

Airport Planning

General Planning Specific Planning Case Study

Presented to: **FAA Consultants Workshop**

By: **John V. Dawson, PhD, RA, AICP**

Date: **June 29, 2017**



Federal Aviation
Administration



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Objectives

- **General Aviation Planning**
 - Big Picture
 - Why the Sponsors need Professional Planners services
- **Specific Planning Issues**
 - Qualification based selection
 - Multiple Projects and Master Services Agreement
 - Multiple Firms and Multiple Task Orders
 - Master Plans, Forecasts, Independent Fee Estimates (IFE)
 - Airport Layout Plan (ALP)
- **Case Study**



Aviation Planning Process



Planning is the systematic process used to establish guidelines for the efficient development of airports that is consistent with local, state and national goals.... *ACRP Report 113*





General Planning Standards

➤ Why Planning:

- Airports must be ***safe and efficient***
- Airports must be located at optimum sites.
- Airports must be developed and maintained to appropriate ***FAA standards.***
- Airports must be ***flexible and expandable*** to meet demands of users and aircraft.
- Airports must be ***compatible with surrounding community*** and environmentally sensitive complying with grant assurances.
- Airport **sponsors** must maintain oversight of their consultants.



General Planning Standards



➤ Planning Periods

- Short-range.....1 – 5 years
- Intermediate-range.....6 – 10 years
- Long-range.....11 – 20 years

➤ **AIP funding approval and distribution is based on the following:**

- Is the grant project request eligible, justified and feasible?
- Is the grant project requirement request achievable?
- Is the grant project requirement request schedule realistic?

➤ **The Airport Sponsor must maintain oversight of all three (3) planning periods while still meeting the daily operational demands.**



General Planning Standards



➤ **NPIAS Snapshot**

- Every 2 years.
- Plan and program (CIP) for the NPIAS snapshot and five-year plan.

➤ **Master plan**

- One size does not fit all.
- Keep to a single phase if at all possible so the review and acceptance can be approximately 18 months.

➤ **Airport Strategic plan**

- Pre-planning
- Analysis
- Implementation
- Monitoring





Planning Tools

➤ **FAA Terminal Area Forecast (TAF)**

- Published in **September**
- Provides operational and enplanement data used as a ***component*** of the planning process

➤ **Other data required for planning**

- Sponsor vision and goals
- Return on Investment (ROI)
- State aviation plan
- Economic opportunities and challenges
- Latest Airport Layout Plan (ALP)

➤ **FAA Advisory Circular 150/5070-6B, *Airport Master Plans***





Planning Lessons Learned

- **What makes a successful planning approach**
 - Meet current and future demand (***needs strong and accurate justification***).
 - Funding avenues (CIP, ODO, DCL, PFC, etc.)
 - Recommend the ***best alternative*** (most cost effective) improvements and development.
 - Establish a ***realistic*** schedule.

- **What makes a less successful approach**
 - Lack of foresight.
 - Non-integrated approach.
 - Piecemeal planning (***lack of consistent CIP***) .
 - Unrealistic planning (***schedule and funding***).





Why a consultant?

- **Provide technical expertise and services .**
- **Map out future (*incremental**) improvements and development rationally and logically.** (*Charles E. Lindblom, author of "Muddling Through")
- **Address the type and magnitude of effort to resolve planning issues.**



Thank You!

• Please hold your questions
until the end



Airport Planning

Specific Planning

Presented to: **FAA Consultants Workshop**

By: **Tricia Brace, Community Planner**

Date: **June 29, 2017**



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Airport Planning



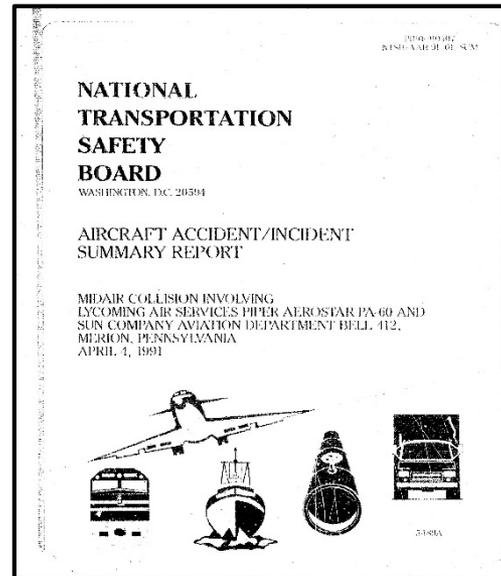
- Why Are We Here?
- Why Is Your Role So Important?
- How We Do What We Do?



Some History



- On April 4, 1991, a freak midair collision above Merion Elementary School killed seven, including two schoolchildren and a Pennsylvania senator.



FAA Mission



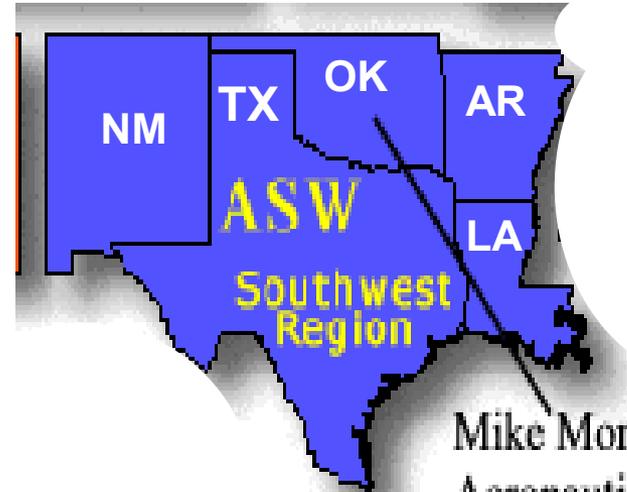
- Our continuing mission is to provide the safest, most efficient aerospace system in the world.
- You are an integral part of aviation and the FAA's Mission.



Airport Master Planning



- **All ADOs Across the country follow - FAA AC 150/5070-6B**
 - Provides guidance for the preparation of airport master plans from small general aviation to large commercial service facilities.



Mike Monroney
Aeronautical Center
Chapter



Planning Process



- Pre-Planning
- Public Involvement Program
- Environmental Considerations
- Existing Conditions
- Aviation Forecast*
- Facility Requirements
- Alternative Development & Evaluation
- Airport Layout Plans*
- Facilities Implementation Plan
- Financial Feasibility Analysis

* FAA Approval





Airport Master Planning

- Airport Master Plan
 - An airport master plan is a **comprehensive study** of an airport and usually describes the short-, medium-, and long-term development plans to meet future aviation demand.



FAA AIRPORT MASTER PLANNING PROCESS





Pre-Planning

➤ ***Pre-planning process***

- Initial Needs Determination
- Request for Proposal
- Consultant Selection
- Development of Study Design
- Negotiation of Contract
- Application for Study Funding

➤ ***Type of Study***

- Level of detail for the elements of the study.
- Master plan or an ALP with narrative

➤ ***Complexity***

- Every master plan includes the full list of elements, the detail each elements will vary, depending on:
 - An airport's size, function
 - Particular issues and problems



Public Out Reach



- Level of public out reach should be proportional to the complexity of the plan & public interest.
- Public out reach program will encourage information-sharing and collaboration
 - Airport Sponsor,
 - Users
 - Resource Agencies
 - Public Officials
 - General Public
- These various groups form the stakeholders who have an interest in the outcome of the study.



Inventory



➤ Existing Conditions

- History
- Physical Facilities – buildings & pavement
- Regional setting & surrounding land uses
- Socioeconomic & Demographic data
- Historical Aviation Activity
- Airport Business Affairs

➤ Environmental Considerations

- Develop an Overview of Sensitive Environmental Resources
 - Existing Maps
 - Prior Environmental Documents
 - Internet to obtain

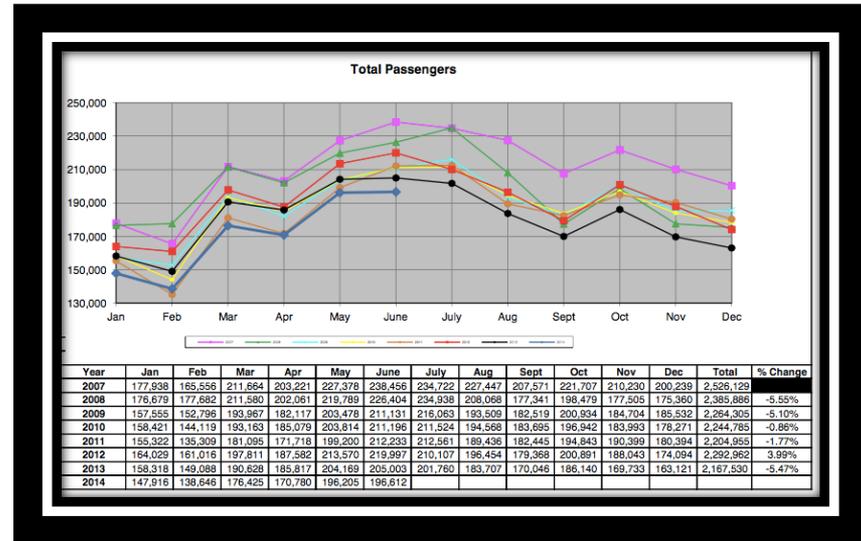


Forecast

➤ Forecasts projections are used to determine the need and provide an adequate justification for new or expanded facilities.

➤ Latest available data

- Operations (annual)
- Passengers (annual)
- Aircraft
- Based Aircraft
- Aircraft Mix
- Critical Aircraft
- Fleet Mix
- Peak Hour Activity



Forecast



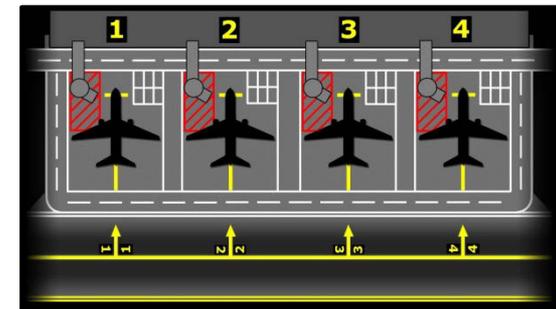
- FAA Approval of Forecasts is required for adoption into the Terminal Area Forecast (TAF)
- Planners should refer to a report prepared by the FAA's Office of Aviation Policy and Plans (APO-110), ***Forecasting Aviation Activity by Airport, dated July 2001***, to help them determine what approach to use.
 - Appendix B - Template for Summarizing and Documenting Airport Planning Forecasts
 - Appendix C - Template for Comparing Airport Planning and TAF Forecasts



Facility Requirements



- Determine what, if any, additional facilities will be required to accommodate forecast activity. This begins with an assessment of the ability of existing facilities to meet current and future demand.



Alternative Development



- Bring together the elements of the planning process to identify and evaluate alternatives for meeting the needs of airport users and the vision for the airport.

- Airports have a wide variety of development options, so an organized approach to identifying and evaluating alternative development options is essential for effective planning.

- The key elements of this process are:
 - Identification of alternative ways to address the facility requirements.
 - Evaluation of the alternatives, individually and collectively to gain a thorough understanding of the strengths, weaknesses, and other implications of each.
 - The ALD/ALP is the recommended alternative.





FACILITIES IMPLEMENTATION PLAN FINANCIAL FEASIBILITY ANALYSIS

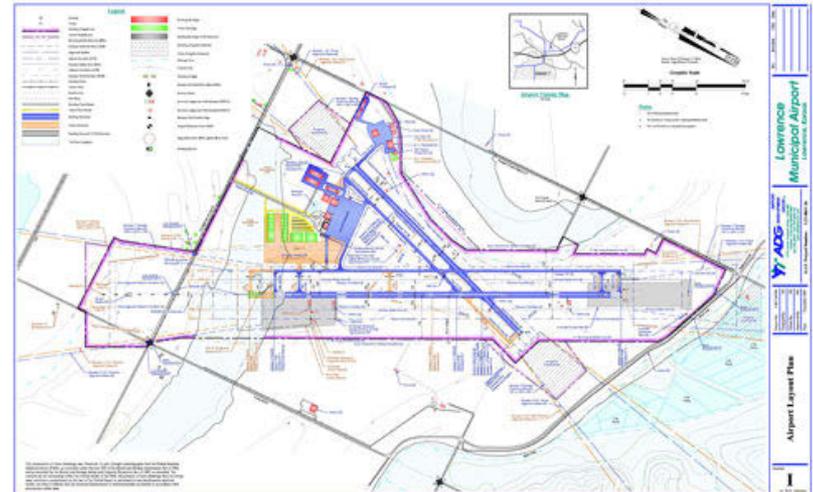
- The **Facilities Implementation Plan** provides guidance on how to implement the recommendations of the planning effort.
 - Schedule
 - Listing of key projects/activities
 - Project descriptions
 - Estimated development cost
 - Any special considerations
 - Capital Improvement Plan (CIP).
- The facilities implementation plan may change from year to year in response to changing conditions.
- The **Financial Feasibility Analysis** demonstrates the airport sponsor's ability to fund the projects in the master plan.
- Airport development can be financed from several sources, including Federal and state grants-in-aid, private financing or third party development, passenger facility charges, etc..
- The sponsor's ability to fund the recommended projects should be a major consideration in preparing the CIP.



Airport Layout Plans (ALP)



- ALPs are drawings used to graphically depict current and future airport facilities
- Follow ARP SOP No. 2.00 October 2013



ALP - Set of Drawings



- Cover Sheet
- ALP Drawing
- Data Sheet
- Facilities Layout Plan
- Terminal Area Plan (as needed)
- Airport Airspace Drawing
- Inner Portion of the Approach Surface Drawing
- Airport Land Use Drawing
- Off-Airport Land Use Drawing (as needed)
- Airport Property Map / Exhibit A
- Runway Departure Surface Drawing
- Utility Drawing
- Airport Access Plans



Narrative Report



- Narrative Report should explain and document changes and include the following:
 - Basic aeronautical forecasts.
 - Basis for the proposed items of development.
 - Rationale for design features and/or modifications to FAA Design Standards.
 - Alternative/Proposed Development
 - Summary and layout sketches of the stages of major items of development.
 - Funding Plan
 - An environmental overview of environmental conditions identified and analysis for airport development projects.

Effective Date: October 1, 2013 ARP SOP No. 2.00

APPENDIX A. ALP REVIEW CHECKLIST

The following checklist shall be used in lieu of FAA AC 150/5070-6R, Appendix F, Airport Layout Plan Drawing set. This checklist is intended for use when submitting a new or updated ALP to the FAA for review and approval. Consultants and/or sponsors should indicate "Yes," "No" or "N/A" (not applicable) for every item on the checklist. The same checklist shall be provided to FAA for review and verification. For all reviewers: It is important that each item listed be shown on the respective plan.

Airport Identification (to be completed by Sponsor or Consultant)	
Airport	_____
City and State	_____ Location Identifier _____
Airport Owner	_____

ALP Submission Information (to be completed by Sponsor or Consultant)	
ALP Prepared by	_____
Name of Consulting Firm	_____
Name of Individual	_____ Date _____
Telephone	_____
Email address	_____
Consulting QA/QC Review	_____
Name and Title of Individual	_____ Date _____
Sponsor Review	_____
Name and Title of Individual	_____ Date _____

FAA Review (to be completed by FAA)	
Name and Title of Individual	_____ Date _____

A-1

ARP SOP No 2.00

If the checklist requires it, then it should be addressed on the ALP and/or in the Narrative Report. Tailor the scope w/ the airport in mind.



Airport Planning

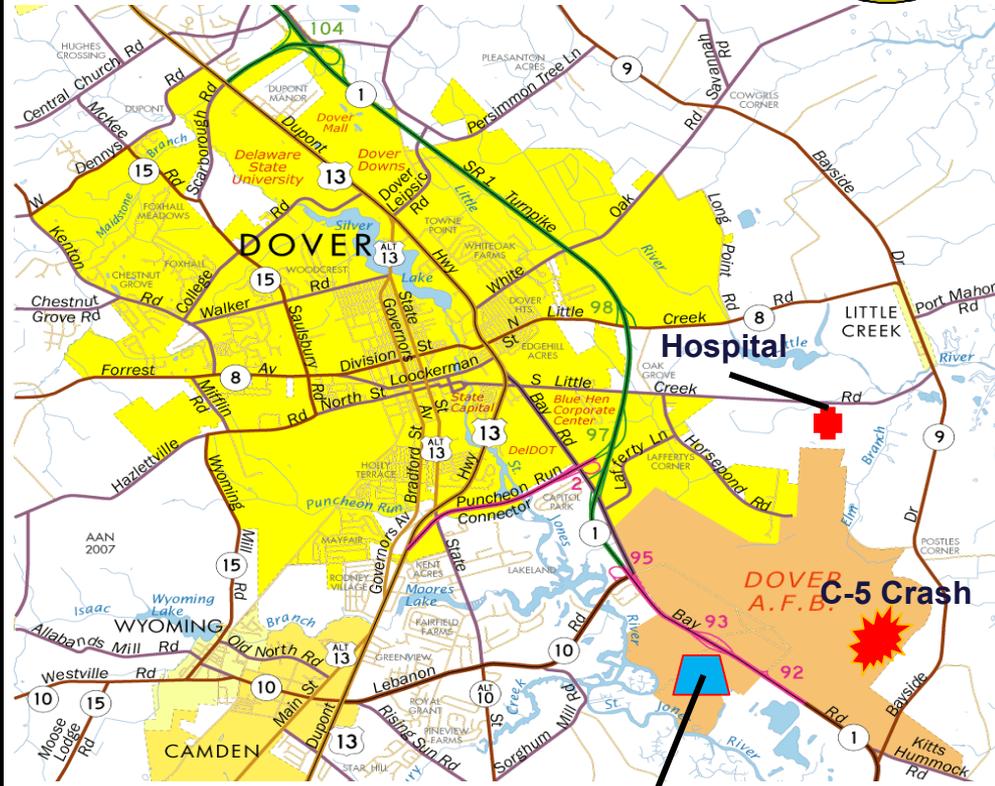
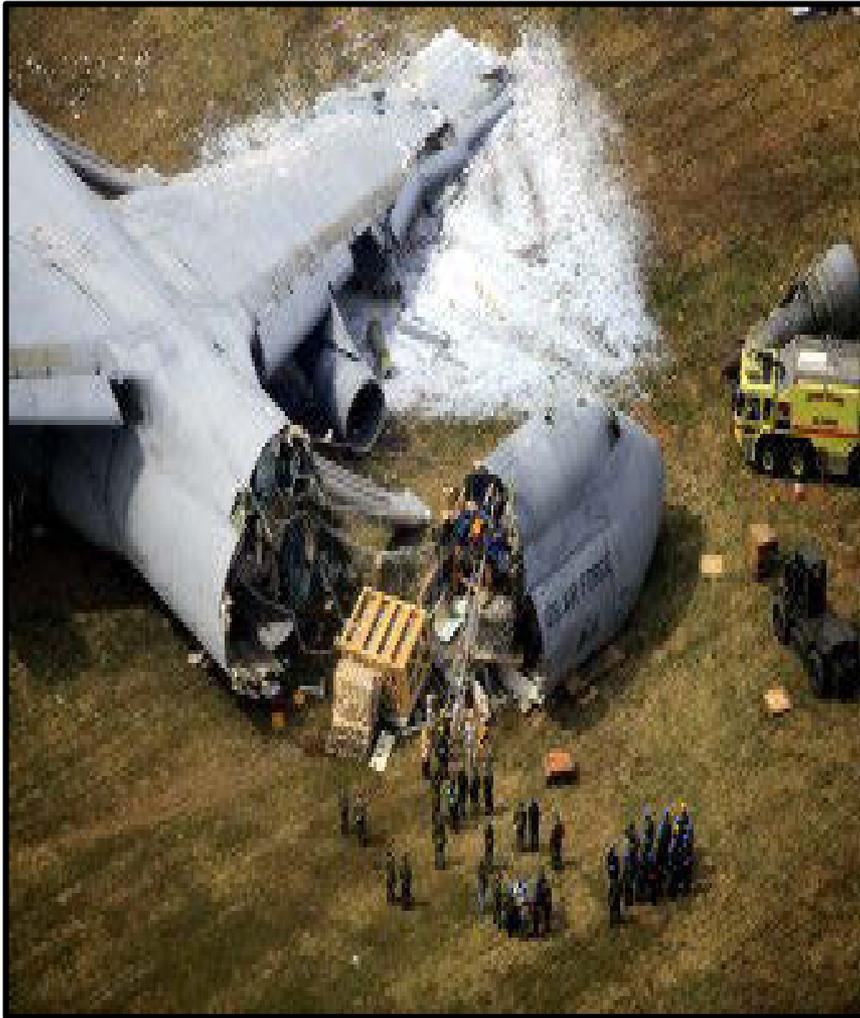


- **Saves Cost**
- **Minimize Problems**
- **Prioritize & Focus**
- **Excellent Airport System**

- **High Cost**
- **Waste**
- **Environment Problems**
- **Poor Airport Designs**

More History

Dover AFB "Miracle Flight" April 3, 2006



Elementary School

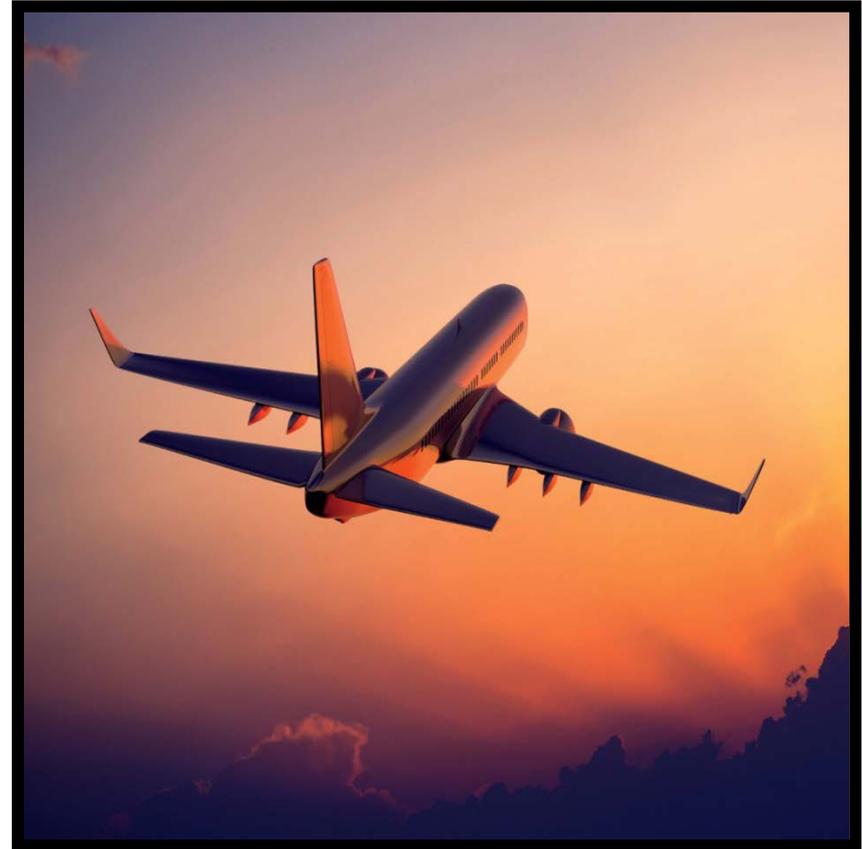


AIRPORT MASTER PLANNING

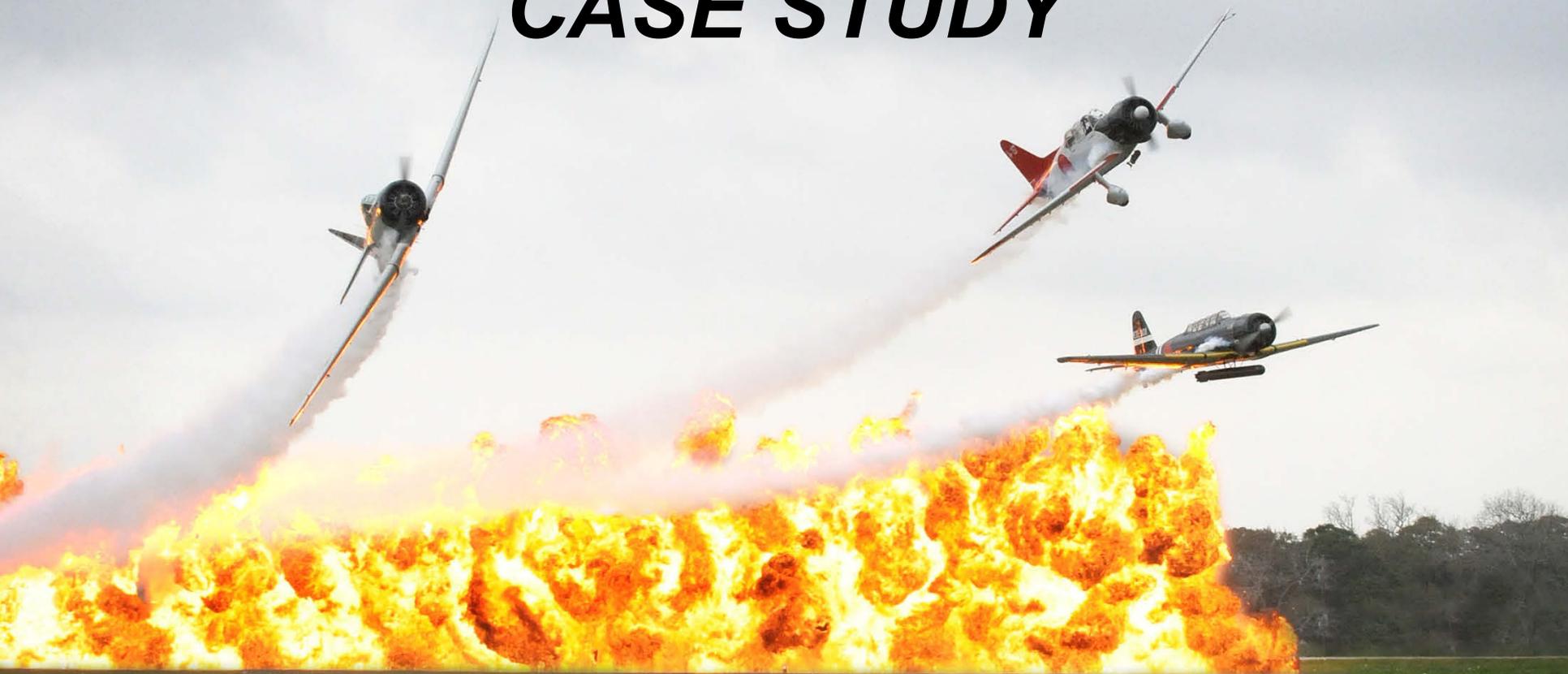


Planning is
bringing the future
into the present

so that you can
do something about it *now*.



CASE STUDY



Case Study – RWY Extension



Case Study – RWY Extension



Case Study – Airfield Extension



Case Study – Airfield Extension



Thank You!

•Questions???

