely fixed costs for project management, services, and supplies;
- \$15.9 million in largely variable costs for contracted service and operations; and,
- \$1.3 million in shuttle services that ferry riders to and from the trains.

Note: While the the base SJRRRC O&M costs used in the model are based on 2017 cost year, the results in Table 1 below have been escalated to current 2021 dollars.

Section 3: Development of the ACE O&M Model

In order to project O&M costs for the service expansion scenarios, specific modifications to the fixed and variable costs elements were made. For example, most fixed costs were increased by 25 percent to reflect an expanded operation. Variable costs related to train operations and bus shuttles were increased by the increase in train-miles¹. Assumptions were made with regard to new management personnel required to staff the expanded operation. Station maintenance costs were increased by the number of stations, and insurance costs were boosted in reflect more train-miles and thus greater exposure to risk. Rail maintenance facility expenses were grown to account for the costs of maintaining more trainsets and to accommodate a new layover and maintenance facility in Merced.

¹ A train-mile is generated by a train moving one mile. A train running 200 miles, for example, generates 200 train-miles.

In accordance with this approach, annual O&M costs that were developed for the proposed Ceres Extension (from Lathrop) and Sacramento Extension (from Stockton), were then updated to reflect the additional extension of train service from Ceres to Merced.

The service scenarios are:

- **Pre-COVID Service-Levels (including FY 2016/2017):** This scenario represents the service-levels pre-COVID pandemic (including the cost year of 2017), with the four trains (round trip) between Stockton and San Jose.
- **With Ceres & Sacramento Extensions:** This scenario represents two extensions currently being implemented, with two trains (round trip) between Stockton and San Jose; one train (round trip) between Ceres and San Jose; one train (round trip) between Natomas and San Jose; three (round trips) between Ceres and Natomas (with a transfer to San Jose-bound trains at the North Lathrop Transfer Station); and one train (round trip) between Natomas and Stockton. Four bus round trips would link the Ceres trains to Merced.
- **With ACE Ceres-Merced Extension:** This scenario represents the Proposed Project operation, with two trains (round trip) between Stockton and San Jose; one train (round trip) between Merced and San Jose; one train (round trip) between Natomas and San Jose (round trip); three trains (round trip) between Merced and Natomas (with a transfer to San Jose-bound trains at the North Lathrop Transfer Station); and one train (round trip) between Natomas and Stockton.

Section 4: O&M Cost Findings

As of the 2017 cost year, ACE’s four round trips between Stockton and San Jose on weekdays generated 174,064 annual train-miles with an annual O&M cost of \$21.6 million. In the table below, incremental and total train-miles and incremental and total O&M costs are identified for the Ceres & Sacramento Extensions (Base) and the Merced Extension (Project). The total O&M reported at the bottom of the table has been escalated to 2021 dollars.

Table 1: Train-Miles and O&M Cost Totals for ACE Service Expansions (\$-million)			
Metrics	Stockton – San Jose (Existing)	With Ceres & Sacramento Extensions (Base)	With Merced Extension (Proposed Project)
Pre-Extensions Train-Miles	174,064	174,064	174,064
Incremental Train-Miles	0	189,335	257,807
Total Train-Miles	174,064	363,399	431,871
Pre-Extensions O&M Cost (\$-2017)	\$21,593,030	\$21,593,030	\$21,593,030
Incremental O&M Cost (\$-2017)	0	\$16,389,995	\$22,659,924
Total O&M Cost (\$2017)	\$21,593,030	\$37,983,025	\$44,252,954
Total O&M Escalated (\$2021)	\$24,492,456	\$43,083,234	\$50,195,063

Appendix

In the table below, O&M costs are projected based on the cost categories appearing in the ACE 2016/2017 Operations and Maintenance Budget, with all figures reflecting 2017 dollars (escalated figures are provided in Table 1 above).

Appendix: ACE Service Expansion Operations and Maintenance Cost Estimates			
Project Management, Services and Supplies	Stockton – San Jose	With Ceres & Sacramento Extensions (Base)	With Merced Extension (Proposed Project)
Salaries/Benefits/Contract Help	\$3,727,501	\$3,727,501	\$3,727,501
Salaries/Benefits/Contract Help	\$0	\$525,741	\$1,051,481
Salaries/Benefits/Contract Help	\$0	\$315,444	\$315,444
Salaries/Benefits/Contract Help	\$0	\$210,296	\$210,296
Office Expense Postage	\$38,285	\$45,942	\$47,856
Subscriptions/Periodicals/Memberships	\$8,825	\$10,590	\$11,031
Office Equipment/Furniture	\$55,470	\$66,564	\$69,338
Computer Systems	\$35,235	\$42,282	\$44,044
Communications	\$80,000	\$96,000	\$100,000
Motor Pool	\$56,610	\$67,932	\$70,763
Transportation/Travel	\$26,550	\$31,860	\$33,188
Training	\$14,085	\$16,902	\$17,606
Training—Security Grant Funded	\$30,000	\$36,000	\$37,500
Audits Regulatory Reporting	\$79,100	\$94,920	\$98,875
Professional Services Legislative	\$75,000	\$90,000	\$93,750
Professional Services Legal	\$50,000	\$60,000	\$62,500
Professional Services General	\$146,273	\$175,528	\$182,841
Publications/Legal Notices	\$12,250	\$14,700	\$15,313
<i>Project Management, Services, and Supplies Subtotal</i>	\$4,435,184	\$5,628,202	\$6,189,327
Contracted Services			
Maintenance and Improve System Wide ACE Stations	\$51,900	\$294,100	\$294,100
Maintenance of Headquarters Structures/Grounds	\$155,460	\$202,098	\$209,871
ACE Operations & Maintenance	\$5,748,550	\$12,001,435	\$14,262,754
Consumables/Repair Parts	\$1,000,000	\$2,087,733	\$2,481,105
Operating Leases	\$72,000	\$72,000	\$72,000
Fuel	\$1,579,217	\$3,296,983	\$3,918,203
RR Maintenance, Oversight/Dispatching	\$1,735,000	\$3,622,216	\$4,304,717
Insurance	\$2,437,999	\$2,950,000	\$2,950,000
Insurance Management Fees	\$143,500	\$143,500	\$143,500

Security Services/Safety Programs	\$319,600	\$667,239	\$792,961
FRA/FTA Drug Testing Program	\$6,200	\$7,440	\$7,750
Community Engagement & Marketing	\$340,472	\$442,614	\$459,637
Special Trains	\$317,970	\$317,970	\$317,970
Passenger Services	\$14,500	\$30,272	\$35,976
Ticketing Services	\$472,950	\$987,393	\$1,173,438
Professional Services Operations	\$295,300	\$616,507	\$732,670
Communications, Operations	\$137,226	\$286,491	\$340,472
Communications, Wi-Fi	\$129,856	\$271,105	\$322,186
Emergency Ride Home Emergency Bus Bridges	\$37,500	\$78,290	\$93,041
Rail Maintenance Facility	\$900,414	\$1,125,518	\$1,125,518
Maintenance Facility Add'l Cost Increase		\$270,124	\$945,435
<i>Contracted Services Sub-Total</i>	\$15,895,614	\$29,771,027	\$34,983,304
Shuttle Services	\$1,262,232	\$2,583,796	\$3,080,323
TOTAL O&M EXPENSES	\$21,593,030	\$37,983,025	\$44,252,954
Annual Train Miles	174,064	363,399	431,871