Feasibility Study for Potential Improvements to McClellan-Palomar Airport

CRQ PAAC Meeting
August 15, 2013
June 2011 – Board addressed need for study of runway improvements at McClellan-Palomar Airport

Sept 2011 – Board directed staff conduct study
Scope of Study

- Determine if a runway extension would:
  - improve runway safety
  - reduce airport noise
  - increase operational efficiency
  - increase business prospects
- Prepared in accordance with FAA requirements
• Contains findings and recommendations that are:
  • technically sound from an engineering perspective
  • fiscally responsible
  • makes good business sense
  • eligible for funding in accordance with FAA criteria
**McClellan-Palomar Airport**

- Design Critical Aircraft for the runway length –
  - Business Jet focus
  - Falcon 2000 (B-II)
- C/D-III aircraft use facility currently and will increase in the future
  - FAA requires open use of funded airports
- Improve safety at runway west end for current and future aircraft
- Increased useful fuel loads = longer haul trips
West End Safety Improvements

Runway Safety Improvements:

• Business Jet Aircraft
• Engineered Material Arresting System (EMAS)
• Improve grades
McCLELLAN-PALOMAR AIRPORT

West End Safety

**FIGURE 5A: West Side Safety Improvements**

- LIMITS OF GRADING
- END RETAINING WALL
- PROPOSED LOCATION OF LOCALIZER EQUIPMENT
- EXISTING LOCATION OF LOCALIZER EQUIPMENT
- BEGIN RETAINING WALL
- JOIN EXISTING VSR

Kimley-Horn and Associates, Inc.
<table>
<thead>
<tr>
<th>Alternative</th>
<th>Description</th>
<th>Probable Construction Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>West End</td>
<td>West End Safety Improvement including EMAS and grading</td>
<td>$25.4 Million</td>
</tr>
</tbody>
</table>
McClellan-Palomar Airport

Runway Extension Alternatives

FIGURE 5H: Runway Extension Alternatives and Approximate Location of Landfill

LEGEND
- 200' EXTENSION AREA
- 500' EXTENSION AREA
- 1000' EXTENSION AREA
- APPROXIMATE LIMITS OF UNIT 3 LANDFILL
- AREA OF LANDFILL

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Landfill Options - Option 2
Drilled Displaced Columns

**Advantages:**
- Almost eliminates settlement
- Low initial cost
- Increases the strength of surrounding material
- Soil/lightweight fill layers bridge potential localized settlement.

**Disadvantages:**
- Requires night work or full airport closure
- Re-construction of methane gas collection system required

Cost Per Square Foot - $72/SF
McClellan-Palomar Airport

Runway Extension Alternatives

Figure 5H: Runway Extension Alternatives and Approximate Location of Landfill

Legend:
- 200' Extension Area
- 500' Extension Area
- 1,000' Extension Area
- Approximate Limits of Unit 3 Landfill
- Area of Landfill

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McClellan-Palomar Airport

FALCON 2000 RANGE AT ALTERNATIVE RUNWAY LENGTHS

Runway Length Benefits

<table>
<thead>
<tr>
<th>AIRCRAFT RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runway Length (ft.)</td>
</tr>
<tr>
<td>4,900’</td>
</tr>
<tr>
<td>5,100’</td>
</tr>
<tr>
<td>5,800’</td>
</tr>
</tbody>
</table>
Noise Contours Comparison

EXISTING NOISE CONTOURS (2011)

2021 NOISE CONTOURS (CURRENT RUNWAY LENGTH)

2021 NOISE CONTOURS (5,797’ RUNWAY)

LEGEND:
- Pink: Airport Property Line
- Yellow: DNL Noise Exposure Contour
- Red: Ultimate Airfield Pavement

Figure 1A
NOISE CONTOURS COMPARISON
## Probable Construction Costs

<table>
<thead>
<tr>
<th>Alternative</th>
<th>East End Alternative Description</th>
<th>East End Extension</th>
<th>West End Safety Improvements</th>
<th>Total Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alt. A</td>
<td>200 ft extension with north and south side end connector taxiways</td>
<td>$22.5 Million</td>
<td></td>
<td>$47.9 Million</td>
</tr>
<tr>
<td>Alt. B-1</td>
<td>900 ft extension with north side end connector taxiway</td>
<td>$49.6 Million</td>
<td>$25.4 Million</td>
<td>$75.0 Million</td>
</tr>
<tr>
<td>Alt. B-2</td>
<td>900 ft extension with north and south side end connector taxiways</td>
<td>$69.7 Million</td>
<td></td>
<td>$95.1 Million</td>
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</tbody>
</table>
Current Regional Economic Benefits

• $321.4 million revenues
• 2,215 jobs
• $81.3 million income to workers

Regional 20 Year Forecast

• Without Runway Extension - $8.3 billion in revenues
• With Runway Extension (Alt B) - $163.2 million in addition to $8.3 billion
• Increase in tax collections
  • Local - $367.7 million
  • State - $128.9 million
Business Case
Regional Payback Period

Payback Period for Runway Extension Project

Cumulative Incremental Revenue with Project (2013$)

- ALT A: Payback Period for $22.5 mil Investment
- ALT B-1: Payback Period for $49.6 mil Investment
- ALT B-2: Payback Period for $69.7 mil Investment

Years

0  2  4  6  8  10  12  14  16  18  20

Base 2 4 6 8 10 12 14 16 18 20

180,000,000
160,000,000
140,000,000
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
0

Preliminary Draft
Regional Benefit-Cost Analysis

**ALTERNATIVE A - 200 Foot Extension**

| Benefit Cost Ratio | 1.49 |

**ALTERNATIVE B - 900 Foot Extension**

| Benefit Cost Ratio | 2.53 |

Alternative’s BCA > 1.0
FAA Eligibility

- *Eligible* for Grant Funding Consideration
- Safety Improvements (west end) top priority in FAA funding potential
- Capacity Projects lowest FAA priority
  - Potential higher cost sharing
  - Funded after other FAA priorities
Executive Summary

- Airfield – same Runway Design Code as today (B-II)
  - Business Jets usage
  - Falcon 2000 (critical design aircraft)
- West End Safety Improvement
  - Enhance safety on west departure
  - $25.4 Million
- Preferred East Extension Alternative – 900 foot (Drilled Displaced Columns)
  - 100% B-II sized aircraft served
  - $69.7 Million with south parallel taxiway
  - Benefit Cost Ratio – 2.53
  - Regional Pay Back Period ~ 11 years
New 20-yr Master Plan *In Progress*
  • 2015-2035

Aviation Forecasts, Facility Requirements, Constraints Development Concept
  • Incorporation of Runway Extension Feasibility Data

Master Plan Implementation Plan
  • Considers Runway Extension in the Context of Long-Term Facility Improvements
  • Project Sequencing, Environmental, Financial Plan

Programmatic Environmental Impact Report (EIR)
Board of Supervisors:

- Targeting September 25 board meeting

Item will have 2 actions:

- Find proposed action is exempt under CEQA
- Receive report titled Feasibility Study for Potential Improvements to McClellan-Palomar Airport
Recommended Motion

The Palomar Airport Advisory Committee recommends the County Board of Supervisors accept the Feasibility Study for Potential Improvements to McClellan-Palomar Airport Runway dated August 1, 2013, and prepared for the County by Kimley-Horn and Associates, Inc.
QUESTIONS/COMMENTS?