Surveillance and Broadcast Services Gulf of Mexico Weather Analysis

Presented to:

United States Helicopter Safety Team 2018 Infrastructure Summit

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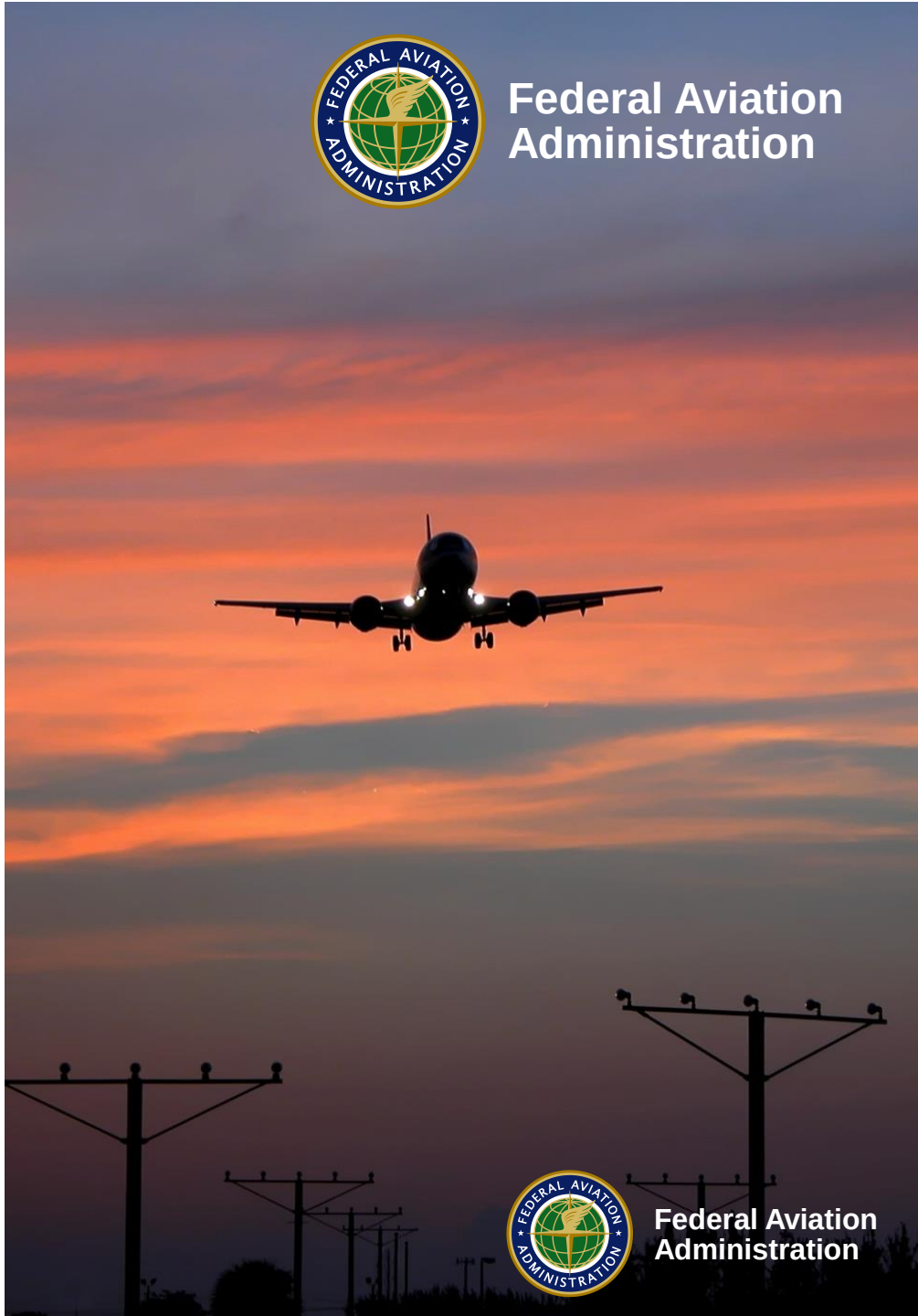
Date: February 14, 2018



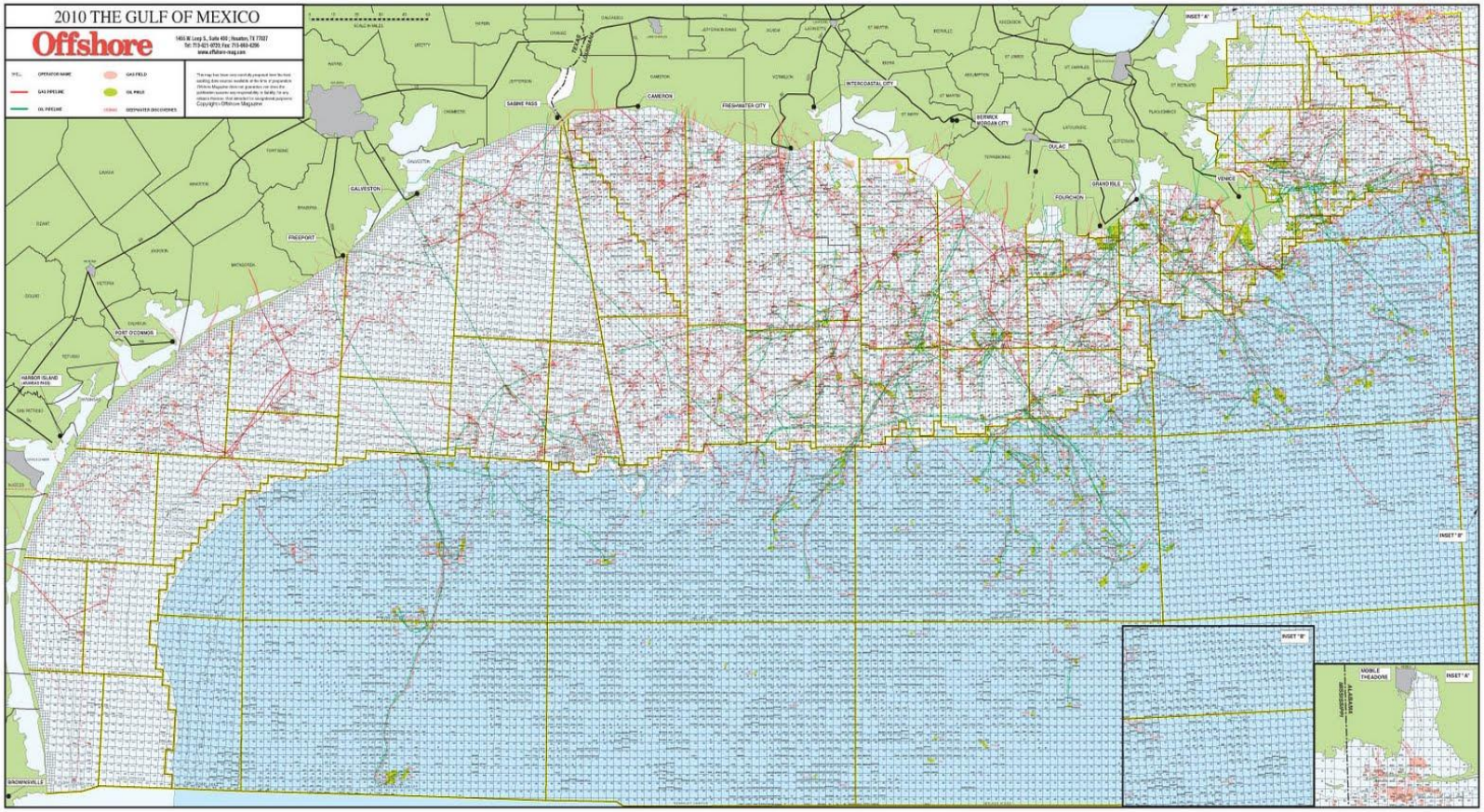
Purpose of Presentation

- **To provide a summary of:**
  - The history of the weather block scheme in the Gulf of Mexico
  - Actions taken by the FAA Surveillance and Broadcast Services (SBS) Program Office to validate the weather block scheme

Background - Helicopter Operations and Weather Reporting in the Gulf

- **Early days, there was very little IFR flying—most done under VFR—known as scud running**
- **In the 1980s, FAA and helicopter operators implemented grid system**
  - 20NM square blocks for navigation and ATC procedural IFR separation (non-radar)
  - Grid system is still used today for reference points

Background - Helicopter Operations and Weather Reporting in the Gulf



Gulf of Mexico Grid System

Background - Helicopter Operations and Weather Reporting in the Gulf

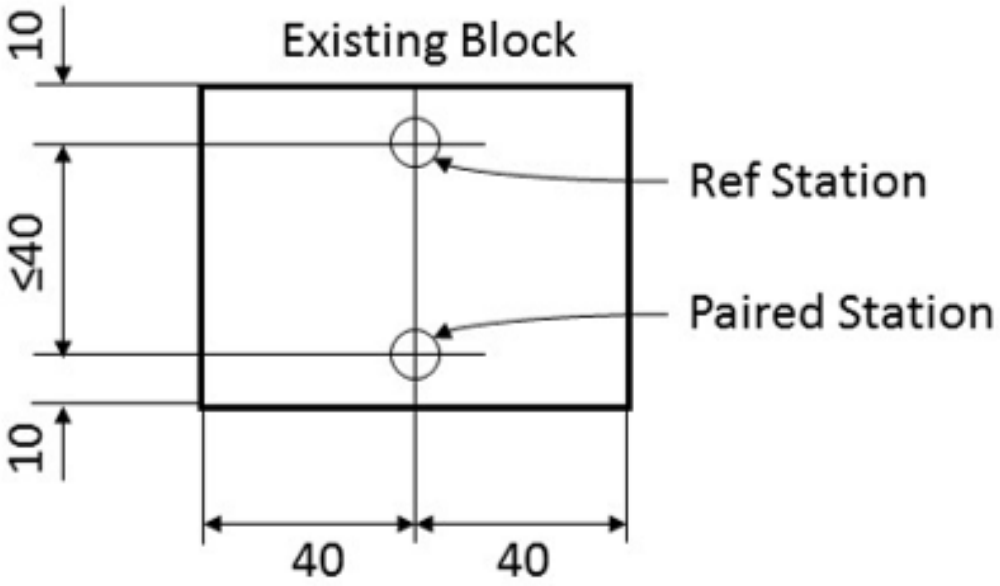
- **Before automated weather reporting systems, there was the Supplemental Aviation Weather Reporting (SAWR) program**
  - Used NWS certified weather observers—up to 30 observers
  - Weather observations disseminated via faxes to the helibases
- **Prior to 2009, there were three (3) FAA commissioned, privately owned offshore AWOS'**

Background - Helicopter Operations and Weather Reporting in the Gulf

- **The grid system along with the SAWR program (augmented later with privately owned AWOS') launched the weather block scheme in the Gulf**
- **Local FSDO's issued an OpSpec to Gulf helicopter operators to file IFR to an offshore destination without the required weather observations as long as it met certain requirements in accordance with FAR 135.213(b)**

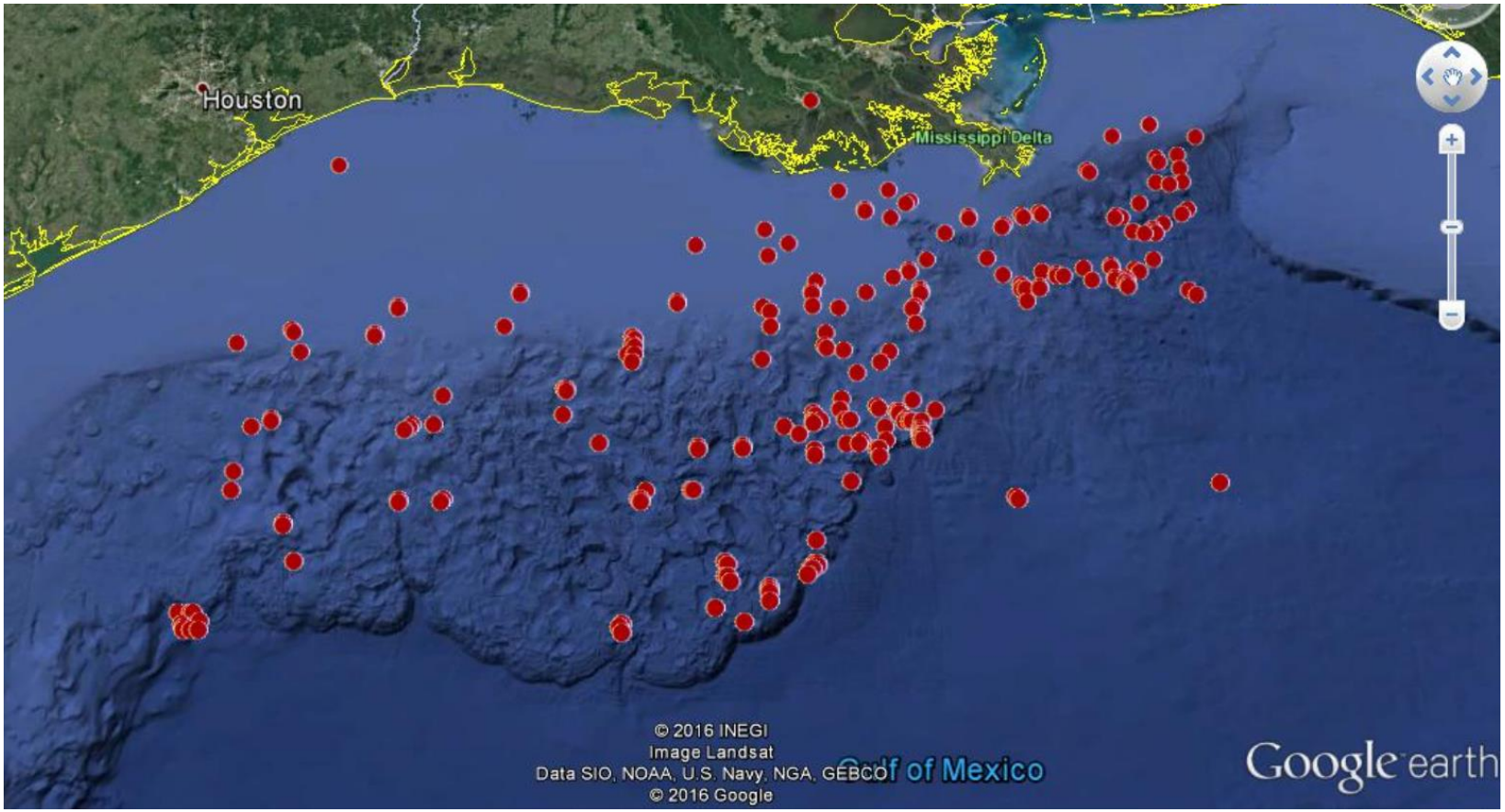
Background - Helicopter Operations and Weather Reporting in the Gulf

- **Offshore weather block defined as:**



Background - Helicopter Operations and Weather Reporting in the Gulf

Offshore IFR Destinations in the Gulf of Mexico



Source: Houston ARTCC, 4 April 2017

Background - Helicopter Operations and Weather Reporting in the Gulf

- **In 2006, the FAA established SBS Program Office to implement and manage the national ADS-B program**
- **The FAA designated the Gulf of Mexico a key site toward Initial Operational Capability for ADS-B in 2009**
  - The installation of 35 AWOS' in the Gulf to support IFR helicopter operators was major subset of the project
  - The SBS Program Office sited and installed the AWOS' based on the weather block scheme

Background - Helicopter Operations and Weather Reporting in the Gulf

AWOS Weather Block Scheme - 2012

Background - Helicopter Operations and Weather Reporting in the Gulf

- **In October 2016, the OpSpecs came under scrutiny—in particular, the continued use of the weather block scheme**
- **In March 2017, the NWS issued the FAA a one (1) year provisional extension**
- **In March 2017, the SBS Program Office, with the encouragement of Flight Standards, NextGen, HAI, and HSAC, tasked the Volpe National Transportation Safety Center to conduct a weather analysis of the Gulf**

Weather Analysis Purpose

1. **Determine if the weather blocks were safe to support the opspec**
2. **Determine if an expanded weather block area (beyond 60x80NM) was possible**
3. **Ascertain the maximum size possible between weather observing systems**
4. **Find out if weather coverage around a stand-alone AWOS could be expanded beyond the standard 10nm radius**

Weather Analysis Technical Approach

Task 1: Research historical information (about 60x80NM weather deviation area), safety records, and helicopter operating environment

Task 2: Identify required weather data

Task 3: Conduct weather analysis

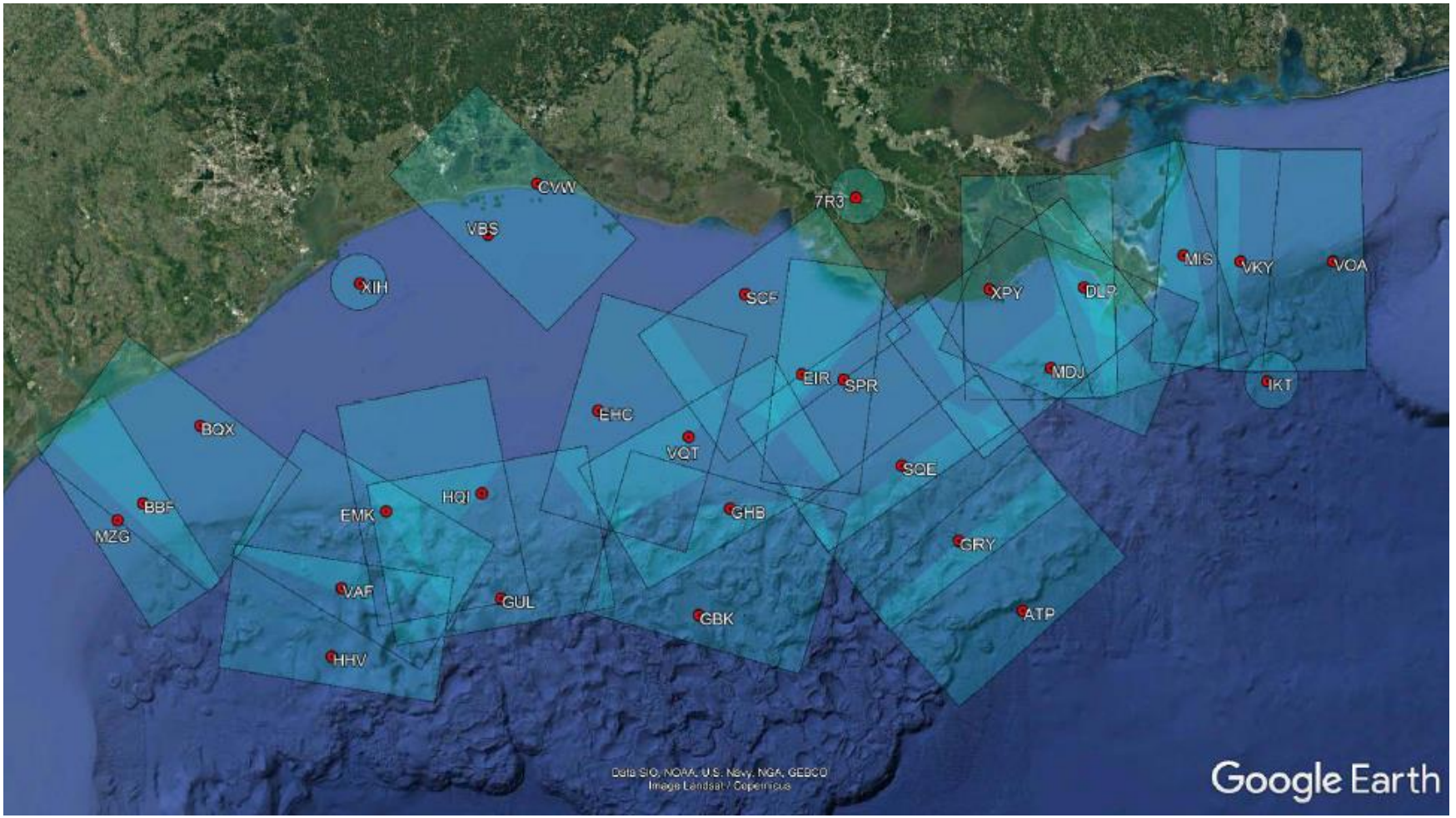
Weather Analysis Methodology

- **Examined Gulf of Mexico weather and evaluated homogeneity of weather across the Gulf**
- **Accepted operational use of the 60x80NM weather block (from Task 1)**
- **Used visibility and ceiling as the fundamental parameters for the analysis**
- **Determined weather homogeneity in the existing weather block areas valid baseline for the analysis**

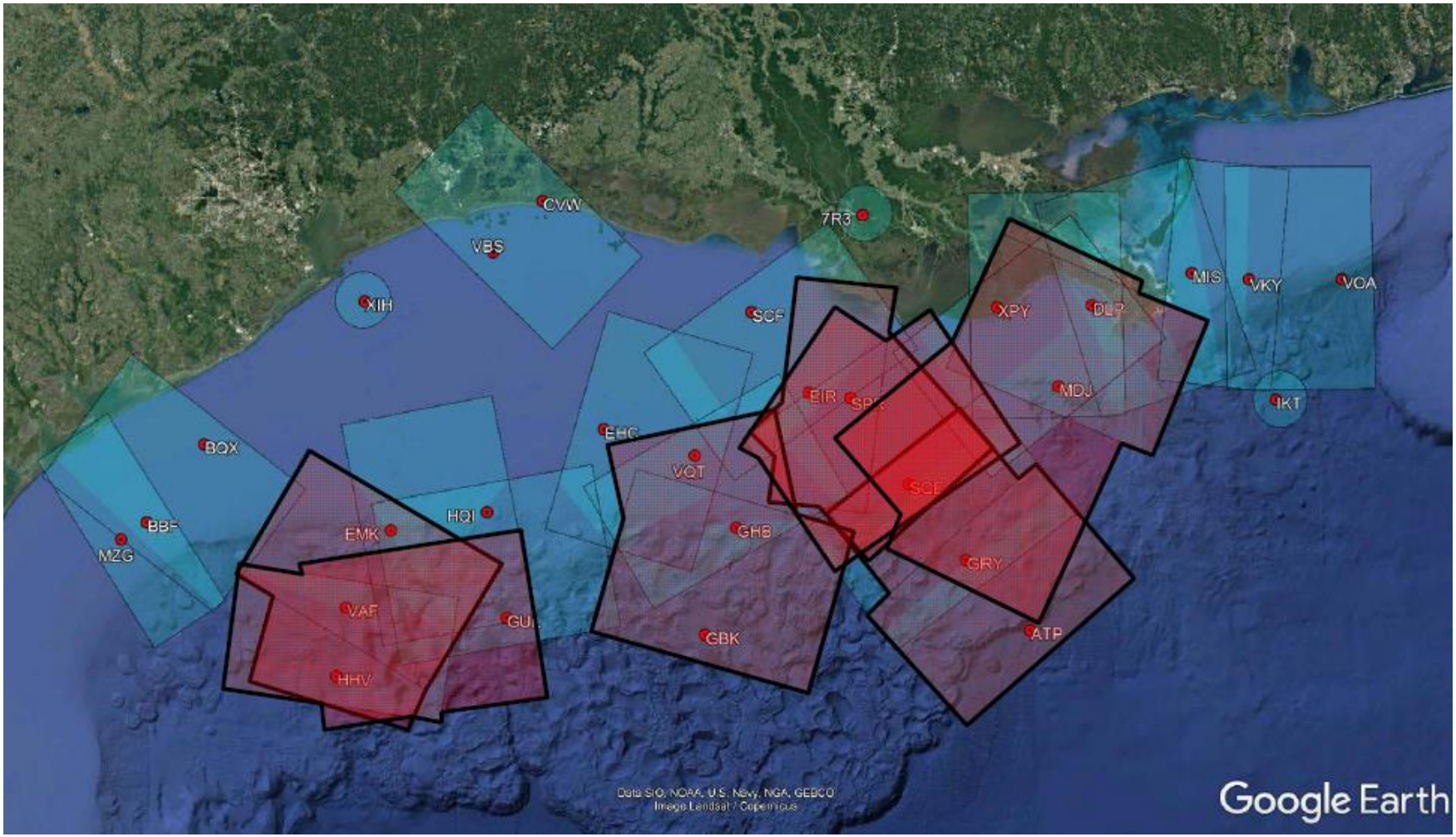
Weather Analysis Findings

- **60x80NM Weather Block**
  - Use of the weather block scheme has been safe since its inception in the late 1980s
  - Helicopter operators have confidence in the use of the weather blocks
- **Expansion**
  - Permanent, expanded weather deviation areas was possible (i.e. greater than 60x80NM)
  - Expansion for stand-alone AWOS (i.e. increase radius beyond 10NM) was not supported
- **Weather data**
  - The Integrated Surface Hourly (ISH) data base was a reliable source for the analysis (more than 6 years of data)
  - Homogeneity of weather averaged 97% between reporting stations

Existing 60x80NM Weather Blocks



Possible Weather Block Expansion



Summary and Conclusion

- **In Dec 2017, Volpe briefed the National Weather Service Southern Region Headquarters on the observations and findings from the Gulf weather analysis**
  - NWS was appreciative of the study
  - NWS was pleased by the findings
- **AC 90-80C allows the use of the weather block scheme for approved operators**
- **The findings validated the weather block scheme and the SBS Program Office's AWOS implementation strategy**

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