



Bismarck Airport Master Plan

Technical Advisory Committee Meeting 2

Presented by

RS&H
TEAM

In association with
Ulteig Engineers, Inc.
CAD Concepts, Inc.

February 22, 2006

Meeting Agenda



- 1. Master Plan Elements**
- 2. Master Plan Status**
- 3. Aviation Demand Forecast**
- 4. Technical Committee Input / Discussion**
- 5. Project Schedule / Subsequent Meetings**

Introductions

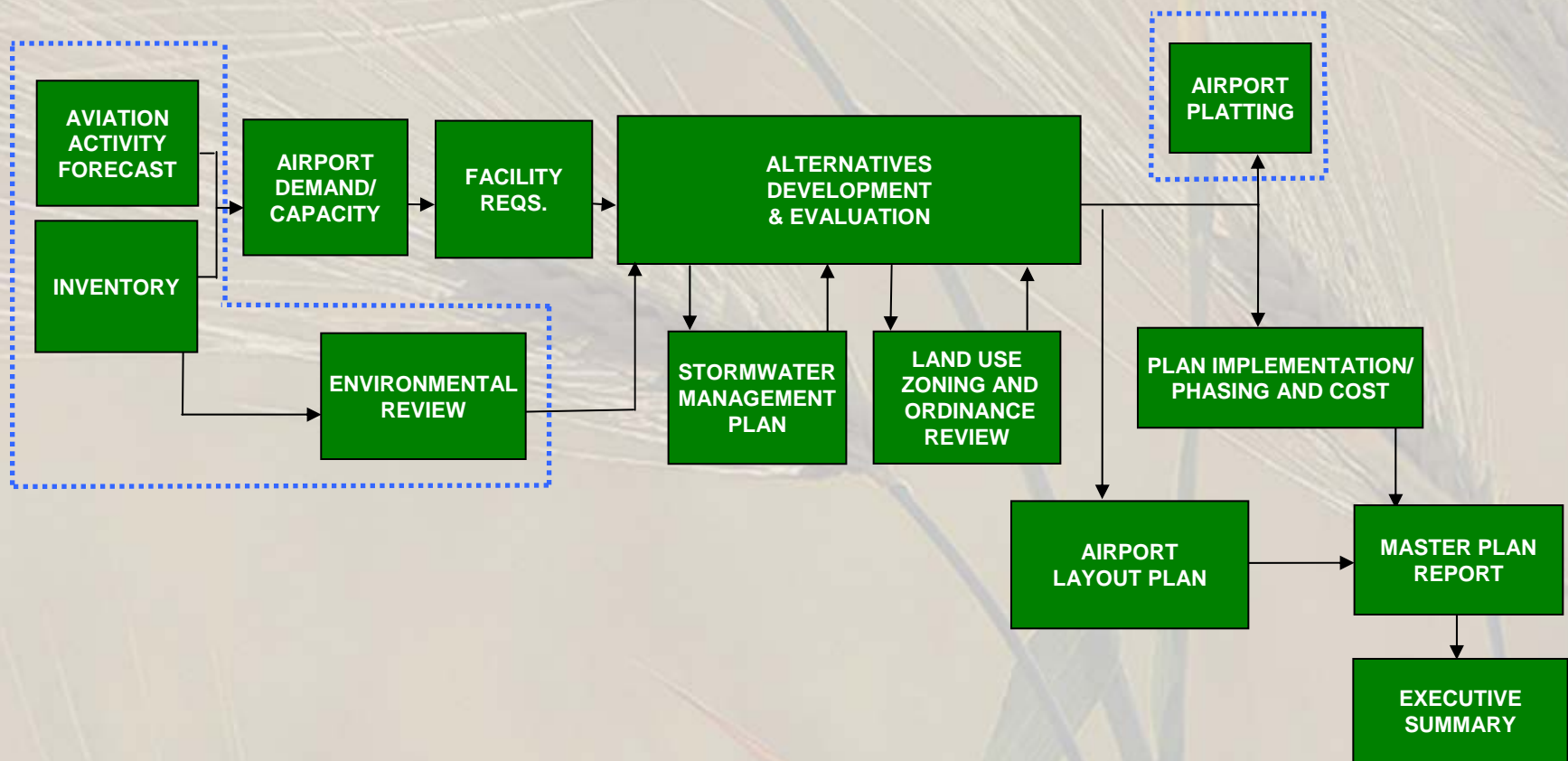


- **Bismarck Airport**
 - Greg Haug, Airport Manager
 - Tim Thorsen, Airport Operations Manager
 - Troy Estes, Maintenance Chief
- **Reynolds, Smith and Hills, Inc.**
 - Joe Jackson, Vice-President
 - Neal Westlund, Senior Aviation Consultant
 - E-mail: BIS.MasterPlan@rsandh.com
- **Ulteig Engineers**
 - Brant Malsam, Vice-President

Master Plan Overview



Master Plan Process

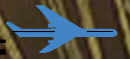


Aviation Activity Forecast Purpose



- **Estimate timing of threshold events**
- **Threshold events occur when aviation demand exceeds airport capacity**
- **Form “triggers” for facility changes**

Aviation Demand Forecast Status



- **Validate Forecast Scenarios and Preliminary Findings**
 - Passenger
 - Operations
 - Based Aircraft
- **Implication on Facility Needs**
 - Passengers → Terminal Facilities
 - Operations → Airfield and Apron
 - Based Aircraft → Storage
- **Select Preferred Forecast Scenarios**

Forecast Items



- **Enplaned Passengers – number of air carrier and commuter passengers (Point2Point addressed separately)**
- **Aircraft Operations – number of landings and takeoffs by type**
- **Based Aircraft – number and types of general aviation aircraft stored at the Airport**
- **Other supporting statistics**

Forecast Chronology and Source Data



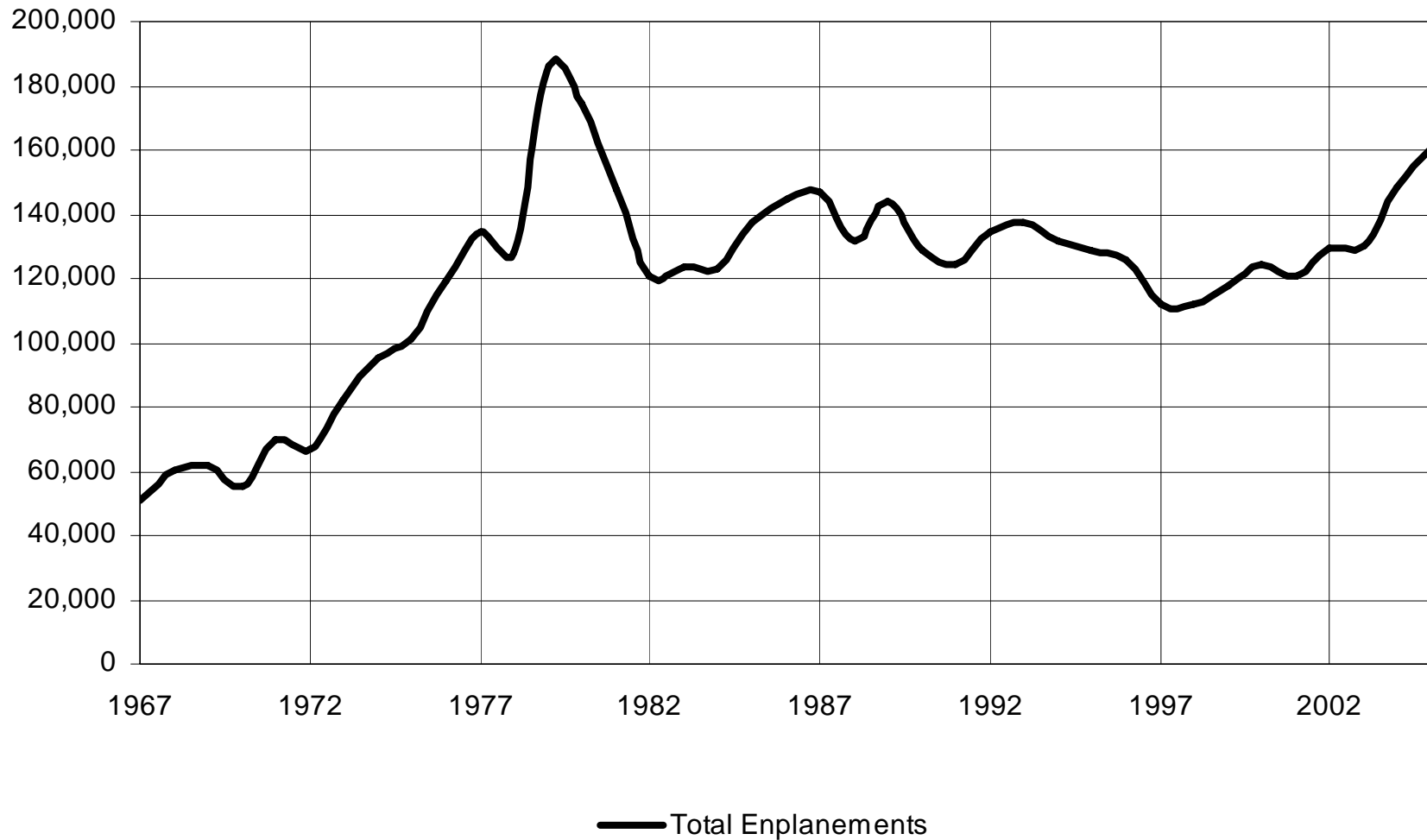
- **2005 Base Year, 2010, 2015, and 2025**
- **Qualitative and Quantitative Inputs:**
 - **FAA Terminal Area Forecast (TAF)**
 - **2001 Master Plan Update**
 - **Local Conditions and Considerations**
 - **Local Demographics (Bismarck-Mandan MSA)**
 - **Aviation Industry Trends**
 - **Historical Airport Activity Statistics**
 - **National Events**
- **Forecast Ranges & Planning Activity Levels**

Passenger Forecast Methods

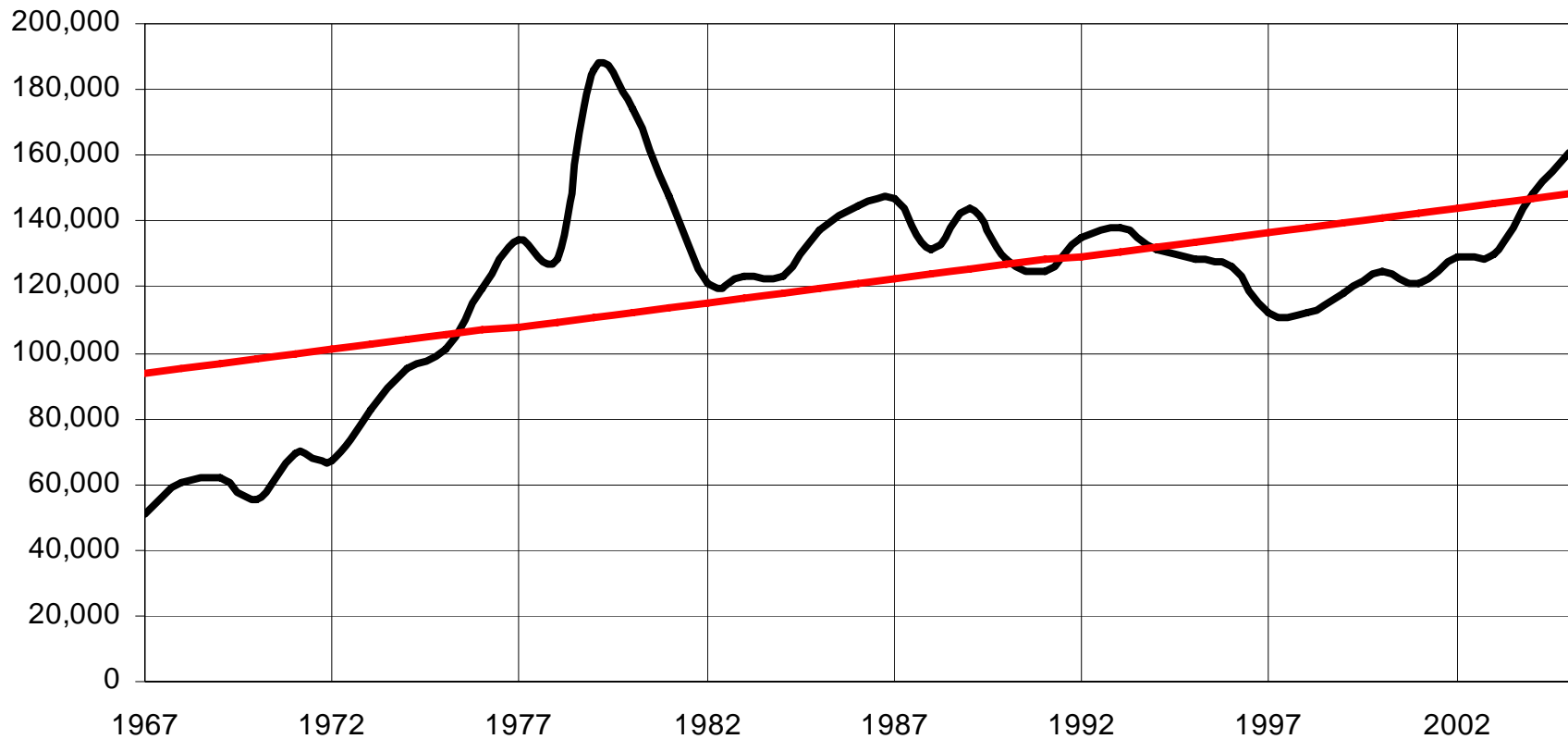


- **Trend Analysis Projections**
 - Time Series
 - Enplanements per Capita
- **US Market Share Analysis**
- **FAA's Terminal Area Forecast (TAF)**
- **Judgmental Factors and Corrections**

Historical Enplanements



Historical Enplanements With Trend Line



— Total Enplanements

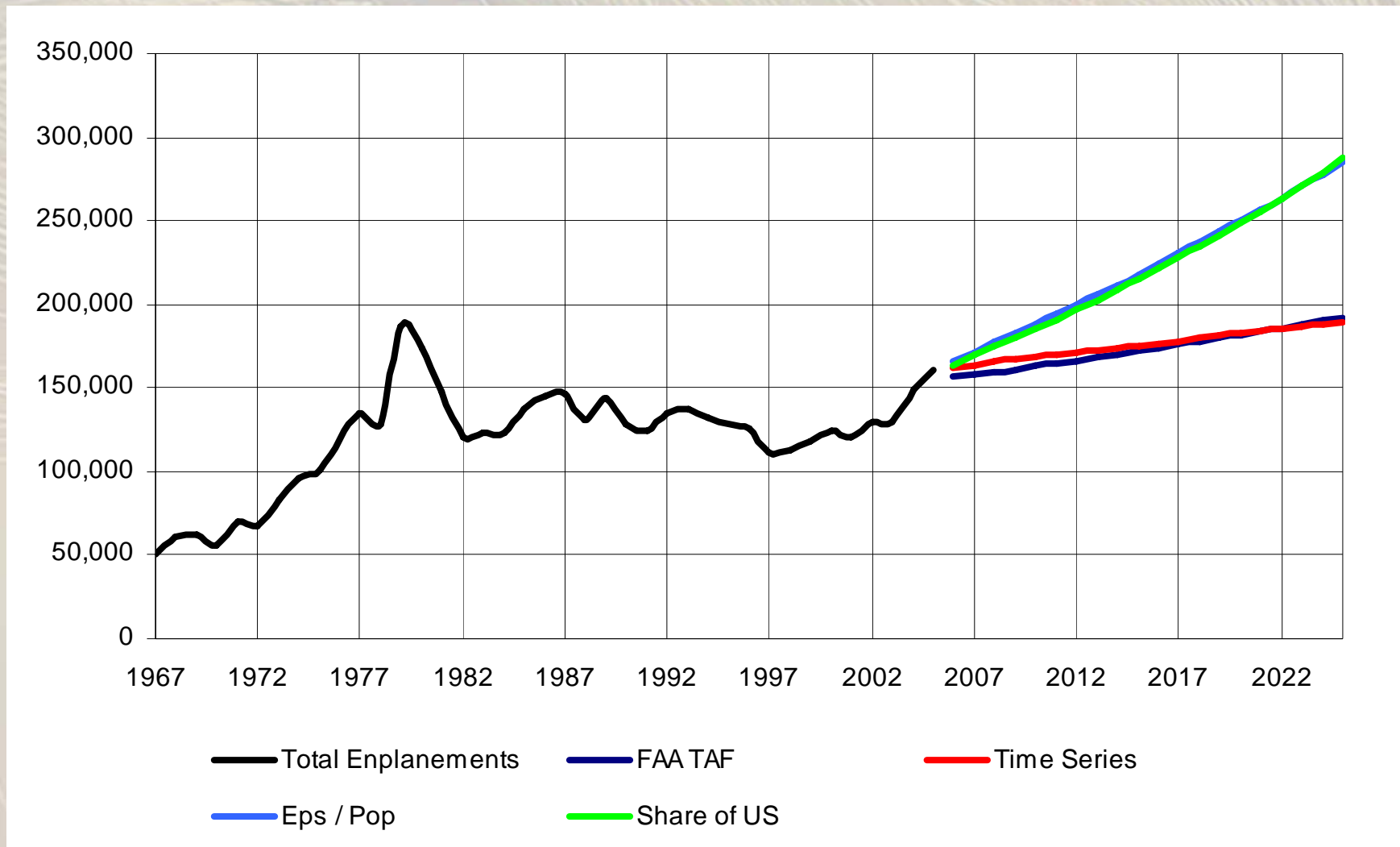
— Time Series

Enplanement Forecast Scenarios



- **Continue “breakout” and follow national trends**
- **Follow long-term “doldrums”**

Enplanement Forecast



Enplaned Passenger Forecast Implications



- **“Breakout” forecast requires expansion:**
 - **Auto Parking**
 - **Hold Rooms and Gates**
 - **Bag Claim**
 - **Other**
- **“Doldrums” forecast – No Expansion**

Aircraft Operations Forecast Issues



- **Scenarios**

- **Airline – “Breakout” or “Doldrums”**
- **Charter – including Point2Point**
- **Air Cargo – including Northern Plains Commerce Centre**
- **General Aviation - Micro Jets**

- **Assumptions**

- **Mandan Municipal Airport serves “sport” aviation**
- **Military remains in place**

Aircraft Operations Categories



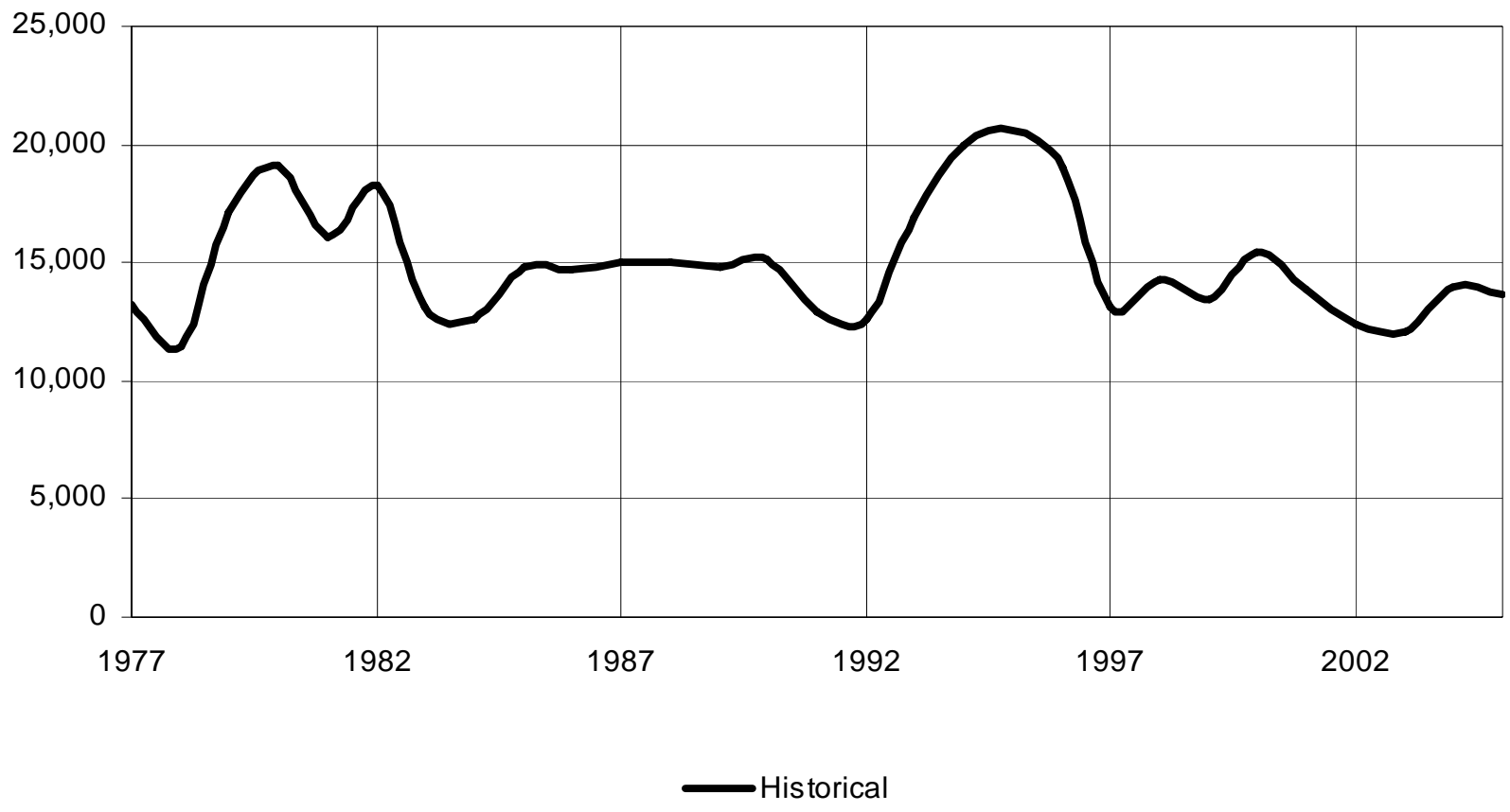
- **Commercial – Revenue Service**
 - **Air Carrier includes large aircraft (60+ seats)**
 - Airlines
 - Charter
 - Air Cargo
 - **Air Taxi (includes smaller aircraft (<60 seats))**
 - Airlines
 - Charter (including Point2Point)
 - Air Cargo
- **Military**
- **General Aviation**

Aircraft Operations Forecast Methods

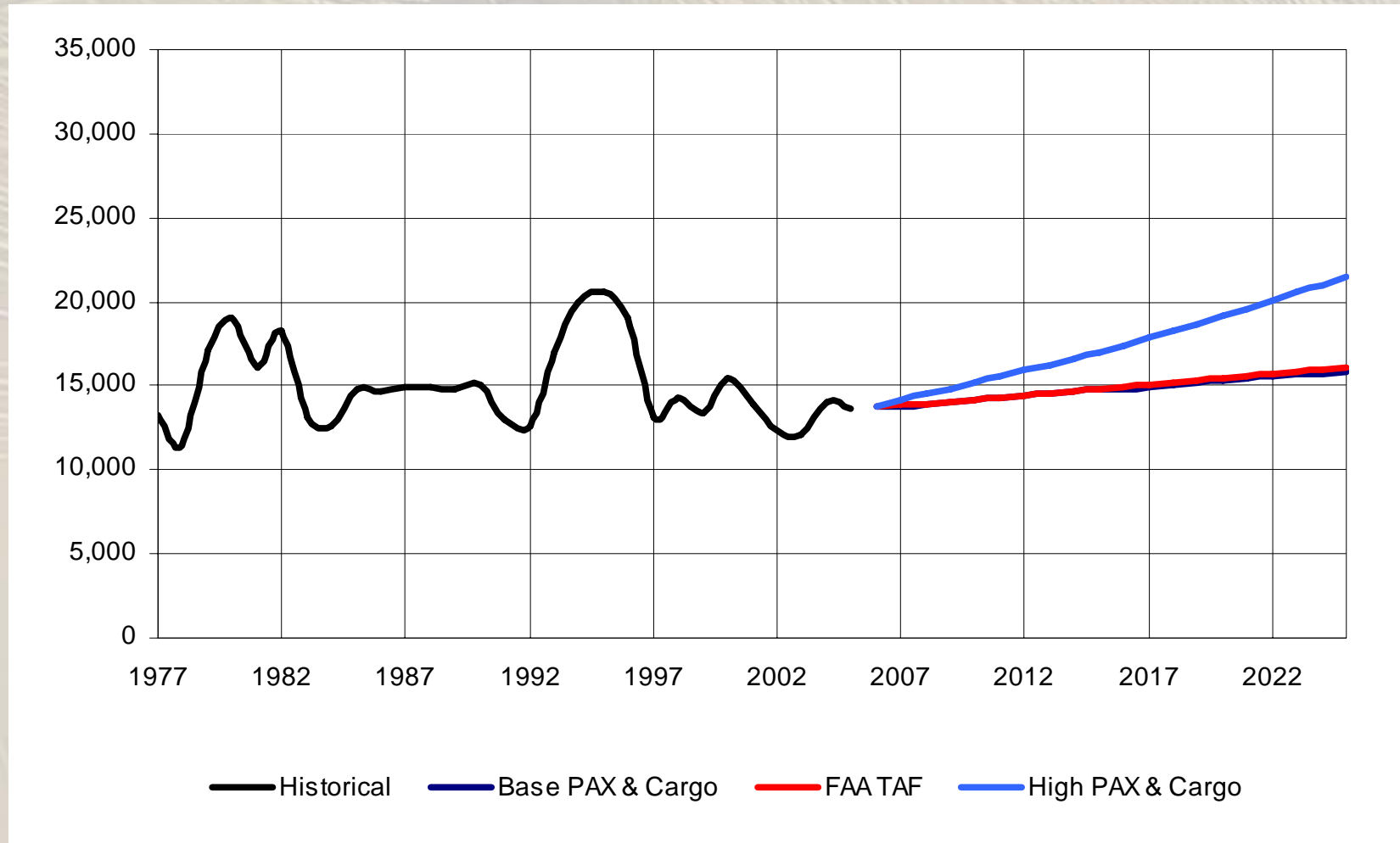


- **Commercial - Air Carrier & Air Taxi (including P2P and Cargo)**
 - FAA's Terminal Area Forecast (TAF)
 - US Market Share Analysis
 - Employment Based Analysis
- **General Aviation and Military**
 - FAA's TAF
 - Trend Analysis
 - Employment Based Analysis
- **Interviews, judgmental factors and corrections**

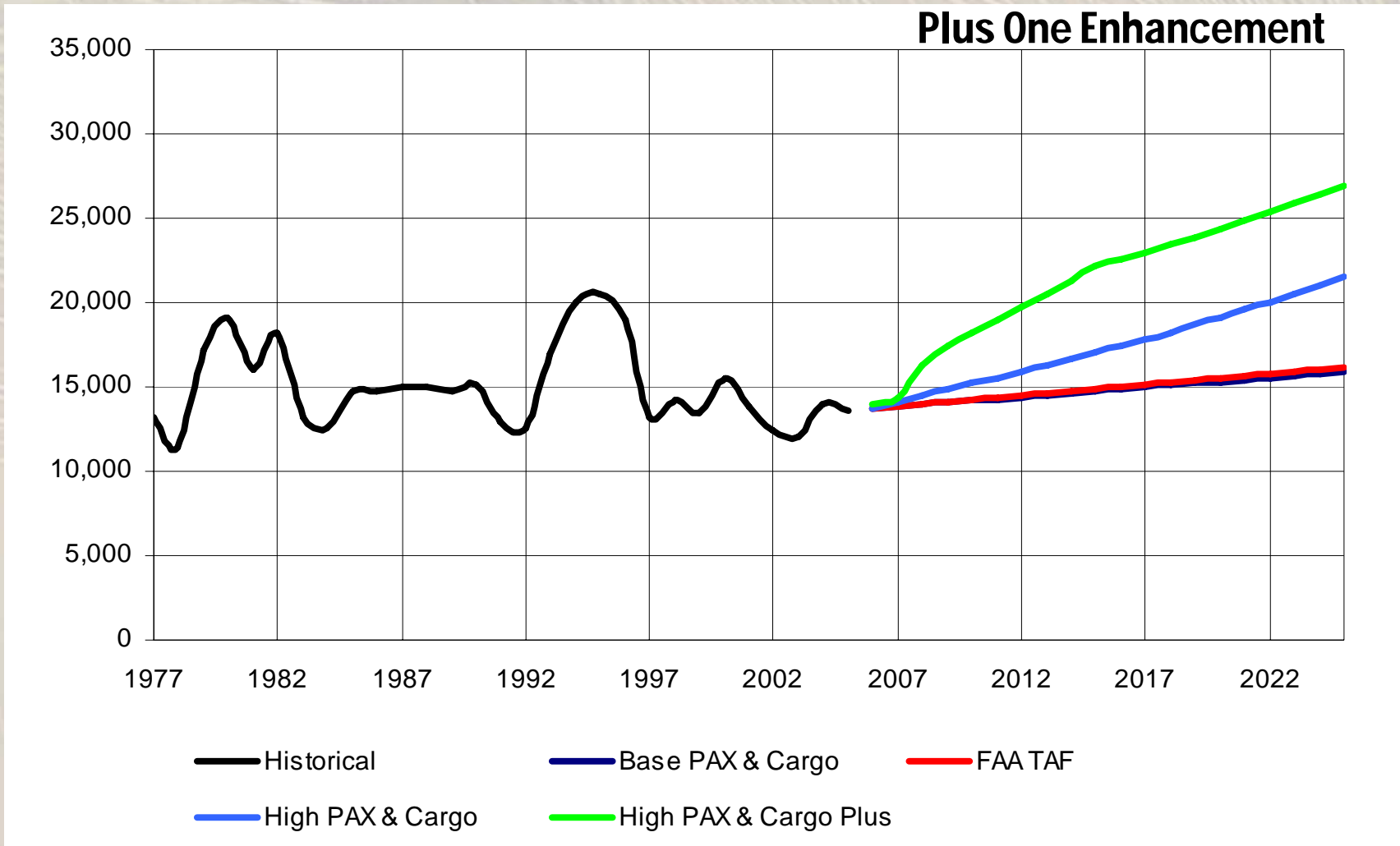
Historical Commercial Operations



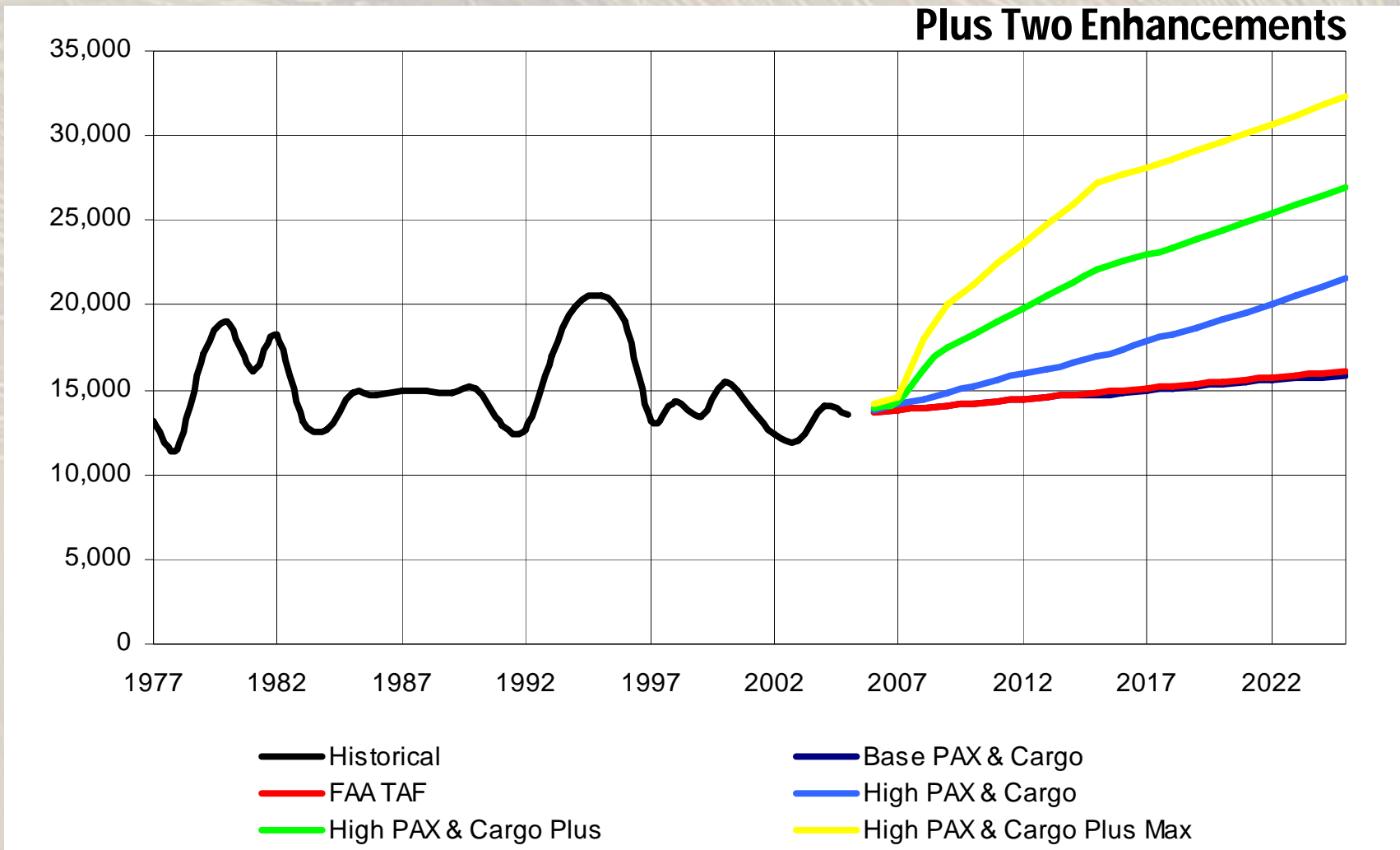
Commercial Operations Forecast



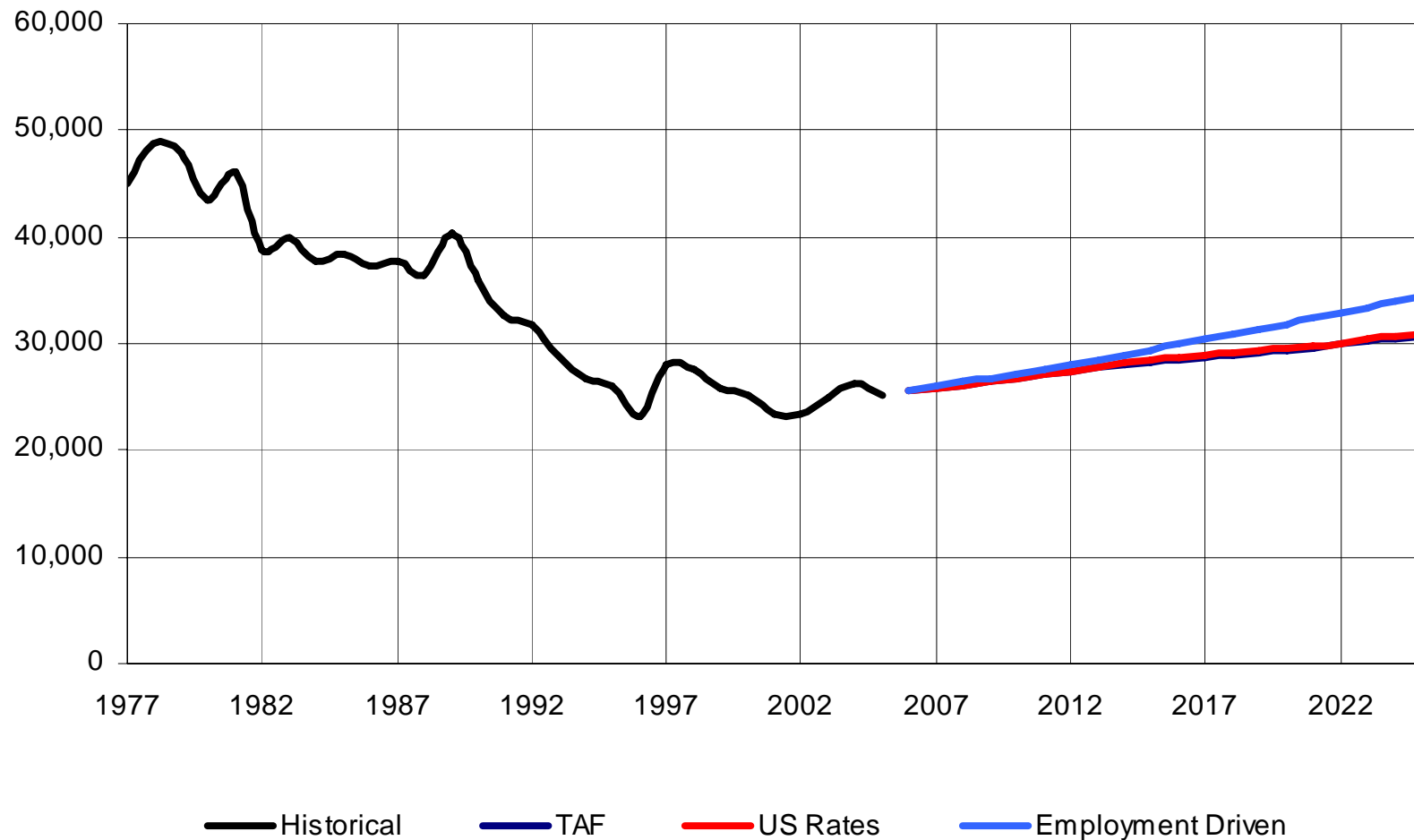
Commercial Operations Forecast



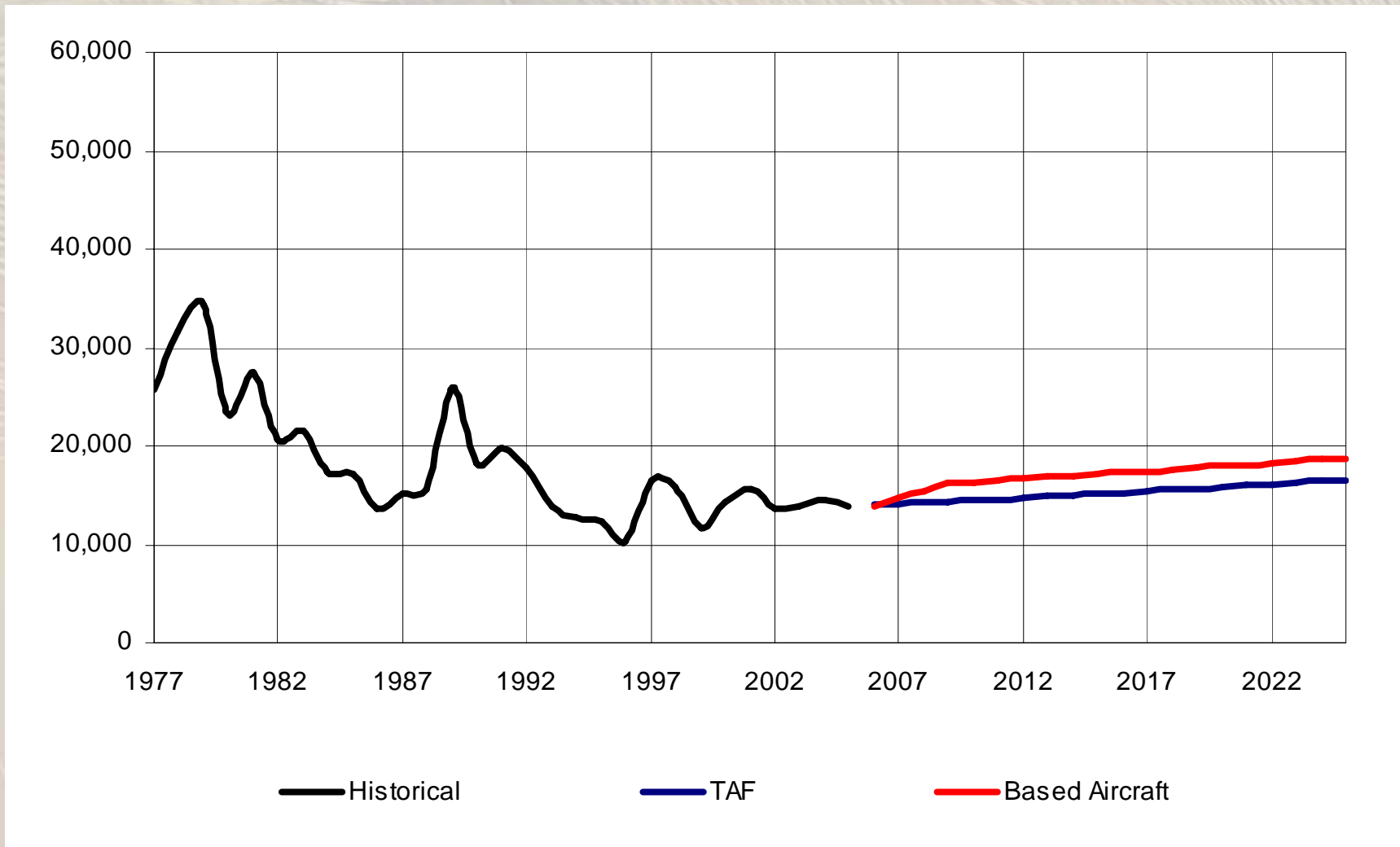
Commercial Operations Forecast



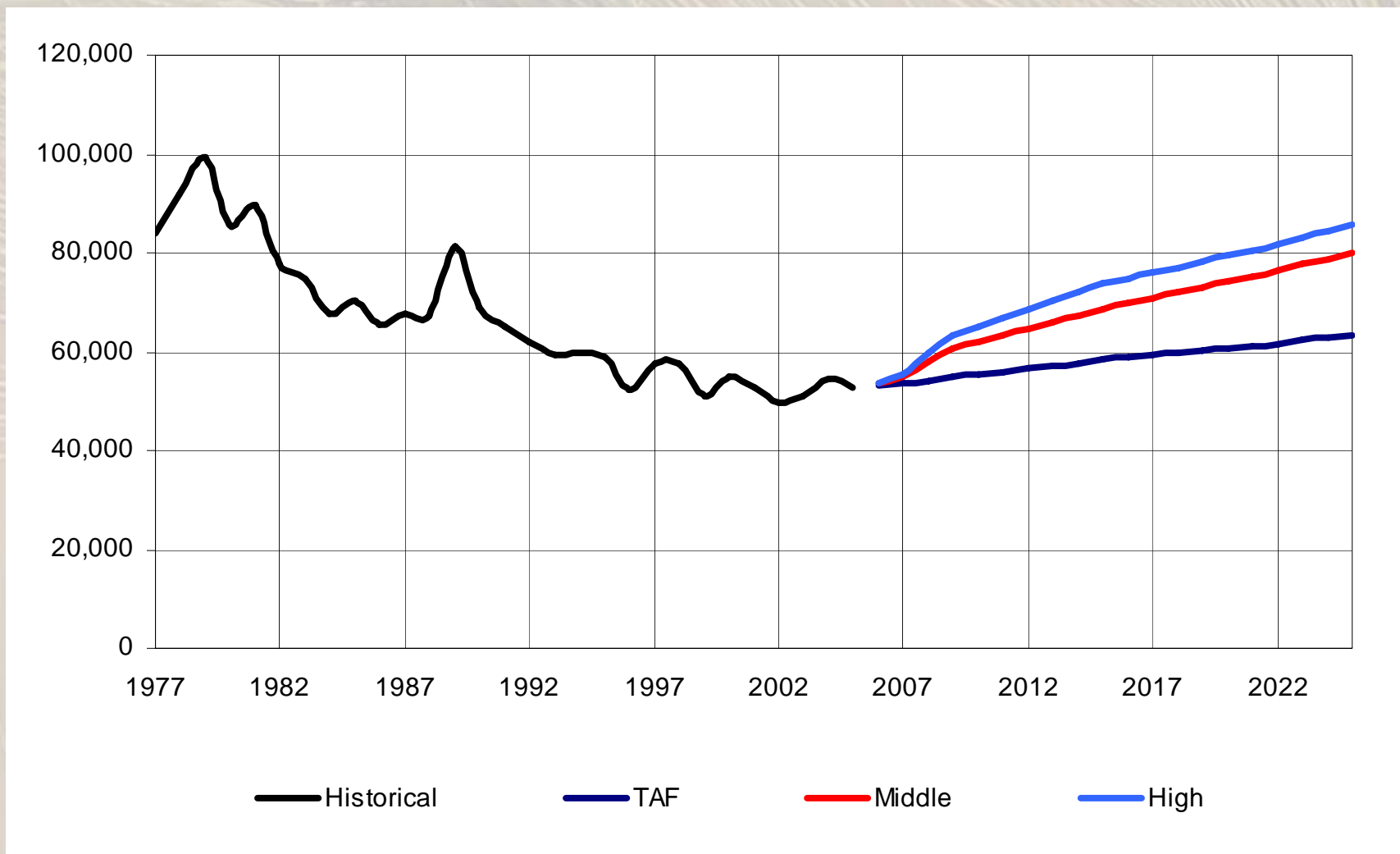
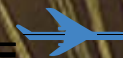
Itinerant General Aviation and Military Operations Forecast



Local General Aviation and Military Operations Forecast



Total Aircraft Operations Forecast



Aircraft Operations Forecast Implications



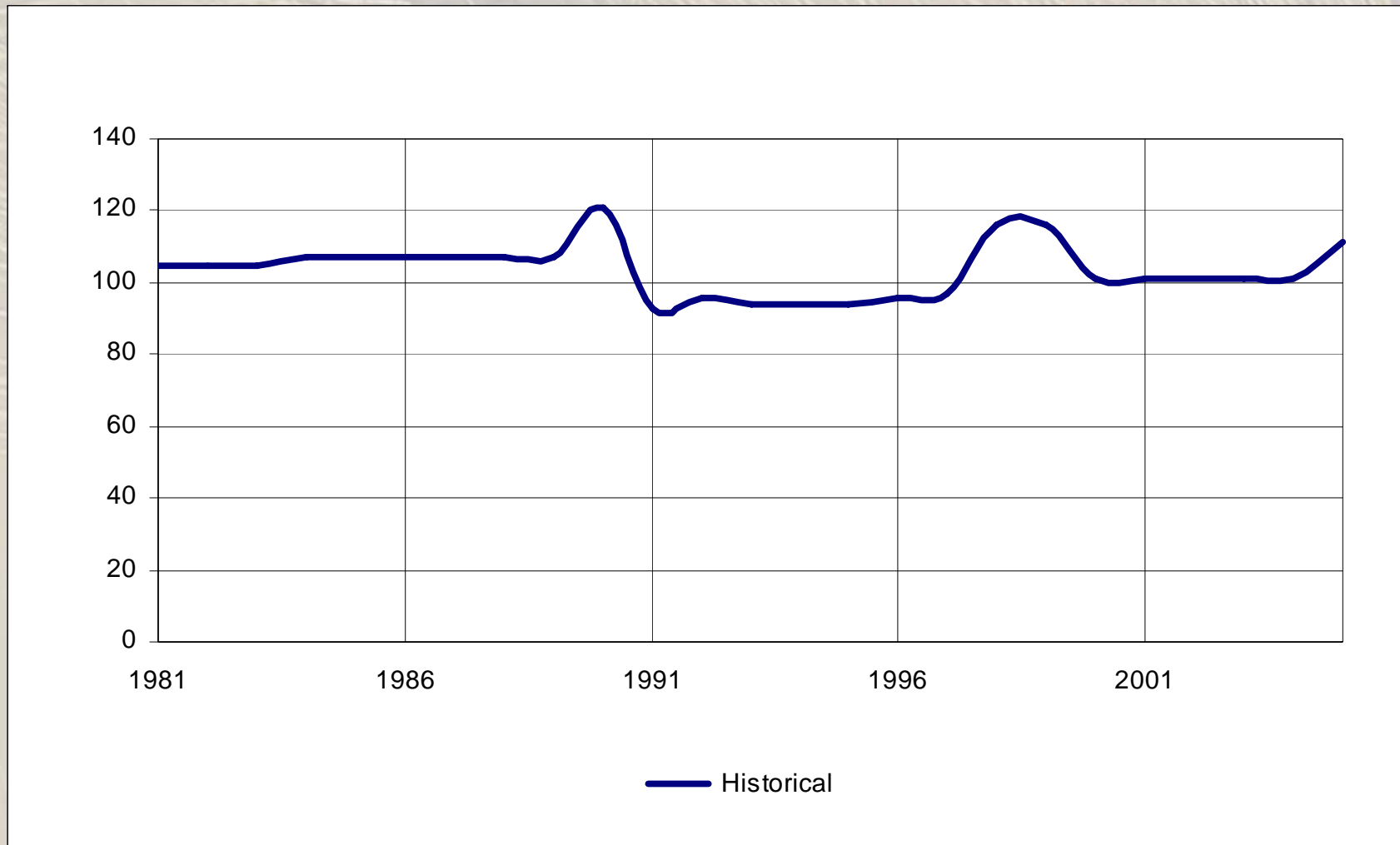
- **All scenarios indicate airfield capacity is OK**
- **Will require activity-specific facility build-up**
- **Itinerant operations may require additional apron**
- **Runway length and width analysis is next step**

Based Aircraft Forecast Methods

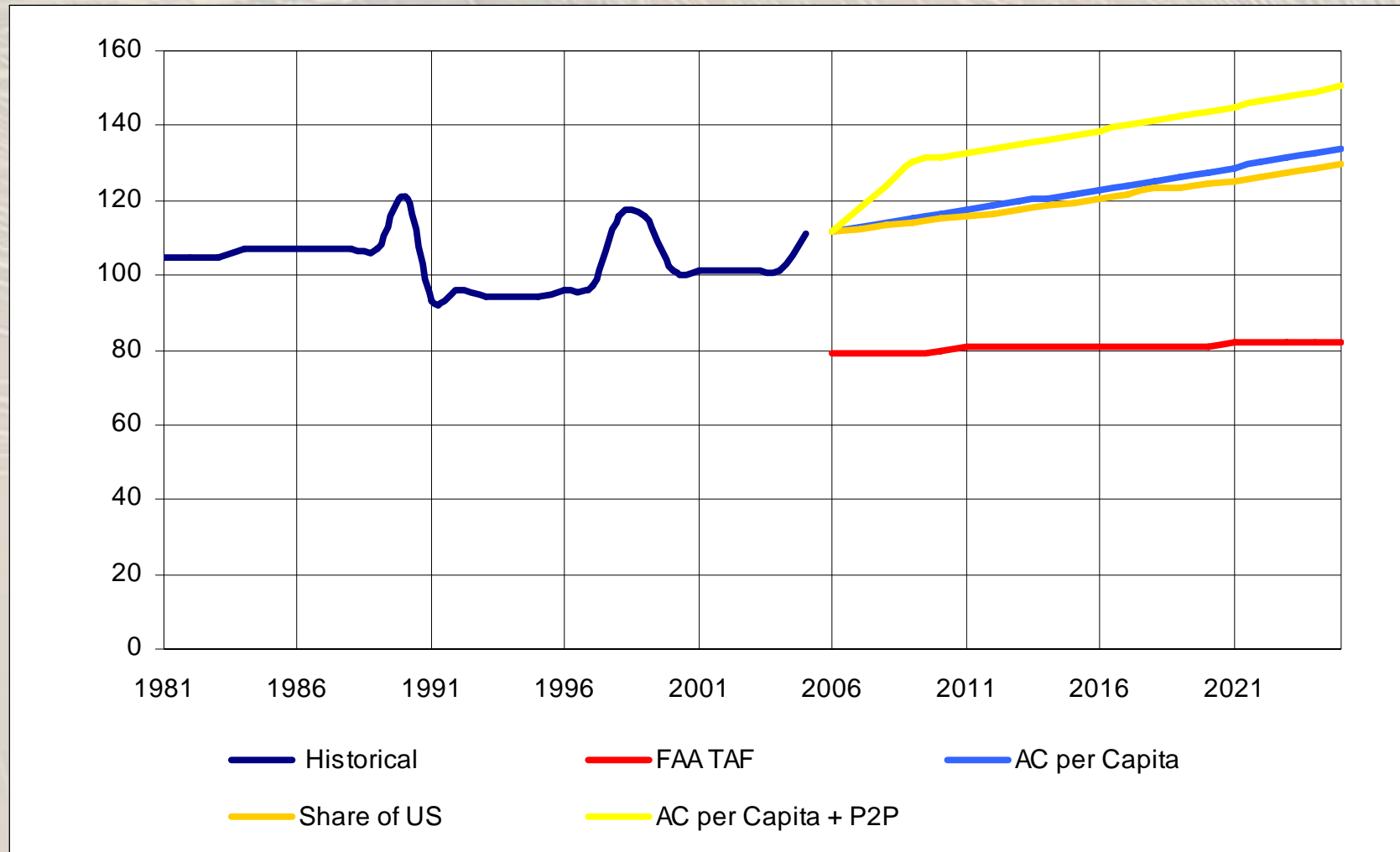


- **Trend Analysis Projections**
 - Time Series
 - Aircraft per Capita
 - Aircraft per Capita plus P2P
- **US Market Share Analysis**
- **Judgmental Factors and Corrections**

Historical Based Aircraft



Based Aircraft Forecast



Based Aircraft Forecast Implications



- **Based aircraft growth will require hangar expansion**
- **Based aircraft growth may require apron expansion**

Other Forecast Supporting Statistics

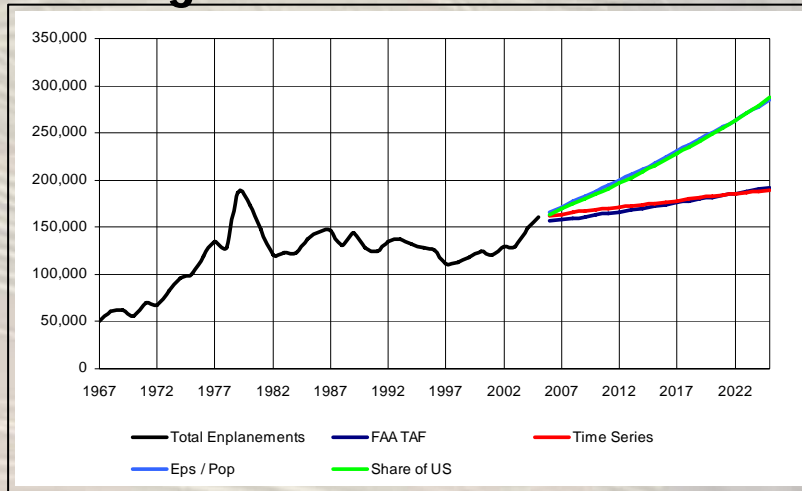


- **Next Steps**
- **Peak Period Activity (Enplanements, Commercial Operations, & Total Operations)**
 - **Peak Month**
 - **Design Day (Peak Month Average Day)**
 - **Peak Hour**
- **Annual Instrument Approaches**

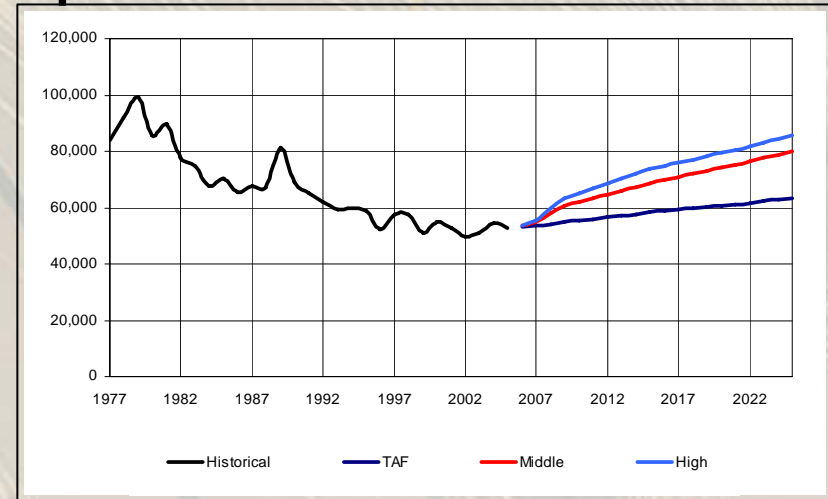
Aviation Demand Forecast Summary



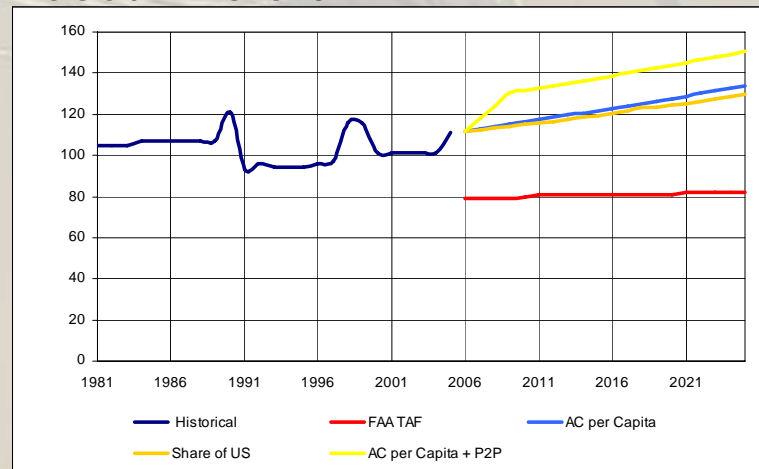
Passengers



Operations



Based Aircraft



Technical Committee Input / Discussion



- **Recommend Preferred Forecast Scenarios**
- **Other Issues Affecting Airport Operations or Future Development**
 - **Operational**
 - **Physical Limitations**
 - **Environmental**

Technical Committee Input / Discussion



- **Airport Facility Needs**
- **Other Issues Affecting Airport Operations or Future Development**
 - **Operational**
 - **Physical Limitations**
 - **Environmental**

Project Schedule and Meeting Milestones



- **Master Plan Completion anticipated in 14 months**
 - **Dependent on Intermediate Reviews and Approvals**
- **Technical Advisory Committee will meet to discuss:**
 - **Airport Facility Requirements and initial Development Alternatives**
 - **Selected Comprehensive Development Alternative**
 - **Final Draft of the Comprehensive Master Plan**