

2021 FPAW Spring Meeting

Characteristics of ATFM Decision Making During Severe Weather Season

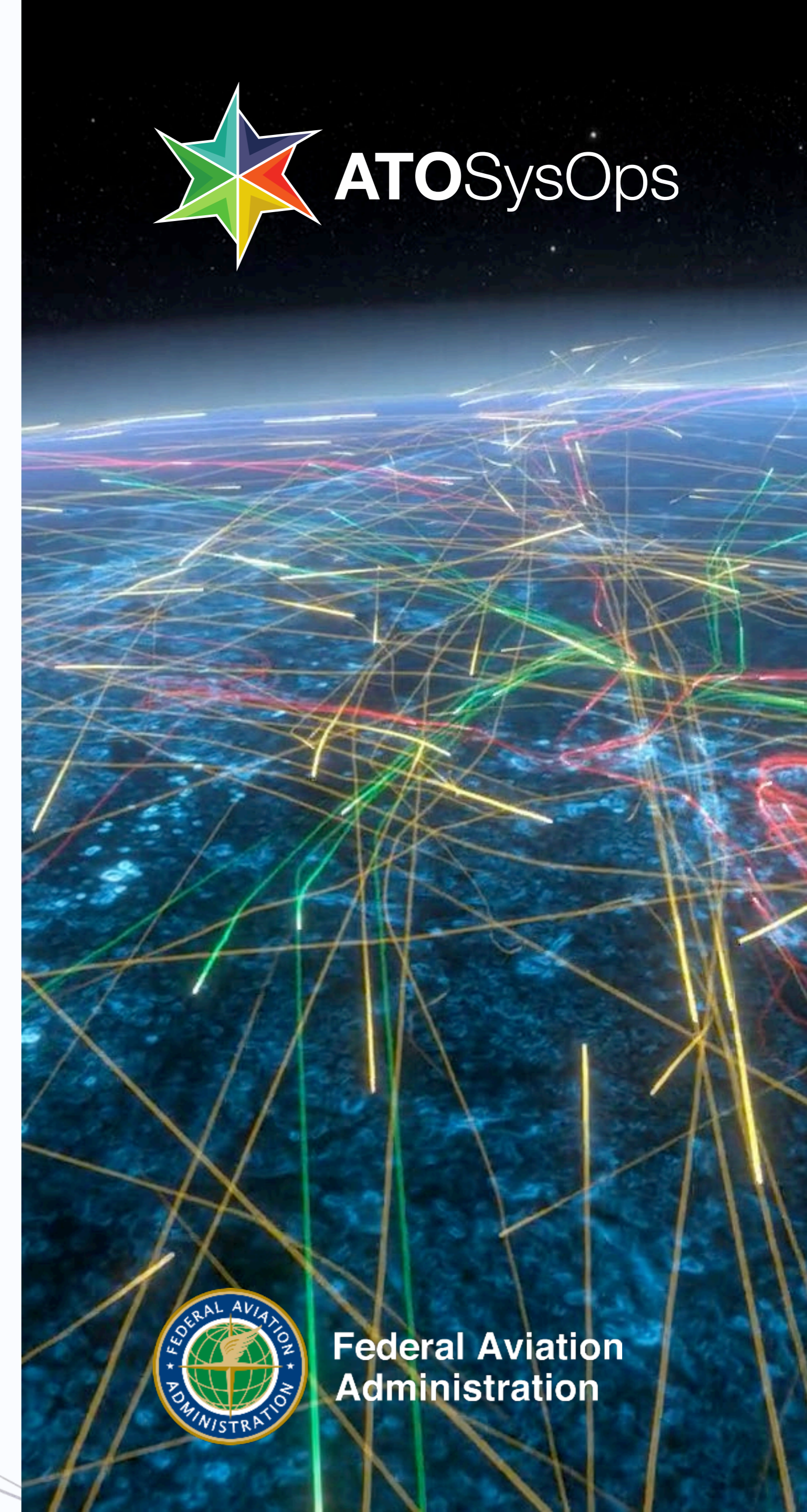
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AJR-13

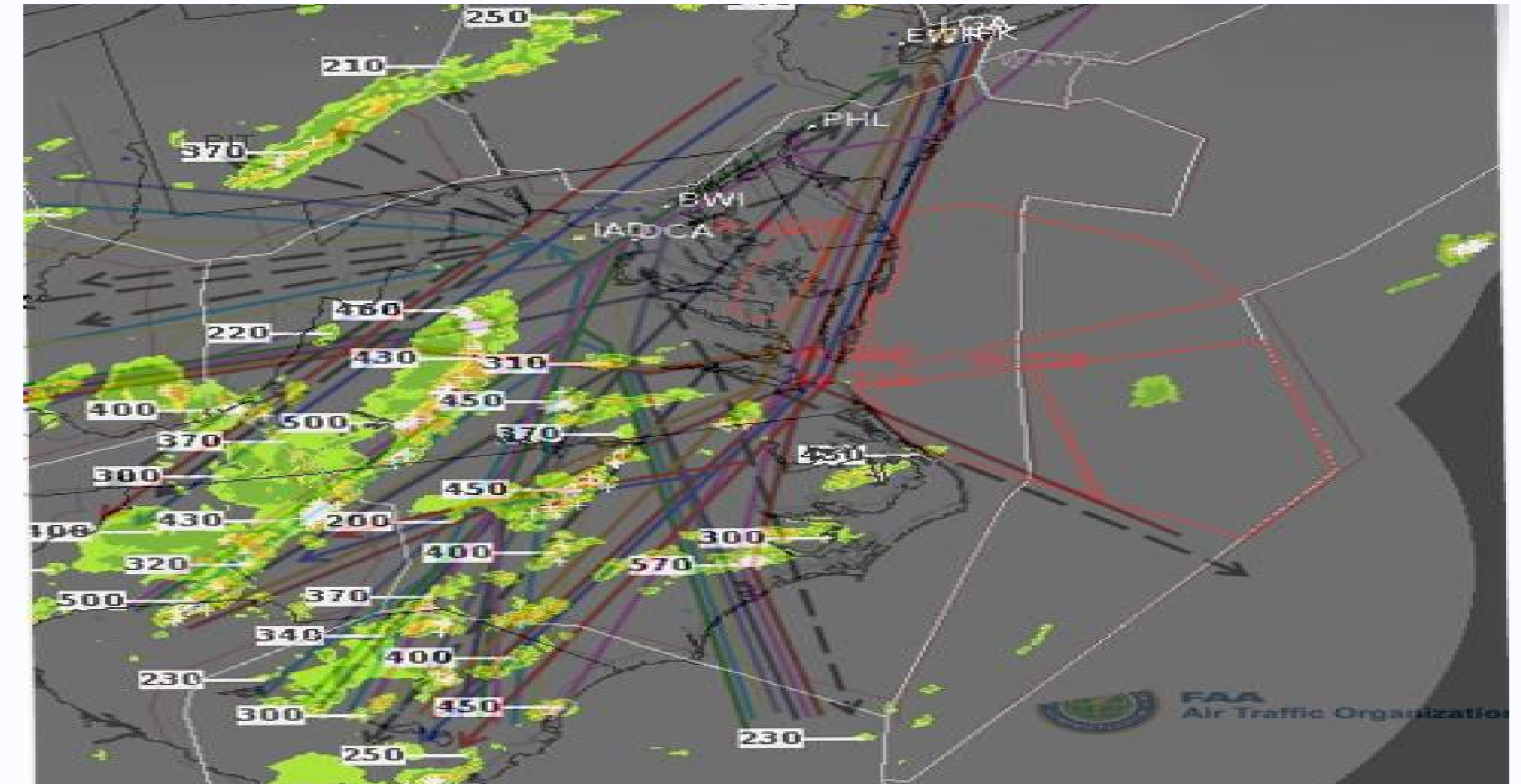


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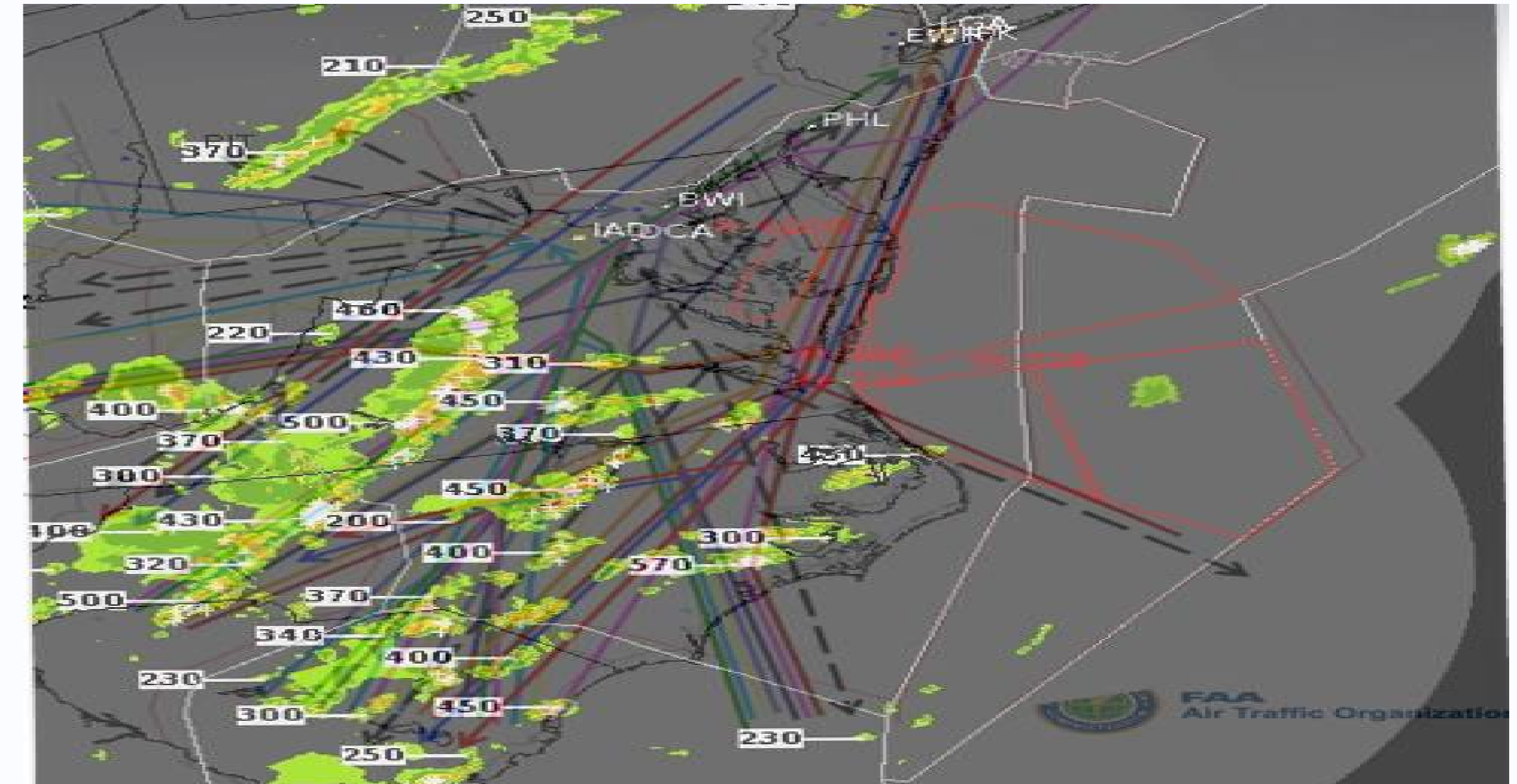
Strategy of Use Document

- **Objective:**
Improve transparency for all National Airspace System (NAS) users and FAA facilities by documenting common weather scenarios, historical strategies, and supporting traffic management initiatives (TMI) when Airspace Flow Programs (AFPs) are used to manage convective weather constraints.



Strategy of Use Document

- **Communication:**
 - PERTI – Advanced Planning process
 - Day of Operations Planning Process
 - Collaborative Weather Products
 - CDW (critical decision window)
 - Historical data from similar weather days
 - Trigger events, i.e. holding, departure delays, route closures, etc...



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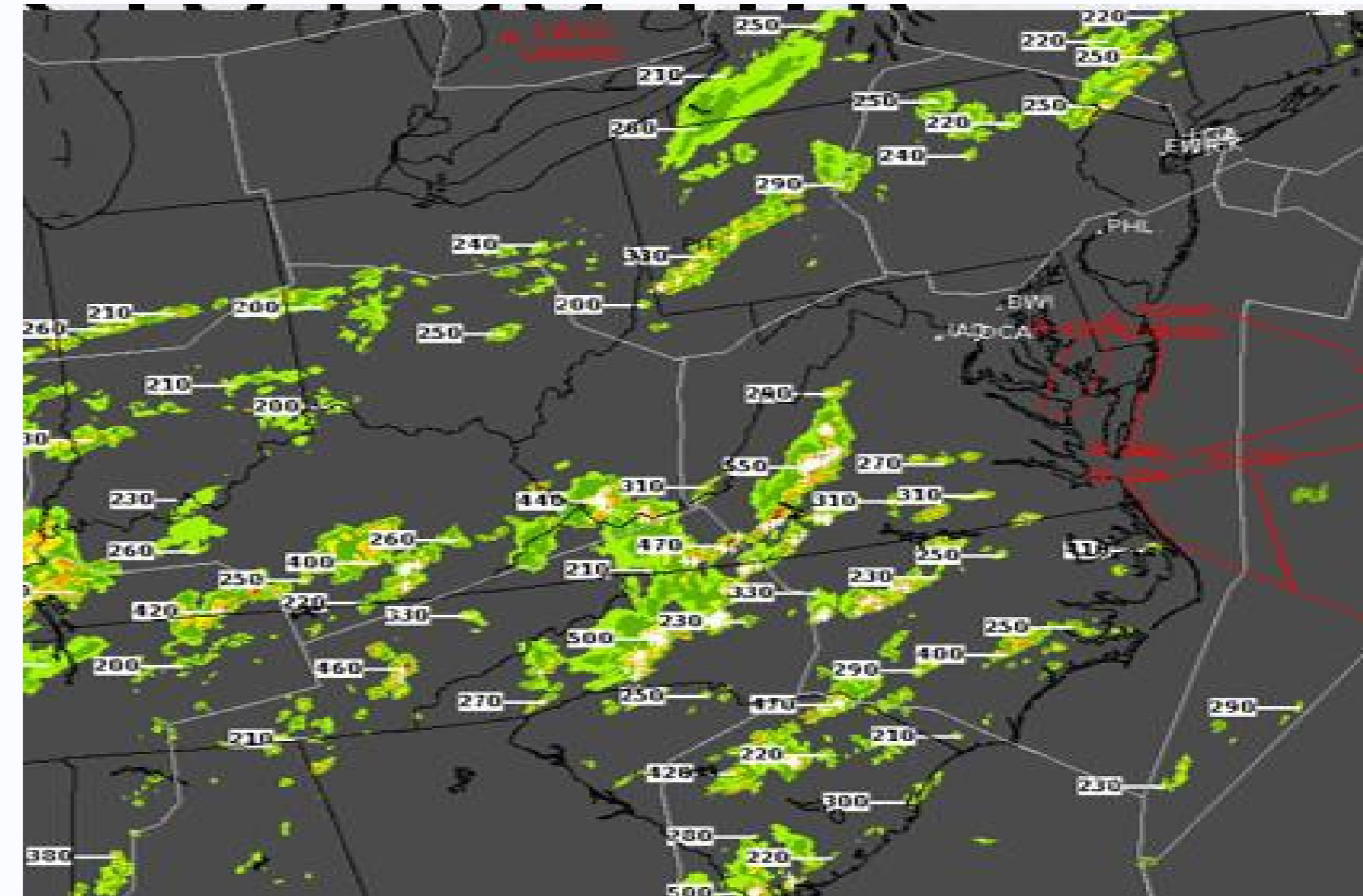
- **AFP Strategy –**

The goal of the Air Traffic Control System Command Center (ATCSCC) during SWAP events is to **proactively manage the NAS without over control**. AFPs are one of the **most impactful TMs** but are rarely used in isolation. AFPs should be considered **in conjunction with** multiple TMs when developing a Day of Operations (DoO) plan to **maximize throughput, balance capacity with demand and ensure a safe enroute environment**.



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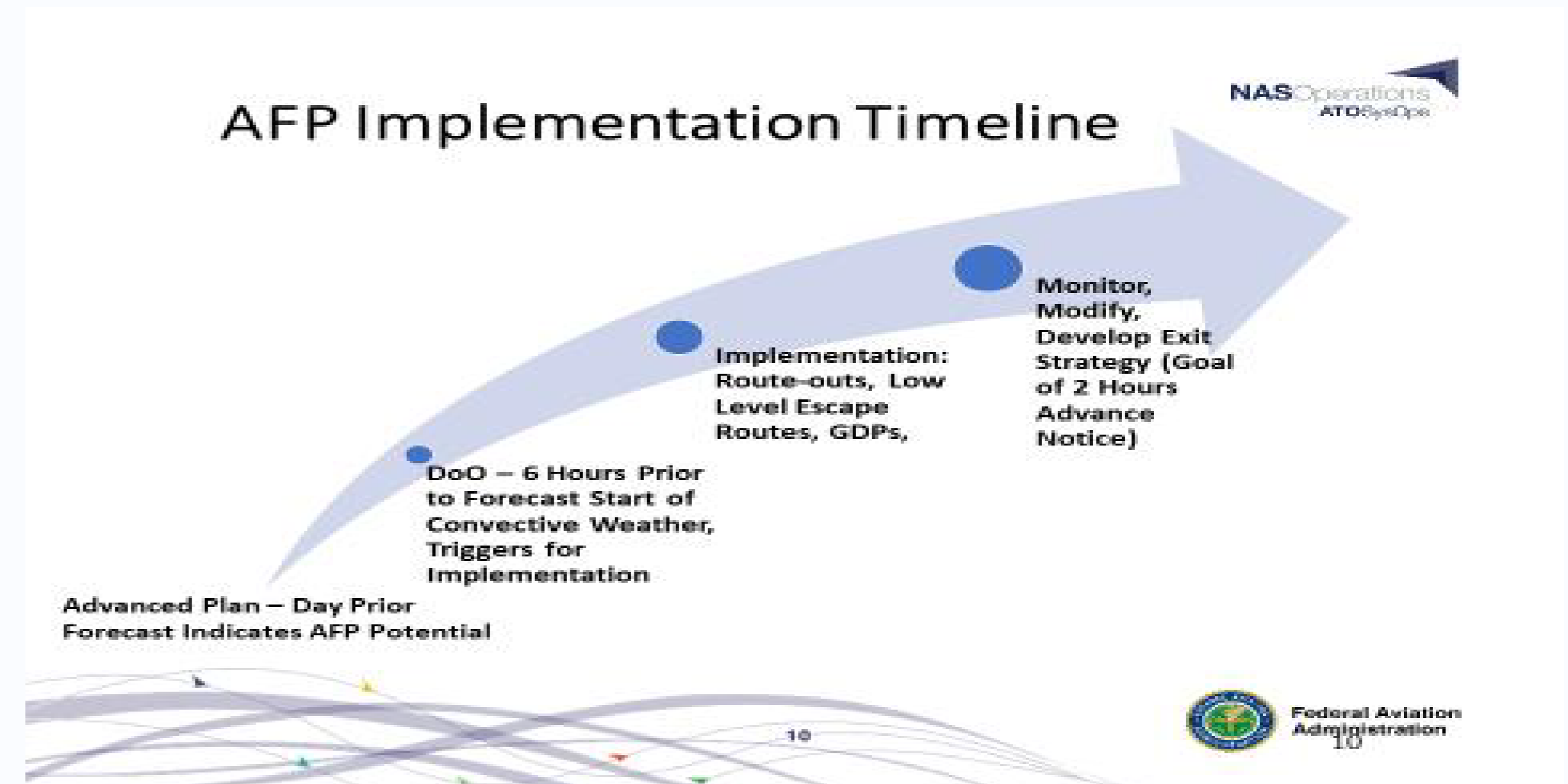
- **When to Consider an AFP Strategy:**
 1. *Significant Severe Weather is forecast or present mostly in one Enroute Center and surrounding facilities must absorb rerouted demand*
 2. *Significant Severe Weather is forecast or present in multiple Enroute Centers and additional facilities must absorb rerouted demand.*
 3. *Significant Severe Weather is forecast or present throughout the NAS and capacity in all affected Centers is greatly reduced.*



Strategy of Use Document

- **Timing of AFPs:**

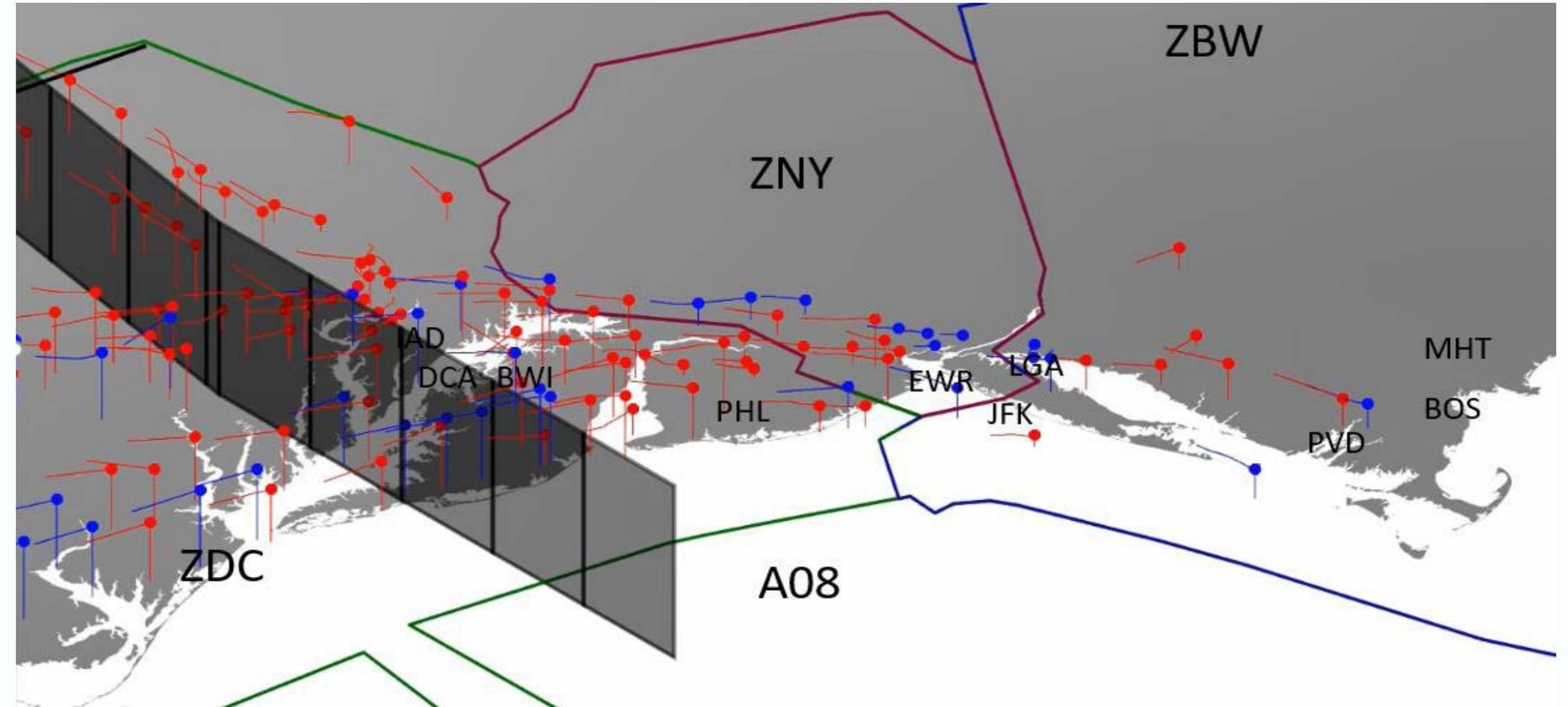
Because most severe weather events begin in the early to late afternoon, the arrival demand departing the west coast in the morning (west coast time) must be addressed before 15z or it will be airborne. **The Critical Decision Window (CDW) for implementation is five to six hours prior to the forecasted convective weather activity.**



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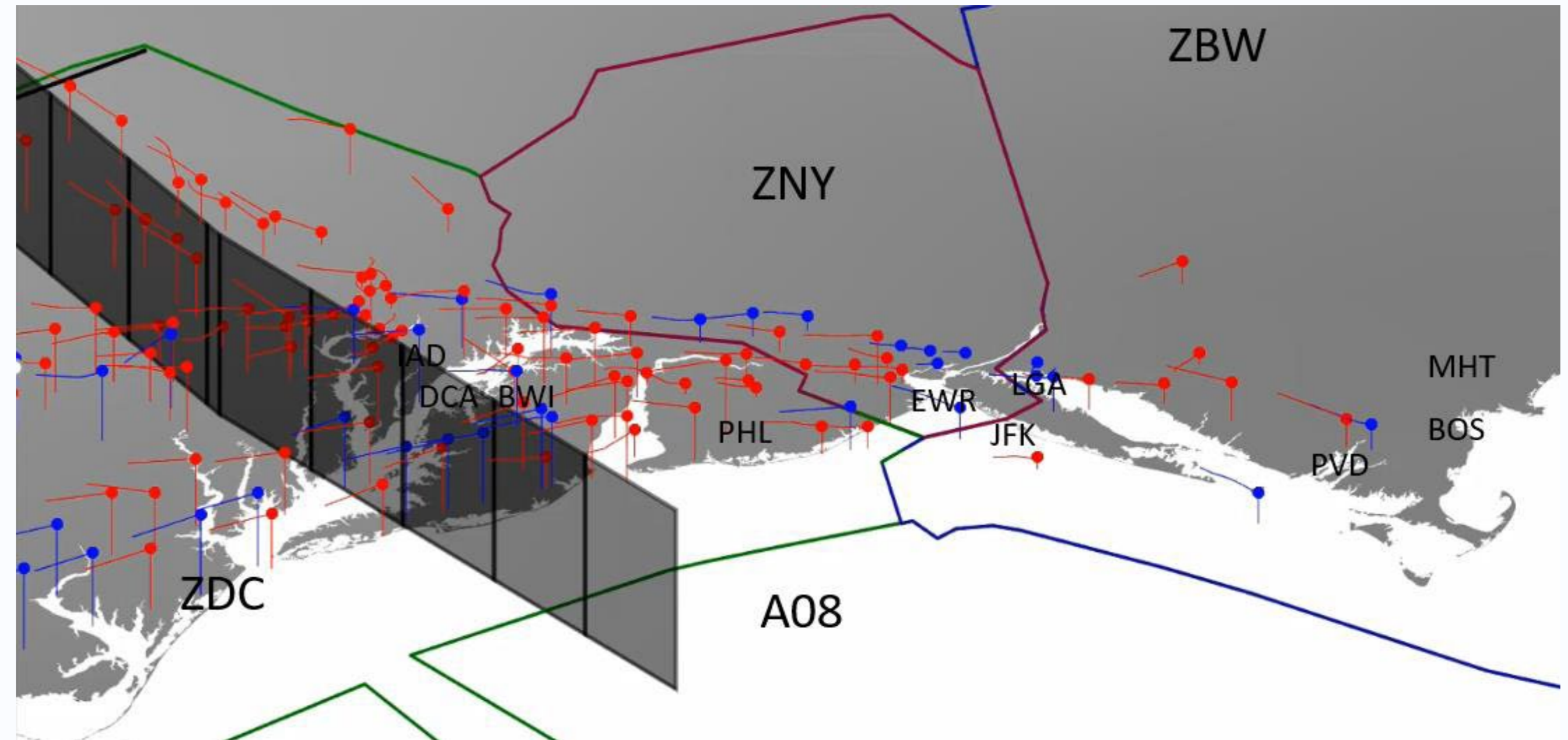
- Ceiling and Floor Information:**

All AFP ceilings and floors are typically set at FL600 and 120. Ceilings will not normally be lowered due to the close proximity to the regional airports. **Sequencing and spacing requirements** preclude aircraft from flying over the top of an AFP/constraint and descending into the regional airports. **However, DoO exemptions shall be given on a case by case basis.**



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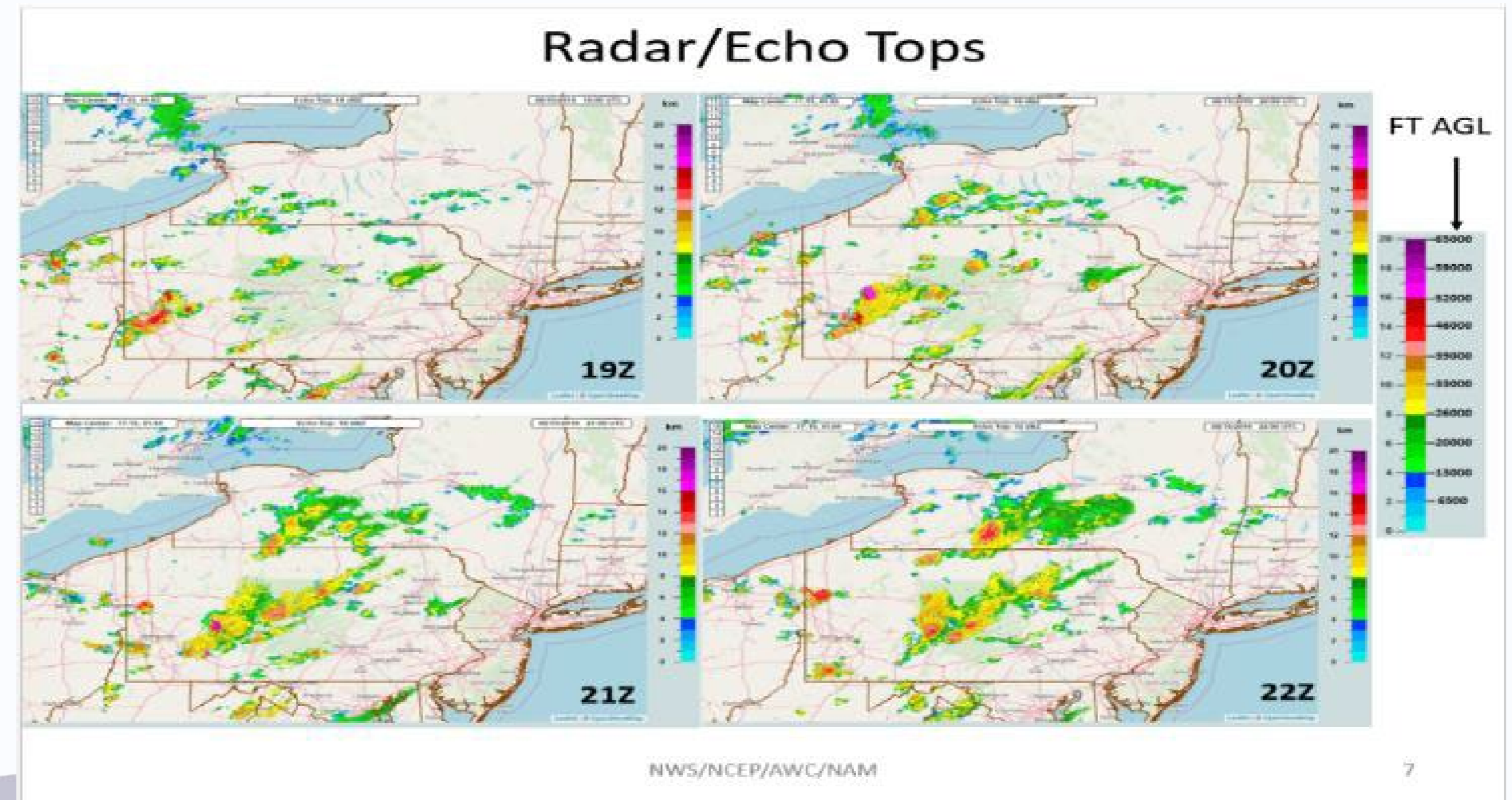
- **Ceiling and Floor Information (CONT'D):**
The airspace AOB230 is generally used for escape routes and capping/tunneling which precludes the floor from being raised.



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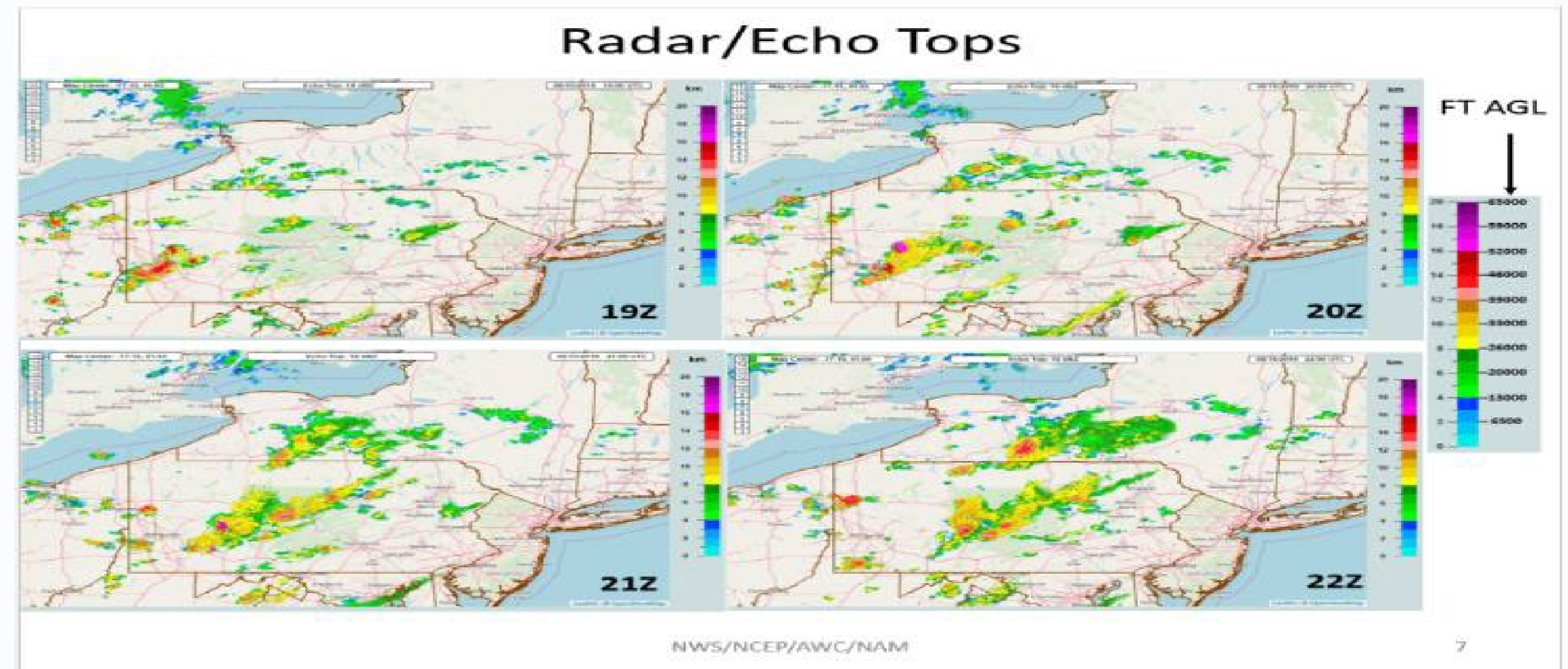
- General Factors to Consider in Determining Rate Reductions :**

Determining the correct capacity and throughput is not an exact science and requires intuitive knowledge of the airspace and the flows of traffic. Determining what the available capacity will be based on weather forecasts can be very subjective.



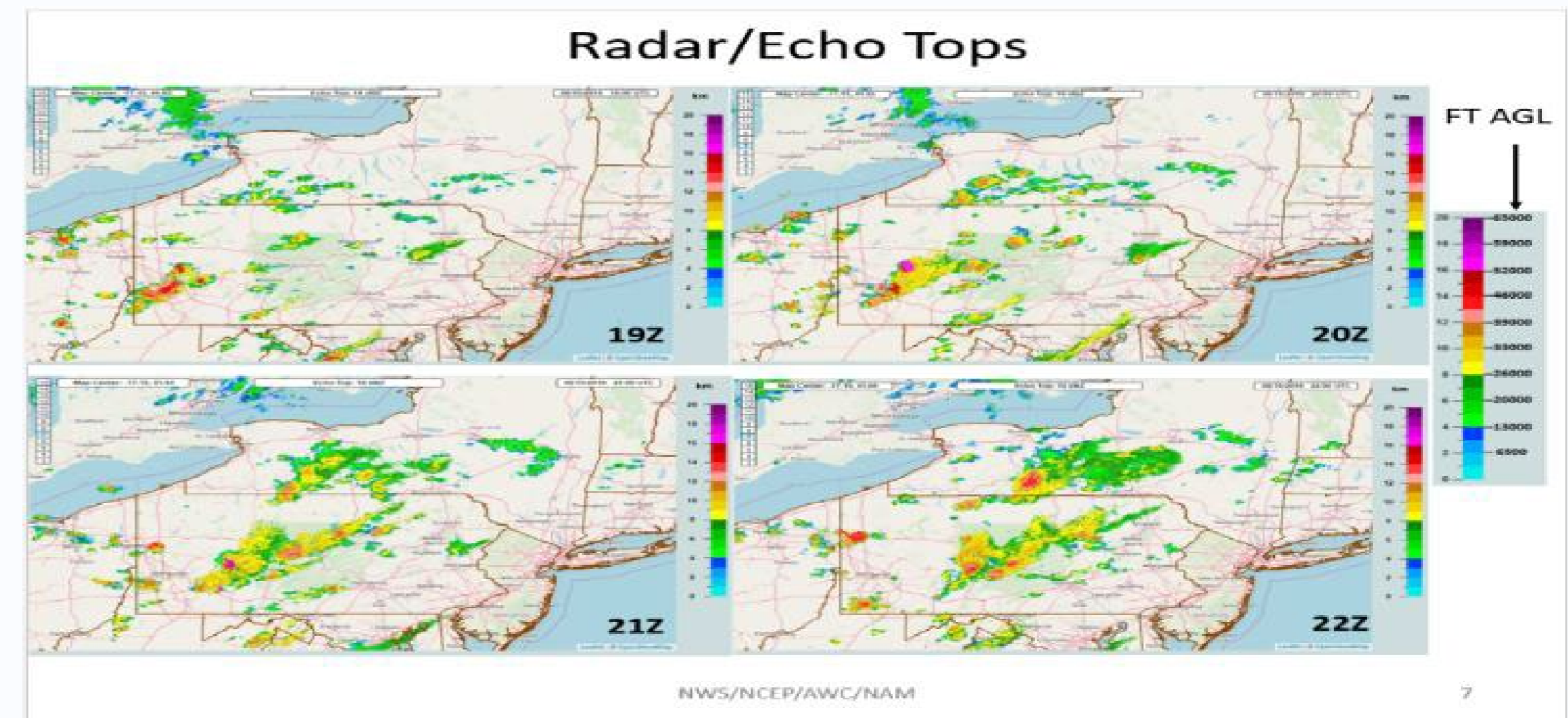
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- **General Factors to Consider in Determining Rate Reductions (CONT'D):**
 - Confidence in the forecast
 - Location – well defined or broad brushed
 - Severity – tops, coverage
 - Timing – start, end, duration
 - Permeability
 - Type and speed of thunderstorms activity (air mass, line, clusters)



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- **General Factors to Consider in Determining Rate Reductions (CONT'D):**
 - Other WX impacts (turbulence, airport impacts etc.)
 - Are thunderstorms going to impact high density airways?
 - Airspace usage (managing flights that are primarily in enroute vs. arrival/departure airspace)
 - Favoring arrivals or departures?
 - If favoring departures then the AFP rate may be further reduced
 - Primary AFP (to manage weather impact) vs. secondary AFP (to manage volume due to reroutes)
 - Other TMIs used in conjunction to AFPs



Note: This list is not all inclusive



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ATFM Decision Making



Strategy of Use Document

Decision Making Process:

From the Advanced Planning webinar through the actual DoO implementation, the following diagram describes the collaborations and actions that follow. Flight operators and FAA facilities are encouraged to participate as much as possible in each stage of planning and operational decision-making.

