

Quantifying Economic Benefits from Aviation Weather Support

INTRODUCTION

A large blue graphic at the bottom of the slide, consisting of several curved lines that sweep from left to right, creating a sense of motion or a horizon line.

Friends and Partners of Aviation Weather
FPAW 2012 Meeting, Orlando, FL
Nov 1, 2012 - Segment 10

Quantifying Economic Benefits from Aviation Weather Support

- ◆ Introduction
 - Bryce Ford, SpectraSensors, Inc. (5 min)
- ◆ U.S. Government Activities
 - Kevin Stone; NWS Aviation Services Branch (8 min)
 - Mike Robinson, AvMet for FAA Metrics Programs (8 min)
- ◆ Business Aircraft and General Aviation Activities
 - John Kosak; NBAA ATM, representing BA and GA (8 min)
- ◆ Airline Activities
 - Tom Fahey; Manager of Meteorology, Delta Air Lines (8 min)
 - Randy Baker; Senior Meteorologist, UPS Airlines (8 min)
 - Rick Curtis; Chief Meteorologist, Southwest Airlines (8 min)
- ◆ Discussion
 - Bryce Ford (7 min)

The Goal of the 2011 Panel was to Initiate Industry Dialogue On

- ◆ What data can be Regularly collected to Quantify the operational benefits
- ◆ How often do we think we can collect metrics
- ◆ What kind of Methodology should we use for regularly collecting data
- ◆ How do we resolve the really contentious Issues
 - ◆ How do we minimize the cost involved in routinely collecting metrics
 - ◆ What info can we Share and what needs to be kept Private
 - ◆ How do we support data being Aggregated at higher levels
 - ◆ Can a single set of Common metrics really support Technical, Operational, Financial, and Political decision making

✓ *We're Still Here - So the Dialogue Appears to be Initiated*

Who are the End Users of this Information (aka Why do We Need This?)

- ◆ Government Decision Makers
 - ◆ Funding Decisions for Aviation Weather/Climate Services
 - ◆ Measure of Effectiveness for Gov Weather/Climate Services
 - ◆ Supplement Existing FAA and NWS Economic Benefits Metrics
- ◆ Aviation Industry Decision Makers
 - ◆ Opportunities to Improve Operational Effectiveness
 - ◆ Improved Marketing and Public Relations
 - ◆ Improvements to the Bottom-Line
- ◆ Other Weather and Climate Enterprise Participants
 - ◆ Increased Research Opportunities for Academia Members
 - ◆ Improved Marketing and Public Relations for Commercial Members
- ◆ General Public - Improved Forecasts for a Weather Ready Nation

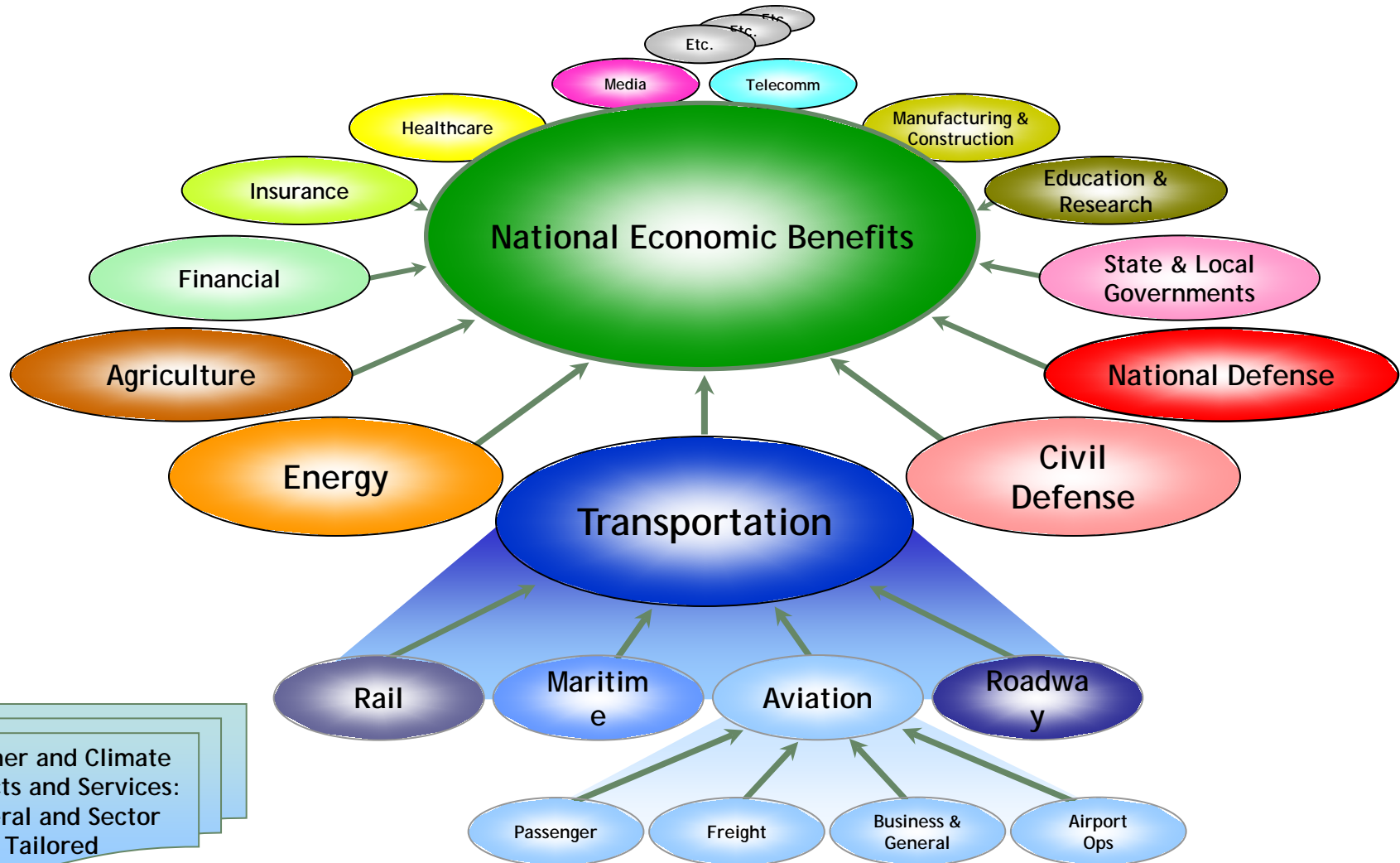
Valuable Information Used By Many Decision Makers

Related Efforts with Similar Goals

- AMS Commission on Weather and Climate Enterprise (CWCE)
 - Beginning with Measurement of Weather/Climate Enterprise SIZE
 - Next will address Weather/Climate Enterprise Economic IMPACT
- AMS National Network of Networks (NNON)
 - Early work on Modeling Economic Benefits from Sensor Networks
- World Meteorological Organization AMDAR Programme
 - Supporting Individual Business Case Analyses for AMDAR
- Met Office (UK)
 - Study of Economic Impacts of Wx Forecasts on UK Energy Sector
- Etc, etc, etc

Similar Efforts Show We Are Not Alone Out There

Framework to Measure Weather/Climate Economic Benefits



Weather/Climate Information Provides Critical Economic Benefit to the Nation



IDEAS on What Economic Benefits Aviation could Report?

Standard Economic Benefits for all Sectors

- Economic Gains/Losses (\$\$)
- Net Present Value (\$\$)
- Jobs Created (#)
- Return on Investment (%)

Aviation Sector Unique Benefits

- Passenger Value of Time (\$\$)
- Fuel Usage Reduced (Gal)
- CO2 Reduced (Tons)

Standard Benefits Metrics from All Sectors, Plus Sector Unique Benefits



Next Steps for FPAW

- ◆ Determine the Value and Priority
- ◆ Determine Who will Work the Issues
 - Requires significant coordination from both Government and Industry
- ◆ Identify an Initial set of Variables which can be Easily Measured
- ◆ Identify what Information the Enterprise can Routinely Collect
- ◆ Determine How we get the Process Started

Possible Approach

- ◆ Industry/Government Define an Initial Set of Variables
- ◆ Each group Internally Researches ways to Report data
- ◆ Compare Data Sets and Harmonize
- ◆ Begin to Store and Report Results

Start Small - Continuously Add New Data/Results to the Process



Thank You!

The Time for Action is NOW!



Backup Information

Aviation Benefits Attributed to Wx Support Improvements

- ◆ Standard Wind & Temp Forecasts
- ◆ Convective Storm Forecasts
- ◆ Fog Forecasts
- ◆ Winter Storm Forecasts
- ◆ Turbulence Observations and Forecasts
- ◆ Wind Shear Observations and Forecasts
- ◆ Icing Observations and Forecasts
- ◆ Jetstream Observations and Forecasts
- ◆ Tropical Forecasts
- ◆ Etc.

*Measuring Benefits from Specific Observation and Forecast Types
Facilitates Targeted Improvements for the Highest Return*

Examples of Measureable Benefits to Aviation

- ◆ Flight Operations Benefits
 - ◆ Fuel Savings
 - ◆ Route and Altitude Selection
 - ◆ Continuous Descent
 - ◆ Flight Crew Related Savings
 - ◆ Ground Crew Related Savings
 - ◆ Reduced Cost from Passenger Missed Connections
 - ◆ Airport Services Related Savings (e.g. reduction of unnecessary deicing)
- ◆ Business Operations Benefits
 - ◆ Reduction in Unplanned Overtime or Lost Time
 - ◆ Reduced Emissions or Noise Penalties
 - ◆ Reduced Insurance Claims
 - ◆ Reduced Litigation
 - ◆ Reduced Wx Related Incidents
- ◆ Other Benefits
 - ◆ Improved Passenger Satisfaction Leading to Improved Sales
 - ◆ Public Relations Benefits Leading to Improved Sales
 - ◆ Improved Employee Moral Leading to Better Performance

Benefits Come from Many Sources, and Not Always the Most Obvious