

Runway Feasibility Study

Appendix H

ROM Cost Estimates



Introduction

Rough Order Magnitude (ROM) cost estimates were developed, for each runway alternative as part of the Master Plan Phase One – Runway Feasibility Study. Cost estimates included in the Study show a range was based of cost estimates in this Appendix. This Appendix describes general assumptions used for each alternative, and includes probable cost breakdowns with summary line items for construction costs.

While ROM estimates use best available data and prices, these are planning level estimates and assumptions on variables were made, particularly on earthwork and fill estimates. A cost range is provided for each alternative. ROM cost estimates should be viewed as comparative to the other alternatives as opposed to refined estimates.

GENERAL ASSUMPTIONS

- Pavement structure used for the cost estimate was assumed as 4 inches of asphalt P-401, 6 inches of P-209 aggregate base, and 13 inches P-154 aggregate subbase. Pavement section was based on a subgrade CBR of 5 and from the traffic counts as provided by TTAD.
- Heaviest aircraft included in the traffic mix is the Gulfstream IV.
- Documents researched indicated frost depths range from 0 to 24 inches. The pavement section used for the cost estimates will satisfy the frost protection requirements for the 24 inches depth (worst case-scenario).
- A contingency of 15 percent on the total project cost was included for all four alternatives.
- Unit Costs were based on bids received in California within the last two years.
- Safety Risk Management (SRM) Panel cost included as this will change the conditions on the airfield that may require FAA involvement for assessing risks related with the changes.
- Environmental mitigation costs were not included as part of ROM cost estimates.
- Due to inflationary factors, supply chain disruptions, and labor shortages, construction costs have increased significantly over the past 12 to 18 months.

Alternative 1 – Third Runway (Runway 16/34)

The ROM Cost Estimates for Alternative 1 range from \$40 to 48 million. This ROM estimate includes construction, design, environmental, and contingency, with the following assumptions.

- Alternative 1 includes construction of a new Runway 16/34, parallel taxiway, and connector taxiways.
- Cost estimates were prepared for construction of a 75-foot-wide runway (\$40-44 million) and a 100-foot-wide runway (\$43-48 million). Electrical costs do not vary between the two options. Only costs related to pavement structure, grading, and drainage vary.
- Due to the size of this project, the cost estimate accounts only for the excavation of material for the pavement section of the runway and taxiway and does not account for any other earthwork needed to meet proposed elevations. An effort to account for these costs was made by comparison with projects of similar size, however, the cost is not specific to the conditions of the site.
- Asphalt Pavement Structure includes costs related to pavement materials only.
- Grading and Drainage Improvements includes costs related to earthwork, drainage improvements (pipes and inlets), and costs for drainage improvements required to retain the additional runoff from new pavement on site.
- Electrical Improvements include costs for runway and taxiway lights, signs, conduits, cable, and electrical structures. Additional costs considered included improvement to the electrical vault for installation of new Constant Current Regulators (CCR) for the new runway and taxiway circuits.
- The cost for NAVAIDS includes one PAPI and one set of REILs.
- An FAA Reimbursable Agreement was included in case construction of NAVAIDS will involve FAA personnel for design and inspection.

Alternative 2 – Runway 02/20 Extension and Widening

The ROM Cost Estimates for Alternative 2 range from \$15 to 19 million. This ROM estimate includes construction, design, environmental, and contingency, with the following assumptions.

- Alternative 2 includes widening (to 100 feet) and extending (to 5,055 feet) Runway 02/20.
- The ROM cost estimate does not include realigning parallel Taxiway G (to 240 feet centerline separation). The ROM cost estimate for this project range from \$9 to 12 million.
- An asphalt pavement is assumed for the extension and widening in Alternative 2.
- Grading and Drainage Improvements includes costs related to earthwork, drainage improvements (pipes and inlets), and costs for drainage improvements. For this estimate a ROM quantity of CYs was calculated for the embankment to be constructed over the drainage swale/creek (south extension). Included in this item is also the cost for installing a box culvert to allow the swale to reach the other side of the embankment. A box culvert was considered the worst-case cost scenario to mitigate the swale/creek compared with re-routing the swale.

- Item “Electrical Improvements” include costs for runway and taxiway lights, signs, conduits, cable, and electrical structures.
- The cost for NAVAIDS includes upgrading the Runway 20 VASI to a PAPI

Alternative 3 – Runway 11 Displaced Threshold

The ROM Cost Estimates for Alternative 3 range from \$500,000 to \$650,000. This ROM estimate includes construction, design, environmental, and contingency, with the following assumptions.

- Alternative 3 includes relocating Runway 11 threshold.
- The “electrical improvements item” includes costs for installing additional runway threshold lights and replacing runway edge light fixtures between the end of the runway and the displaced threshold.

Alternative 4 – Third Runway and Runway 11 Displaced Threshold

The ROM Cost Estimates for Alternative 4 range from \$41 to 49 million. This ROM estimate includes construction, design, environmental, and contingency, with the following assumptions.

- Alternative 4 includes a combination of costs and assumptions of Alternatives 1 and 3.