

Friedman Memorial Airport Authority



Regular Meeting
November 6, 2012

UNFINISHED BUSINESS



Airport Solutions

Blaine County Report



Airport Solutions

City of Hailey Report

Airport Solutions

Airport Manager Report

- Instrument Procedures Feasibility Study Proposal

Communications Director Report

- Coffee Talk
- Airport Tour (Public)

Existing Site

- Technical Analysis
- Presented by Mr. Dave Mitchell, T-O Engineers & Airport Manager

Friedman Memorial Airport Technical Alternatives Analysis Report



Introduction

- FAA Meeting Report
- Technical Alternatives Analysis Report Presentation
- Next Steps

October 23 FAA Meeting

- Purpose:
 - Progress report of Analysis
 - Get feedback
- Agenda:
 - Assumptions
 - Deficiencies
 - Alternatives
- Result:
 - Mission accomplished
 - Document will provide the information needed by FAA
 - FAA's clear priority = meet mandated RSA deadline

Alternatives Technical Analysis Report

- “Final” Draft
 - Essentially complete
 - Some revisions may be made after FAA/FMAA review (prefer comments by 11/9)
- Outline:
 - I. Background/Purpose
 - II. Airport Setting, Configuration and Operational Considerations
 - III. Regulatory Environment
 - IV. Deficiencies Summary
 - V. Alternatives Analysis

Appendices:

- Background information
- Cost estimates
- Preliminary Modifications of Design Standards



Chapter 1 – Background and Purpose

- Airport background
- Purpose
 - Investigate alternatives to improve safety at SUN
 - Consider both C-II and C-III requirements
 - No selection of alternatives
- Ultimate goal: Provide FAA and FMAA with information they need to make decisions on the future of the airport.

Chapter 2 – Airport Setting

- Describe existing airport
- Convey challenges
- Operational
 - Head-to-head
 - Sterilization procedures

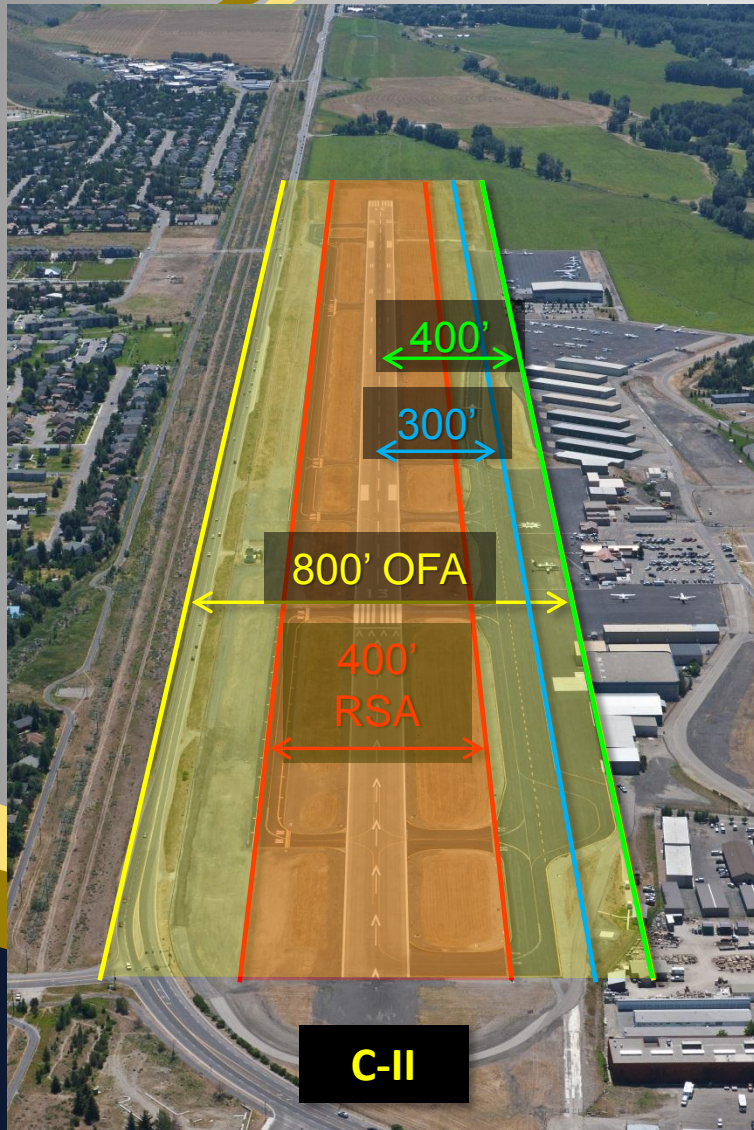


Chapter 3 – Regulatory Environment

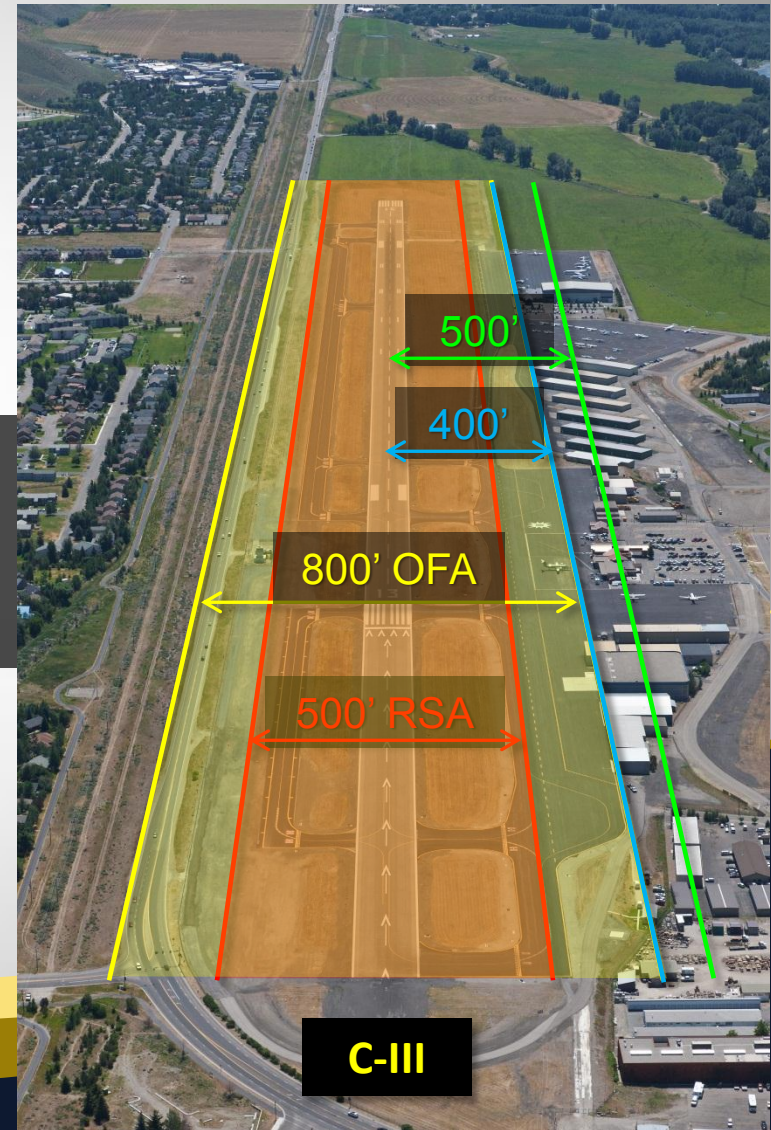
- Congressional mandate
- Modification of Airport Design Standards
 - No modifications for RSA dimensions
- AC 150/5300-13A, *Airport Design*

“...Not later than December 31, 2015, the owner or operator of an airport certificated under 49 U.S.C. 44706 shall improve the airport’s runway safety areas to comply with the Federal Aviation Administration design standards...”

Chapter 4 – Deficiency Summary



RSA
OFA
R/W – T/W
R/W - PRKING



Chapter 5 – Alternatives Analysis

-
- The diagram consists of a list of seven alternatives on the left, grouped by two large curly braces on the right. The top brace groups the first four alternatives under the label 'Full Compliance'. The bottom brace groups the last three alternatives under the label 'Less Than Full Compliance'.
- 1. Shift Runway East (Highway East)
 - 2. Shift Runway East (Highway West)
 - 3. Shift Airfield West
 - 4. Shift Airfield South and Rotate
 - 5. Shift Runway South 1,700'
 - 6. No Expansion (No Land Acquisition)
 - 7. Modest Expansion (Land Acquisition)
- Full Compliance**
- Less Than Full Compliance**

Alternatives Assumptions

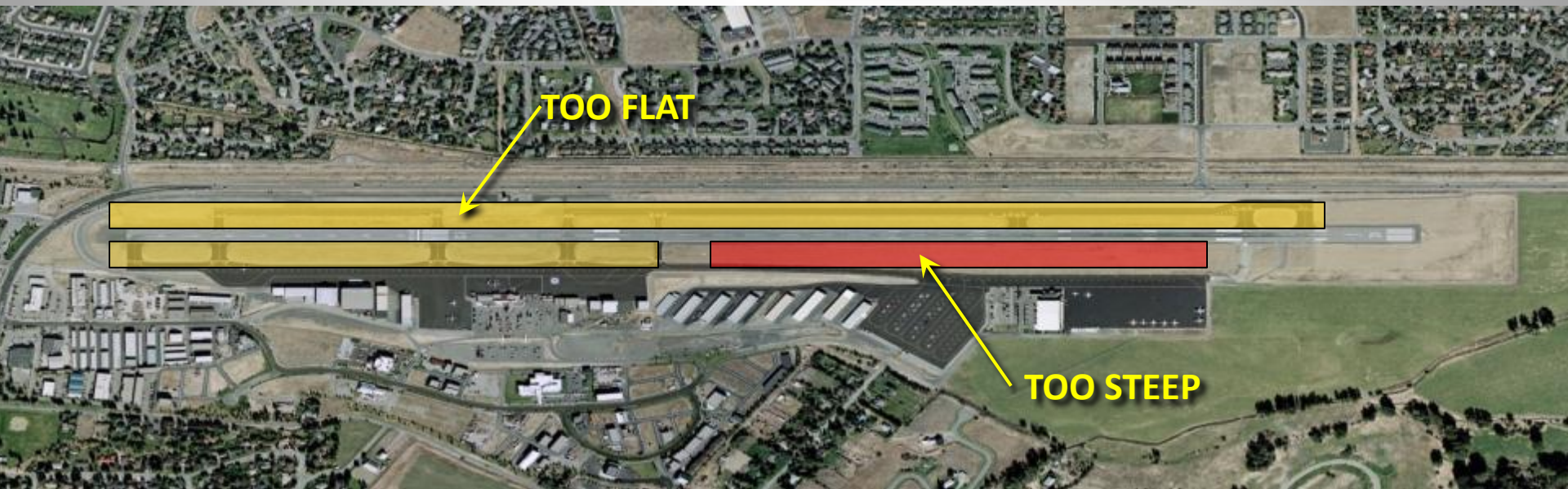
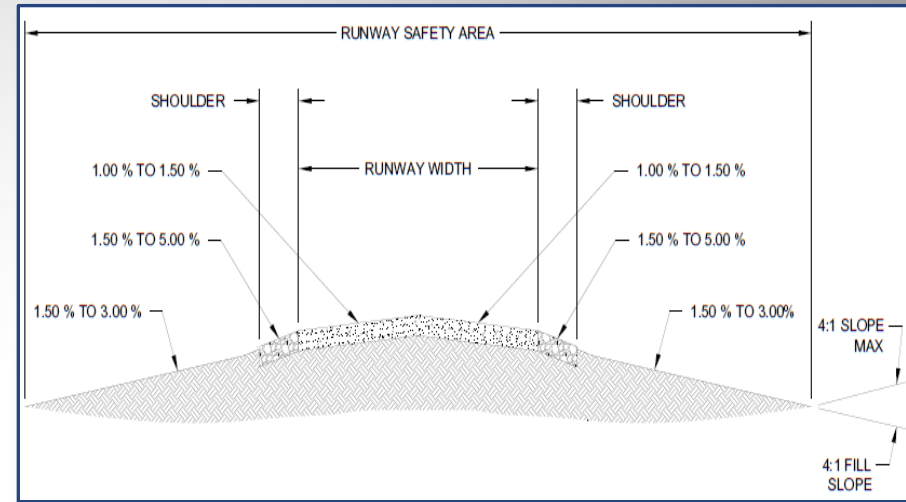
- Look at alternatives from the technical feasibility standpoint only
- Reflect only an effort to comply with standards
 - No consideration for ultimate development/future demand
- 95,000 lbs maximum takeoff weight
 - Based on current fleet, this limits wingspan to less than 100'
- Priority = meet RSA dimensional standards
- Alternatives that consider moving the runway alignment will include meeting all C-III standards

Alternatives – General Considerations

- RSA Grading
- Highway 75
- Environmental
- Cost
- Operational

RSA Grading

- All alternatives assume meeting standards
- North half could remain as is, by MOS
 - Save \pm \$4M and 90 days



Highway 75

- Preliminary coordination with ITD has been completed
- ITD project underway
 - Modifications to roadway between Timmerman and Ketchum
 - EIS completed
- Three options considered:
 1. Signalization
 2. Relocation
 3. Do nothing (leave in current location)

Highway 75 - Signalization

- “Sterilize” Highway adjacent to airport during Category C aircraft operations
 - Control four intersections
 - Total length = 2.5 miles

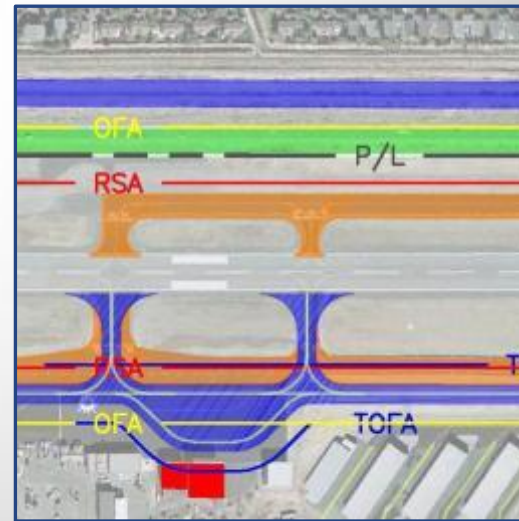
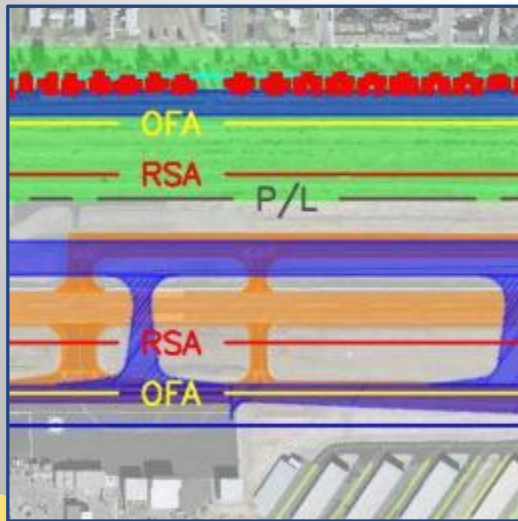


Highway 75 - Signalization

- ITD concerns:
 - Further decrease in level of service (already poor during rush hours)
 - Traffic impacts on highway and adjacent roads
 - Emergency vehicle/school bus/public transportation access
- Tower concerns:
 - Logistics/responsibility of initiating stop
 - Identification of Category C aircraft
- Not evaluated further

Highway 75 - Relocation

- Two options:
 1. Relocate to adjacent neighborhood
 2. Relocate within existing Right of Way



Highway 75 - Relocation

Issues:

- Significant land acquisition, especially for first option
 - Property values are very low, currently
 - Condemnation/relocation issues?
- Environmental concerns (from ITD)
 - Noise (Blaine County Code prohibits noise barriers along Hwy 75)
 - Railroad berm is a historic structure
 - Environmental Justice

Highway 75 – Do Nothing

- Relocating highway is difficult
 - Environmental concerns
 - Estimated relocation costs:
 - \$37M+ with property acquisition
 - \$14.7M+ without (includes sound barrier)
- Runway centerline to edge of highway = $\pm 345'$
- Modifications of Design Standards for OFA
 - Analysis shows this may be acceptable

Environmental Considerations

- No detailed environmental analysis included
- Only potential major impacts are identified
 - Obvious
 - Previously identified
- ***Regardless of alternative, further environmental analysis will be required.***

Cost Considerations

- Costs for all alternatives reflect effort toward meeting standards, not to accommodate additional demand
- Construction
 - Estimated using prior projects at SUN
 - Also considered recent bid results in this region
- Land acquisition
 - Used comparison data from recent sales – costs are low
 - Made assumptions about uneconomical remnants

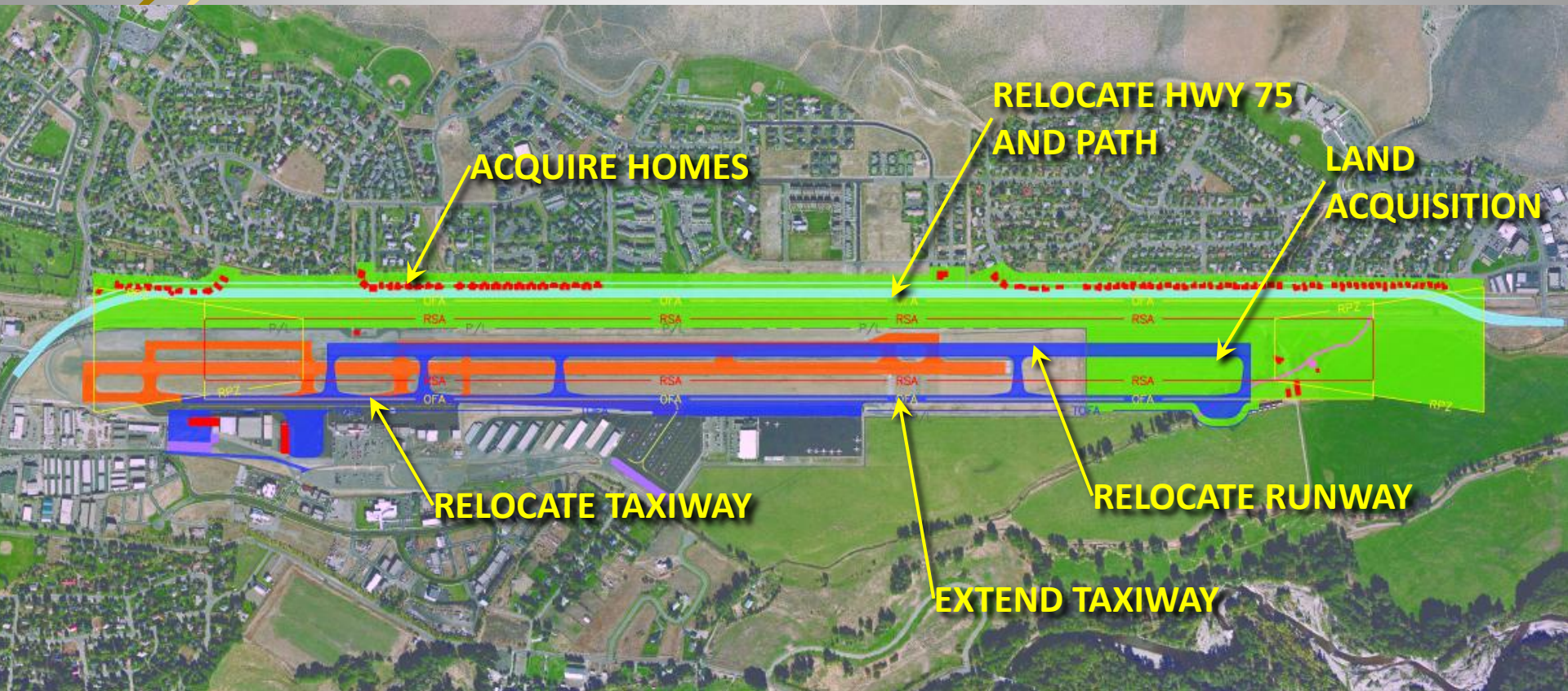
Operational/Phasing Considerations

- Considered schedule for RSA compliance NLT 12/31/2015
- Preliminary look at phasing to limit impacts to operations
 - Construction season is limited
 - Major construction impacts will have a potentially disastrous impact on the airport/community

Full Compliance Alternatives

- Have been evaluated/discussed before
 - Site selection study
 - EIS
 - Public meetings following EIS suspension
- Revisited in this study
 - Updated costs
 - Removed future development elements
- Comments received during previous public processes are noted in the report, in a general way

Alternative 1 – Runway East/Highway East



Alternative 1

Advantages

- + Full compliance
- + Retains airport infrastructure

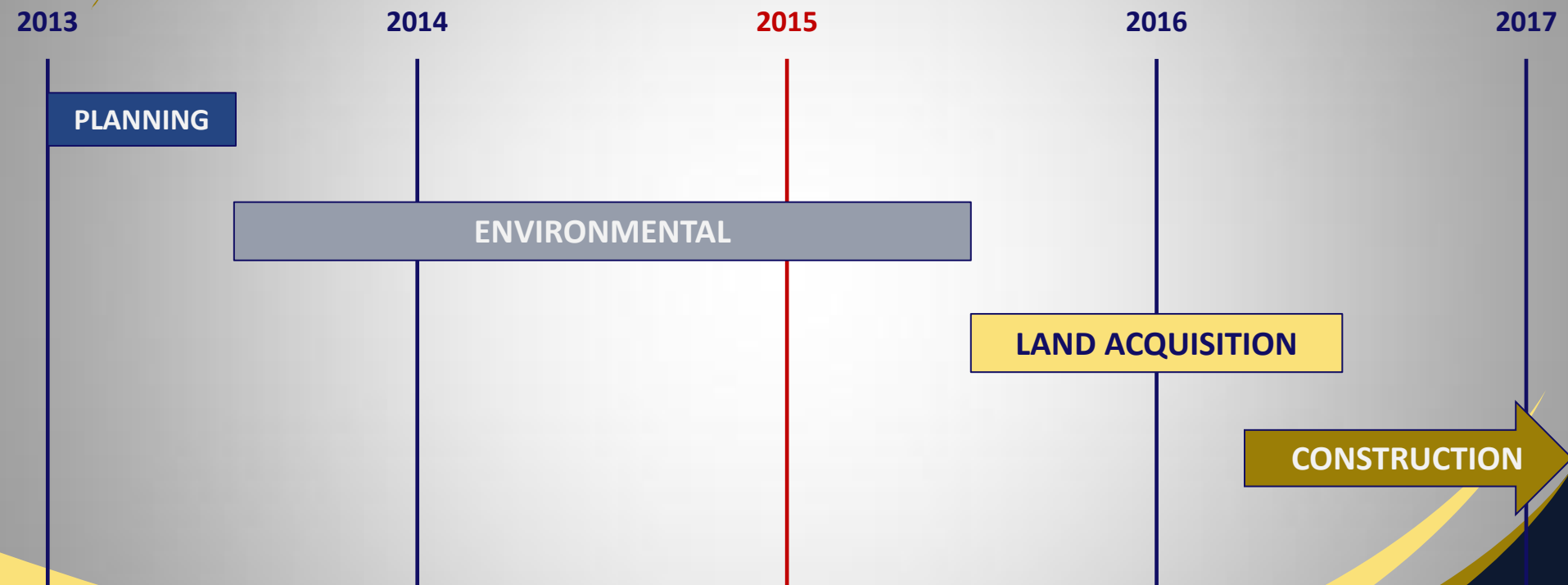
Challenges

- Highway 75/bike path alignments
- Schedule
 - Lengthy airport shutdown
 - Cannot meet RSA deadline
- Environmental impact
 - Environmental justice
 - Noise (highway)
 - Historical

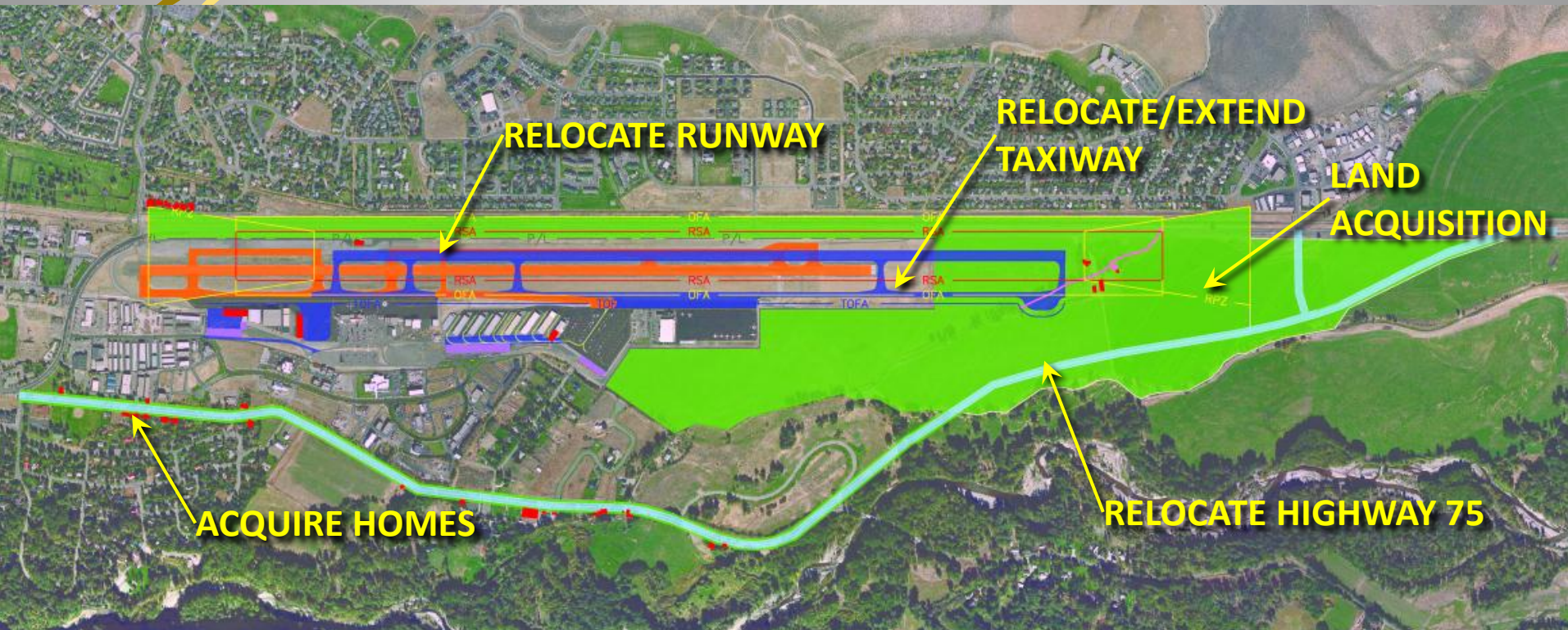
Alternative 1 – Costs

Description	Estimated Cost
Airfield	\$46.4M
Highway Relocation	\$20.7M
Construction Total	\$67.1M
Property Acquisition	\$50.0M
Environmental (EIS)	\$2.0M
TOTAL COST	\$119.1M

Alternative 1 Timeline



Alternative 2 – Runway East/Highway West



Alternative 2

Advantages

- + Full compliance
- + Retains airport infrastructure

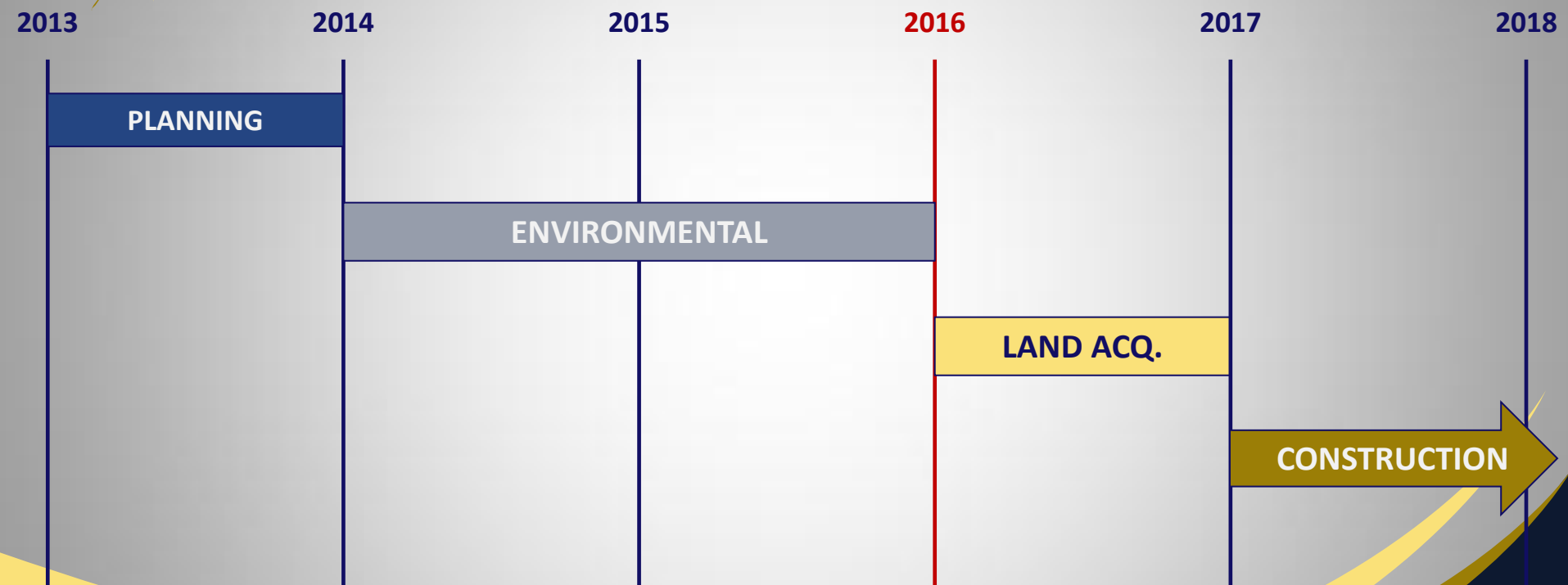
Challenges

- Highway 75 alignment
- Schedule
 - Lengthy airport shutdown
 - Cannot meet RSA deadline
- Environmental impact (highway)

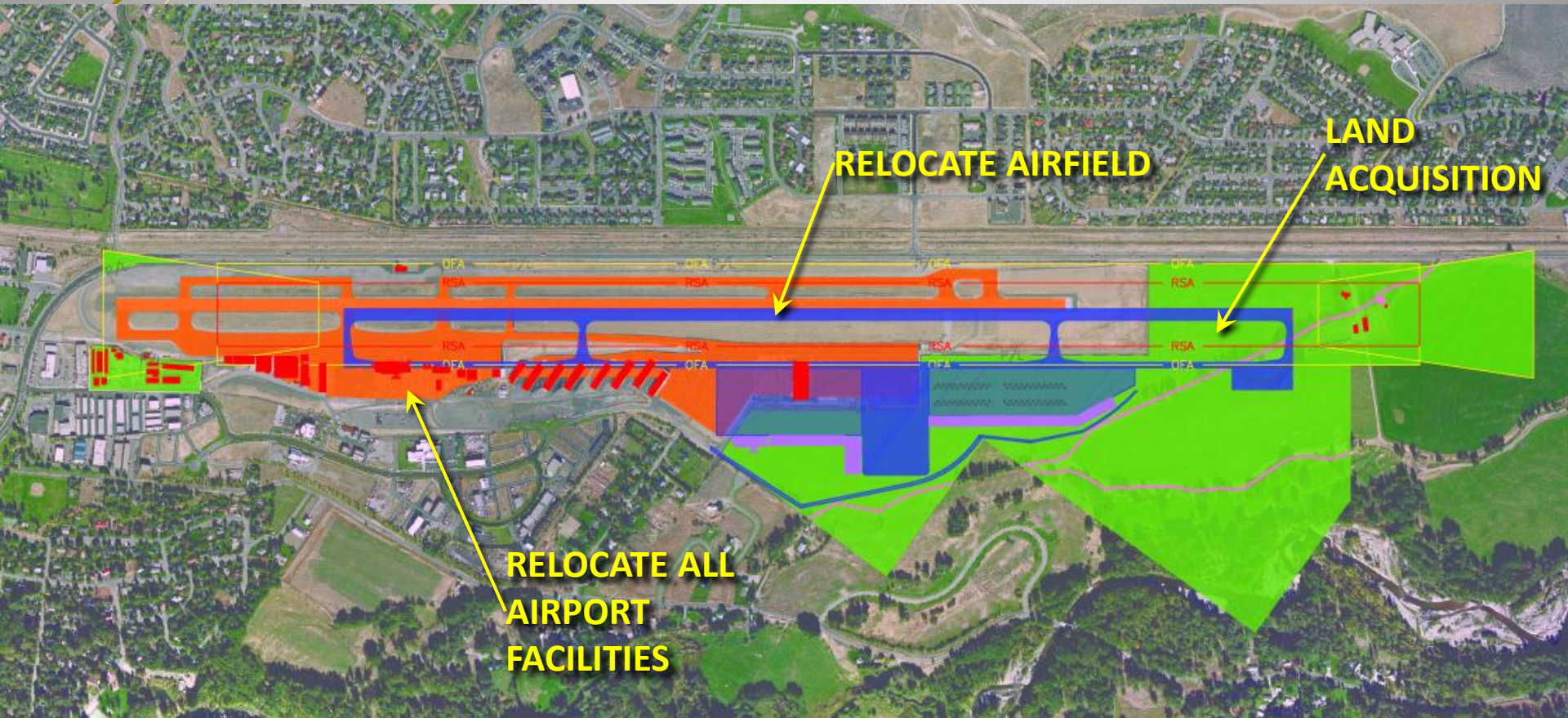
Alternative 2 – Costs

Description	Estimated Cost
Airfield	\$46.5M
Highway Relocation	\$22.8M
Construction Total	\$69.3M
Property Acquisition	\$52.0M
Environmental (EIS)	\$2.0M
TOTAL COST	\$123.3M

Alternative 2 Timeline



Alternative 3 – West



Alternative 3

Advantages

- + Full compliance
- + No impact to Highway 75
- + No residential land acquisition required

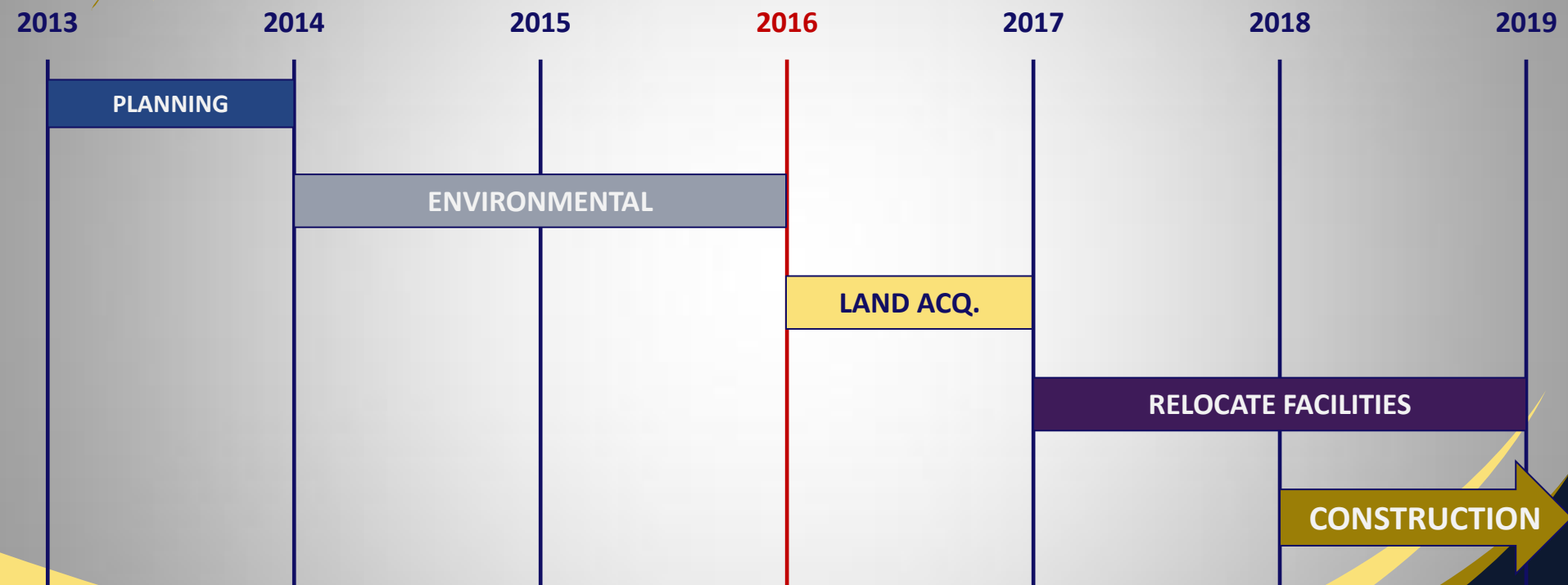
Challenges

- Reconstruct all airport infrastructure
- Schedule
 - Lengthy airport shutdown
 - Cannot meet RSA deadline
- Land acquisition
- Environmental

Alternative 3 – Costs

Description	Estimated Cost
Airfield	\$61.8M
Highway Relocation	\$0.0M
Construction Total	\$61.8M
Property Acquisition/Facility Relocation	\$83.8M
Environmental (EIS)	\$2.0M
TOTAL COST	\$147.6M

Alternative 3 Timeline



Alternative 4 – South/Rotate



Alternative 4

Advantages

- + Full compliance
- + No impact to Highway 75
- + Existing runway could remain open during initial construction

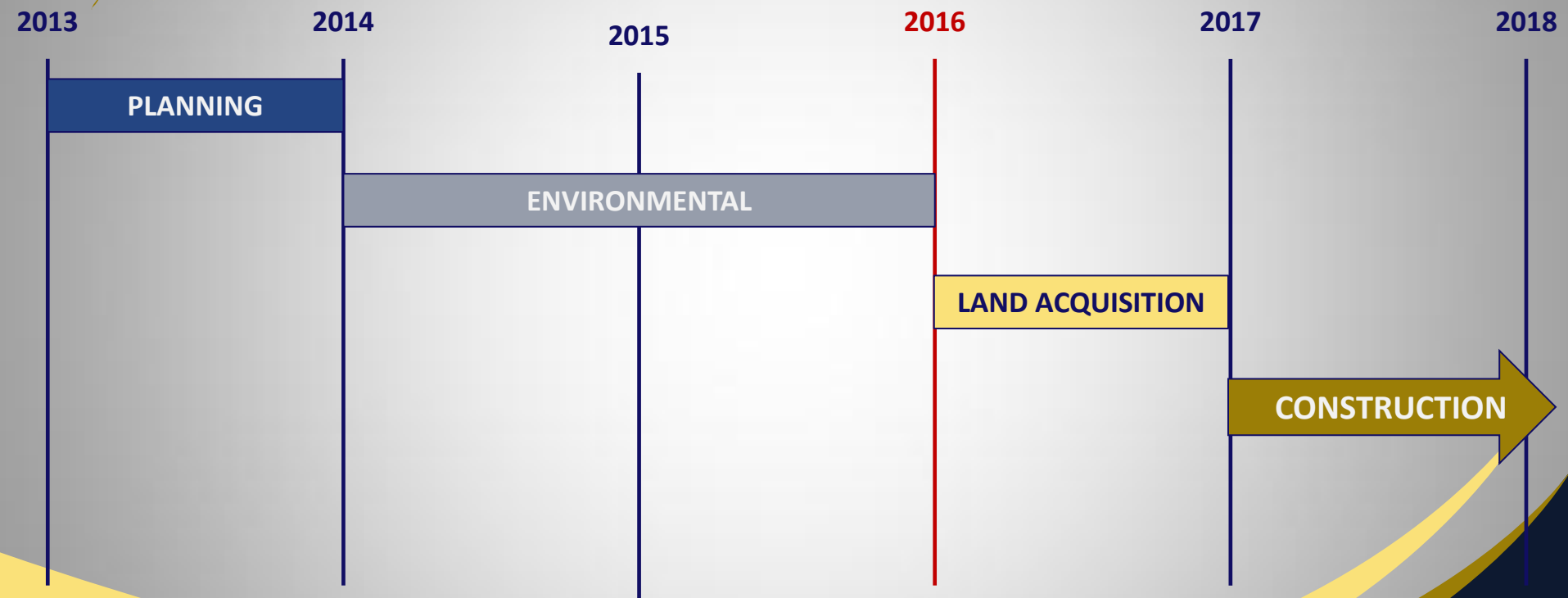
Challenges

- Relocate FBO/Apron
- Long taxi distance
 - Operational
 - Environmental
- Cannot meet RSA deadline
- Land acquisition
- Environmental
 - Community opposition
 - Cumulative impacts
 - Noise
 - Wetlands

Alternative 4 – Costs

Description	Estimated Cost
Airfield	\$54.3M
Highway Relocation	\$0.0M
Construction Total	\$54.3M
Property Acquisition/Facility Relocation	\$79.2M
Environmental (EIS)	\$2.0M
TOTAL COST	\$135.5M
Note: Ultimate cost could be much higher.	

Alternative 4 Timeline



Full Compliance Alternatives - Summary

- Costs are very high
- Environmental impacts are significant
- None meet the RSA deadline

Less Than Full Compliance Alternatives

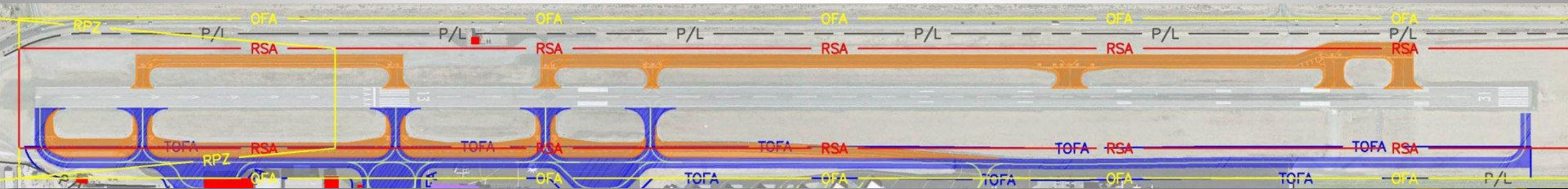
- Three configurations considered, with the goal of meeting as many standards as possible
 - All meet RSA requirements
 - Either meet OFA requirements or improve significantly
 - Significant improvement to Runway – Taxiway Separation
 - No aircraft parking within OFA

Less Than Full Compliance Alternatives

- Some common elements to each alternative
 - Parallel taxiway
 - Deconfliction
 - Terminal apron
 - T-hangar access

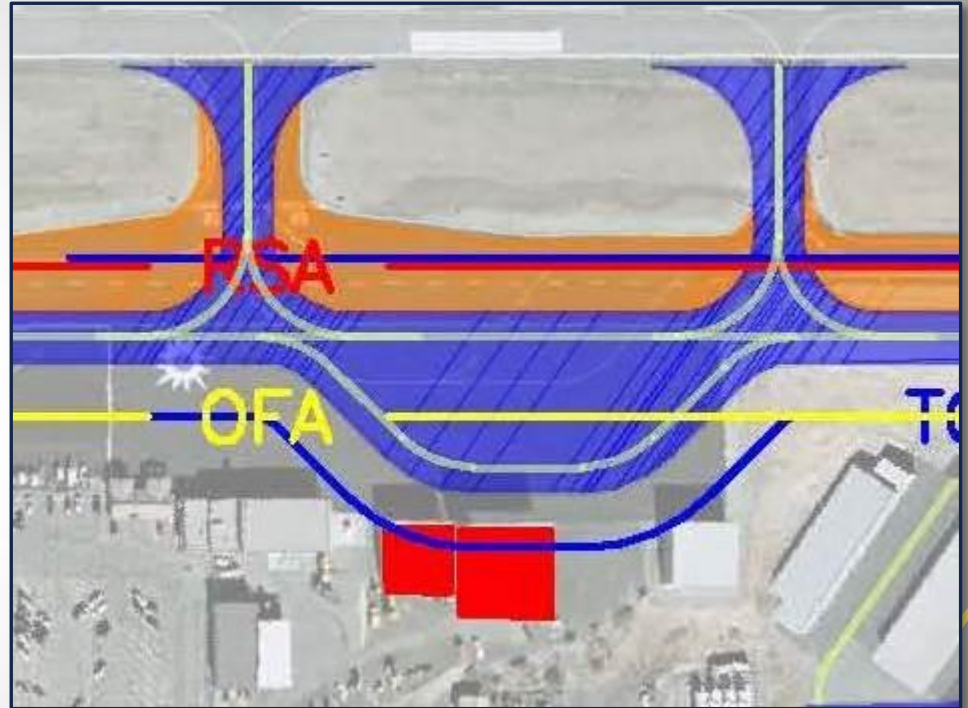
Parallel Taxiway

- Parallel taxiway is shown relocated to 320', min.
 - 100' max. wingspan
- Remove Taxiway A (RSA)
- Extend Taxiway B to south end



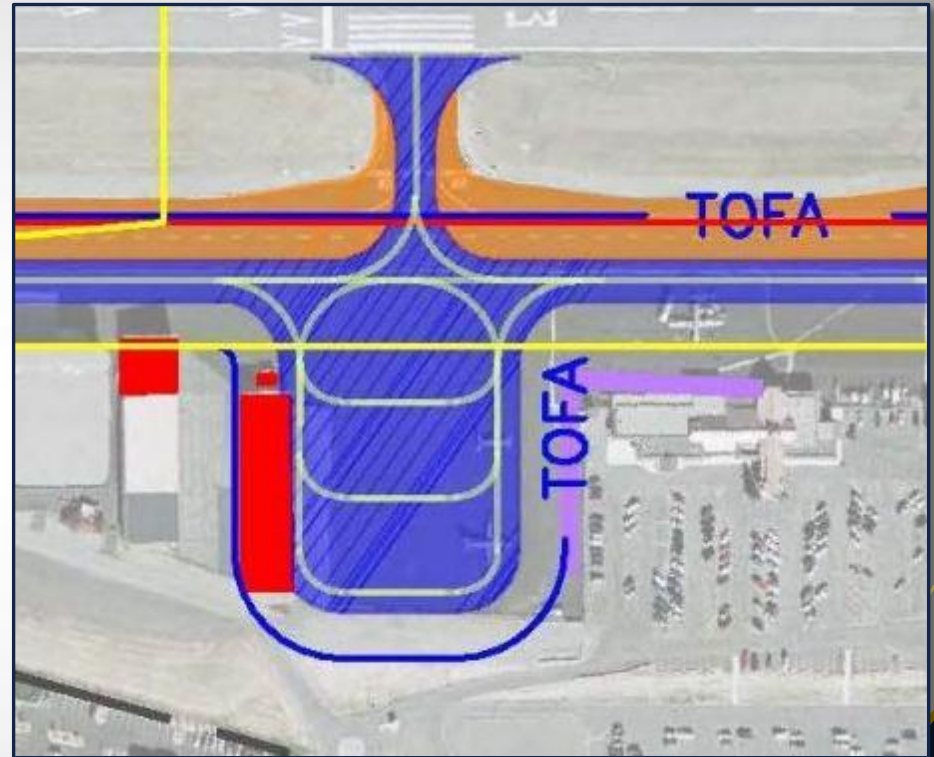
Deconfliction

- Due to “head-to-head” operations, ability to deconflict taxiing aircraft will be necessary
- Displaces parking and hangars in some alternatives



Terminal Apron

- Relocate parking to N side
 - Outside ROFA
 - 1 Q400
 - 2 RJ700s
- Estimates include covered walkway

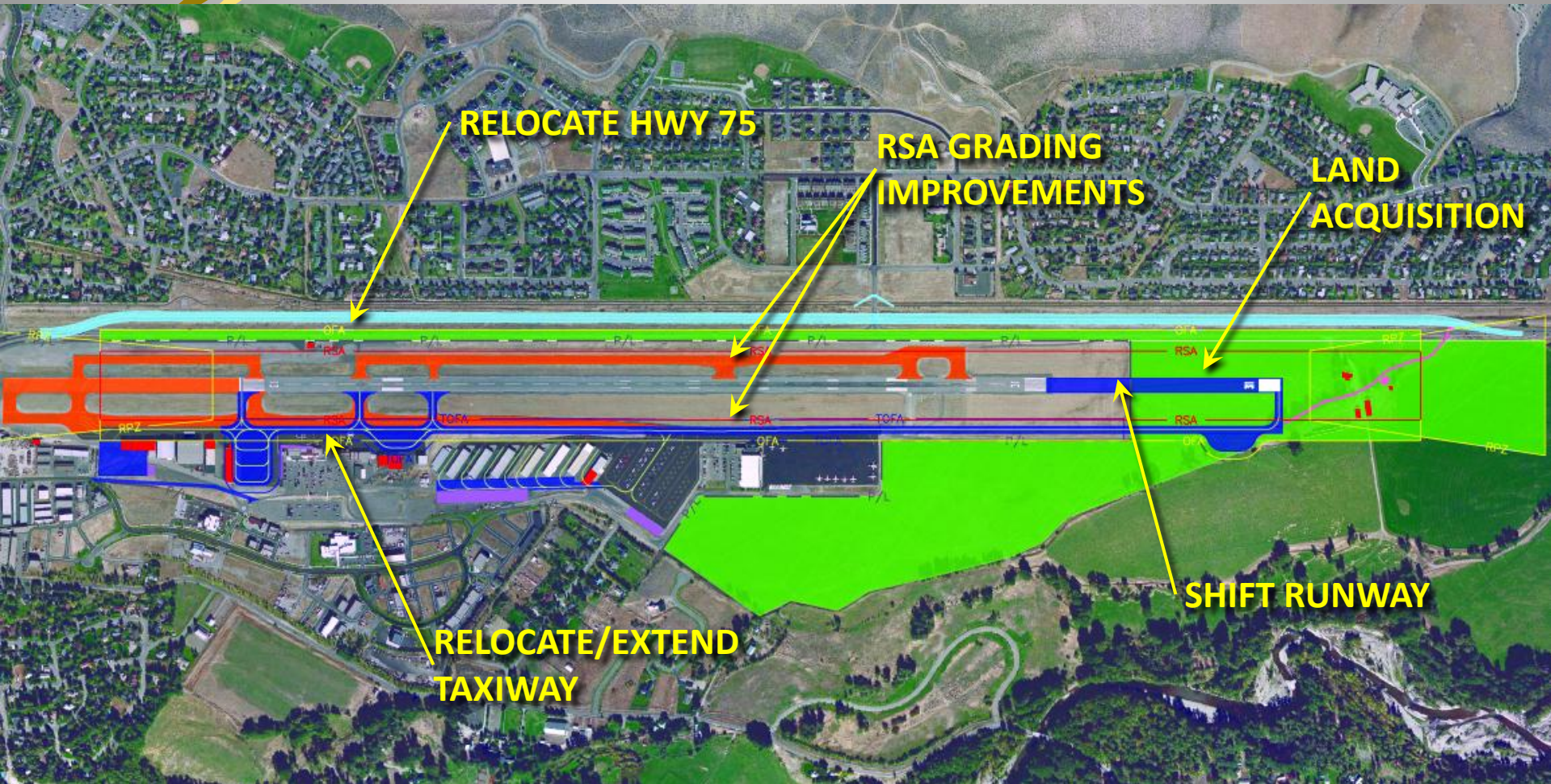


Hangar Access

- Parallel taxiway location will prevent access to t-hangars
- Reconfigure as shown



Alternative 5 – South Shift 1,700'



Alternative 5 – Standards Check

Criteria	Dimension
RSA Width	500'
OFA Width	800'
Runway – Parallel Taxiway	320'
Runway – Aircraft Parking	<u>±400'</u>

Alternative 5

Advantages

- + C-III RSA/OFA
- + No residential land acquisition required
- + No declared distances

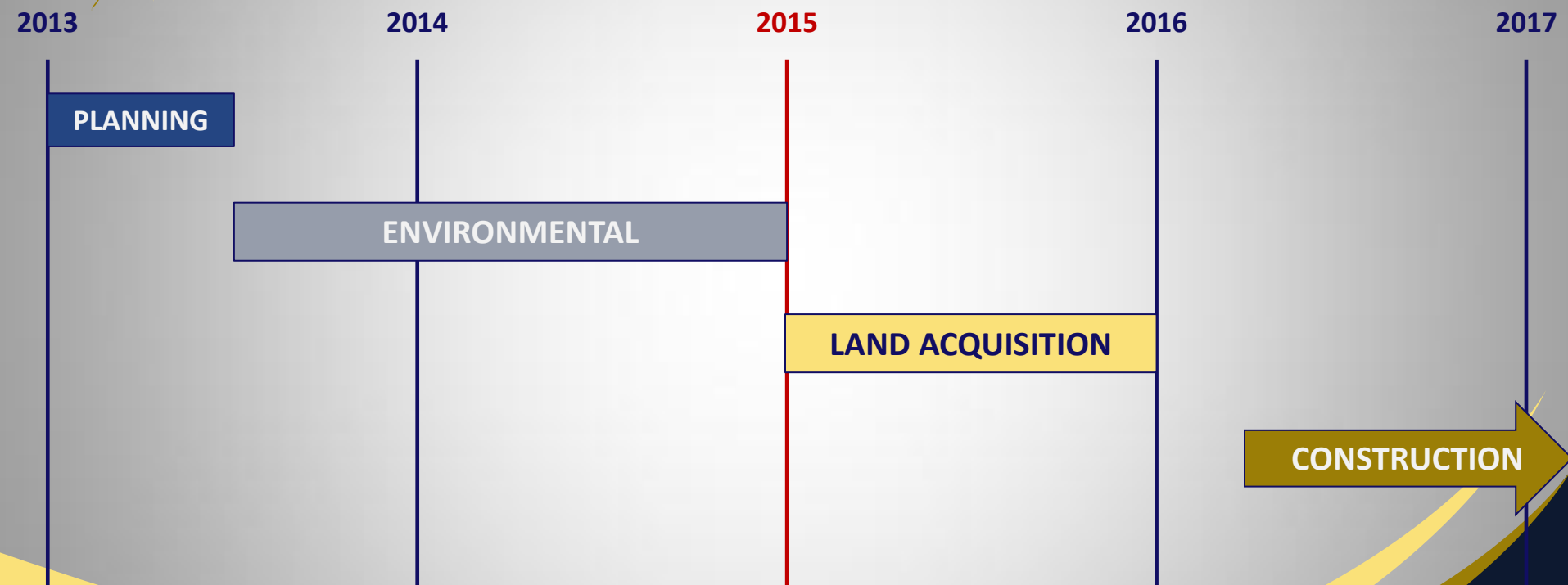
Challenges

- MOS
- RSA deadline?
- Land acquisition
- Construction phasing
- Environmental

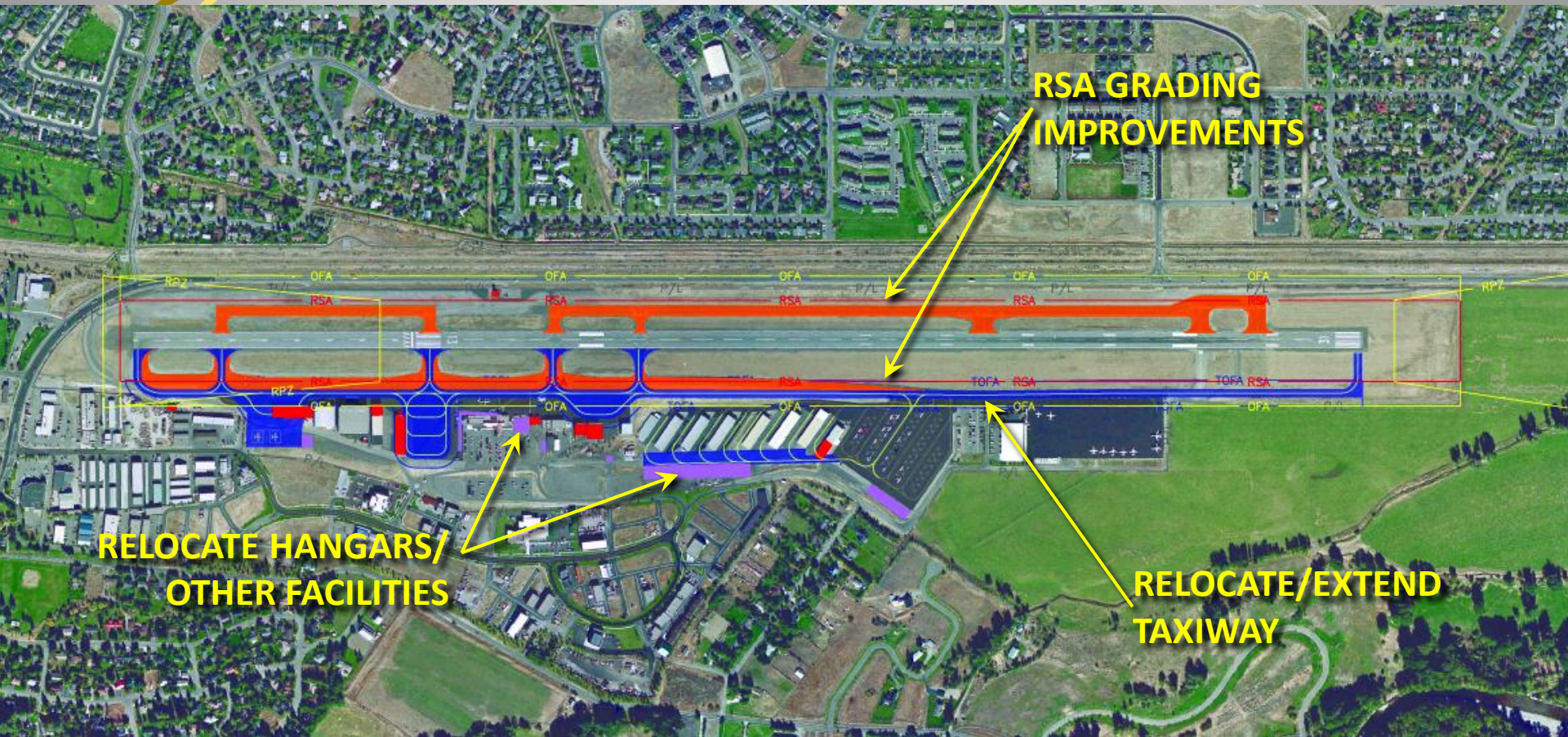
Alternative 5 – Costs

Description	Estimated Cost
Airfield	\$31.4M
Highway Relocation	\$15.3M
Construction Total	\$46.7M
Property Acquisition/Facility Relocation	\$22.9M
Environmental (EIS)	\$2.0M
TOTAL COST	\$71.6M

Alternative 5 Timeline



Alternative 6 – No Land Acquisition



Alternative 6 – Standards Check

Criteria	Dimension
RSA Width	500'
OFA Width	400'/320'
Runway – Parallel Taxiway	320'
Runway – Aircraft Parking	±400'

Alternative 6

Advantages

- + C-III RSA
- + No land acquisition
- + Lowest environmental impact
- + Can meet RSA deadline

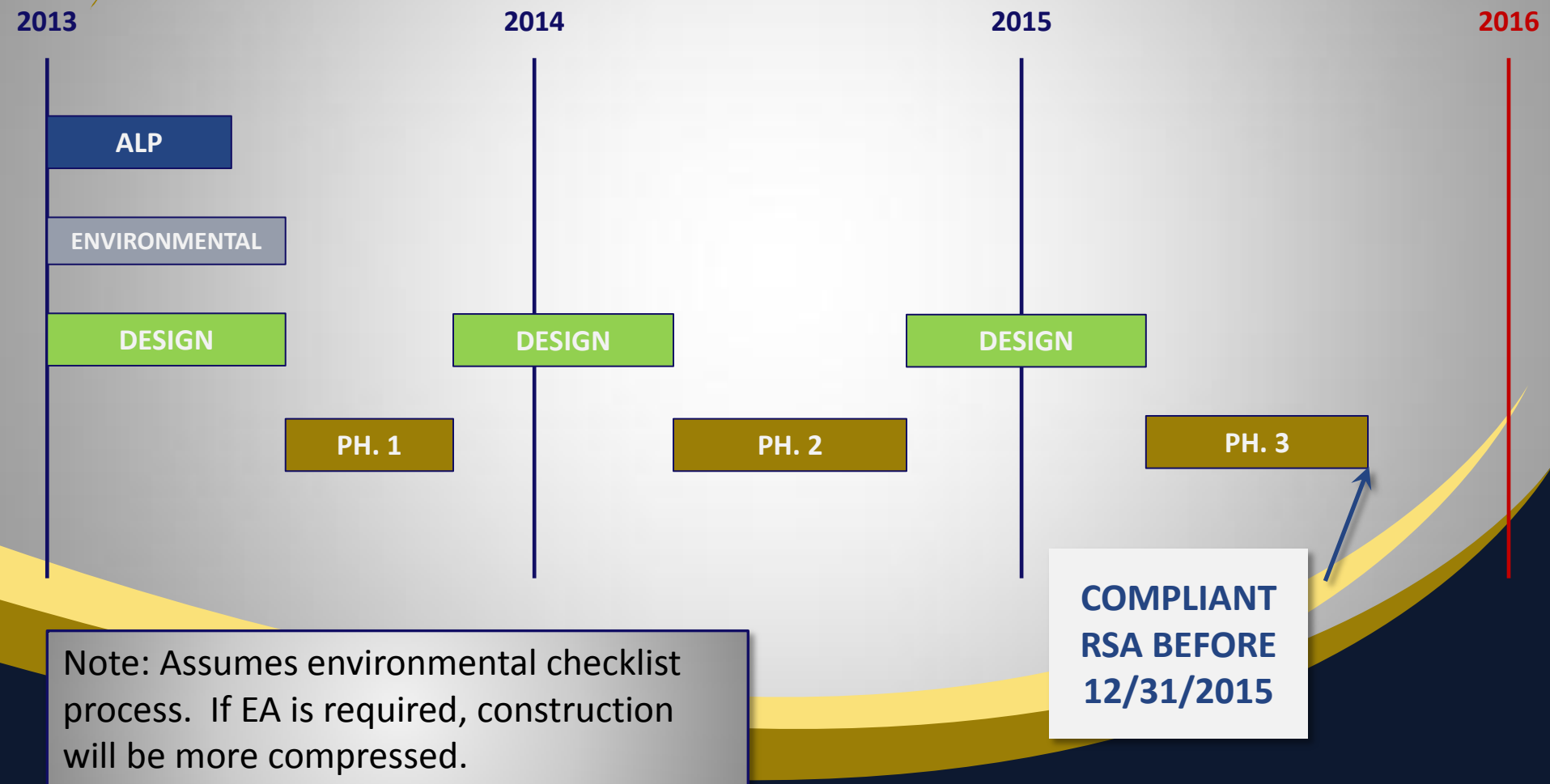
Challenges

- MOS
- Operational challenges
 - Lose hangars/aircraft parking
 - Snow removal
- Construction phasing

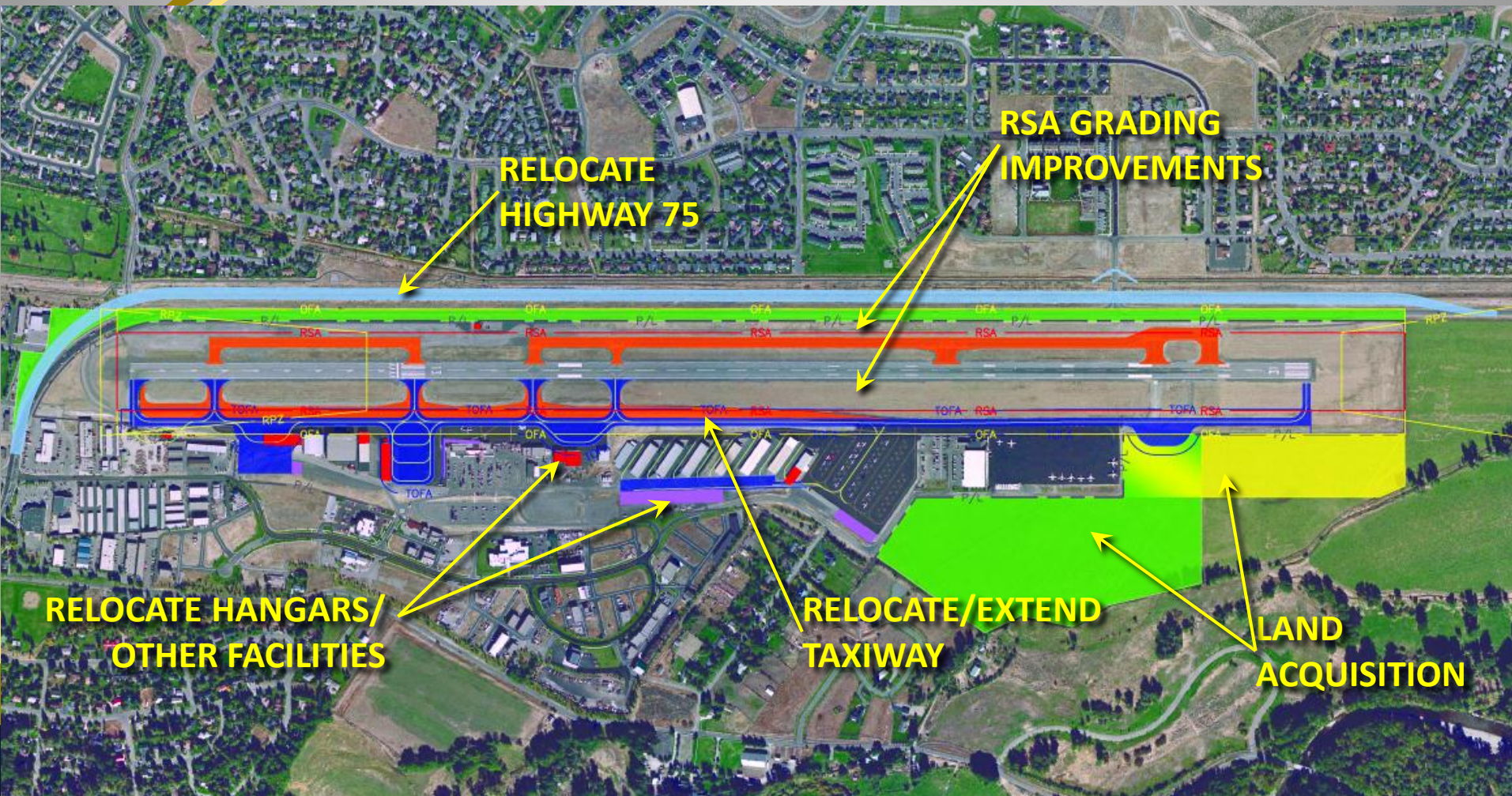
Alternative 6 – Costs

Description	Estimated Cost
Airfield	\$29.9M
Highway Relocation	\$0.0M
Construction Total	\$29.9M
Facility Relocation	\$7.8M
Environmental (?)	\$.3M
TOTAL COST	\$38.0M

Alternative 6 Timeline



Alternative 7 – Modest Expansion



Alternative 7 – Standards Check

Criteria	Dimension
RSA Width	500'
OFA Width	800'
Runway – Parallel Taxiway	320'
Runway – Aircraft Parking	<u>±400'</u>

Alternative 7

Advantages

- + C-III RSA/OFA
- + Replaces hangars/parking lost
- + Low environmental impact
- + Can meet RSA deadline

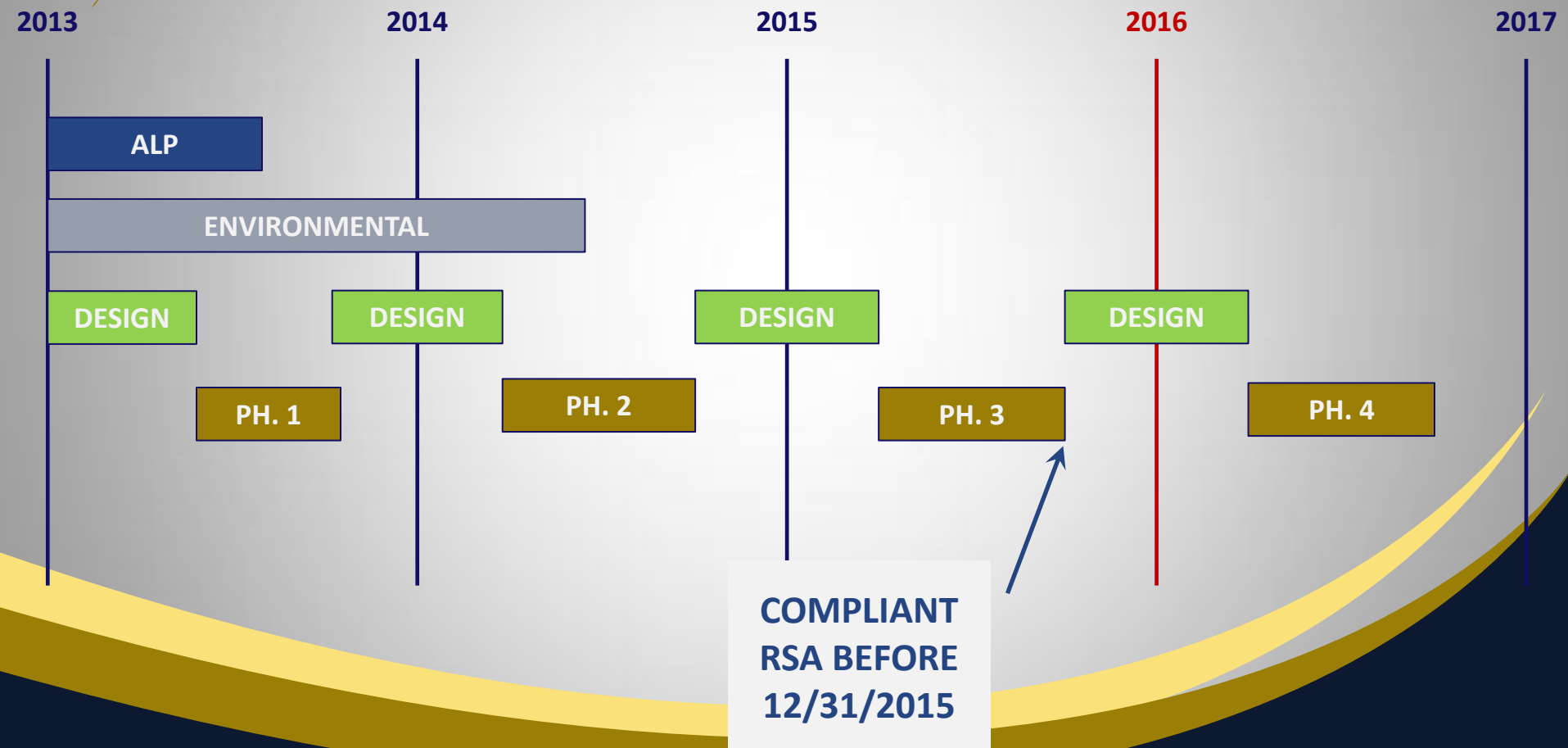
Challenges

- MOS
- Construction phasing
- Land Acquisition
- Highway 75
- Environmental

Alternative 7 – Costs

Description	Estimated Cost
Airfield	\$29.2M
Highway Relocation	\$14.9M
Construction Total	\$44.1M
Property Acquisition/Facility Relocation	\$11.5M
Environmental (EA)	\$.5M
TOTAL COST	\$59.5M

Alternative 7 Timeline



Less Than Full Compliance Alternatives - Summary

- Costs and environmental impacts are lower
- Alternative 5 does not seem to have any significant advantage, in terms of standards compliance
 - Higher costs
 - Land acquisition process prevents compliance with RSA deadline
- Alternatives 6 and 7 could meet RSA deadline

ALTERNATIVES COMPARISON

	1	2	3	4	5	6	7
Cost (M)	\$119	\$123	\$148	\$136	\$72	\$38	\$60
RSA	Y	Y	Y	Y	Y	Y	Y
RSA Schedule	N	N	N	N	N	Y	Y
OFA	Y	Y	Y	Y	Y	M	Y
Runway – Taxiway	Y	Y	Y	Y	M	M	M
Runway – Parking	Y	Y	Y	Y	M	M	M

Appendix D - Modifications of Standards (MOS)

- Prepared preliminary documentation for the following:
 - **Runway OFA**
 - **Runway – Taxiway Separation**
 - Taxiway OFA
 - Runway OFA Grading
 - Runway Safety Area Grading
 - Runway – Aircraft Parking Separation

Risk-Based Analysis

**Standards/
Practicability**
- All are required for Alternative 6
- Runway OFA not required for Alternatives 5 and 7
- Documents will be used to coordinate with FAA for approval – no guarantees, at this point

Risk-Based Analysis

- Used ACRP Report 51, *Risk Assessment Method to Support Modification of Airfield Separation Standards* (2011)
 - Published by Airport Cooperative Research Program, part of the Transportation Research Board
 - Research sponsored by FAA
 - Objective of the research:

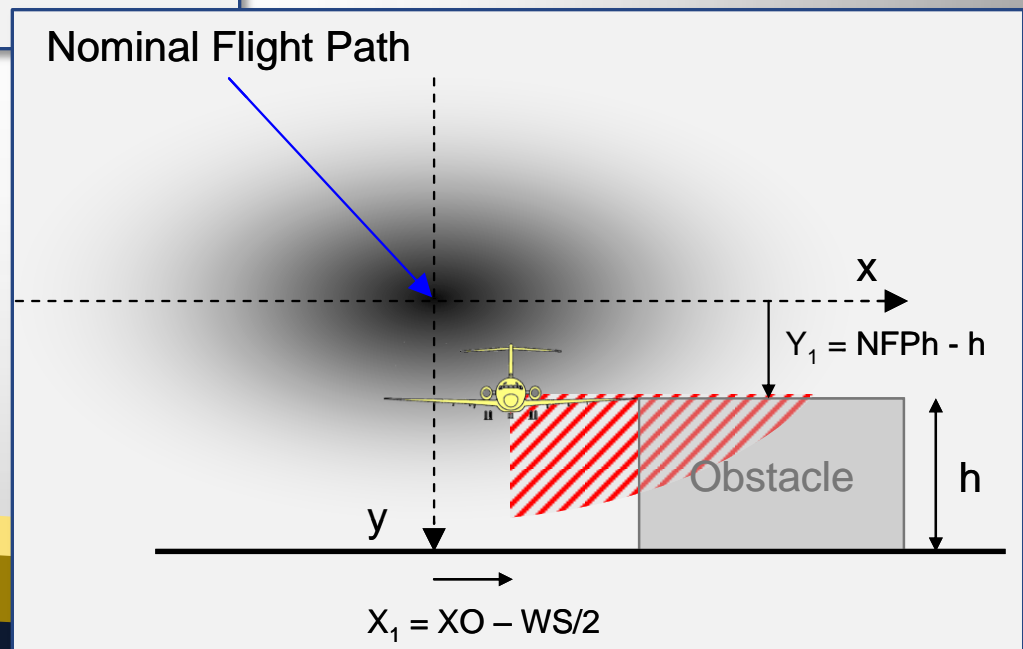
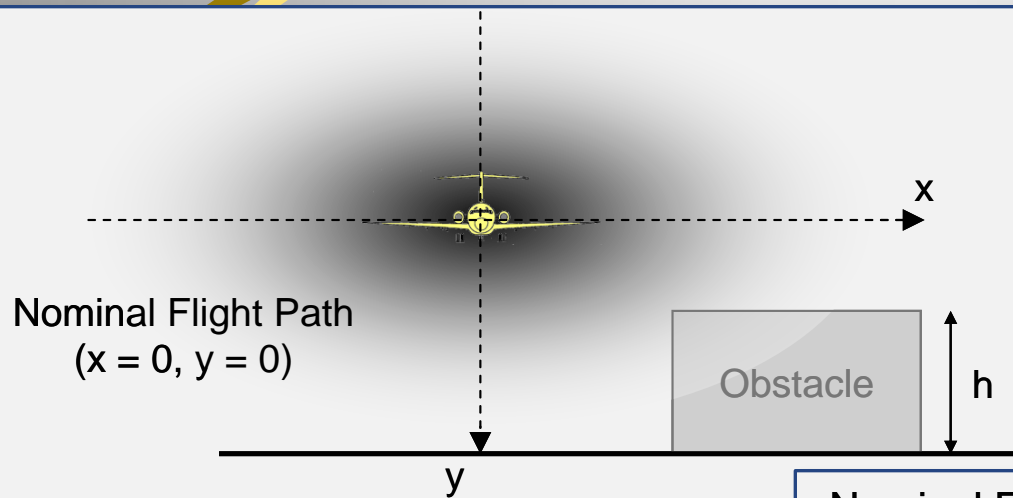
“...develop a simple and practical methodology for assessing the risk of aircraft collisions associated with non-standard airfield separations.”



Risk-Based Analysis

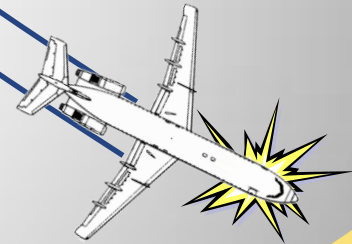
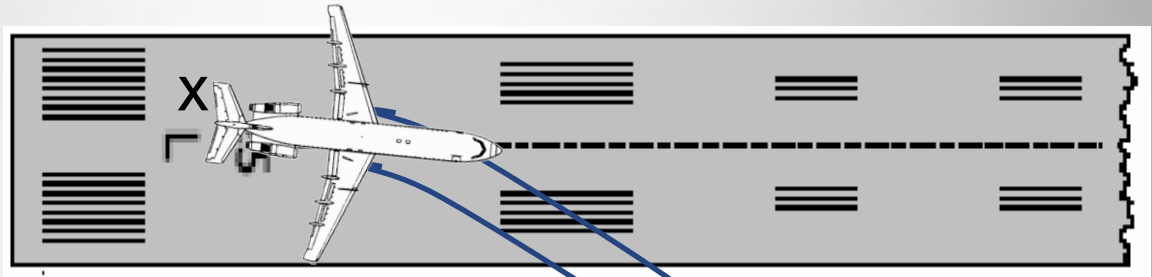
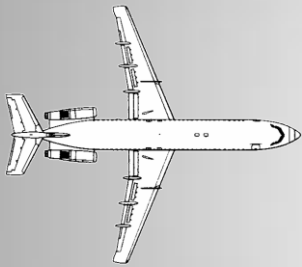
- For Runway Object Free Area and Runway-Taxiway separation, concerned with three phases of flight:
 - Airborne (landing or takeoff)
 - Landing veer off
 - Takeoff veer off
- This procedure is conservative
 - Does not consider lower wingspans
 - Considers operations under IFR conditions only

Airborne



Runway Veer-off

Landing (or Takeoff)



Analysis Procedure

1. Enter appropriate chart.
2. Determine risk per operation.
3. Determine rate of occurrence.
4. Divide by number of operations to get rate of occurrence at this airport.
5. Assess risk using FAA Safety Risk Management Criteria.

Analysis Procedure

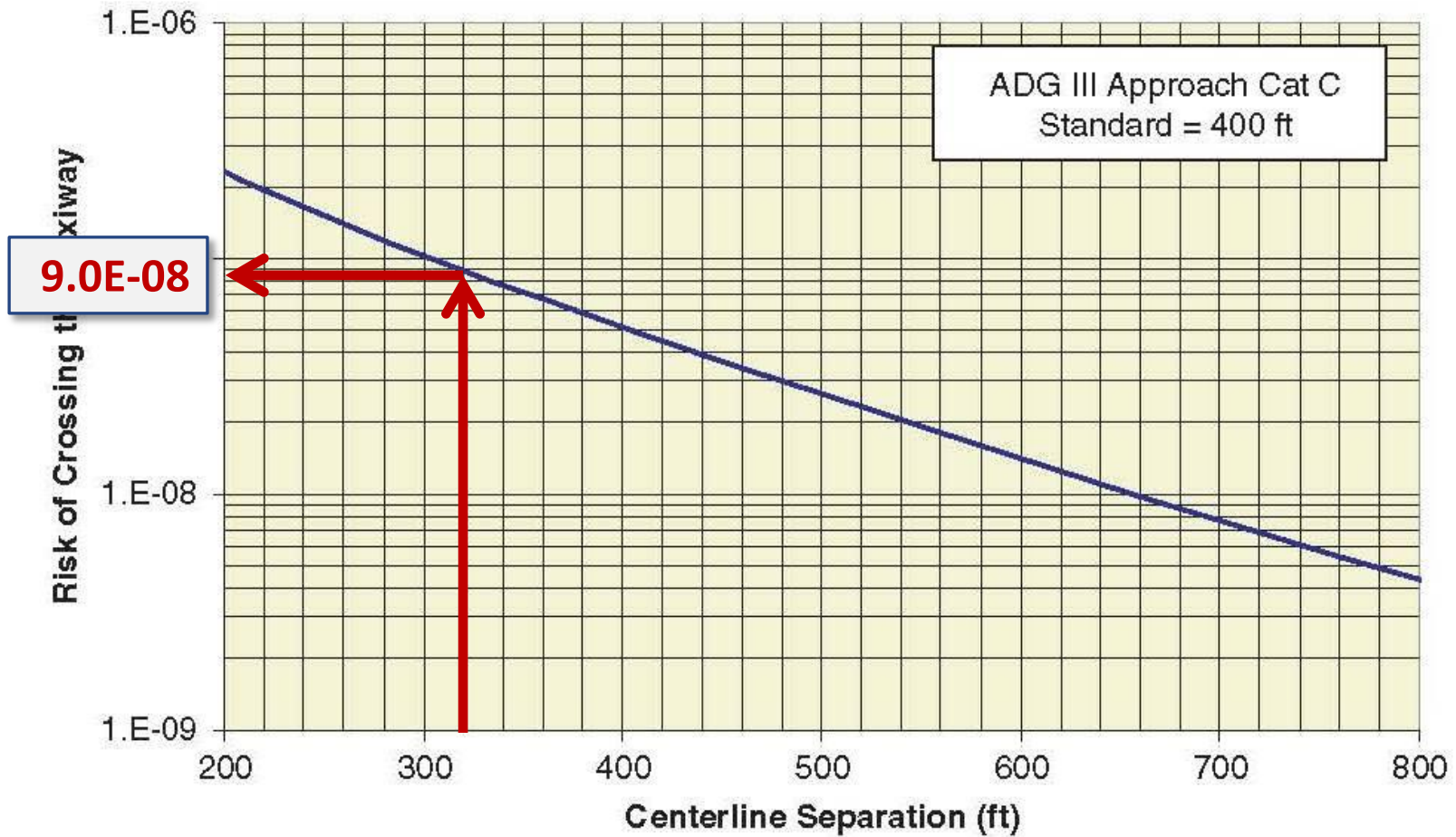


Figure AA-43. Landing veer-off collision risk for ADG III.

Analysis Procedure

- Risk = 9.0×10^{-8}
- Rate of occurrence = 1 per 11M operations
- 11M/25,000 operations = 1 every 440 years

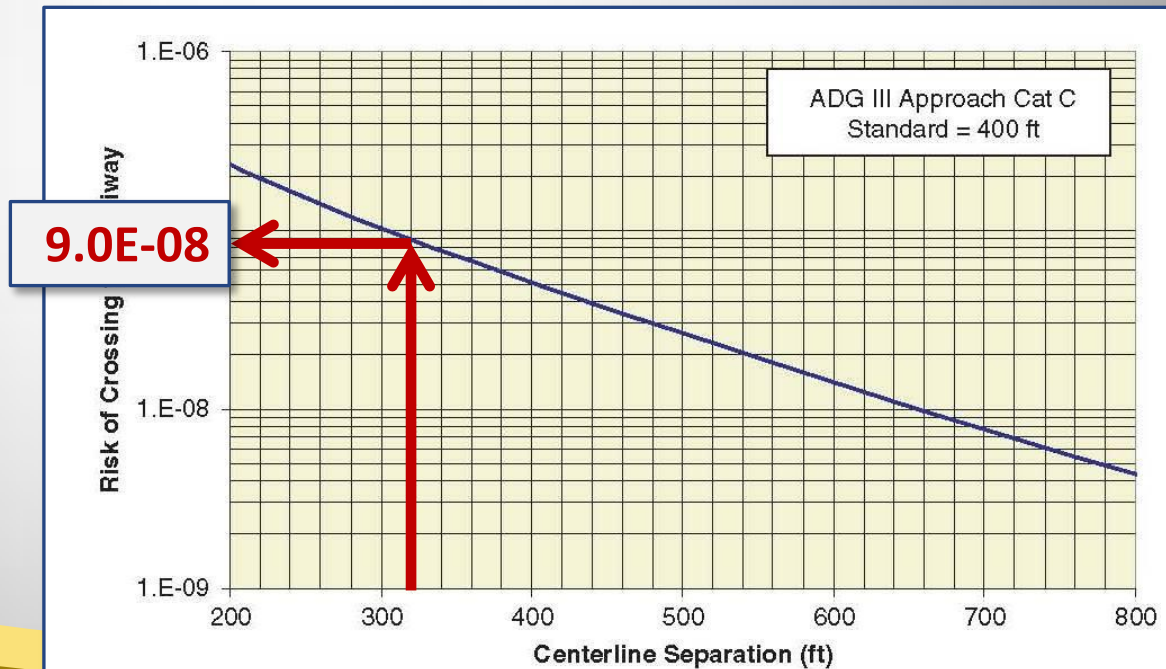


Figure AA-43. Landing veer-off collision risk for ADG III.

Analysis Procedure

Table A-3. FAA likelihood levels (FAA, 2010).

	General	Airport Specific	ATC Operational	
			Per Facility	NAS-wide
Frequent A	Probability of occurrence per operation is equal to or greater than 1×10^{-3}	Expected to occur more than once per week or every 2,500 departures (4×10^{-4}), whichever occurs sooner	Expected to occur more than once per week	Expected to occur every 1-2 days
Probable B	Probability of occurrence per operation is less than 1×10^{-3} , but equal to or greater than 1×10^{-5}	Expected to occur about once every month or 250,000 departures (4×10^{-6}), whichever occurs sooner	Expected about once per month	
Remote C	Probability of occurrence per operation is less than 1×10^{-5} but equal to or greater than 1×10^{-7}	Expected to occur about once every year or 2.5 million departures (4×10^{-7}), whichever occurs sooner	Expected about once every 1-10 years	
Extremely Remote D	Probability of occurrence per operation is less than 1×10^{-7} but equal to or greater than 1×10^{-9}	Expected to occur once every 10-100 years or 25 million departures (4×10^{-8}), whichever occurs sooner	Expected about once every 10-100 years	
Extremely Improbable E	Probability of occurrence per operation is less than 1×10^{-9}	Expected to occur less than once every 100 years	Expected less than once every 100 years	

Table A-4. FAA severity definitions (FAA, 2010).

Hazard Severity Classification				
Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
No damage to aircraft but minimal injury or discomfort of little consequence to passenger(s) or workers	<ul style="list-style-type: none"> - Minimal damage to aircraft; - Minor injury to passengers; - Minimal unplanned airport operations limitations (i.e. taxiway closure); - Minor incident involving the use of airport emergency procedures 	<ul style="list-style-type: none"> - Major damage to aircraft and/or minor injury to passenger(s)/worker(s); - Major unplanned disruption to airport operations; - Serious incident; - Deduction on the airport's ability to deal with adverse conditions 	<ul style="list-style-type: none"> - Severe damage to aircraft and/or serious injury to passenger(s)/worker(s); - Complete unplanned airport closure; - Major unplanned operations limitations (i.e. runway closure); - Major airport damage to equipment and facilities 	<ul style="list-style-type: none"> - Complete loss of aircraft and/or facilities or fatal injury in passenger(s)/worker(s); - Complete unplanned airport closure and destruction of critical facilities; - Airport facilities and equipment destroyed

Note: Occurrence is defined per movement.

Analysis Procedure

Severity \ Likelihood	No Safety Effect 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Frequent A	Low Risk	Medium Risk	High Risk	High Risk	High Risk
Probable B	Low Risk	Medium Risk	High Risk	High Risk	High Risk
Remote C	Low Risk	Low Risk	Medium Risk	High Risk	High Risk
Extremely Remote D	Low Risk	Low Risk	Low Risk	Medium Risk	High Risk
Extremely Improbable E	Low Risk	Low Risk	Low Risk	Low Risk	Medium Risk

High Risk

Medium Risk

Low Risk

* Unacceptable with Single Point and/or Common Cause Failures

Figure A-1. FAA risk matrix (FAA, 2010).

MOS – Object Free Area

- Evaluated for two dimensions:
 - 320' (Fence)
 - 345' (Highway 75)
- Rates of recurrence:
 - Fence: Once/440 years
 - Highway: Once/571 years
- What if it's not approved?
 - Move Highway and fence.



MOS – Runway – Taxiway Separation

- Evaluated assuming separation of 320'
- Rate of recurrence:
 - Once/440 years
- What if it's not approved?
 - Operational limitations

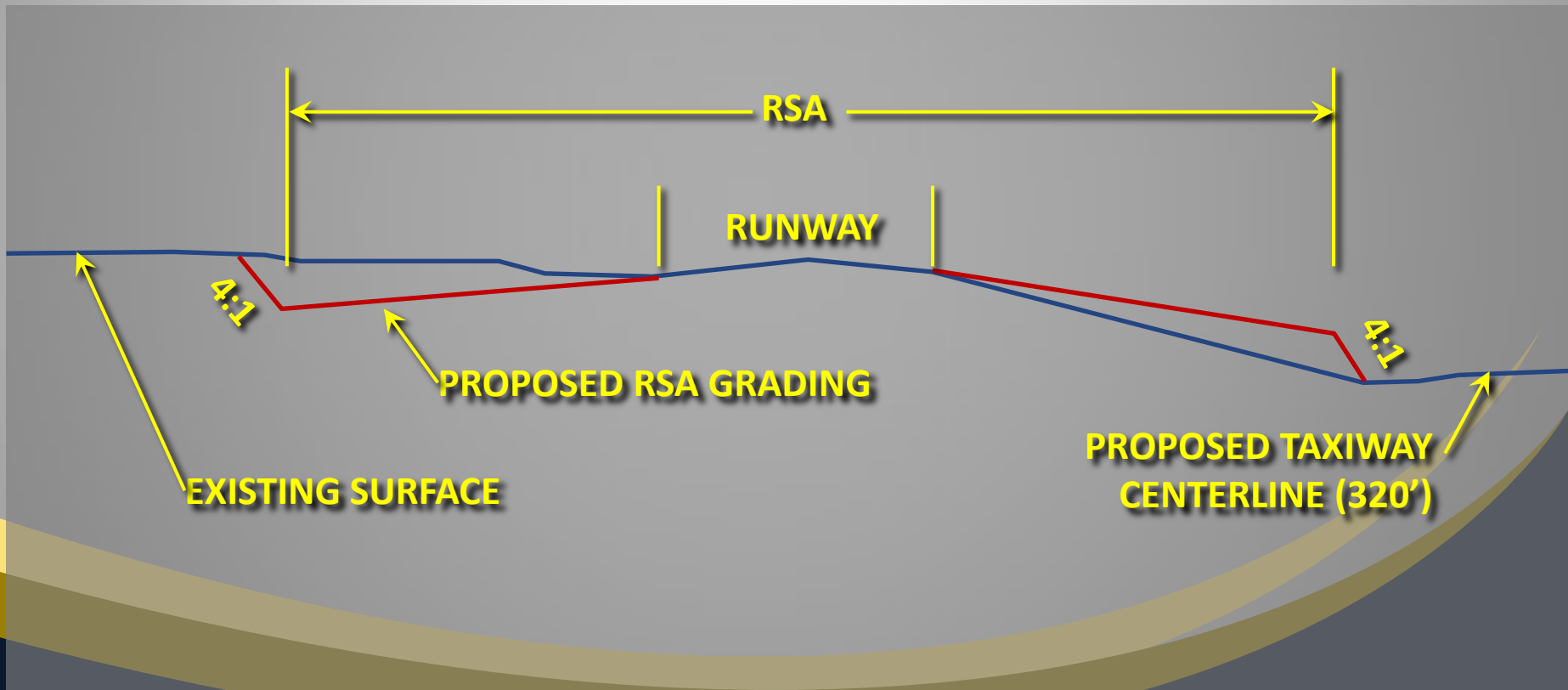


MOS – Taxiway Object Free Area

- Standard TOFA = 186' (C-III)
- As proposed = 160'
- FAA Engineering Brief 78 allows for calculation of “aircraft specific” TOFA:
 - $TOFA = 2(0.7 \times \text{Wingspan} + 10')$
- Using 100' maximum wingspan of aircraft under 95,000 lbs:
 - $TOFA = 2(0.7 \times 100' + 10') = 160'$
- May not require FAA HQ approval
- If not approved, Alternatives 5-7 will not be feasible

MOS – Runway OFA Grading

- Former standard required 4:1 slopes within ROFA

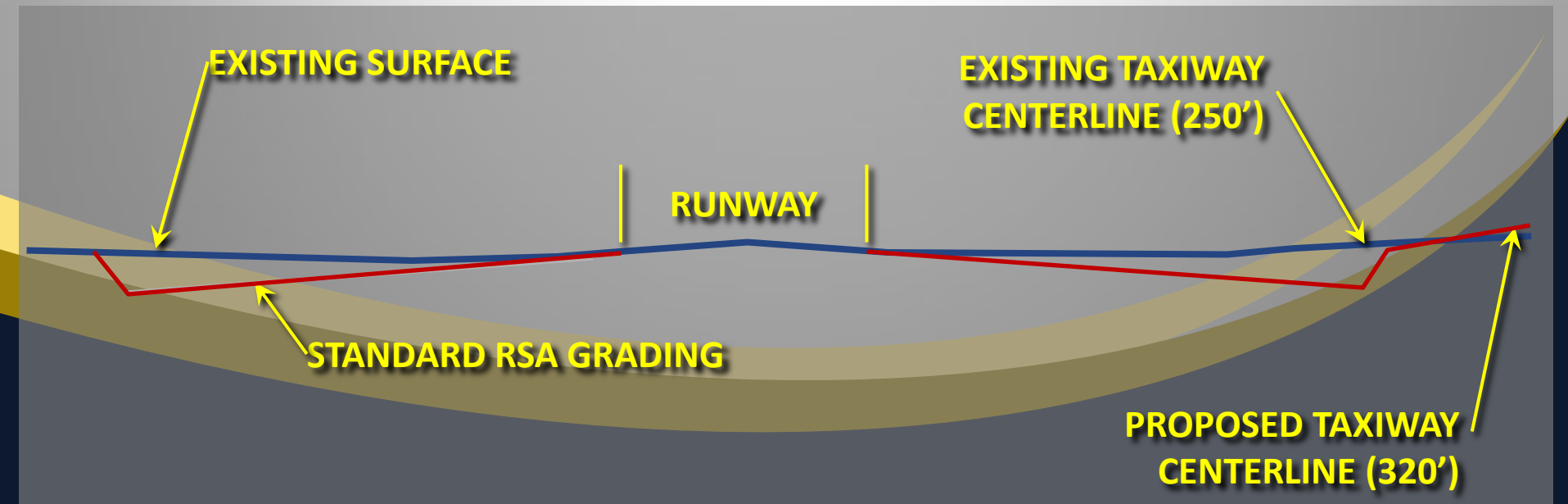


MOS – Runway OFA Grading

- *Airport Design* (9/28/2012) limits the slope to 10:1
 - It appears that the emphasis is on preventing steep up grades within the OFA
 - In our case, we are looking primarily at down grades
- May not require FAA HQ approval
- If not approved, 320' runway-taxiway separation (Alternatives 5-7) will not be feasible

MOS – RSA Grading

- Standard: -1.5% to -3%
- Existing: Flatter than -1.5% (up to +1%)
- Standards on north half would require removal of over 250,000 cubic yards of material at a cost of over \$4M
- Existing RSA drains and performs well



MOS – Runway To Aircraft Parking

- Standard = 500'
- Purpose: prevent “any part of a parked aircraft from being within the ROFA or OFZ.”
- As shown = 400', clears OFA and OFZ and does not penetrate any other surfaces



Next Steps

- Finalize report, based on comments from FAA and FMAA
- Pursue Modifications of Standards (if applicable)
 - Develop strategy
 - Finalize documentation
 - SRM panel?
- Planning – scope depends on which alternative is selected
- Environmental – depends on alternative
- Design – depends on alternative
- In order to meet the RSA deadline at the existing site, work must begin very soon

For Your Consideration...

- The FAA has the report and is reviewing it, as well.
- How do these alternatives relate to the City and County's dual path forward approach?
- What do these alternatives mean, relative to re-starting the EIS?
- What do these alternatives mean, relative to the RSA mandate?
- How does FMAA want to move forward?

Retain/Improve/Develop Air Service

- FSVA Report

First Time Scheduled Jet Service Environmental Assessment

- The FAA has issued a Final Environmental Assessment (Final EA) and Finding of No Significant Impact (FONSI) for the Operations Specifications approval of regional jet operations (CRJ 700) at the airport by SkyWest Airlines
- The Final EA document includes text revisions to address comments received, the signed FONSI, and individual responses to the nine comment letters received during the public comment period.
- A Notice of Availability for the Final EA and FONSI was published in the Idaho Mountain Express on October 24th, 2012
- SkyWest Operations Specification has been amended by the FAA to include the CRJ 700 (Existing Ops Spec for SKW is for the Brasilia E-120)

Joint Powers Agreement Property Transfer Update

- Legal Counsel
 - Joint Powers Agreement Property transfer process

FMAA Bylaws

- Board Member McCleary and Board Member McBryant have been continuing efforts to clarify and insure that FMAA Bylaws are in line with the current version of the JPA and practices
- Proposed changes generated by Board comments last month provided for review

Approve Friedman Memorial Airport Authority Meeting Minutes

- October 2nd, 2012 Regular Meeting Minutes
 - Approval

NEW BUSINESS

Legal Counsel Request for Qualification (RFQ)

- Last month, the Board asked Staff and Legal Counsel to develop a Request for Qualifications for Legal Services
- The request for information and qualifications was included in Board briefing materials for review and comment.
- When appropriate, the Board may direct Staff to solicit Qualifications

Mini Truck Acquisition Process

- FMAA approved a budget line item to replace two vehicles: Airport Manager Vehicle and Ops Vehicle
- Staff has advertised an RFP for a previously owned, low mileage “mini-truck” that will provide maintenance and environmentally efficient service.
- Procurement proposals are due 2:00 pm, November 7
- Upon satisfactory Staff and Legal review, Staff seeks Board authorization for the Chair to execute a purchase agreement.

AIRPORT STAFF BRIEF QUESTIONS



Public Comment



Thank You