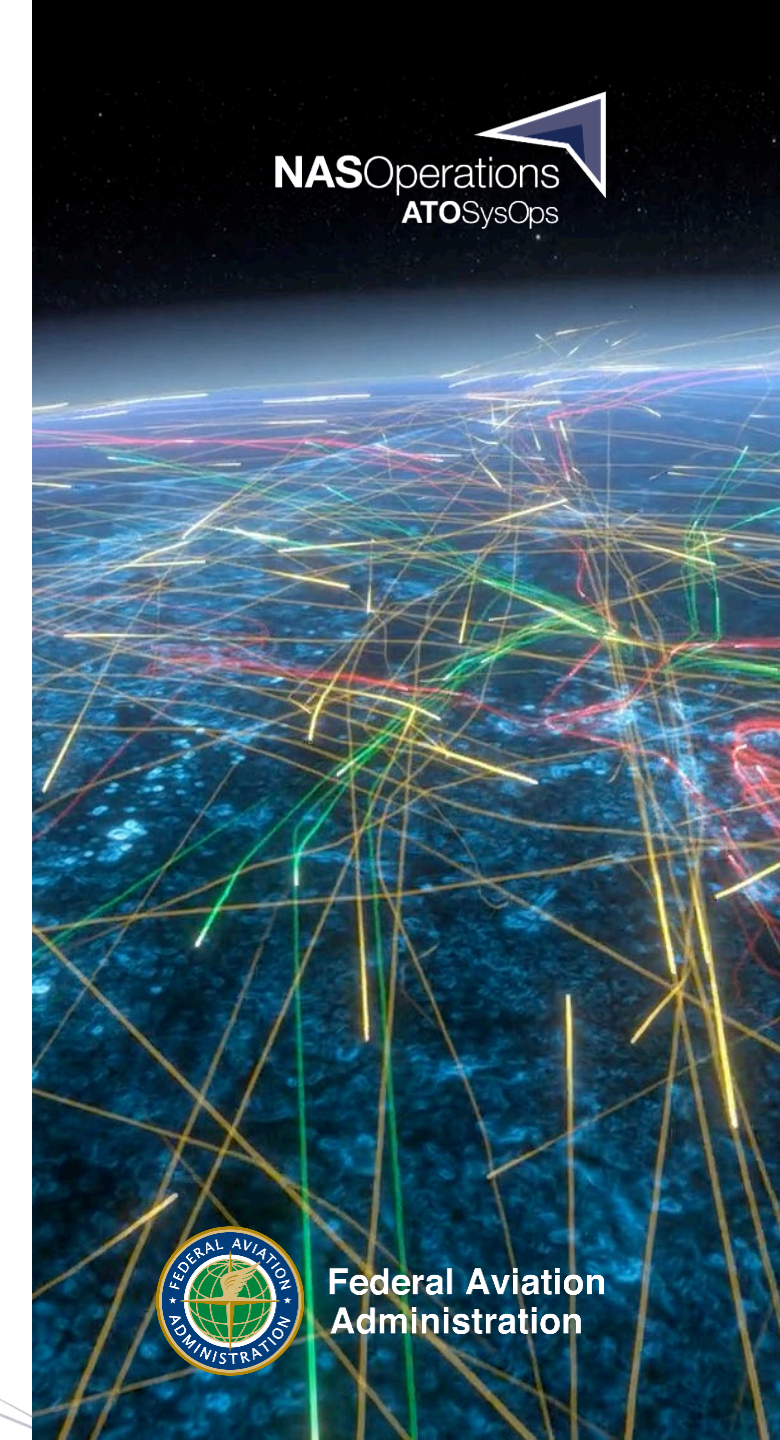
ZBW TMU
SWAP Briefing 2024

Presented to: National Collaboration Forum
April 2024



Topics of Discussion

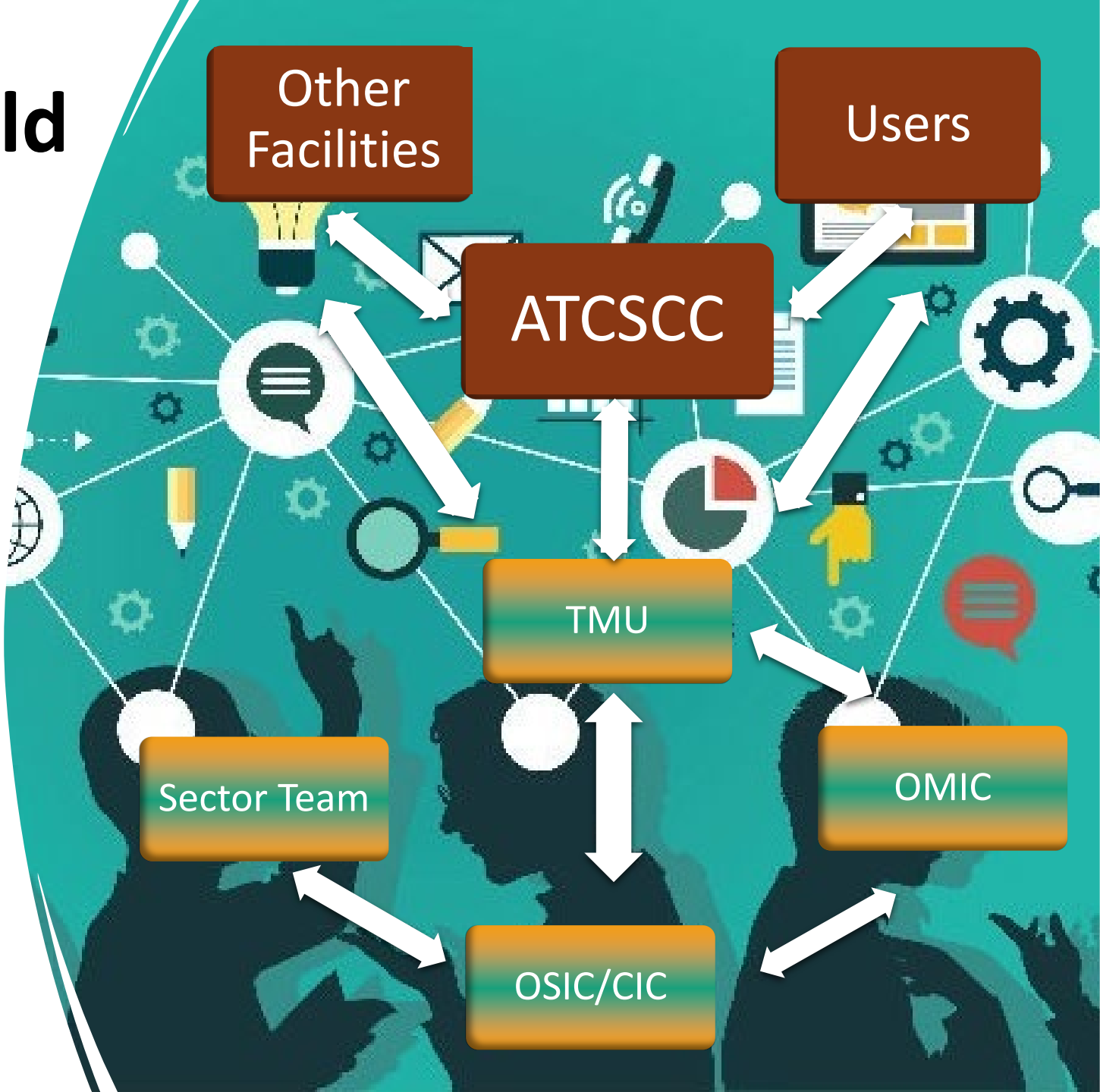
- Common Themes From Past Events
- Communication & Lessons Learned
- STMC Oversight Position
- CWSU Enhanced Engagement
- Dynamically Adjusting MAP Values
- Area Scenario Guidebook Reminder
- PLAYBOOK Refresher

Common, Recurring Themes From Reviewed SWAP Events

- Communication
- TMI Efficacy
- Guidebook and Playbooks

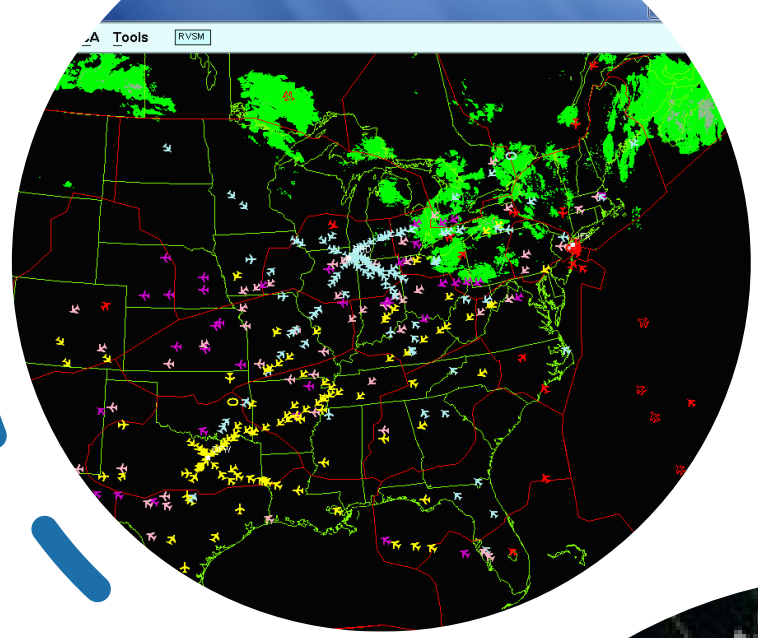
Primary Focus Should Be *Proactive* Communication

- Early discussions about weather and accompanying constraints are critical to successful operations.
- Discussions may be initiated by TMU, OMIC, and/or OSIC/CICs about developing situations.
- Share the plan, share constraints!
- If services that controllers provide, such as calling weather and soliciting/ disseminating PIREPs are expected to be impacted by volume or sector conditions, this information **must** be shared with the OMIC and TMU proactively.
  - **OMIC needs and is required to be aware of TMIs and sector issues**.
  - Face-To-Face discussions with all parties may be required.

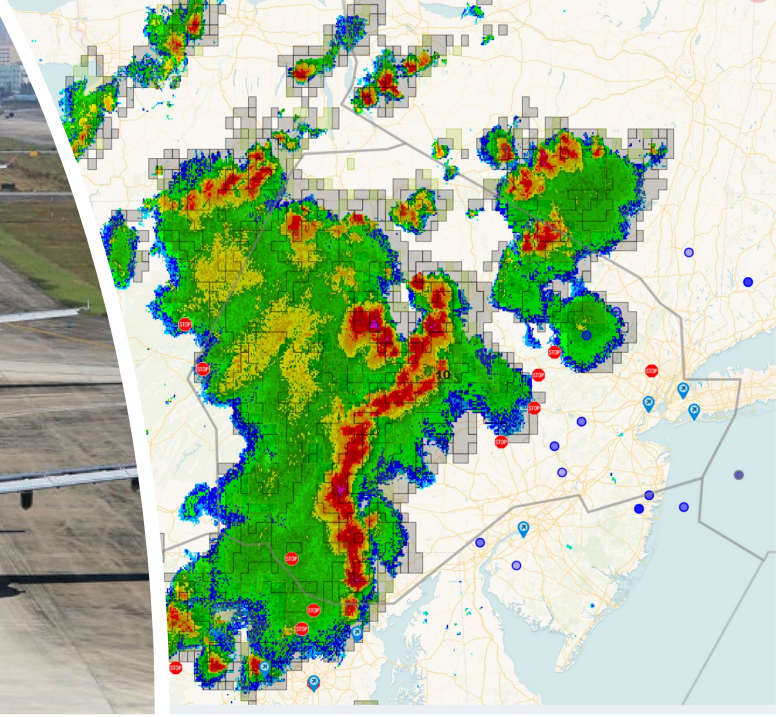


TMI Implementation Process -

- Discussion is had between Area and TMU about needing a TMI
- Traffic Analysis Performed
- NTML Restriction Typed Up and Passed to Providing Facility
- Conference Call between requesting TMU and Providing facility/facilities' TMU and ATCSCC
- NTML Restriction Accepted
- Providing Facility TMU sends message to their sector(s)
- Providing Facility controllers begin to provide the TMI
- ***Can take 30+ minutes from initial request to when the providing facility starts complying!***



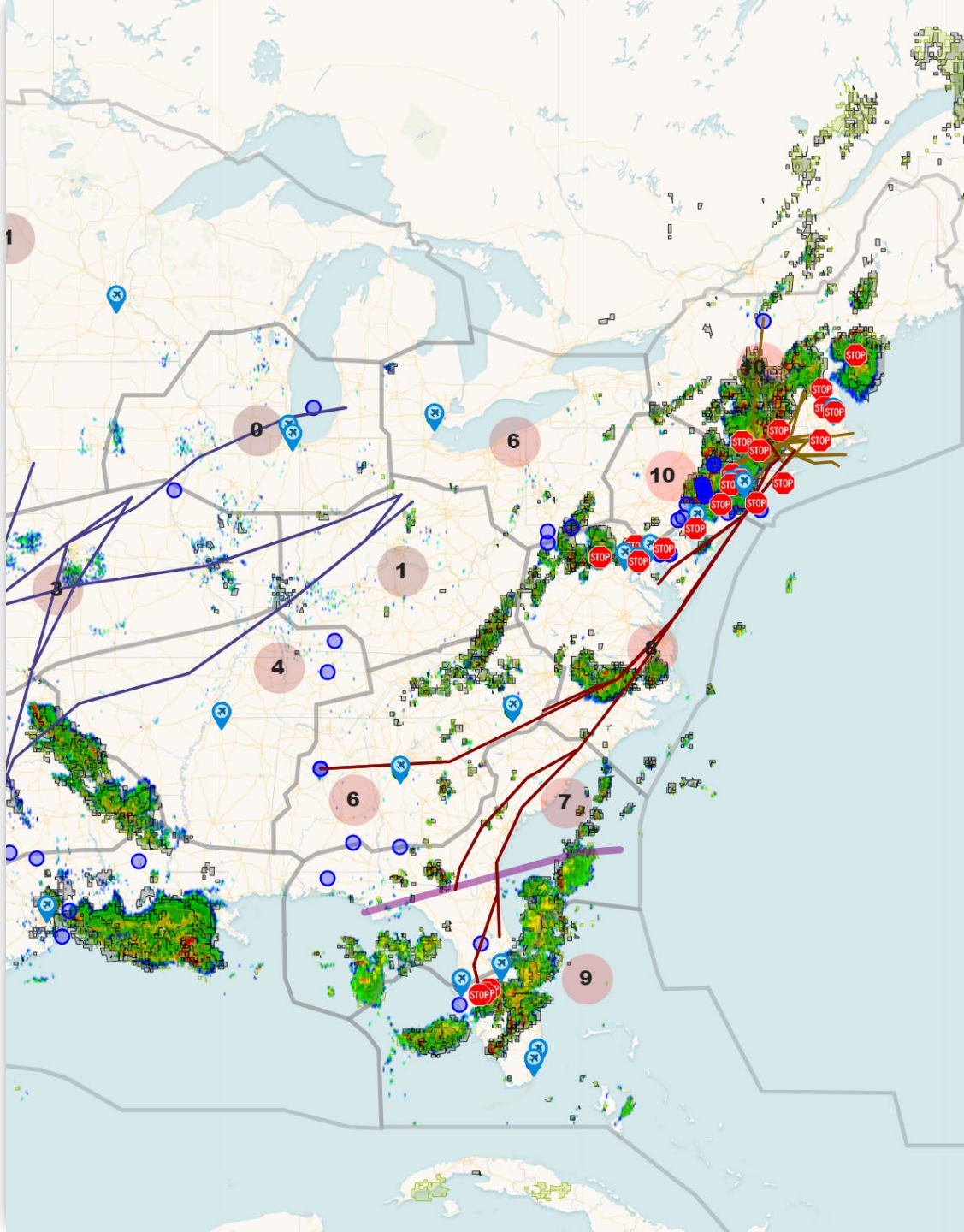
Complexity and call volume in the TMU can be high at times



- When routes are closed or there are other constraints in the system, please remember that there are numerous other facilities and Areas requesting assistance from the TMU.
    - Limited TMU staffing is tasked with answering phones and managing reroutes. - It takes time to coordinate effectively
- **Pre-planning and proactive actions by Areas are essential to a smooth operation.**
- If you need a re-route or to check on a route, call the NAS Coordinator
    - TMNC= ext. 6861
    - STMC= ext. 6666

New to Summer 2024: STMC Oversight Position

- Will act more as a coordinator, leaving computer entries and some phone calls to other positions, similar to a tracker-type role.
- Should allow for increased communication and coordination with the Areas, OMIC, and external facilities - **Less heads-down time** and more strategic operational engagement.
- Will be staffed as needed during weather events or other shifts when increased workload in TMU is anticipated and communication between TMU, the Areas, and OMIC will be imperative for safe and efficient traffic management.
    - When conditions are known in advance, an additional STMC/TMCIC will aim to be staffed for the impacted shift.
- Adopted from how some ARTCC TMUs operate



NASOperations
ATOSysOps

Boston Center CWSU Guide

Federal Aviation Administration

GUIDE PURPOSE

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ATOSysOps

The **intent of this guide is to provide information that may be beneficial for enhanced communications between the CWSU, TMU and Operational Areas**. It is not all-encompassing, nor does it cover every possible scenario, but it should give the ZBW team good reference points to more effectively manage traffic.

The mission of the traffic management system is to balance demand with system capacity to ensure efficient utilization of the NAS. It is recognized that the CWSU and the ATCSs are integral in the execution of the traffic management mission.

Good communication is imperative between the all parts of the operation to maintain a safe, orderly, and expeditious flow of traffic.

It is important to work together with a high level of interactions and teamwork:

- Keep TMU and Operational Areas apprised of situations or circumstances that may cause congestion or delays.
- Coordinate with TMU and Operational Areas so that appropriate mitigations for sectors and airports are planned developed and implemented in a timely manner.

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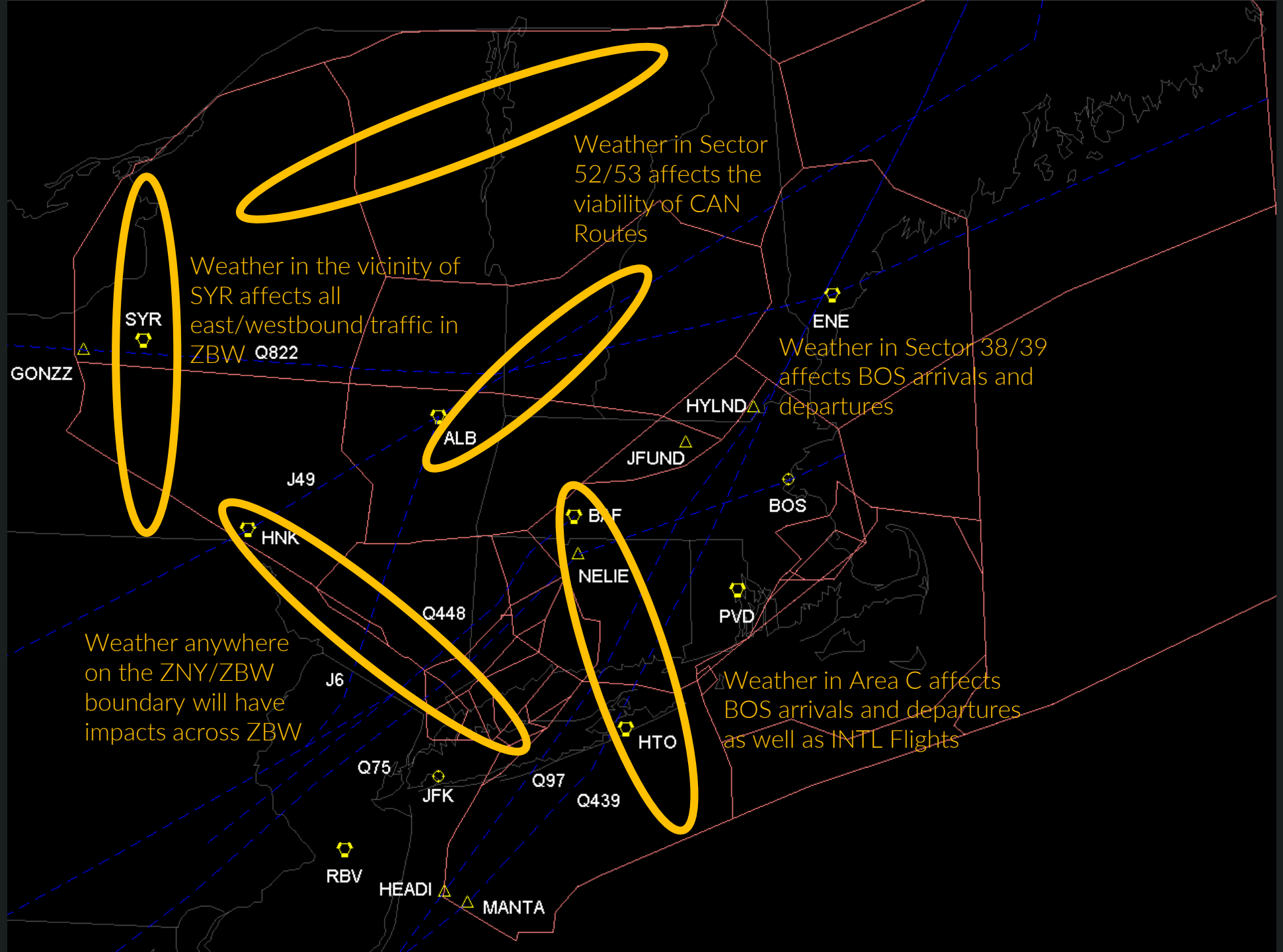
Weather in Sector 52/53 affects the viability of CAN Routes
Weather in the vicinity of SYR affects all east/westbound traffic in ZBW
Weather in Sector 38/39 affects BOS arrivals and departures
Weather anywhere on the ZNY/ZBW boundary will have impacts across ZBW
Weather in Area C affects BOS arrivals and departures as well as INTL Flights
SYR
GONZZ
Q822
ALB
ENE
HYLND
JFUND
J49
BOS
HNK
NELIE
PVD
Q448
J6
HTO
Q75
JFK
Q97
Q439
RBV
HEADI
MANTA

Common Examples:

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The following slides show actual examples from 2023 of when weather developed causing an impact to ZBW operations, which included:

- HNK/ALB
- PATSS/REVSS/BLZZR
- ZOB/ZNY Boundary
- HYLND Departures
- JFUND Arrivals

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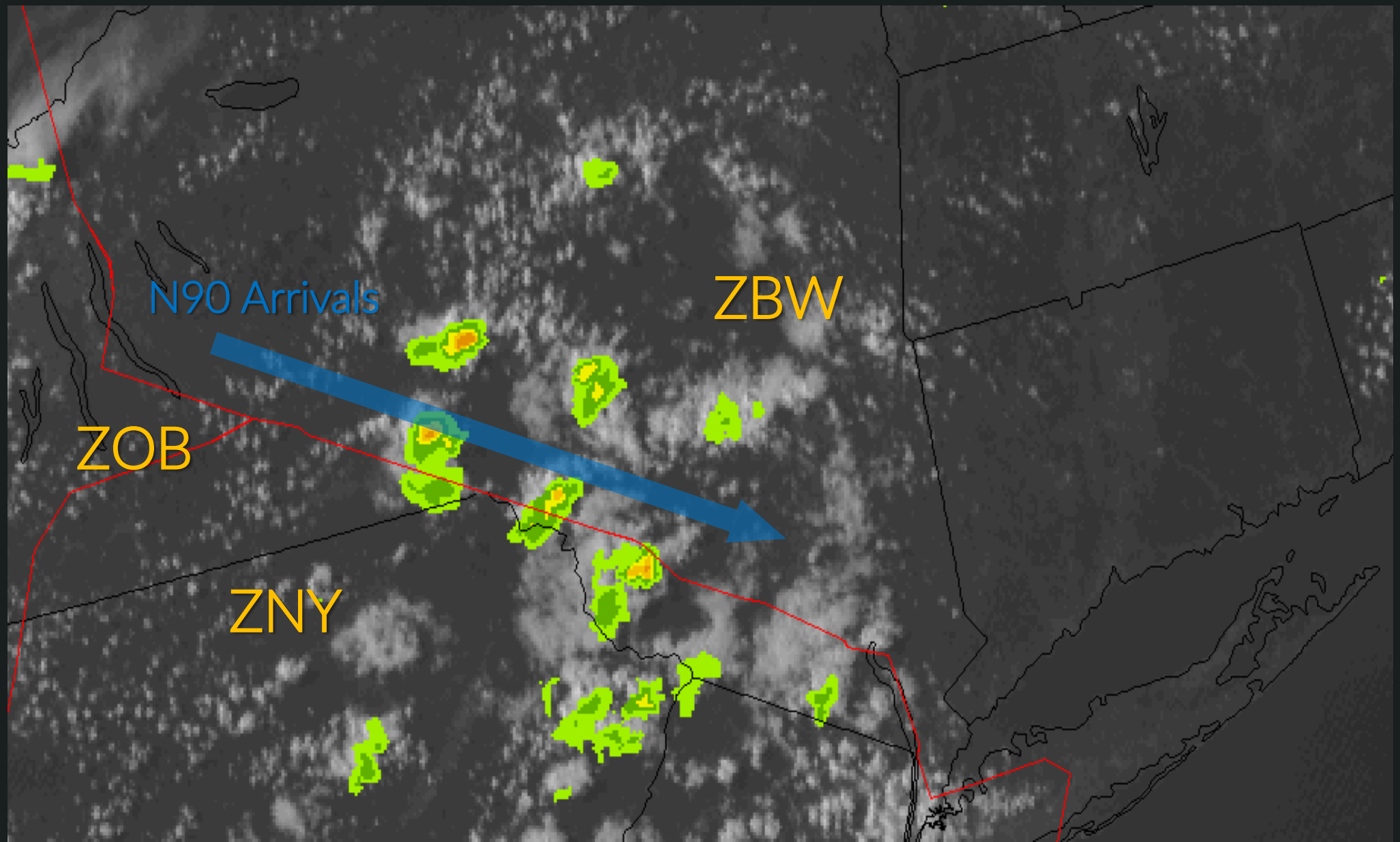
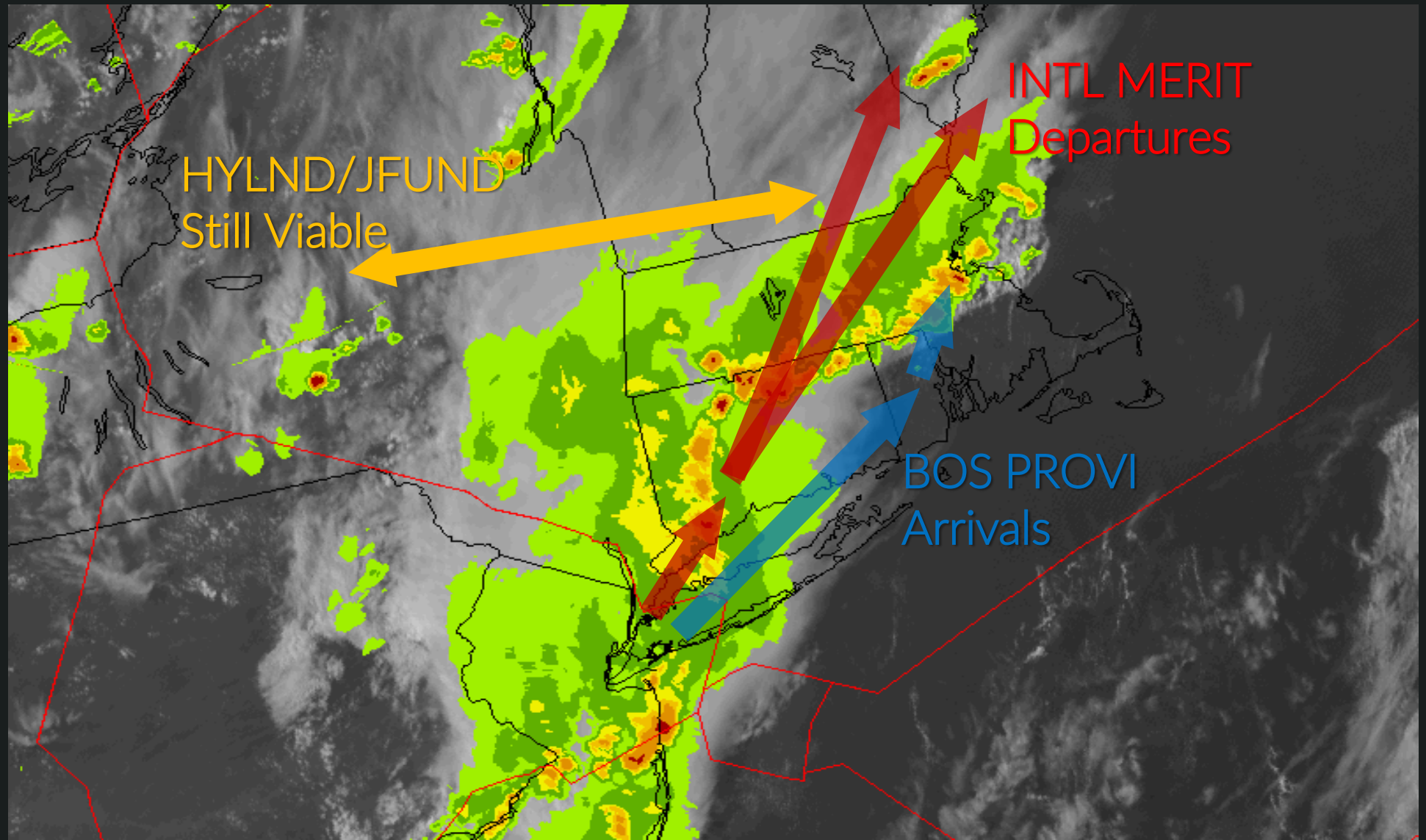
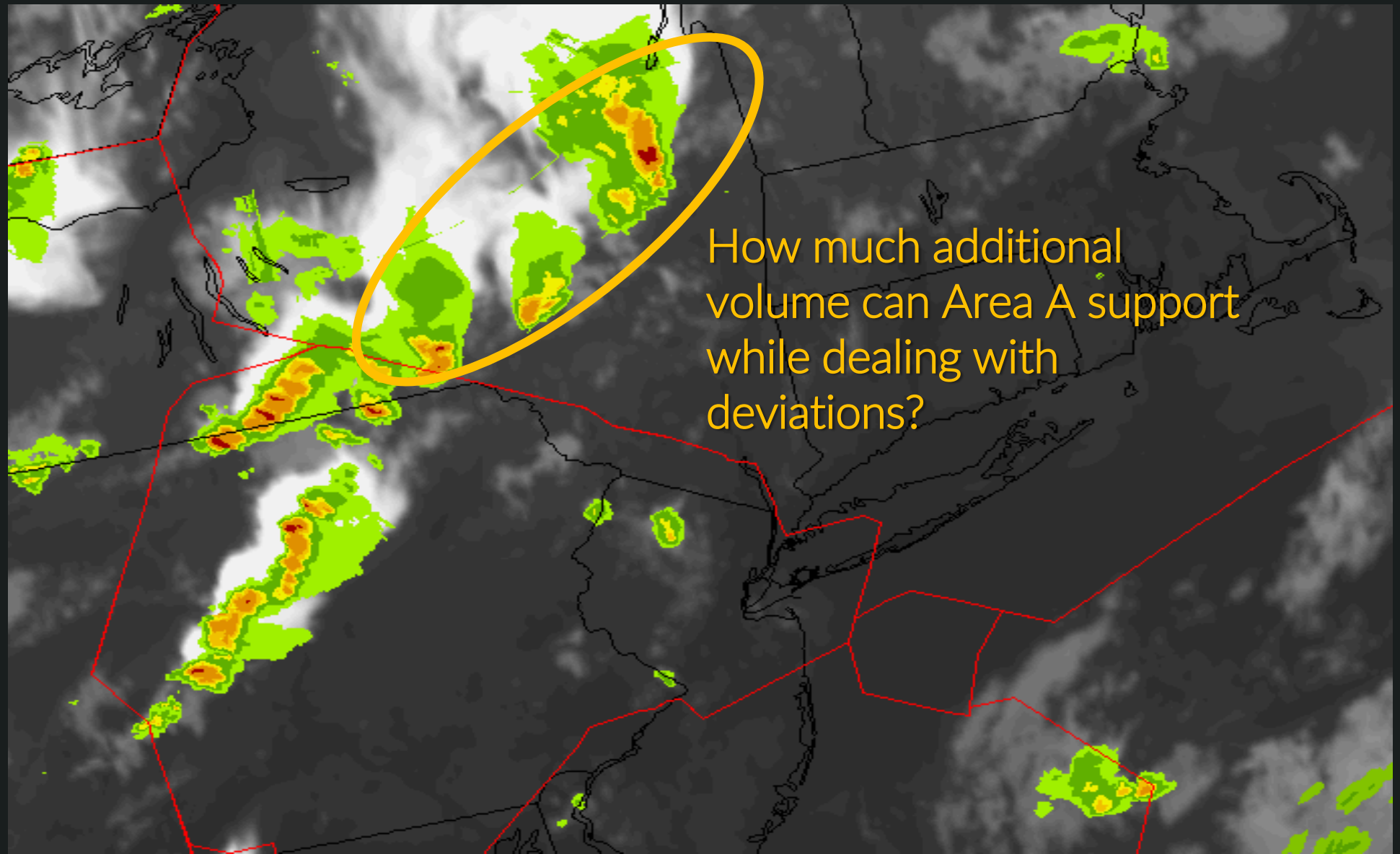
Weather beginning to develop in the HNK/RKA area, affecting N90 arrivals through ZBW



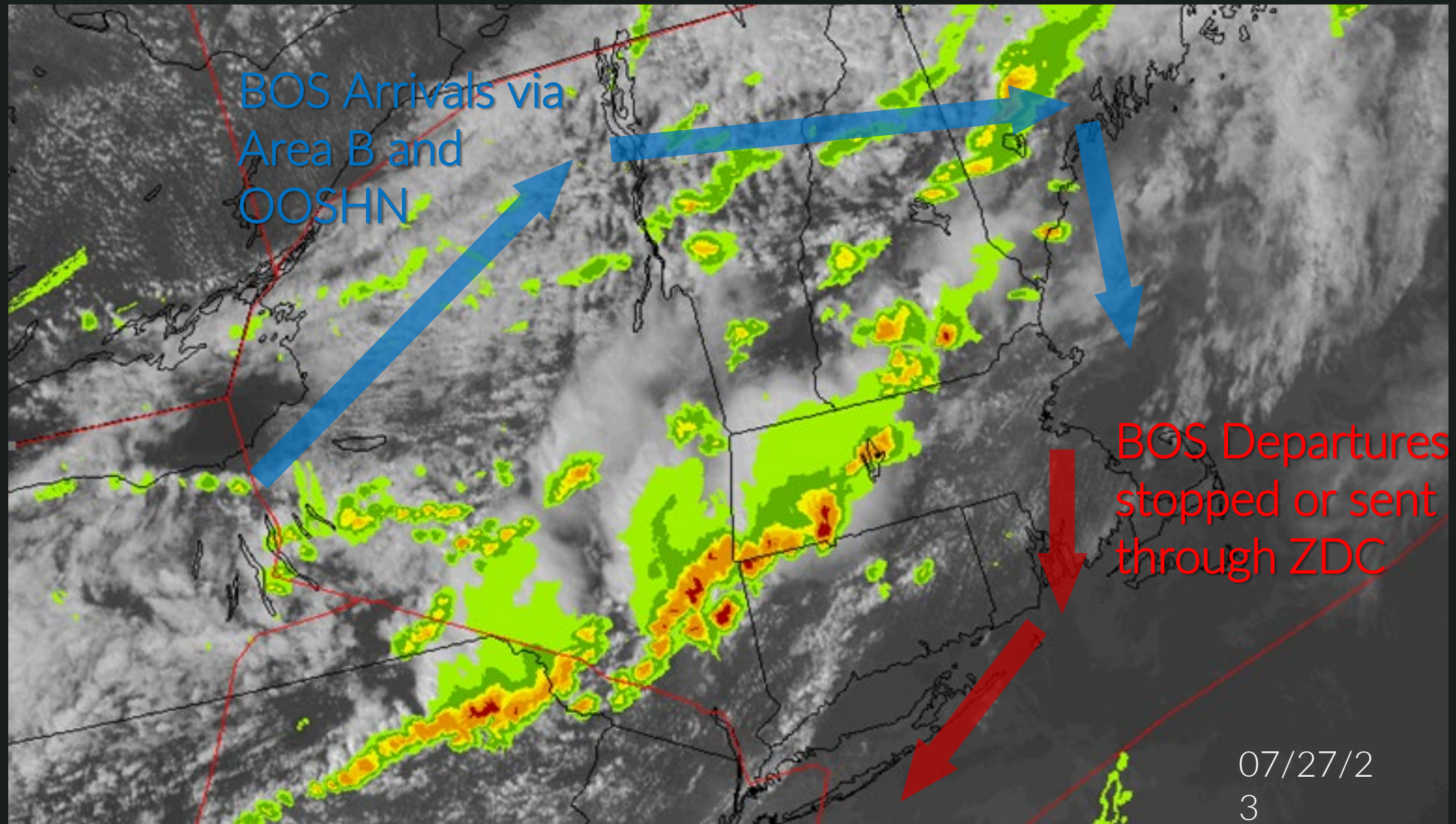
Weather developing in CT and MA, affecting the BOS arrivals via PROVI, departures via PATSS / REVSS / BLZZR, and N90 INTL departures over MERIT. JFUND and HYLND seem viable if they can get into BOS.



Weather developing on the ZOB/ZNY boundary will traffic north into ZBW. Can Area A support the extra volume?

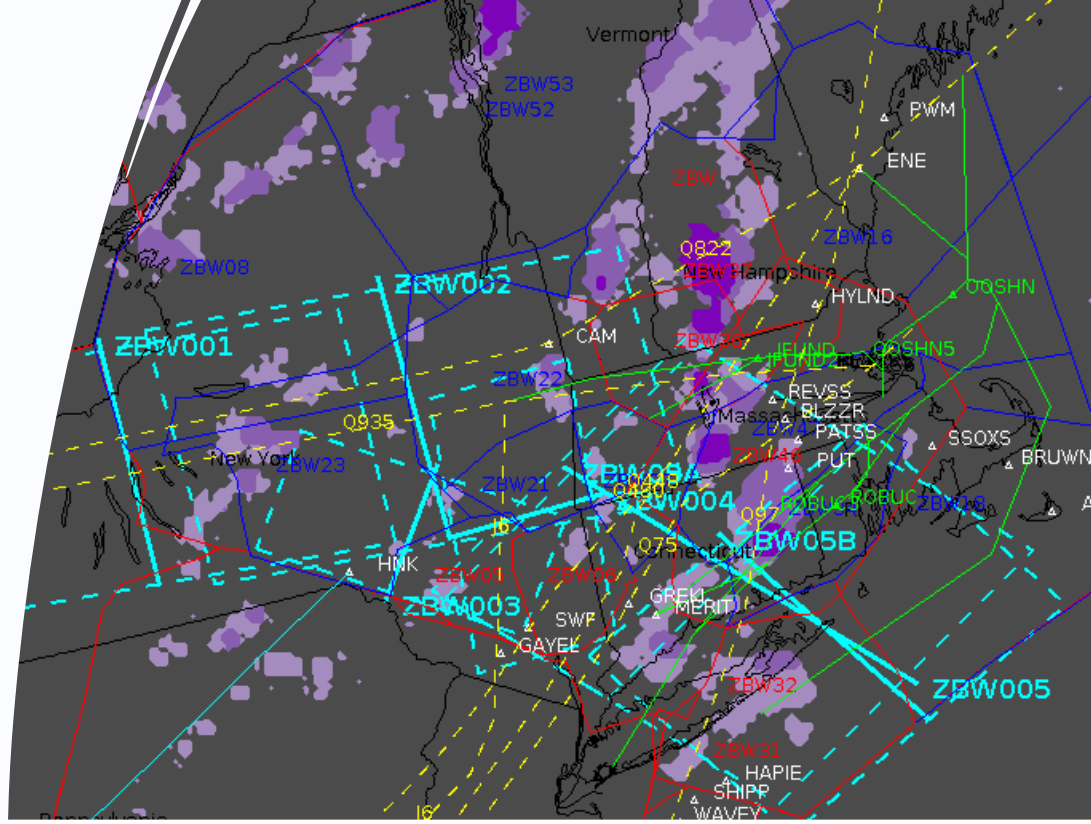


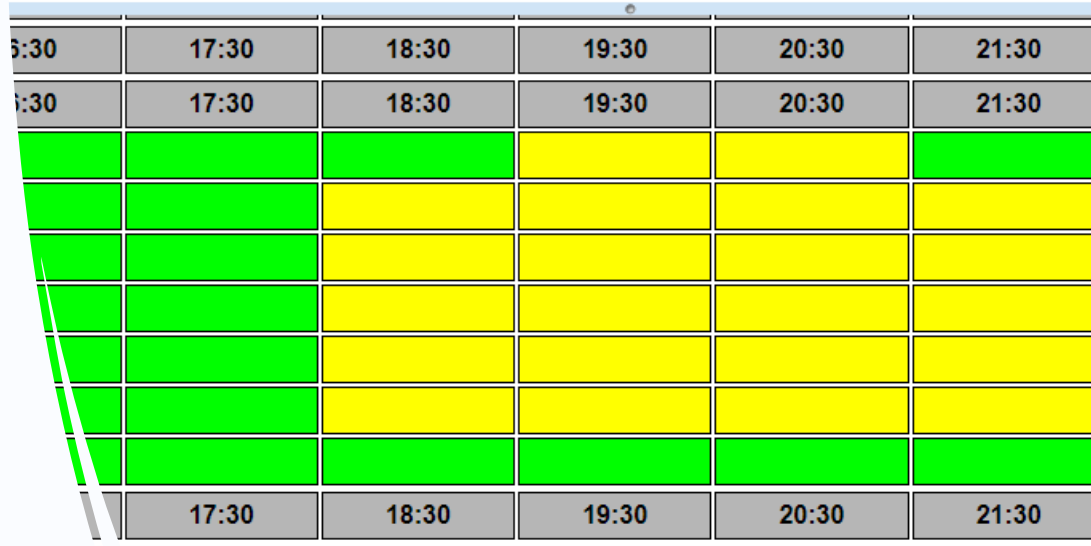
Weather developing in ZNY, blocks N90 arrivals from ZOB. ZBW cannot accept these offloads with HNK/RKA/IGN being impacted. JFUND arrivals to BOS impacted, as well as the HYLND departures. All BOS traffic is going north into Sectors 52/53 and Area D or south to ZDC



Using Available Forecasting Tools Can Help With More Efficient “Recovery” Operations

- To help predict when airways/sectors/fixes can be reopened after convective weather moves through, several tools may be used to assess potential impacts
- The CIWS TFI is very accurate when used several hours in advance which allows plenty of time to plan for when to open or close flows in anticipation of weather moving through.
- Allows for more efficient planning. Rather than waiting for weather to be clear of a route/airport, we can anticipate it will have moved by the time a flight gets there.





International Departure Gate Forecast (IDGF)

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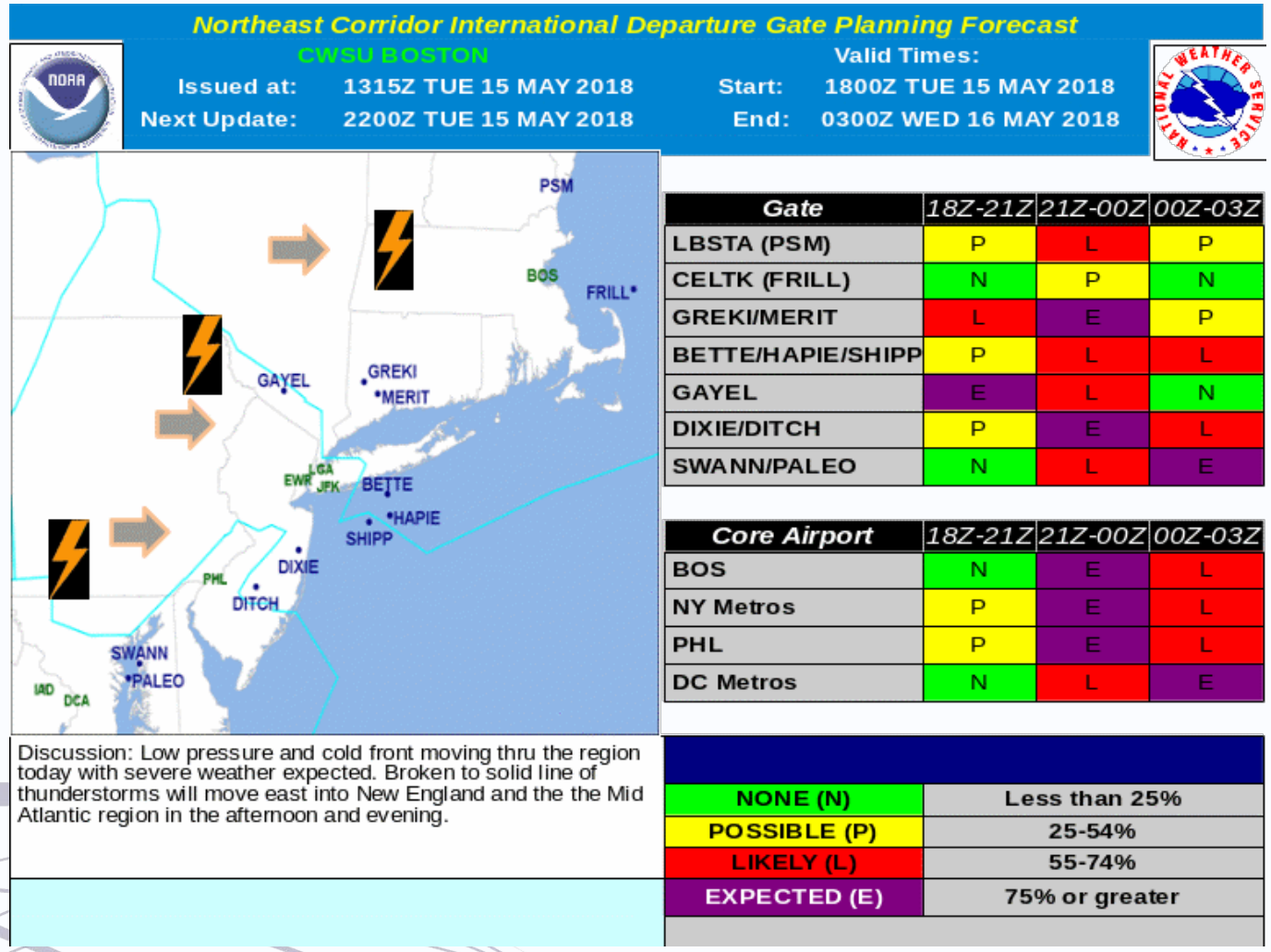
Developed to help address convective issues for international flights departing the N90 enroute to Europe.

- **Current day update**
  - Issued between 1230z-1330z.
- **Day 2 outlook**
  - Issued in the evening around 2300z.
- **3 hour forecast blocks**
  - 18z-21z, 21z-00z, 00z-03z
  - Can be used with other available forecasting tools to aid in "recovery" from convective weather
- **20nm forecast circle around each fix/gate/airport**



Gate	18Z-21Z	21Z-00Z	00Z-03Z
LBSTA (PSM)	P	L	P
CELTK (FRILL)	N	P	N
GREKI/MERIT	L	E	P
BETTE/HAPIE/SHIPP	P	L	L
GAYEL	E	L	N
DIXIE/DITCH	P	E	L
SWANN/PALEO	N	L	E

Core Airport	18Z-21Z	21Z-00Z	00Z-03Z
BOS	N	E	L
NY Metros	P	E	L
PHL	P	E	L
DC Metros	N	L	E

NONE (N)	Less than 25%
POSSIBLE (P)	25-54%
LIKELY (L)	55-74%
EXPECTED (E)	75% or greater

Domestic Fix Forecast (DFF)

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NONE – no significant gate/fix/airport restrictions

Examples: Isolated TS

TS probability less than 25%

POSSIBLE – restrictions possible during the period

Examples: Scattered TS

TS probability 25-49%

LIKELY – significant impacts during the period

Examples: TS Clusters

TS probability 50-74%

EXPECTED – major impacts during the period

Examples: Broken-Solid lines, large TS complexes

TS probability 75-100%

EXPERIMENTAL Graphical MIS – Domestic Arrival/Departure Fix Planning Forecast

CWSU BOSTON

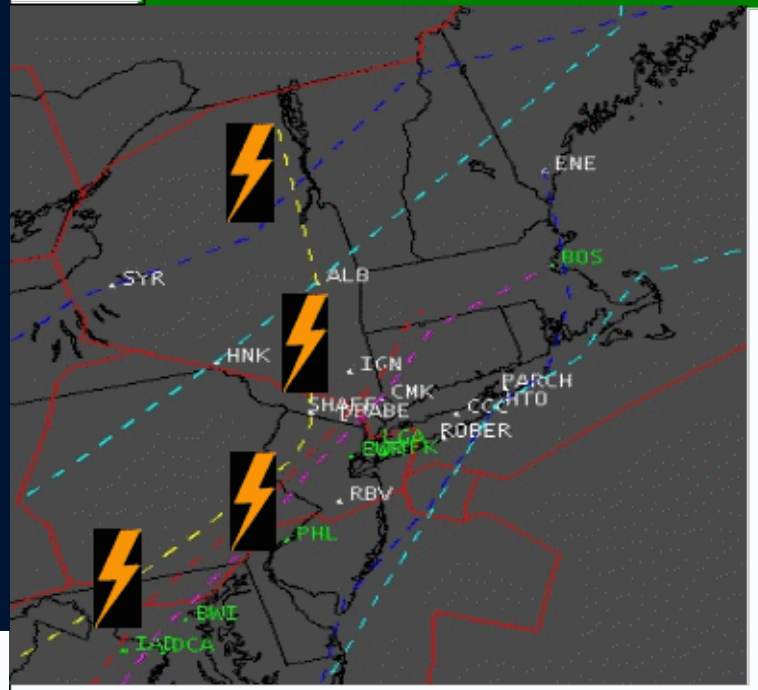
Issued at: 2305Z SAT 17 AUG 2019

Next Update: 1300Z SUN 18 AUG 2019

Valid Times:

Start: 1800Z SUN 18 AUG 2019

End: 0300Z MON 19 AUG 2019



Fix	18Z-21Z	21Z-00Z	00Z-03Z
BUGSY	N	N	N
NOVON / TULEG / RAKAM	P	P	N
SYR/GOATR/GONZZ	P	P	N
HNK/DNY	P	L	N
ALB/CAM	P	L	P
IGN and VCY	N	P	P
GREKI/MERIT	N	P	P
BOS and Gates	**18Z-21Z**	**21Z-00Z**	**00Z-03Z**
BOS	N	N	N
SEETS/JFUND	N	N	N
OOSHN	N	N	N
PATSS / BLZZR / REVSS	N	N	N
PROVI	N	N	N
SSOXS	N	N	N

Discussion: Widely scattered to scattered thunderstorms are expected once again Sunday afternoon and evening from portions of NY into the Mid-Atlantic region and spreading eastward. Significant impacts are again possible.

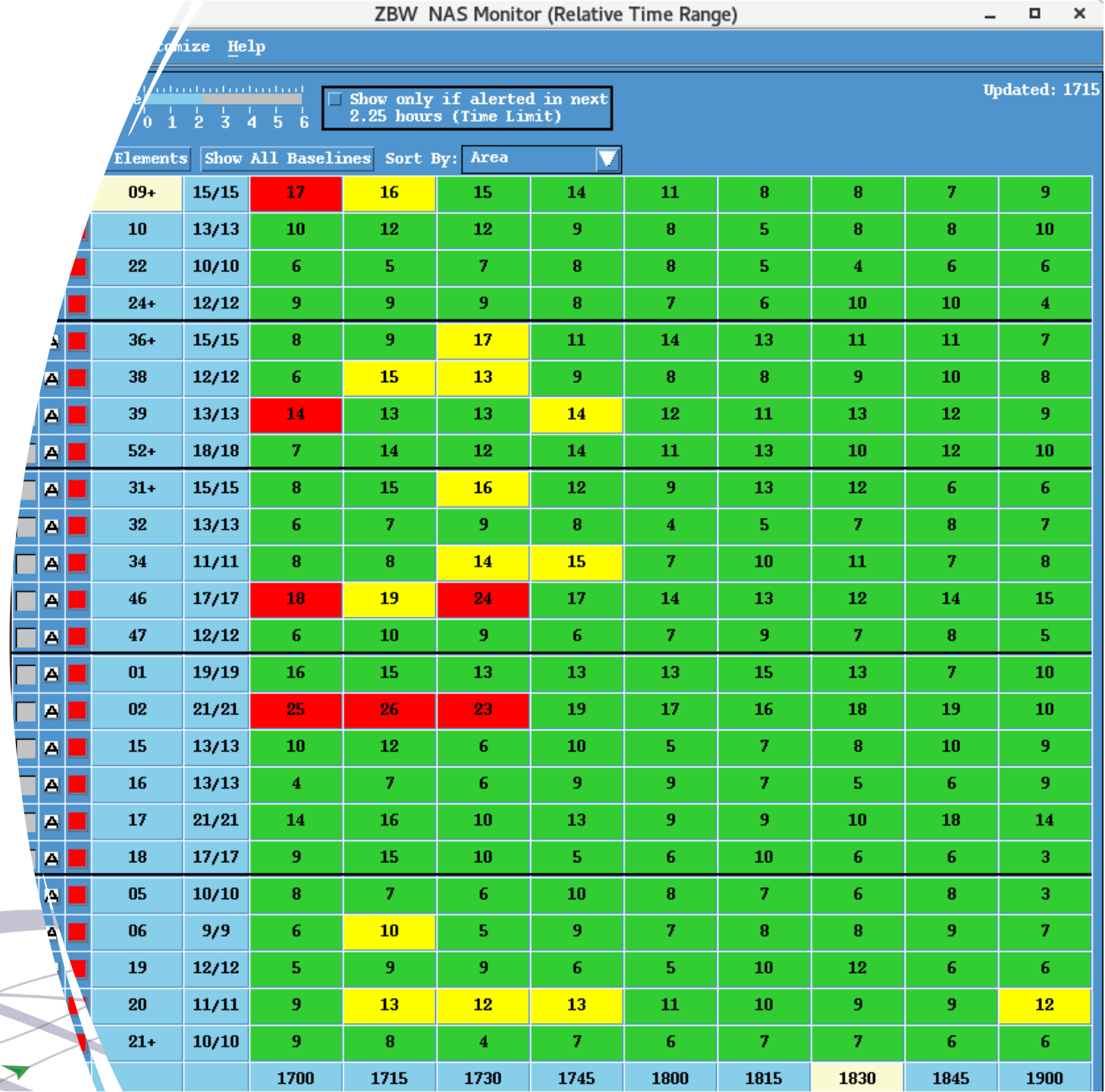
Thunderstorm Probability	
NONE (N)	Less than 25%
POSSIBLE (P)	25-54%
LIKELY (L)	55-74%
EXPECTED (E)	75% or greater

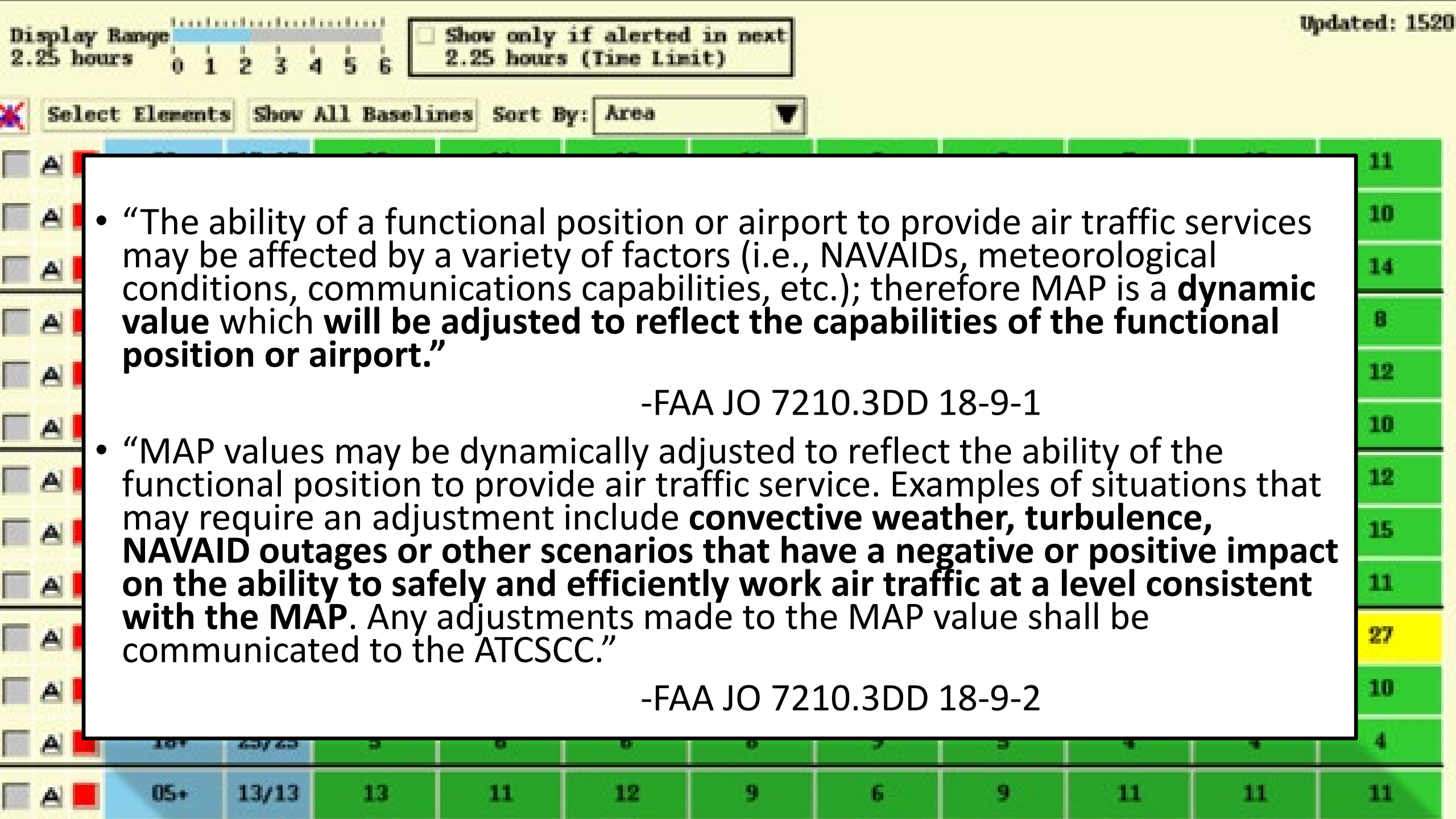
This is an experimental graphic for domestic fixes in ZBW. Graphic will be issued along with IDGF at 1230z/2230z daily. Comments to zbw.operations@noaa.gov.

Dynamic MAP Value Adjustment

Lessons Learned and Best Practices

Winter/Spring 2024





- "The ability of a functional position or airport to provide air traffic services may be affected by a variety of factors (i.e., NAVAIDs, meteorological conditions, communications capabilities, etc.); therefore MAP is a **dynamic value** which **will be adjusted to reflect the capabilities of the functional position or airport."**

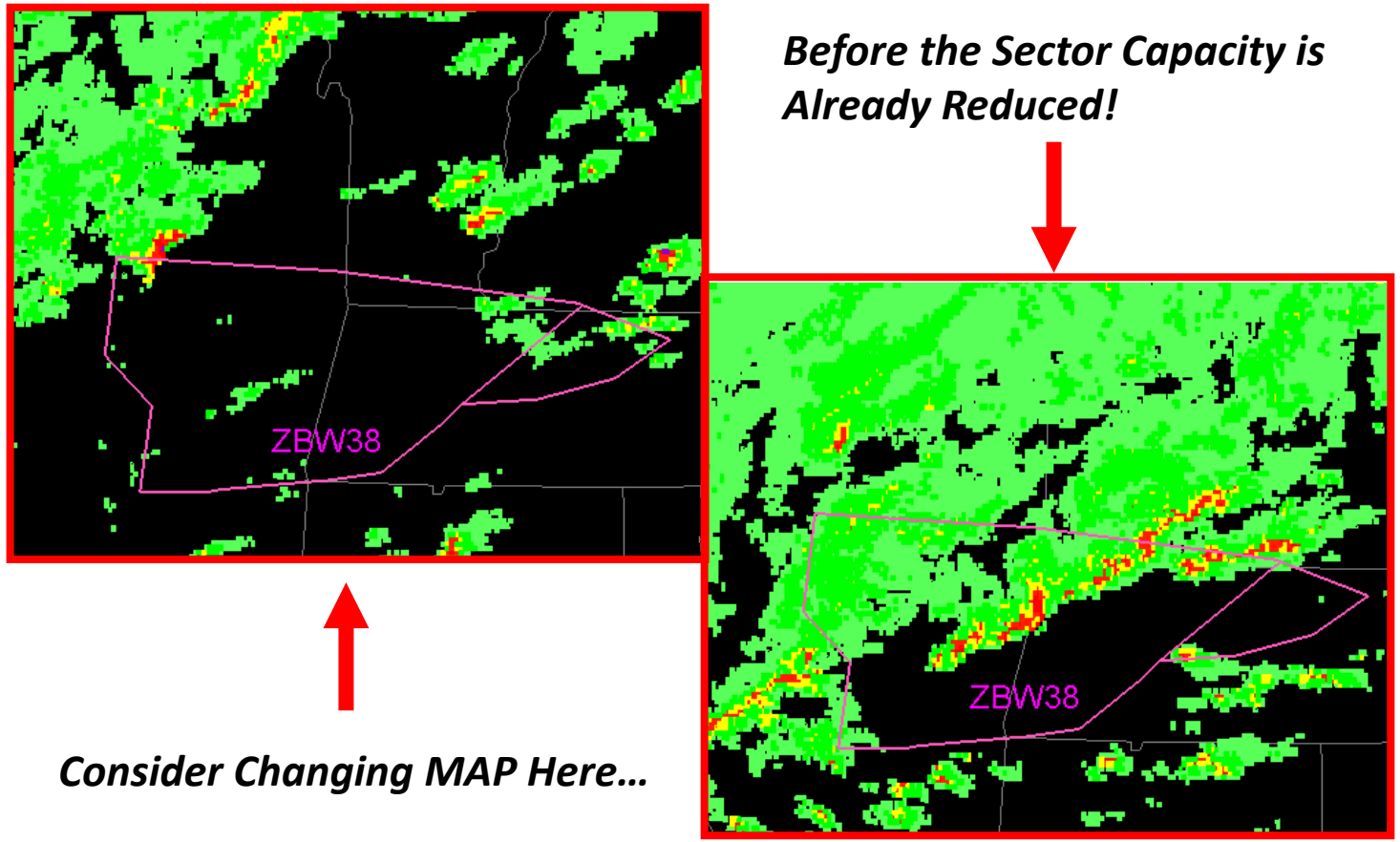
-FAA JO 7210.3DD 18-9-1

- "MAP values may be dynamically adjusted to reflect the ability of the functional position to provide air traffic service. Examples of situations that may require an adjustment include **convective weather, turbulence, NAVAID outages or other scenarios that have a negative or positive impact on the ability to safely and efficiently work air traffic at a level consistent with the MAP**. Any adjustments made to the MAP value shall be communicated to the ATCSCC."

-FAA JO 7210.3DD 18-9-2

Effective MAP Value Change Timeframe

- TMU is required to set the MA look-ahead value at least one hour into the future, with 1.5 hours to 2.5 hours being the recommended time frame.
- Lowering MAP values provides a **warning** of upcoming sector overload and will allow for TMI discussions and implementation to occur earlier and effectively.
  - Lowering MAP does not automatically reduce traffic…TMIs still need to be considered and implemented. Close the loop!
- Lowering the MAP value once the sector has already become saturated **will not** be effective in this situation. You are already behind the power curve!



Before the Sector Capacity is Already Reduced!

Consider Changing MAP Here…

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ZBW TMU SWAP Statement Procedures

- When the possibility of severe wx exists within ZBW, TMU will declare SWAP is in effect with ATCSCC and underlying facilities.
- TMU will coordinate with the ATCSCC when implementing SWAP procedures that affect other ARTCCs.
    - *This coordination should be completed at least **2 hours prior** to expected implementation.*
- ZBW TMU will send a Domestic and/or an International SWAP Statement to the ATCSCC. This statement will list:
    - **Expected airspace impacts.**
    - **Developed shared FEAs representing airspace impacts.**
    - **Possible route closures.**
    - **Effective times of constraints.**
    - **Expected routing alternatives including applicable Coded Departure Routes (CDRs) and playbook routes.**

```
THIS ADVISORY IS FOR PLANNING PURPOSES ONLY. CUSTOMERS ARE
ENCOURAGED TO FILE NORMAL ROUTINGS AND ANTICIPATE THE SPECIFIED
ALTERNATE ROUTES.

SWAP STATEMENT:

SEVERE WEATHER AVOIDANCE PLANS ARE EXPECTED FOR THE ZBW AIRSPACE:

CLUSTERS/BROKEN LINES OF SHRA/TS EXPECTED TO DEVELOP AFTER 1900Z
OVER EASTERN PA AND EXPAND/MOVE FROM 22020KTS. MAX TOPS FL300-350.
SIGNIFICANT IMPACT TO NY METRO TRAFFIC ACROS SOUTHERN ZBW,
ESPECIALLY AFTER 2200Z.

PLANNED ALTERNATE DEPARTURE ROUTES:

CDRS FOR HYLND, PATSS, BLZZR, REVSS, SSOXS MAY BE UTILIZED AS ROUTES
ARE IMPACTED.  ZBW DEPARTURES FILED VIA Q75, Q448, Q480, Q406. J174,
Q439 MAY BE SWAPPED AFTER 1900Z.  FLIGHTS TO DC METRO AIRPORTS MAY
BE ROUTED VIA HNK OR SYR.  CAN ROUTES ARE NOT EXPECTED.
```

Coded Departure Routes (CDRs) Advisory During SWAP

- CDRs are used by TMU to rapidly amend routes, and used by towers and participating airlines for abbreviated clearances.
- Once notified of impending SWAP conditions, airline dispatchers will provide flight crews with appropriate CDRs, one of which should be ‘normal’ routing to facilitate clearing an aircraft back through the original departure gate once SWAP is terminated.
- Towers will issue an abbreviated CDR using the phraseology “(call sign), revised routing, cleared to (destination) via (CDR name), (appropriate departure procedure).”
- **During a severe weather event, ZBW TMU will call ATCSCC SVRWX and advise BOS will be in CDR swap from XXXX-XXXX. ATCSCC will issue an FYI Advisory.**

Florida Alt Rte CDRs:

F2, F4, F8, F9, FN	**F**LORIDA 2, J**4**8, J**8**0, Q2**9**, H**N**K
S5	**S**NOWBIRD **5** RTE
DW	**D**eep **W**ater Rte
PL	**P**REF **L**AND RTE

FLIGHT PLAN FORMAT EXAMPLE:

FP N123 B767/Q 400 BOS P1200 350 BOSATLPJ

ROUTE AMENDMENT FORMAT EXAMPLES:

AM CID 6 DEPJ 10 ROUTE CODE↓ 11 o FRC

AM 785 6 BOS 10 BOSATLPJ↓ 11 o FRC

ATCSCC Advisory

ATCSCC ADVZY 042 DCC 03/23/2023 ROUTE FYI

MESSAGE:
NAME: ORD_MDW_CDRS_SWAP
CONSTRAINED AREA: ZAU
REASON: WEATHER
INCLUDE TRAFFIC: KMDW/KORD DEPARTURES TO UNKN
FACILITIES INCLUDED: ZAU/ZID/ZMP/ZKC/ZOB
FLIGHT STATUS: ALL_FLIGHTS
VALID: ETD 231230 TO 231700
PROBABILITY OF EXTENSION: MODERATE
REMARKS:
ASSOCIATED RESTRICTIONS:
MODIFICATIONS:
ROUTES:

ORIG	DEST	ROUTE
KORD KMDW	UNKN	CDR RTE:DEPARTURES CAN EXPECT CDRS/SWAP DUE TO WEATHER. USERS SHOULD FILE NORMAL ROUTES BUT FUEL ACCORDINGLY.

EFFECTIVE TIME: 231230 - 231700
SIGNATURE: 23/03/23 12:38

Putting It All Together:

NASOperations
ATOSysOps

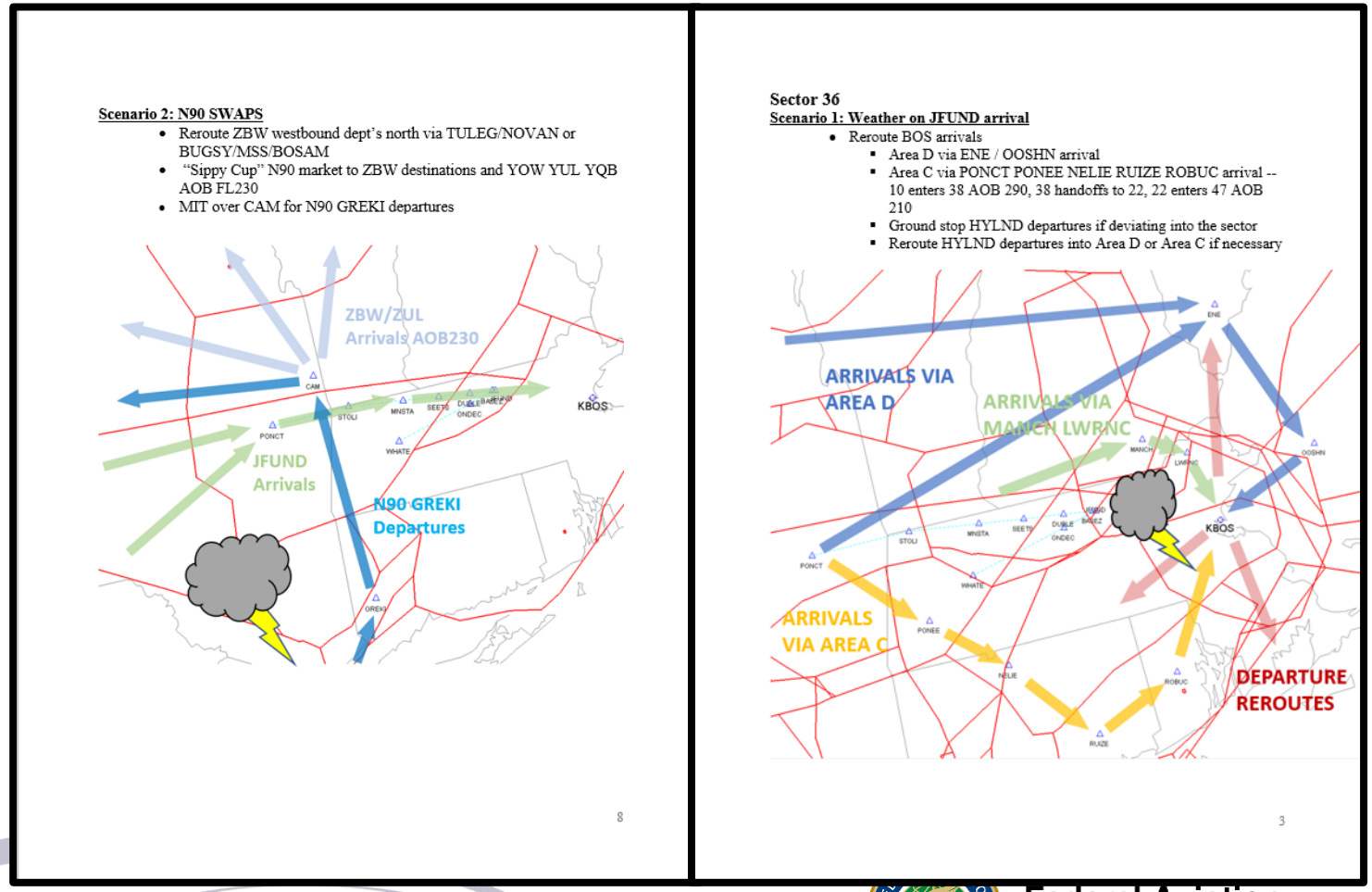
Scenario Guidebooks and Playbooks

Federal Aviation Administration

Area Scenario Guidebooks

NASOperations
ATOSysOps

- Developed Collaboratively with Reps, TMU OS Liaisons and TMU – developed for SWAP. **Please use them!**
- Contains commonly seen scenarios specific to each Area, in addition to the sector TMI guidebooks
- Intent is to provide generic outlines for TMU & OSIC/CICs to reference when formulating a plan
- Binders located at each OS Desk and TMU and in ERIDS



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Reducing Delays from NY to BOS

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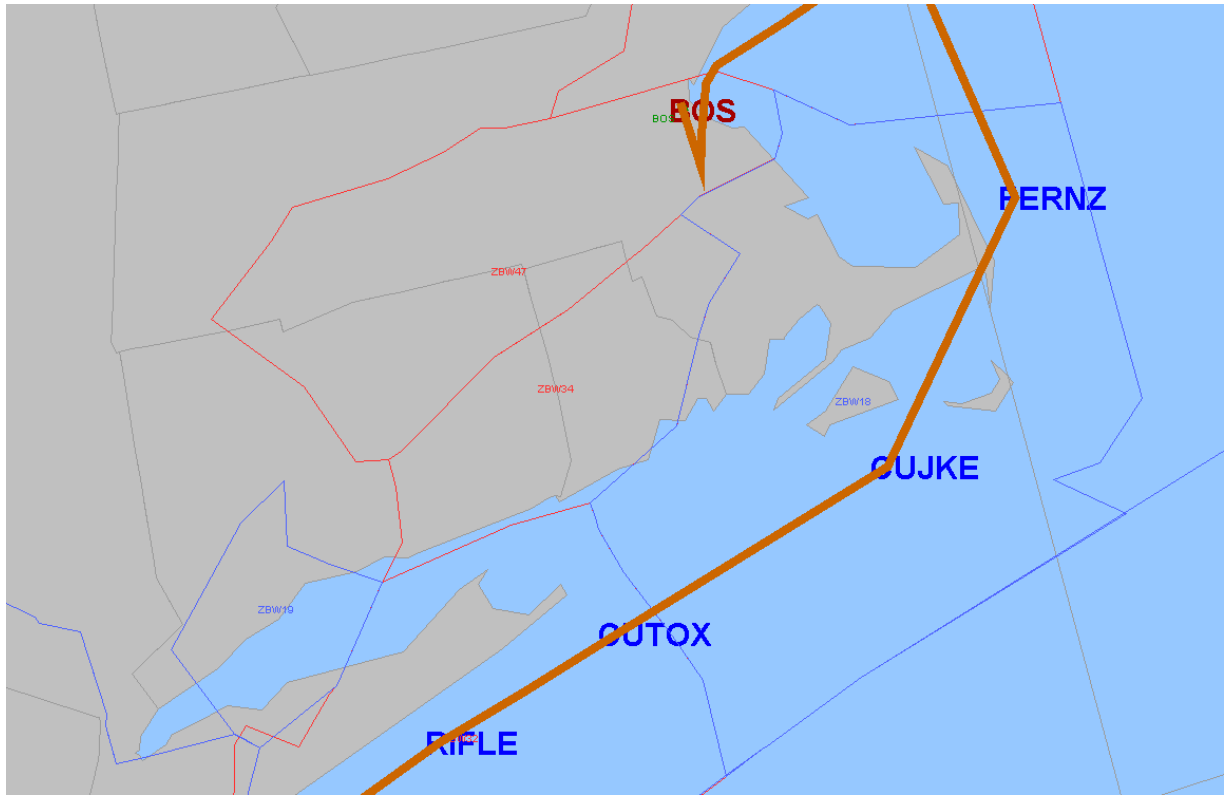
- **N90 to BOS via OOSHN**
  - During a BOS GDP, accompanying MIT to BOS over PROVI due to demand can cause delays in excess of an hour out of NY when coupled with a GDP/EDCT delay
  - **Solution**: Offload N90 departures to the lower-demand OOSHN arrival, via BETTE RIFLE OOSHN5
  - **Alternatives**: Deep water routes via OWENZ/SHIPP FLUTE ACK FERNZ OOSHN5
  - **Reminder**: ATCSCC has issued guidance stating that the NY airports should ***not*** be exempted from a BOS GDP unless surface constraints exist at those airports and an exemption would be to their benefit
  - Coordinate with everyone!



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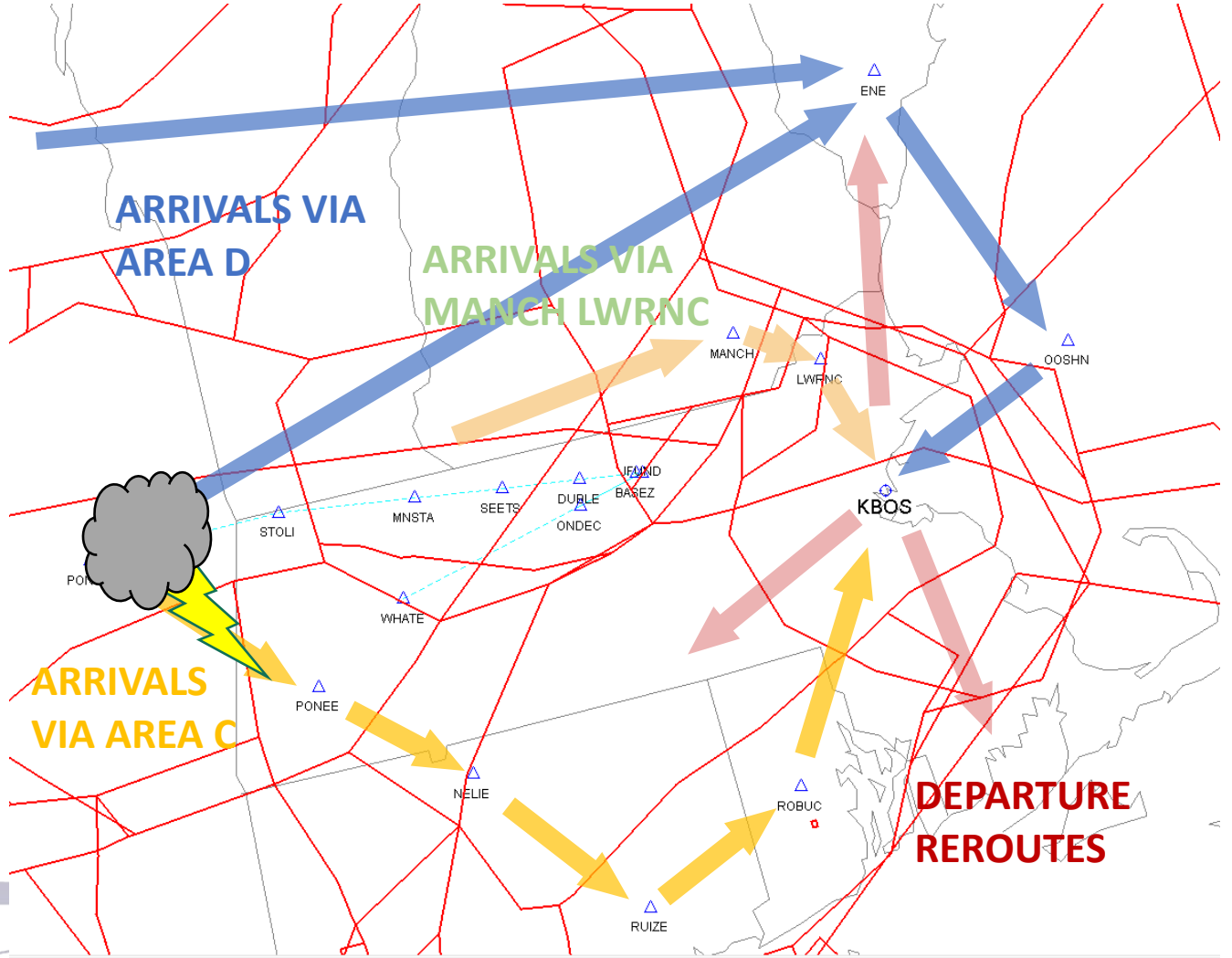
Sector 36:
Weather on JFUND Arrival

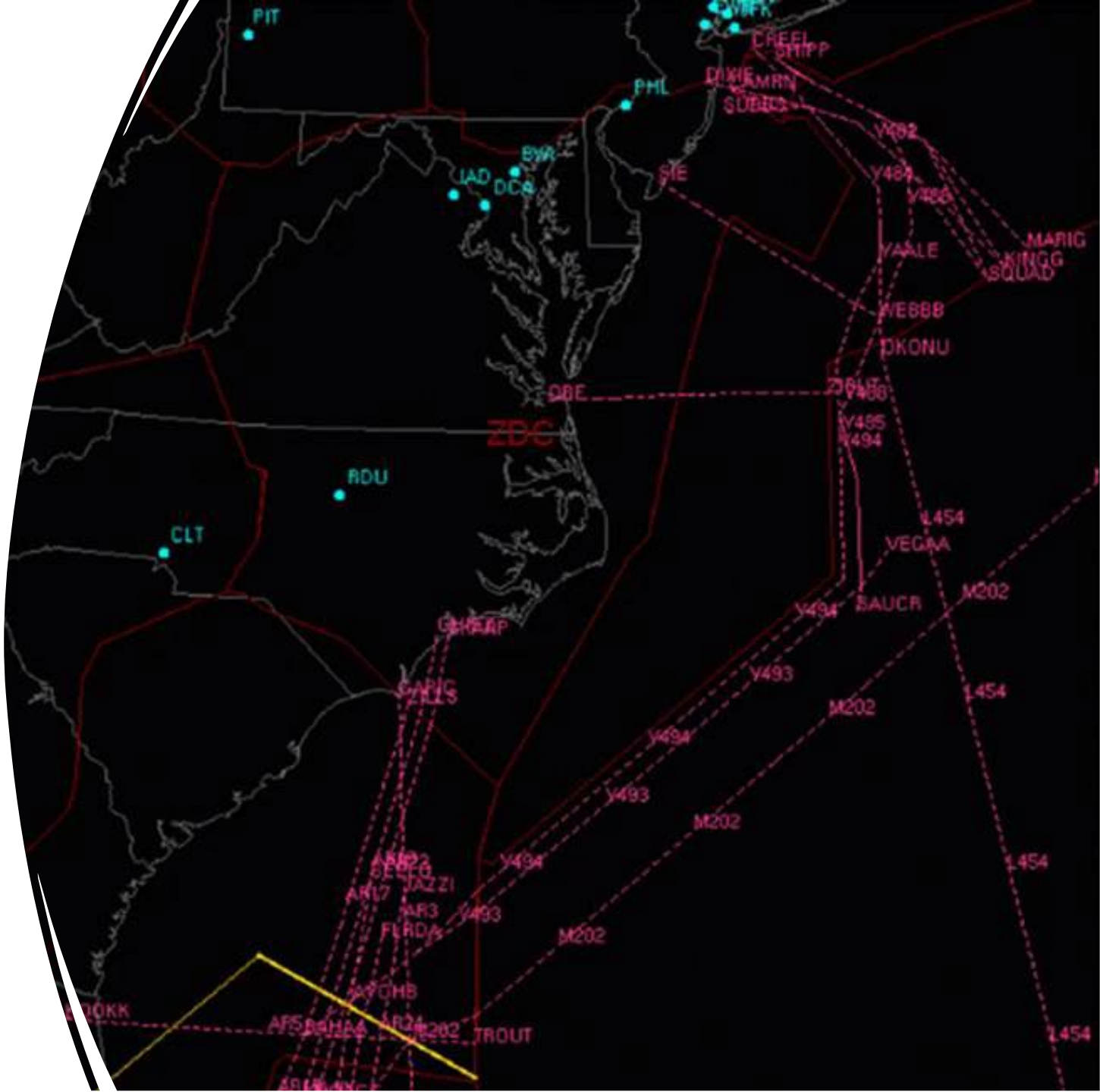
- **Weather on the JFUND arrival will significantly impact operations. If the weather is west of MNSTA, MIT and deviations may be all that is needed. MIT pass back to Area A, and possibly ZOB, can slow the volume to allow for JFUND deviations that do not need reroutes.**
- **If the weather is east of MNSTA, the arrival may have to be stopped and have flights rerouted. Reroute BOS arrivals via:**
  - Area D - ENE OOSHN arrival
  - Area C - PONCT PONEE NELIE RUIZE ROBUC arrival.
  - A90 - MANCH LWRNC KBOS. This is not a normal route and will need to be approved prior to implementation.

  NOTE: These reroutes can cause increase in volume in adjacent sectors, coordinate appropriately.
- **JFUND arrivals deviating north can impact Sector 37 and the BOS HYLND departures. If conflictions between these streams occur:**
  - Ground stop HYLND departures
  - Reroute HYLND departures into Area C or D.
  - MIT over HYLND, or MINIT off KBOS can help also.



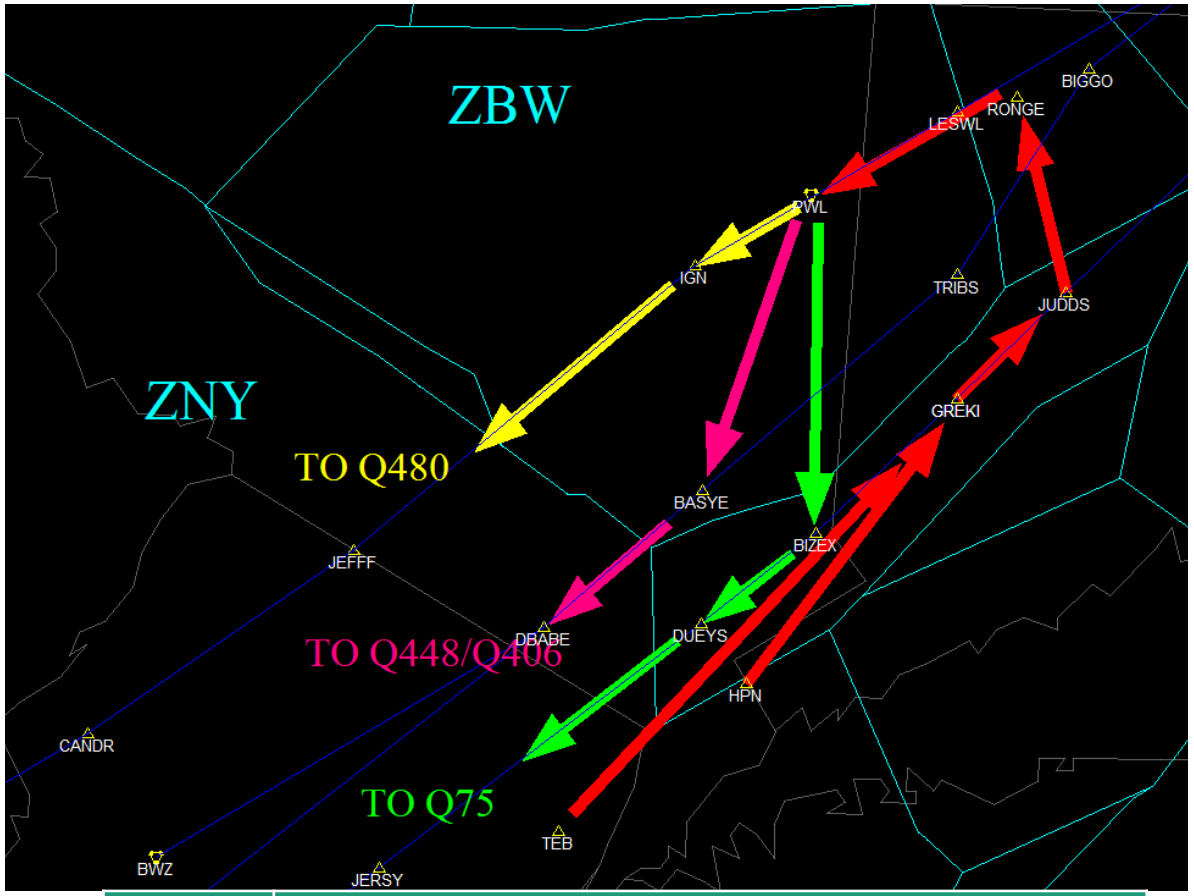
WATRS Route Option

- We have worked with ZNY and will encourage the use of the under-utilized deep water routes (“*DW*” CDRs) as much as possible during SWAP to avoid constraints along the east coast
- We cannot actively force flights onto these routes due to aircraft equipment limitations, but this option is often overlooked to avoid delays.
- If operators can continue to file over the water, we will ensure not to amend their routes unless instructed/requested to do so.



TEB/HPN Escape Route Initiative

- High-performance jets to utilize GREKI then to west-gate airways during volume or weather-related events.
  - Industry briefed that participating aircraft must be capable of crossing the ZNY/ZBW boundary AOA FL260.
- Use of these reroutes will be by consensus of the N90, ZBW and ZNY Traffic Management Units.
- Can't be used GREKI/CAN reroutes are in effect; GREKI/CAN SWAPs have priority
- If there is miles-in-trail in effect, N90 TMU will CFR with ZBW TMU.
  - TEB/HPN should be able to be scheduled via EDC.
- Utilization of these reroutes will be limited to **no more than 2 departures per hour**, managed by N90 TMU, unless otherwise coordinated.



Airway	Departure Routing To Join
Q75	..GREKI..JUDDS..RONGE..PWL..BIZEX.Q75.BIGGY..
J48	..GREKI..JUDDS..RONGE..PWL..BASYE.Q448.LANNA..
J6	..GREKI..JUDDS..RONGE..PWL..BASYE.Q406.BWZ.J6.
Q480	..GREKI..JUDDS..RONGE..PWL..IGN.Q480.
Q42	..GREKI..JUDDS..RONGE..PWL..IGN.Q480.MIKYG.Q42.
J60	..GREKI..JUDDS..RONGE..PWL..IGN.Q480.CANDR.J60.DANNR
J64	.GREKI..JUDDS..RONGE..PWL..IGN.Q480.CANDR.J60.DANNR..RAV .J64.

Area A Guidebook Refresher

Scenario A1: Sector 24 - ZNY Requests PCT Traffic over HNK at FL220

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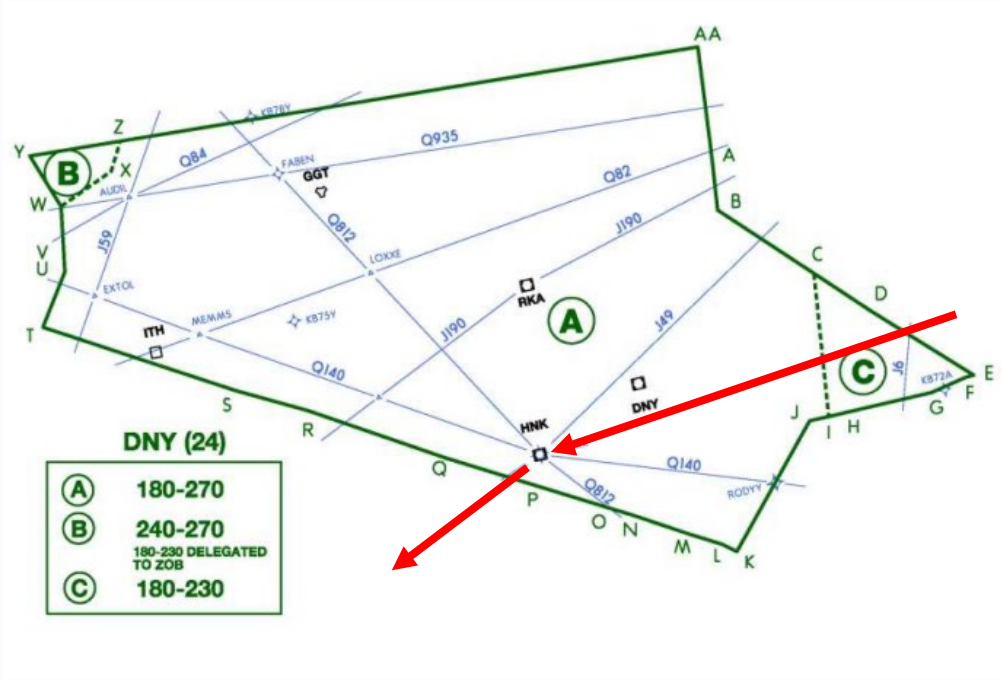
- Whenever traffic to PCT is rerouted over HNK, ask ZNY if they need the traffic at or below FL220. Be very specific when relaying information to the Areas because sometimes not all the PCT area airports needs to be rerouted and/or descended. This scenario creates numerous head-on descending conflictions around HNK.



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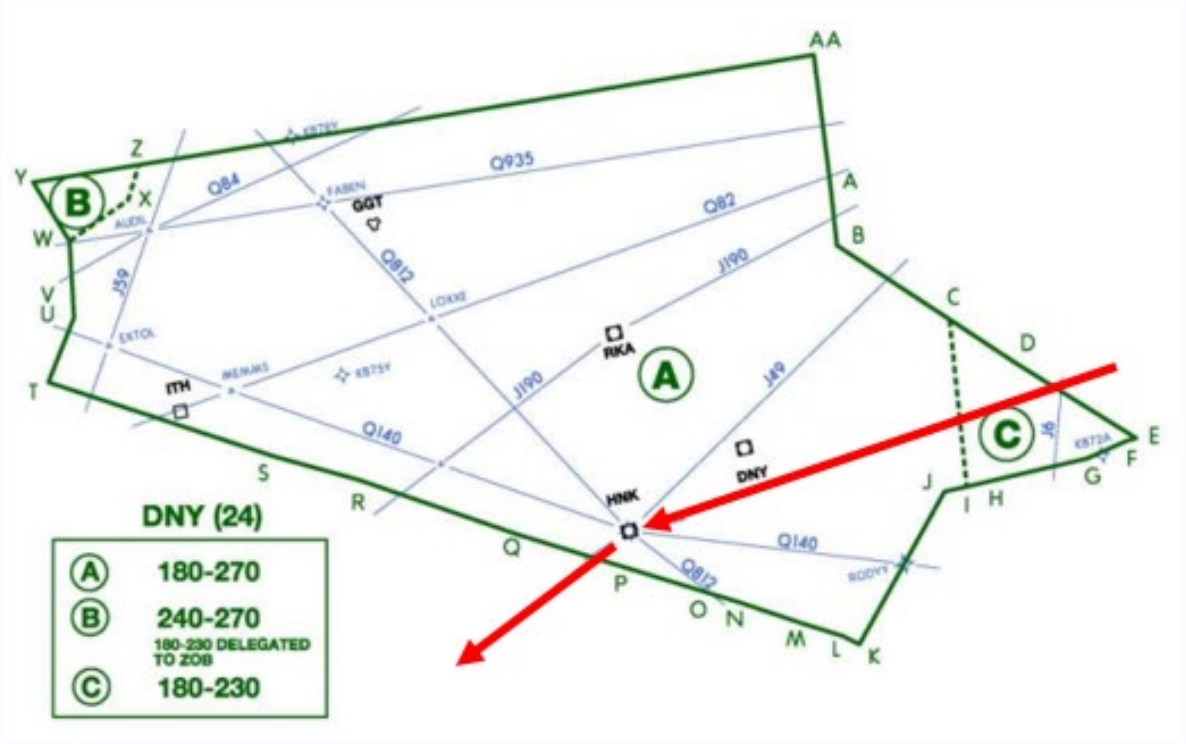
Scenario A1: ZNY Requests PCT Traffic over HNK at FL220 Continued

- PCT Traffic from Area B shall enter Sector 24 at or below FL260. PHL traffic should be below PCT traffic.
- LGA offloads create a major confliction point east of RKA. Increase LGA MIT from ZOB.
- Increase MIT for TEB/EWR from ZOB
- Consider rerouting ALB departures filed HNK PSB over SYR PSB/JHW instead.
- If there are any deviations in Sector 24, consider lowering MAP value and increasing MIT for all flows.
- Consider rerouting PHL traffic over CFB SPUDS-STAR to reduce PHL MIT requirements. Also, consider additional routing such as PUPPY CFB as depicted in **Scenario A3** so Sector 08 can do the PHL sequencing. Area B should deliver PHL traffic to Sector 08 in this situation and Sector 08 would deliver to Sector 24 at or below FL220. GRIMM airspace may interfere with this. Staffing may not allow Sector 8 to open, which would most likely negate this item.



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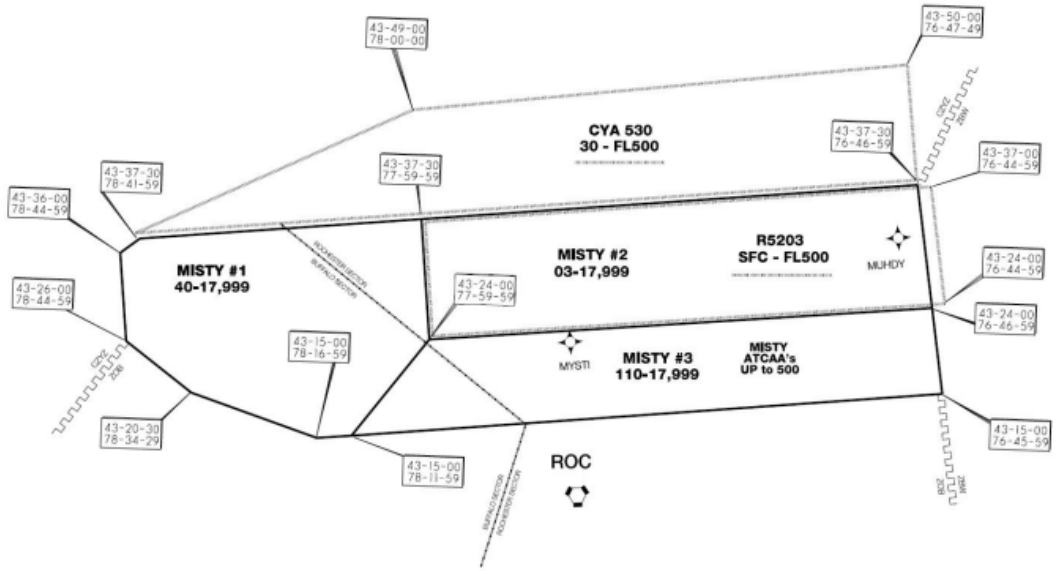
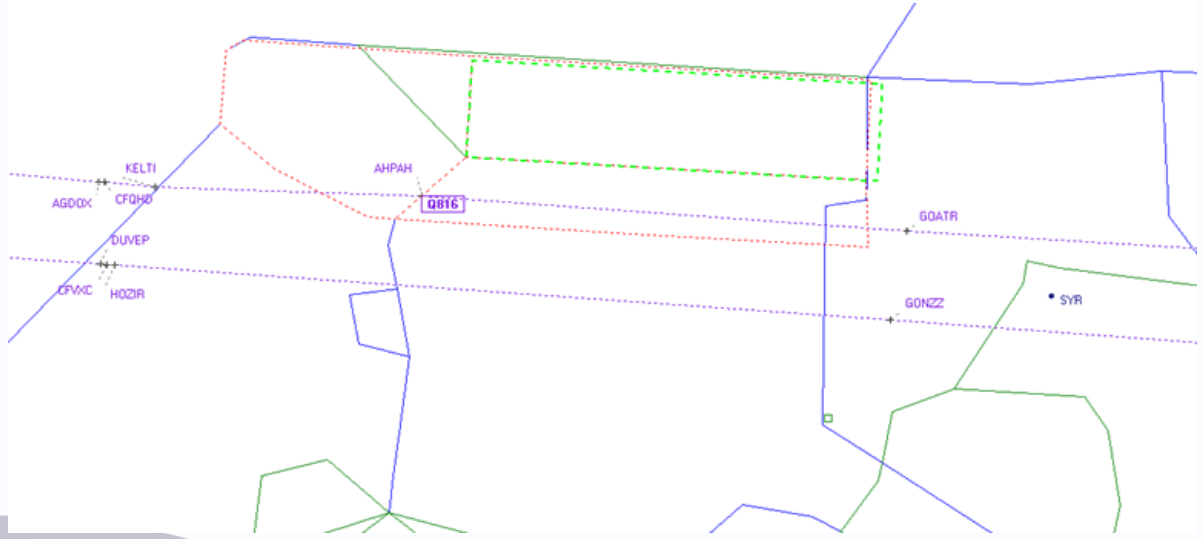
Scenario A2: MISTY ATCAAs active above FL230 interfering with Q816

- The MISTY airspace is normally FL230 and below. It is always considered HOT by ZOB regardless of user activity. When scheduled, please reroute planes off Q816.
- Traffic routed northwest bound via Q140 may be routed WAYGO TULEG ZOHAN
- Traffic routed westbound may be rerouted to Q822.
- Consider lowering MAP value, as complexity will increase





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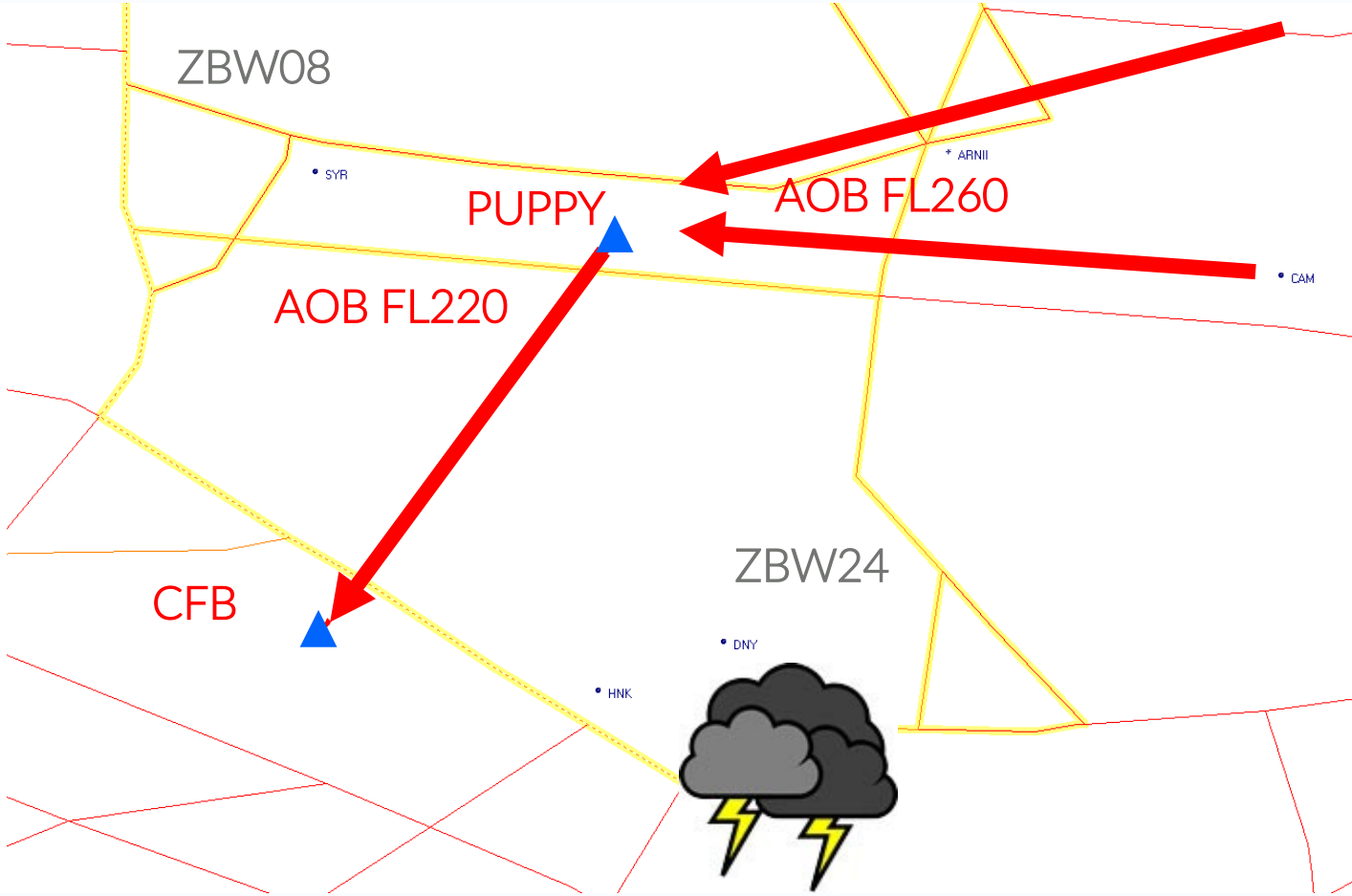
Scenario A3: PHL Reroutes for Sector 24 Complexity with Weather

NASOperations
ATOSysOps

- When Sector 24 is busy taking offloads from ZOB and has weather deviations, it can be difficult to work any westbound traffic over DNY, primarily PHL arrivals.
- Attempt to reroute PHL traffic via BRIGS JIIMS. Other DNY traffic should be rerouted away from the sector to alleviate some complexity.
- If a coastal route is not available, PHL traffic from the east could be rerouted from Areas B, C or D to enter Sector 08 AOB FL260. This route will be tactical, based on numerous factors such as the GRIMM ATCAA or weather.
- The idea is to have the PHL traffic enter Sector 24 from Sector 08 beneath all the N90 arrivals (AOB FL220), and from a more northerly direction, away from the southeast side of the sector. A suggested route would be **direct PUPPY CFB SPUDS4 KPHL, entering Sector 08 AOB FL260.** The Area A OSIC/CIC and TMU coordinate together on this.
- TMU should create a local tactical reroute for any airborne inventory.



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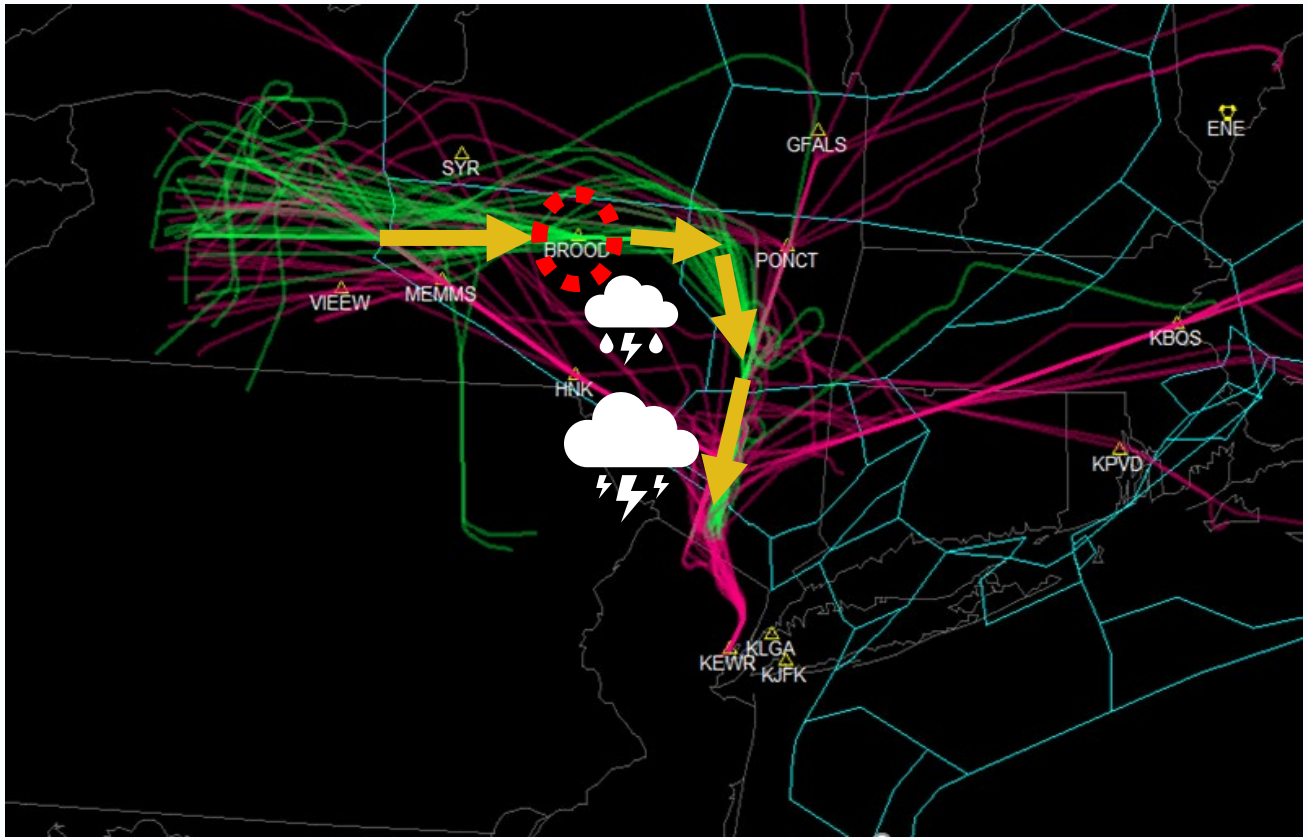
Scenario A4: Reroute N90 Arrivals Via BROOD ALB

NASOperations
ATOSysOps

- When weather impacts the Sector 24/05 boundary, consider having ZOB/ZNY reroute N90 arrival traffic via BROOD ALB to join the arrival routes from ALB. This greatly reduces Sector 24's complexity.
- Traffic can either enter Sector 24 per the ZOB/ZBW LOA, or be further stratified with MIT:
  - LGAs on top (ALB HAARP3 KLGA)
  - EWR/HPN as-one, below LGA
    - ALB FLOSI4 KEWR
    - ALB VALRE5 KHPN.
  - EWR SATS/ALB/SWF as-one, below the rest
    - ALB V489 COATE KTEB/KMMU/KCDW
    - ALB V123 TRESA KSWF
  - If needed, JFK could be added via BROOD ALB IGN IGN1, above everything else.
- This play should be put into place early, as Sector 24 could clear planes direct WEARD/HELON/FILPS/IGN as they clear the weather. As the weather moves east, traffic can remain over ALB.



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Area B Guidebook Refresher

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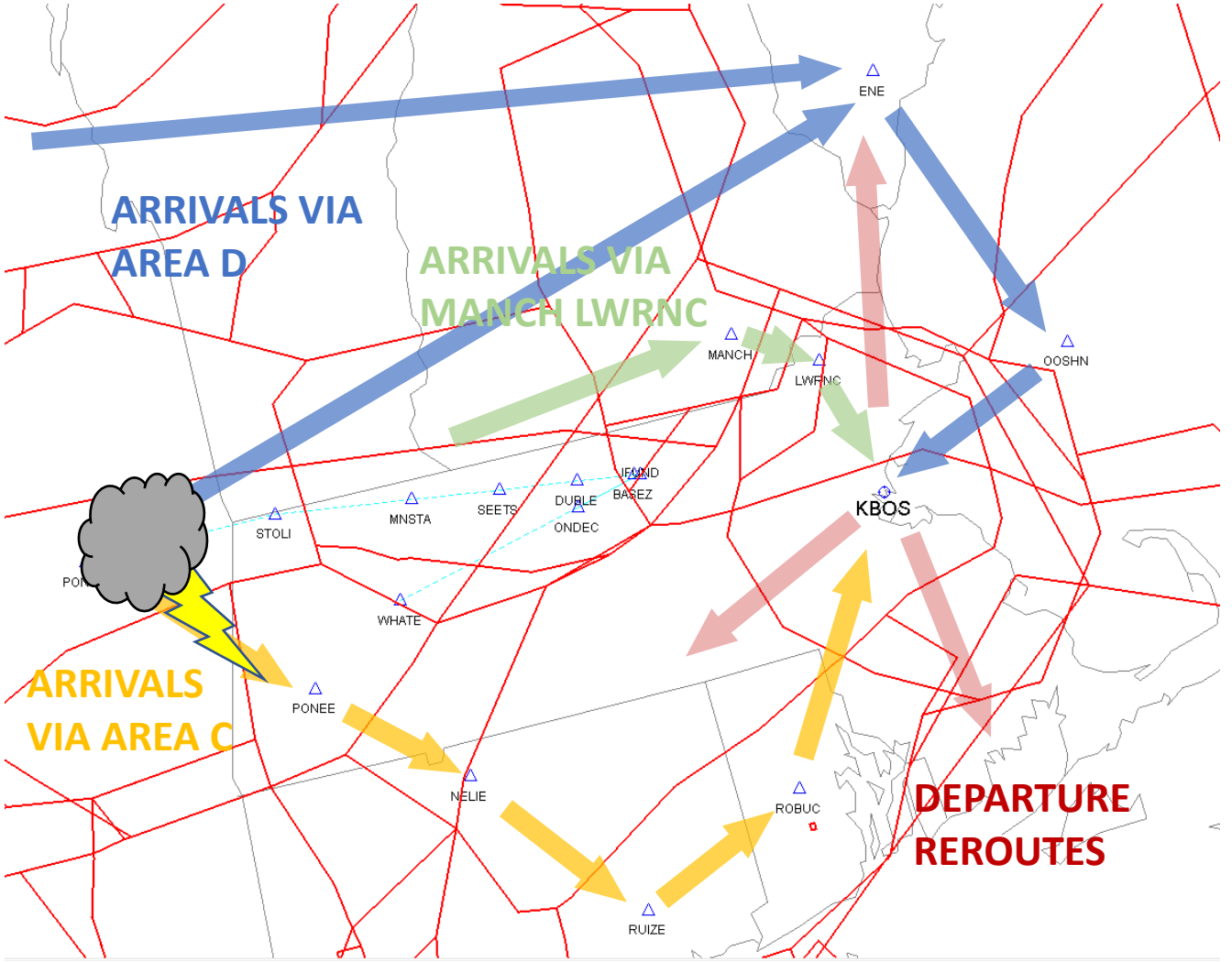
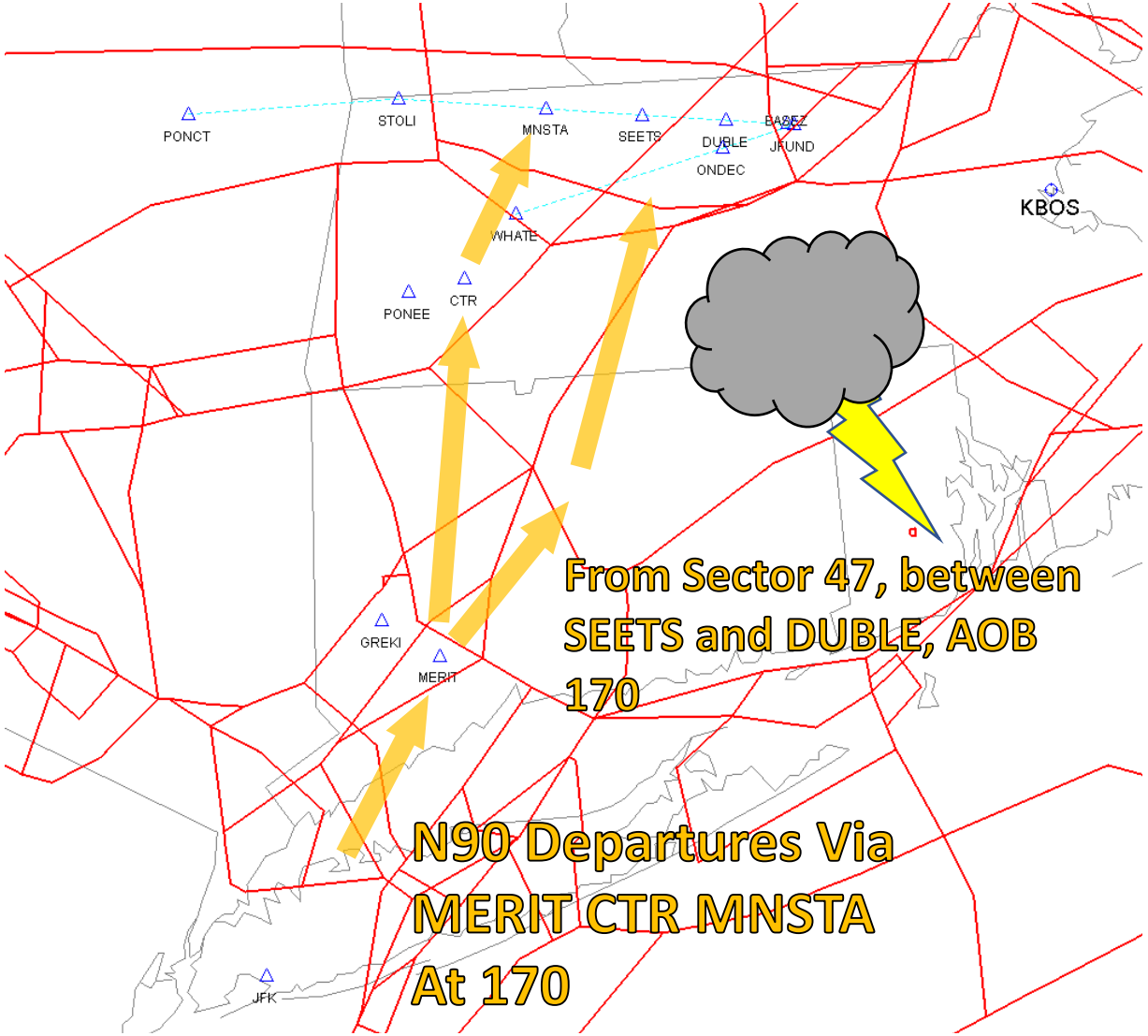
Sector 36:
Weather on JFUND Arrival

- **Weather on the JFUND arrival will significantly impact operations. If the weather is west of MNSTA, MIT and deviations may be all that is needed. MIT pass back to Area A, and possibly ZOB, can slow the volume to allow for JFUND deviations that do not need reroutes.**
- **If the weather is east of MNSTA, the arrival may have to be stopped and have flights rerouted. Reroute BOS arrivals via:**
  - Area D - ENE OOSHN arrival
  - Area C - PONCT PONEE NELIE RUIZE ROBUC arrival.
  - A90 - MANCH LWRNC KBOS. This is not a normal route and will need to be approved prior to implementation.

  NOTE: These reroutes can cause increase in volume in adjacent sectors, coordinate appropriately.
- **JFUND arrivals deviating north can impact Sector 37 and the BOS HYLND departures. If conflictions between these streams occur:**
  - Ground stop HYLND departures
  - Reroute HYLND departures into Area C or D.
  - MIT over HYLND, or MINIT off KBOS can help also.

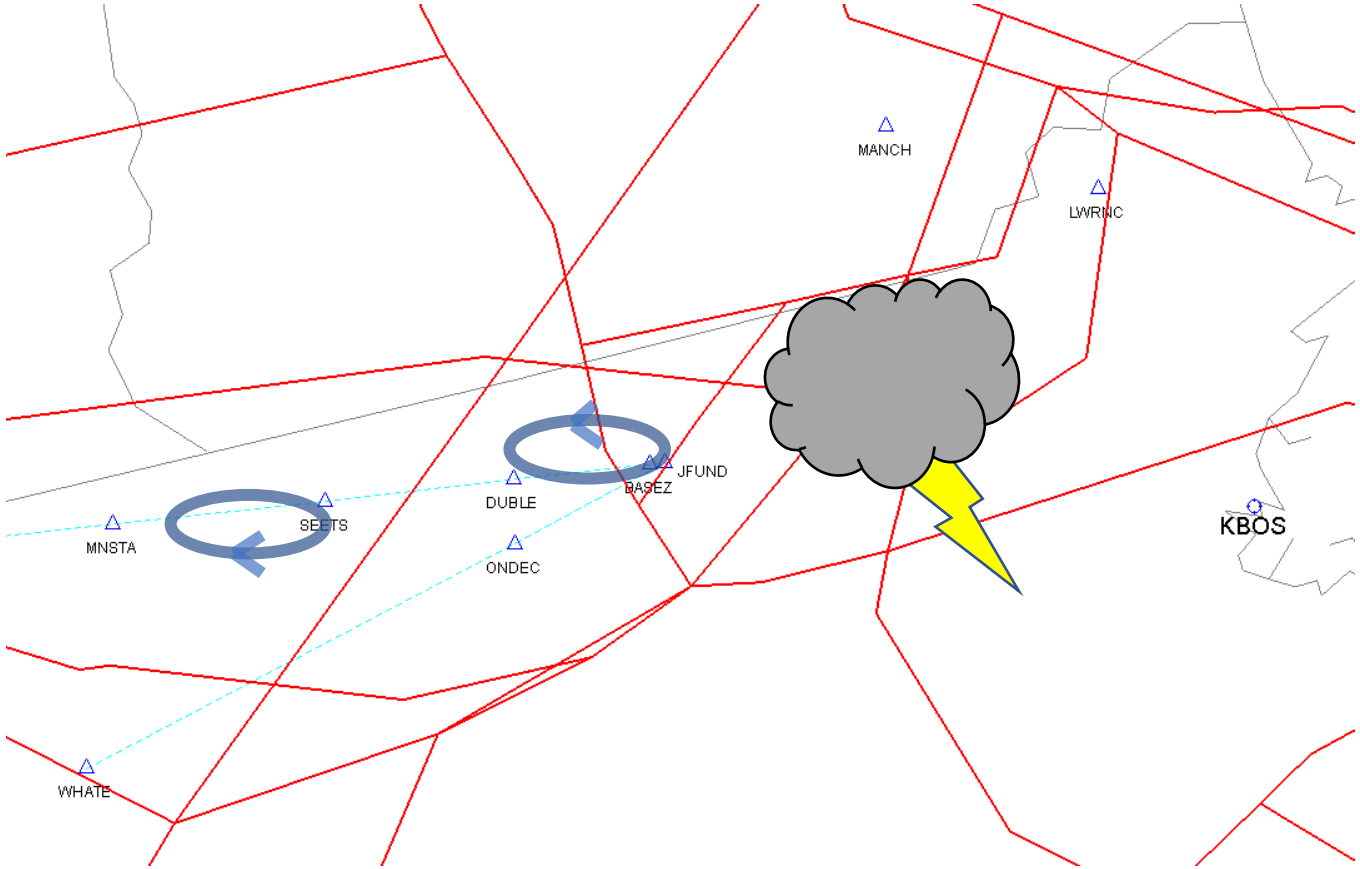


Sector 36 :
JFUND Offloads



- **N90 to BOS offloads from Sector 19 via JFUND**
  - If coming from Sector 19 out of N90, consider routing via MERIT CTR MNSTA, to enter Sector 36 at 170.
- **Low Altitude BOS arrivals from Sectors 34/47**
  - If flights are south of ONDEC area, they should be direct SEETS, no further than DUBLE, AOB 170.

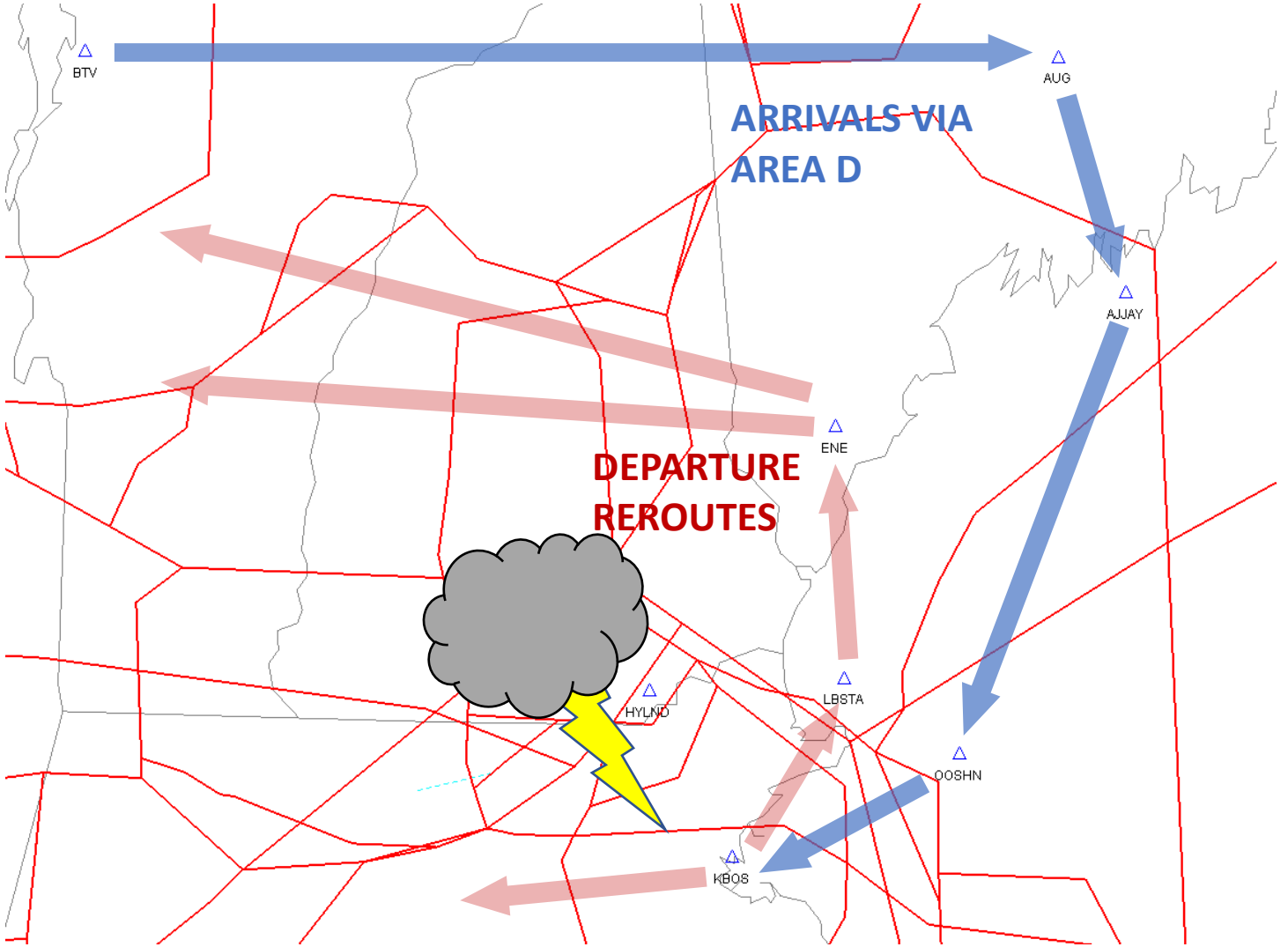
Sector 36: BOS Holding



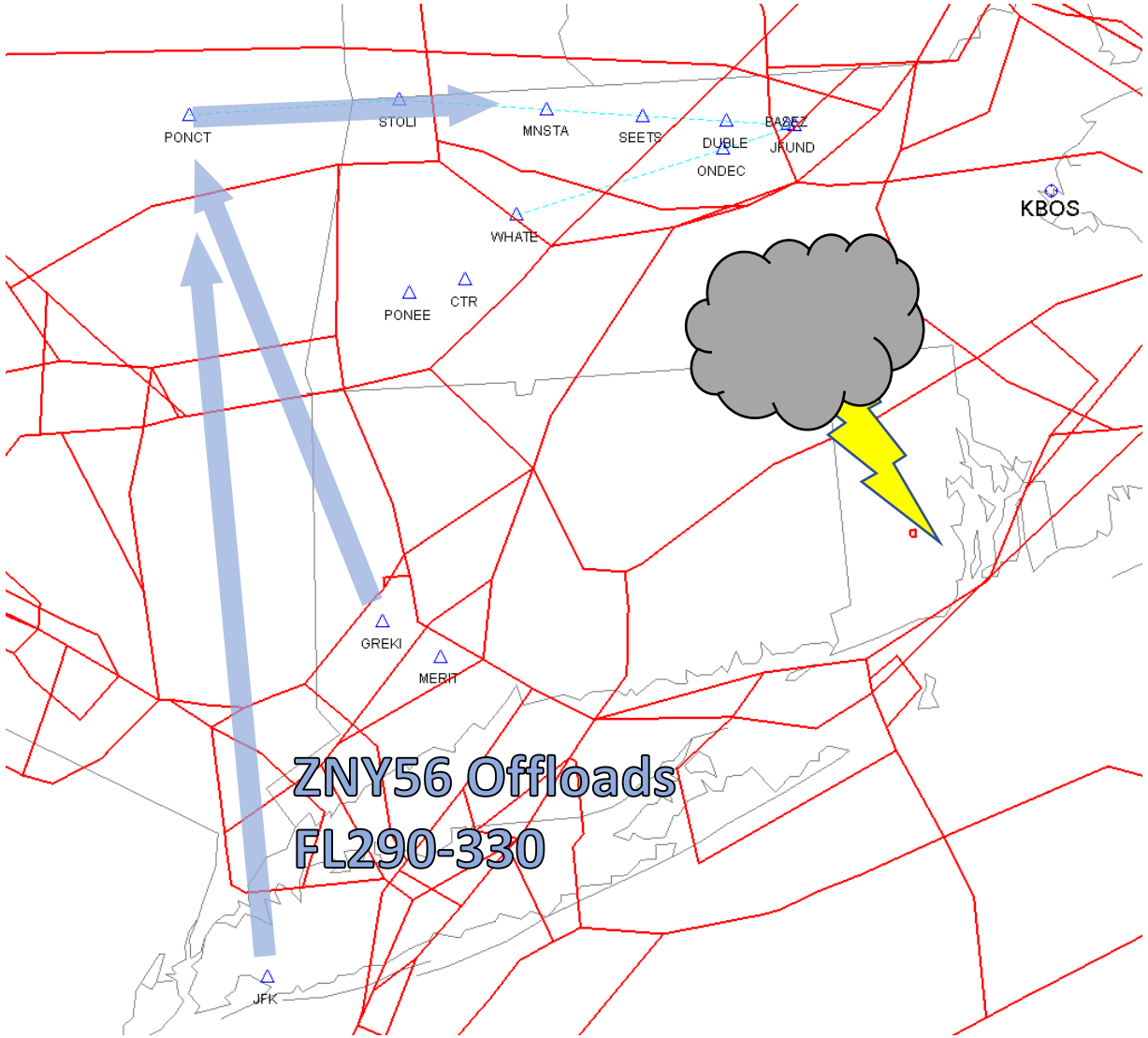
- Sector 36 can hold 4-6 aircraft at SEETS and possibly another stack at JFUND, before rerouting airborne traffic or holding in Sector 38 is required.
- While holding, monitoring the flow and reducing the volume of traffic becomes a priority to protect the sector from overload. Proactively prepare adjacent sectors to hold if necessary.

Sector 37:
Weather over HYLND

- **Reroute HYLND Departures into Area D or Area C.**
  - These routes may also not be conventional, so working closely with TMU and the adjacent sectors will be needed.
  - If routed into Area D, move ENE OOSHN flow to DINES or ART BTV AUG AJJAY OOSHN to provide route separation.
- **MIT over HYLND or MINIT off KBOS**
  - Will reduce volume in sector to ease the strain of any deviations.
- **Ground stop HYLND Departures**
  - Avoid conflictions with JFUND arrivals when either flow is deviating



Sector 38 :
JFUND Offloads



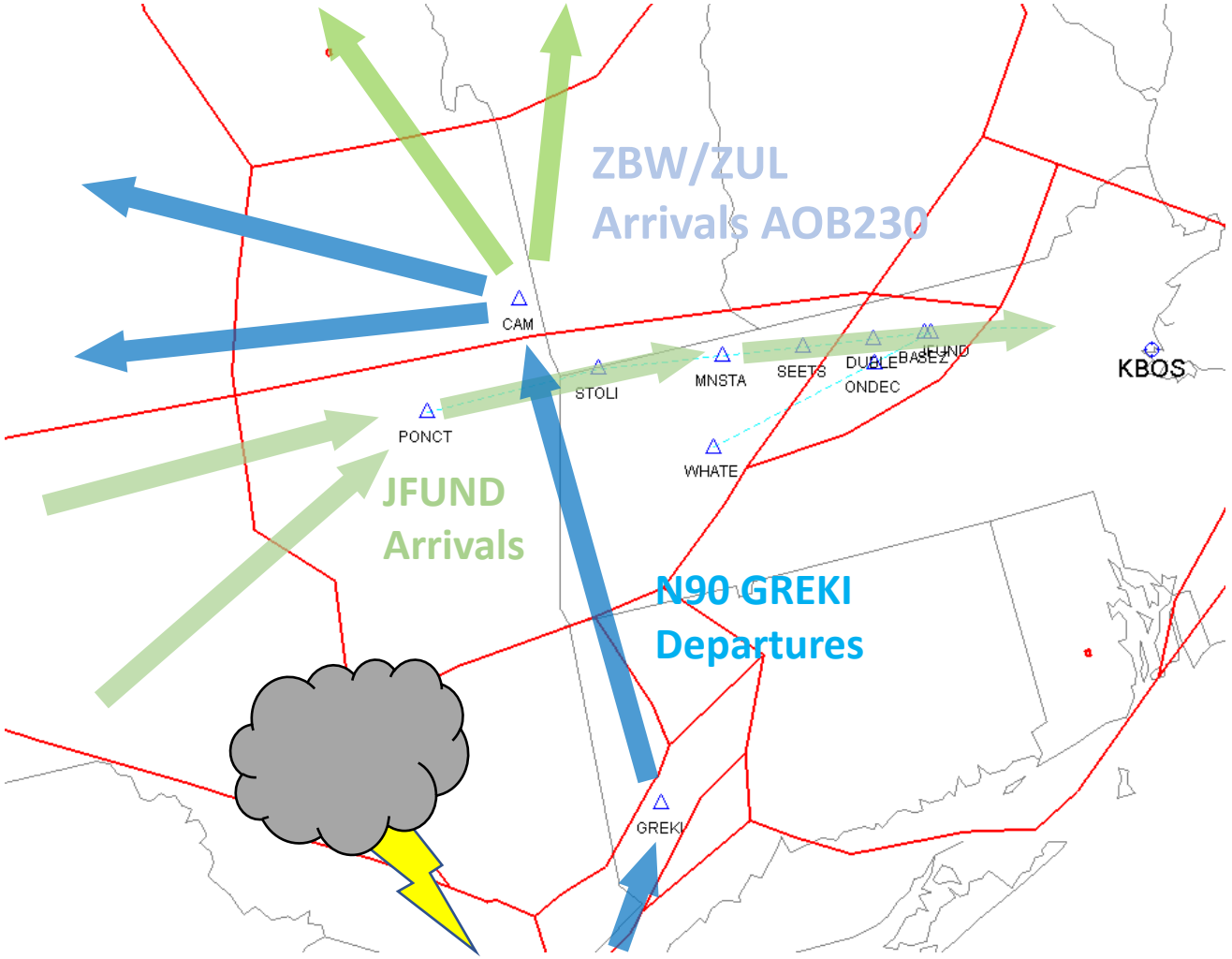
- **From Sector 20 (High altitude arrivals from ZNY56)**
  - Coordination will occur between Area B, E, and TMU before Area E starts offloading
  - Aircraft should be cleared direct PONCT, to enter Sector 38 between FL290-330, similar to Sector 10 restrictions
  - GREKI PONCT or JFK PONCT, depending on where they're coming from and what the weather is doing.
  - If CTR HNK starts to conflict with this offload, consider tunneling those flights through Sector 22, AOB FL230, until clear of Sector 38. This requires Area E and A coordination.
  - TMU/Area B may need to have Area A deliver PONEE traffic to Sector 38 at FL280 due to the BOS offloads entering around FL290

Sector 38: N90 SWAPS

When SWAP is in effect because weather is impacting N90 westbound departures, Sector 38 often sees a large increase in volume and complexity. GREKI departures climb northbound to CAM, crossing BOS arrivals that are starting their descent profile.

- **MIT on BOS JFUND Arrivals and N90 Departures Over GREKI**
  - Provides more room to be able to climb and descend more comfortably.
- **Altitude Cap ZBW/ZUL Arrivals AOB FL230**
  - Keeps these arrivals below Sector 38 to reduce complexity and volume.
  - Also known as the Area B “Sippy Cup”

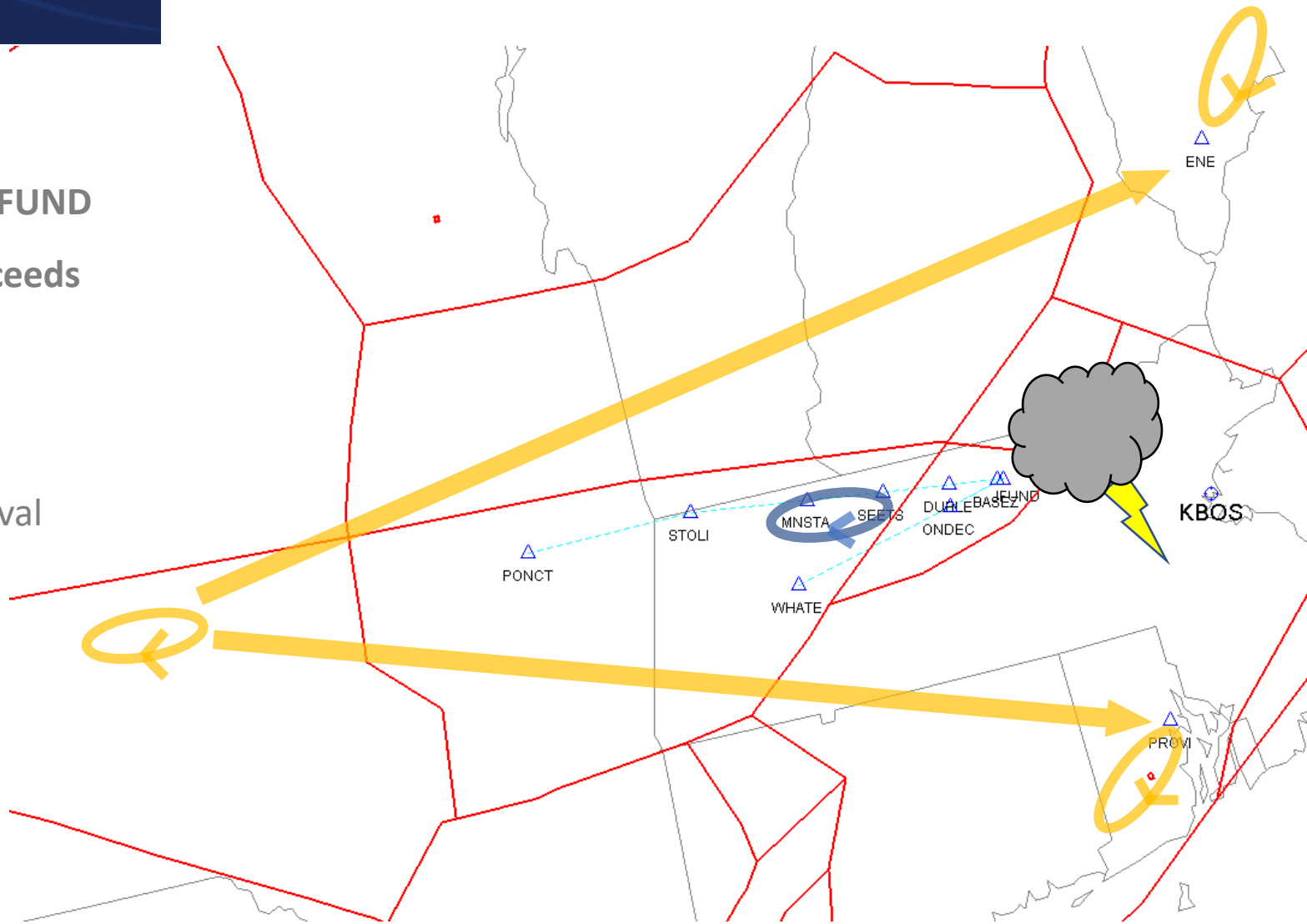
    NOTE: This cap will impact Area A so timely coordination and communication is essential.



Sector 38: BOS Holding

Sector 38 can safely hold 6-8 aircraft on the JFUND arrival, normally at SEETS. If the demand exceeds this capacity, either:

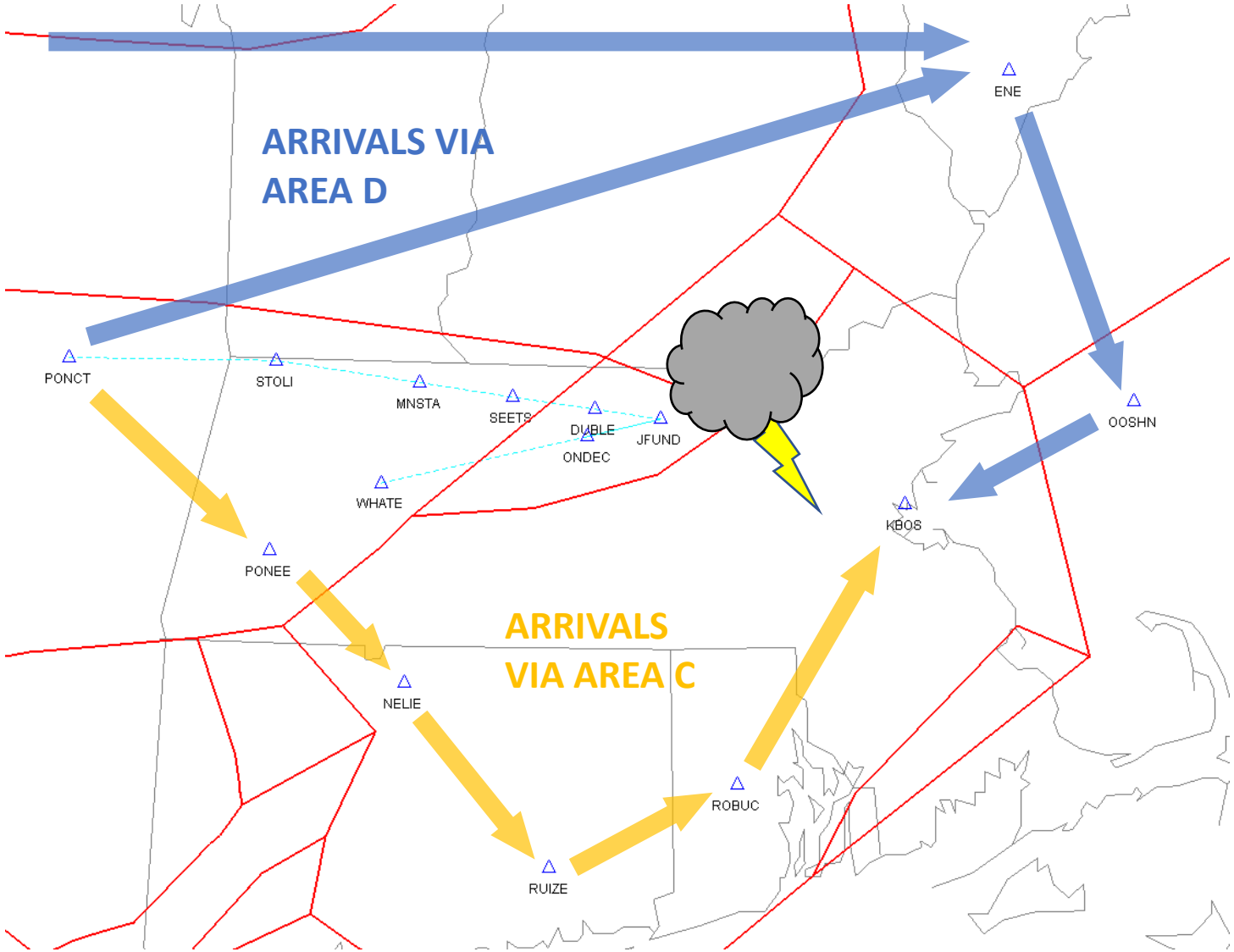
- Pass back holding to Area A
- Reroute flights to a less congested arrival



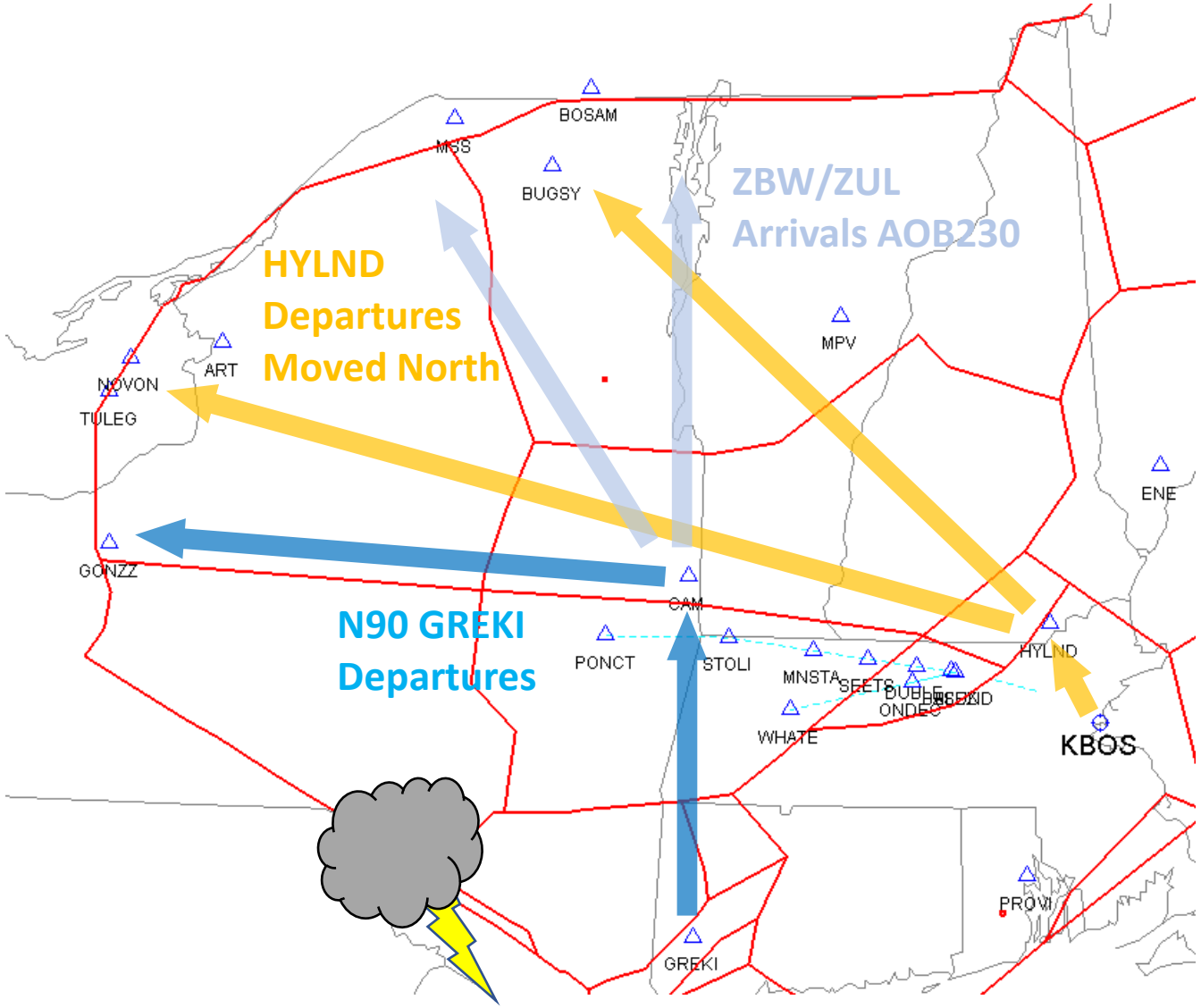
Sector 38:
JFUND and OOSHN Arrivals Closed

- **If aircraft are unable to fly the JFUND arrival, and holding is not an option, reroute BOS arrivals via:**
  - Area D - ENE OOSHN arrival
  - Area C - PONCT PONEE NELIE RUIZE ROBUC arrival
    - A/C will need to enter sector 47 AOB FL210 so coordination with Area A, C and TMU is needed prior to implementation. A to B at FL290, Descend like ponee arrival and Sector 22 will get a/c to sector 47 AOB FL210

NOTE: These reroutes can cause increase in volume in adjacent sectors, coordinate appropriately



Sector 39: GREKI SWAP

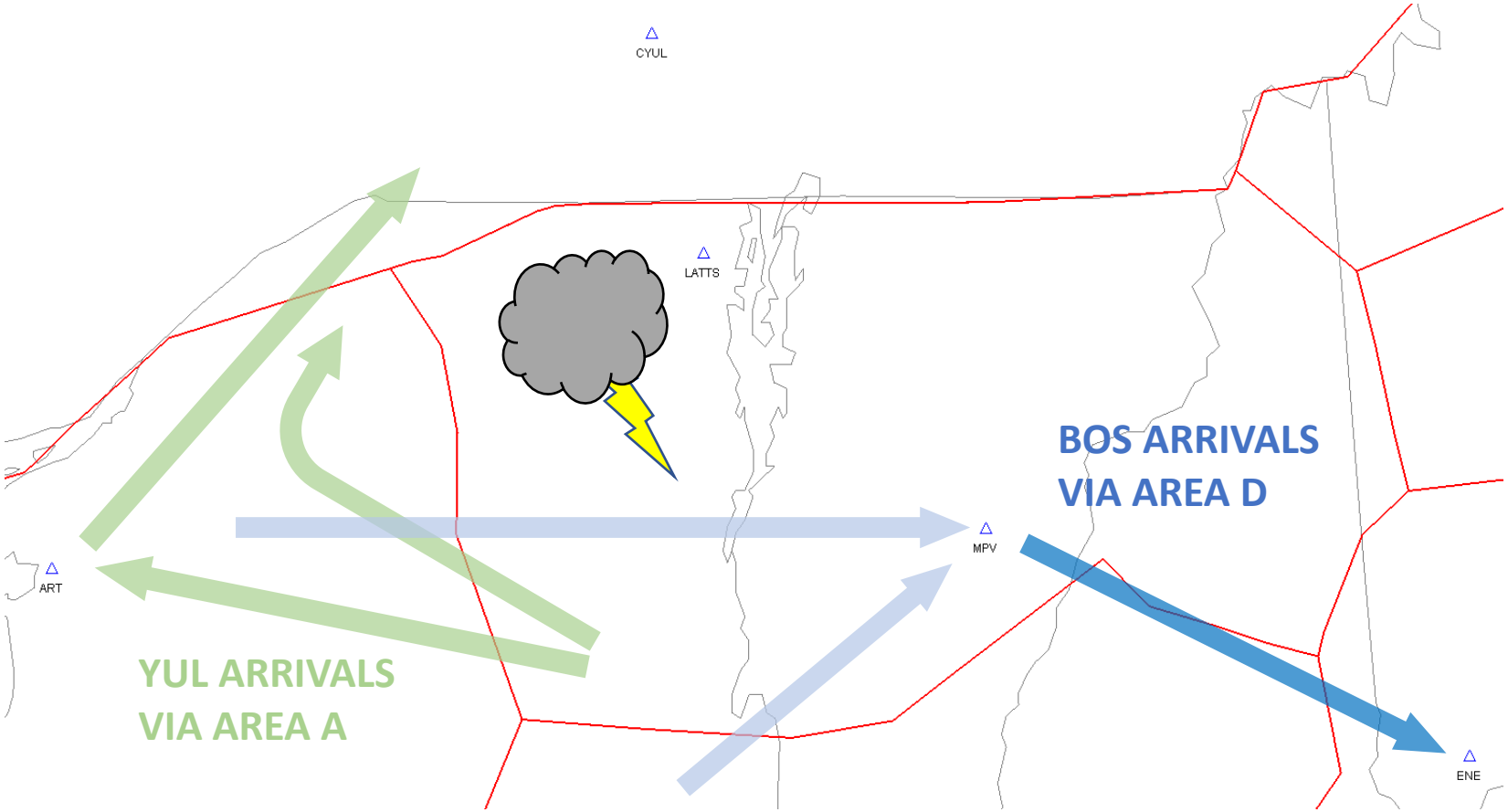


When SWAP is in effect because weather is impacting N90 westbound departures, Sector 39 often sees a large increase in volume and complexity. GREKI departures climb northbound to CAM before turning westbound. Blending this flow with the existing westbound increases complexity.

- **Reroute ZBW Westbound Departures North via TULEG/NOVAN or BUGSY/MSS/BOSAM.**
  - Moves Sector 39 normal westbound traffic north, into Sector 52, providing relief from extra volume from the N90 SWAP.
- **Reroute ZBW Westbound Departures North on parallel track to deconflict instead of blend.**
- **Altitude Cap ZUL Arrivals AOB FL230**
  - Keeps these arrivals below Sector 39 to reduce complexity and volume.
  - Also known as the Area B “Sippy Cup”

    NOTE: This cap will impact Area A so timely coordination and communication is essential.
- **MIT Over CAM for N90 GREKI Departures and/or BOS departures**.
  - Can provide extra spacing to blend with existing westbound flow.

Sectors 52 and 53: YUL and BOS REROUTE



CARTR Arrival to YUL Stopped Due to Weather

- Reroute flights into Area A/Sector 09 via ART IMPAC3 CYUL. A coordinated heading may also be used that will allow Area A to turn the flights on course when clear of weather.
  NOTE: Communication and coordination with Montreal, Area A, and TMU shall be accomplished prior to implementing this.

BOS arrivals can be rerouted into Sector 53 from Sectors 09 and 39 to proceed via ENE OOSHN arrival. This can create the requirement to blend these flows together. If the volume becomes unmanageable:

- **Request MIT from Sector 09**. This could create extra spacing and allow for easier blending of the two flows.

NASOperations
ATOSysOps

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Sector 47: Weather and Volume Issues

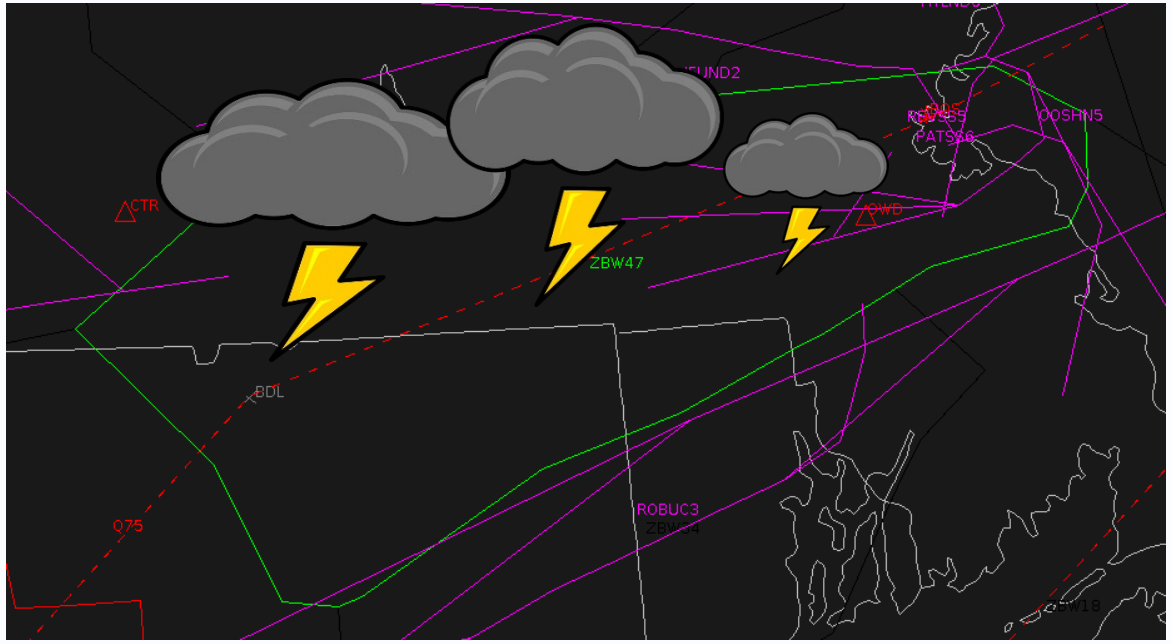
NASOperations
ATOSysOps

Most impactful when BOS/PVD Westbound are deviating

Rerouting BOS, PVD and Cape departures around sector 47 and 46 may be necessary. PVD departures may find routes down Q97/Q167 or Q75 if the sector loads in 31 or 20 are not overwhelmed. BOS departures may be rerouted via SSOXS down Q97/Q167 or HYLND to go north around the weather, again if the receiving sectors are not overwhelmed. BOS departures landing N90 airports may also use SERBOS1 to keep out of Sector 47.

If deviations start to conflict with MERIT departures, stopping or slowing KBOS/KPVD or the MERIT Departures may be required. Sector 46 will be unable to climb both head on.

If necessary, ground stop departures until the weather allows traffic to flow again.



After a ground stop has been issued, reopen routes with MIT/MINIT or reopen routes via CTR/BAF/NELIE as needed, decreasing MIT/MINIT as departure flow returns to normal operations.

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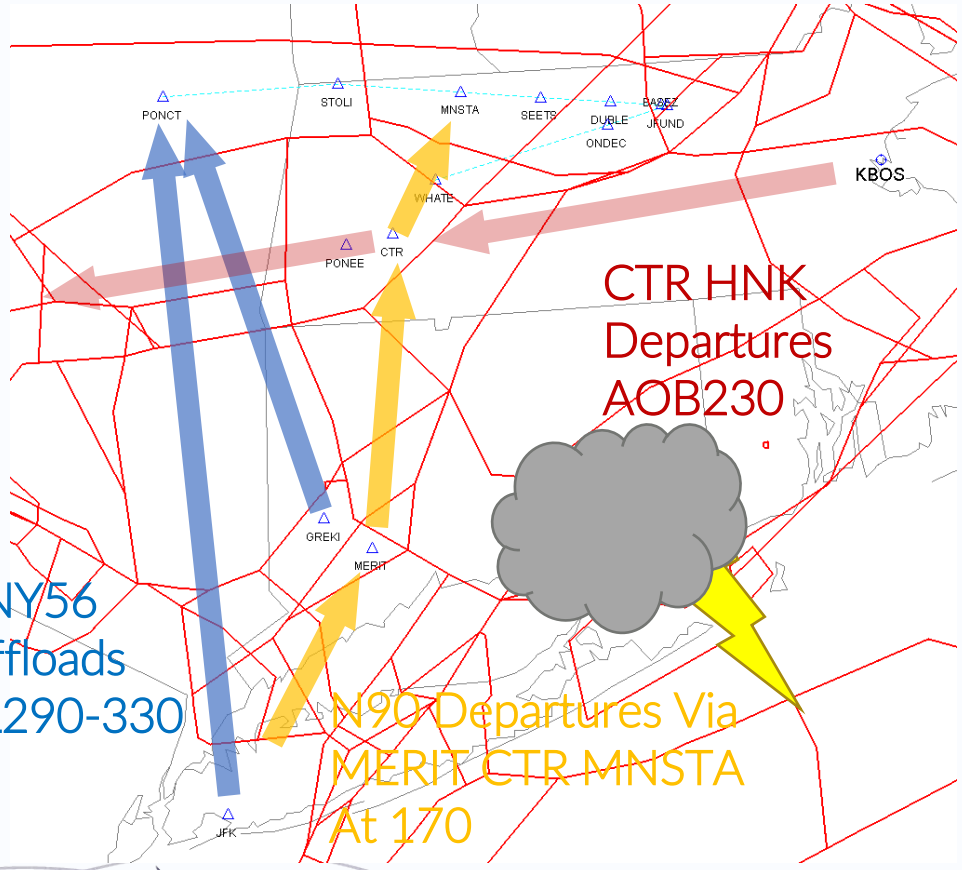
Sector 47: JFUND Offloads



- From Sector 20 (High altitude arrivals from ZNY56)
  - Coordination will occur between Area B, E, and TMU before Area E starts offloading
  - Aircraft should be cleared direct PONCT, to enter Sector 38 between FL290-330, similar to Sector 10 restrictions
  - GREKI PONCT or JFK PONCT, depending on where they're coming from and what the weather is doing.
  - If CTR HNK starts to conflict with this offload, consider tunneling those flights through Sector 22, AOB FL230, until clear of Sector 38. This requires Area E and A coordination.
  - TMU/Area B may need to have Area A deliver PONEE traffic to Sector 38 at FL280 due to the BOS offloads entering around FL290

- N90 to BOS offloads from Sector 19 via JFUND
  - If coming from Sector 19 out of N90, consider routing via MERIT CTR MNSTA, to enter Sector 36 at 170.

- Low Altitude BOS arrivals from Sectors 34/47
  - If flights are south of ONDEC area, they should be direct SEETZ, no further than DUBLE, AOB 170.

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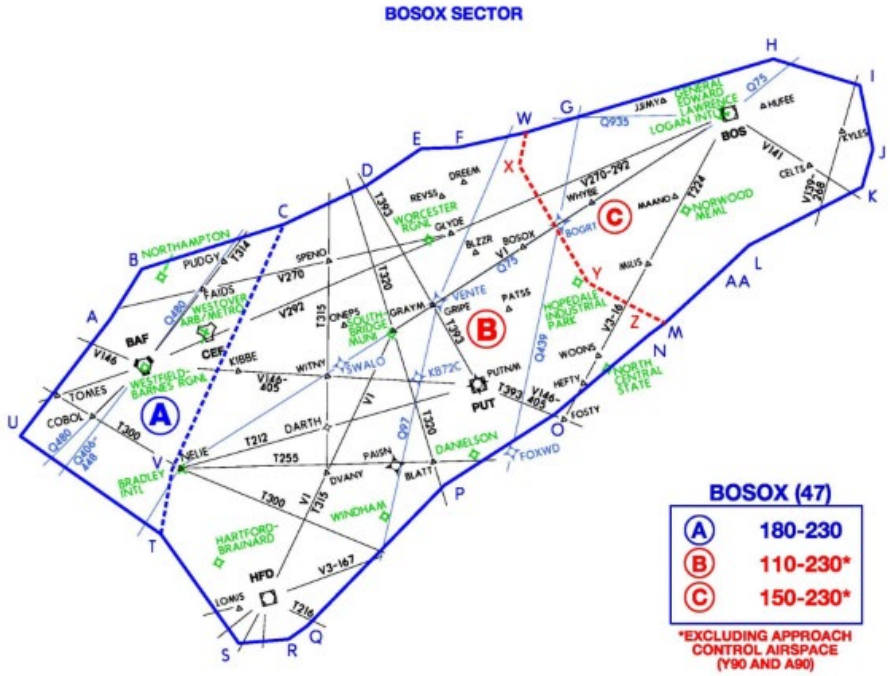
TMIs for Decreasing Volume or Complexity at Sector 47 (*Estimated implementation time is ~15-30 minutes)*

NASOperations ATOSysOps

- MIT/MINIT for PVD: This will decrease volume in the sector and provide more room for BOS and PVD departures to deviate around weather.
- STOP PVD Departures via CTR/BAF/NELIE as needed.
- MIT/MINIT for BDL CSTL Departures: Most impactful to 47 when CSTL departures are deviating or when WIPOR/NELIE arrivals are deviating.
- STOP BDL & Coastal Departures.
- MIT/MINIT for PATSS/REVSS/BLZZR to reduce the volume in the sector and/or slow departure flow going into Sector 46
- STOP PATSS/REVSS/BLZZR Departures or PVD via CTR/BAF/NELIE as needed.
- Ask TMU to Reroute eligible A90/PVD departures down Q97/Q167

NOTE: REMOVING A90 DEPARTURES FROM 47/46 AND "RUNNING THEM DOWN THE COAST" MAY MOVE THE OVERLOAD SITUATION FROM 47/46 TO 31/49.



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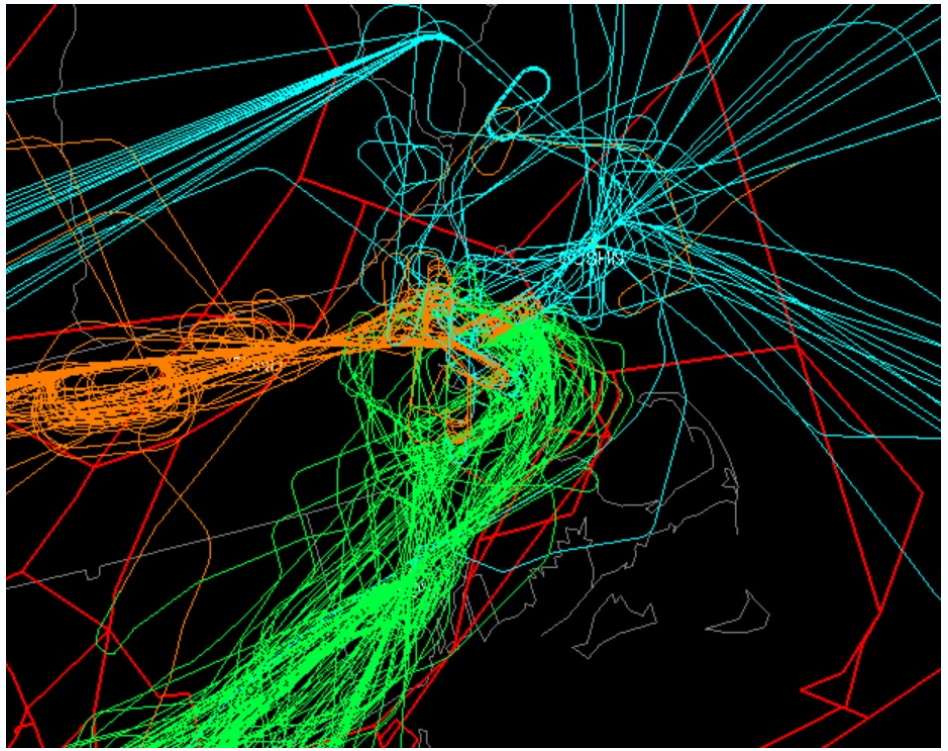
Sector 34 *Scenario 1: Weather impacting BOS Arrivals*

NASOperations ATOSysOps

Whenever weather impacts the arrival flow into BOS, early action by TMU can help slow the flow coming into 34 from Sector 19/ZNY. Adding MIT to sector 19 and/or ZNY will allow room for weather deviations.



It may take 15-30 minutes for ZNY and Sector 19 to start getting the expanded in-trail needed. TMU may also need to add MIT/MINIT to N90 Departures destined to BOS. If the arrival becomes unavailable due to the weather, reroute airborne traffic (RIFLE.OOSHN Star / MNSTA.JFUND STAR) and stop departures to KBOS via ROBUC Arrival. Coordinate with Areas E/D/B with these reroutes.

Depending on the complexity, MINIT or a Ground Stop for Coastal Departures may also be required.

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Scenario 2: *Holding/Metering in Sector 34*

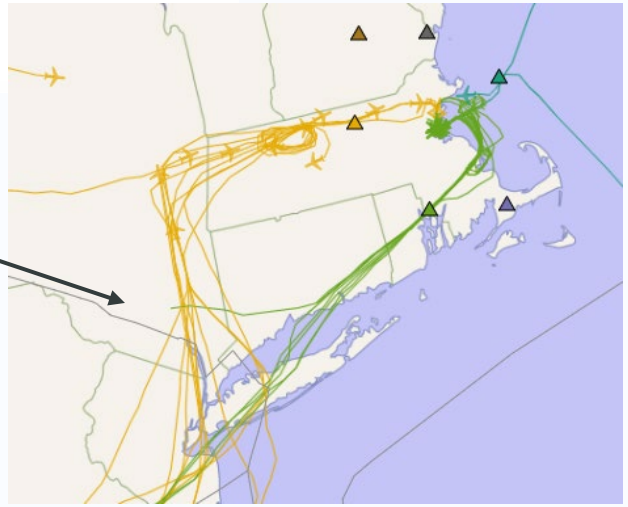
Metering at Sector 34 ranges from minor speed control, to delay vectors, to spinning for delay, and holding. When delays are between 5-10 minutes, aircraft can be given one spin at PROVI and then run in. For anything more than 10 minutes holding is normally issued.

While holding, reducing the flow and volume of traffic becomes a priority to protect the sector from overload. 34 can hold 8-10 aircraft at PROVI before rerouting airborne traffic (or holding in ZNY) is required.

MIT/MINIT may be required on Coastal Departures, N90 Departures to the Cape, and Cape Departures over PVD.

TMIs for Decreasing Volume and Complexity at Sector 34. (*Estimated implementation time is ~15-30 minutes)*

- MIT on BOS Arrivals from Sector 19/ZNY/N90
- Reroute BOS Arrivals via RIFLE.OOSHN Star
- Reroute BOS arrivals vis MNSTA.JFUND Star
- MIT/MINIT/STOP on Coastal Departures
- MIT/MINIT on N90 Departures to Cape Area Airports
- STOP N90 to Cape Area Airports
- MIT/MINIT/STOP on Cape Area Airports via PVD
- Sector 34 typically cannot hold more than **8-10** aircraft at PVD

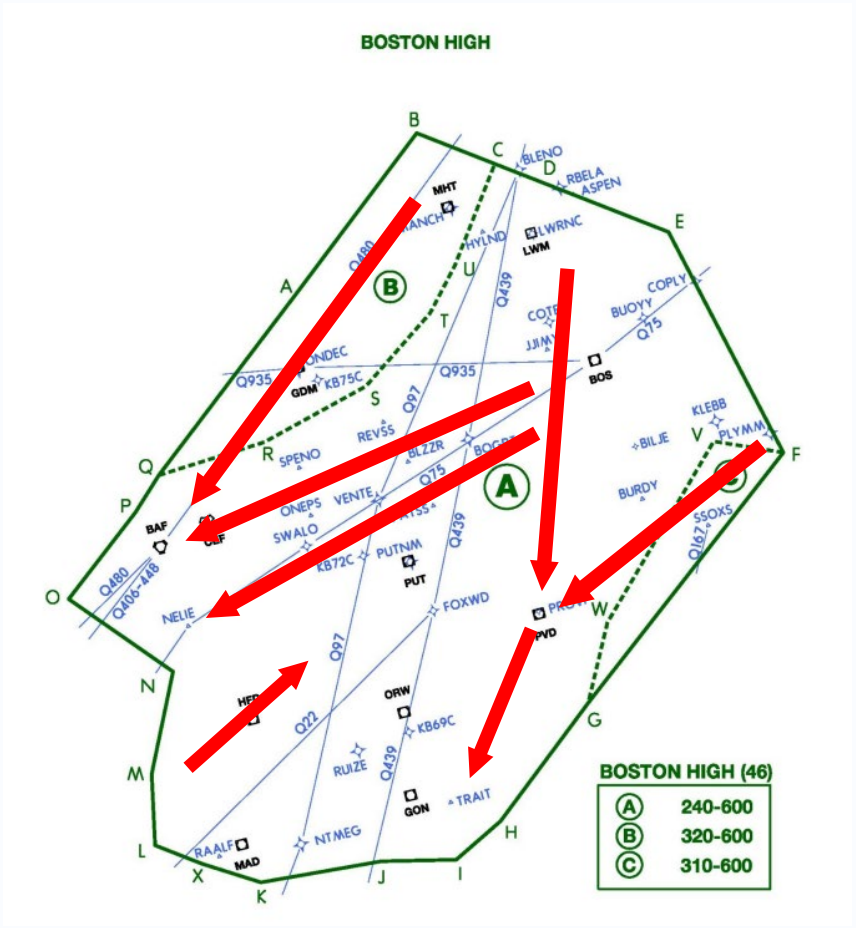


Sector 46: Decreasing Volume and Complexity

Sector 46 is a complicated sector which has many intertwined flows. Deviations from any of these flows can impact the overall operation of the sector.

Many of the TMI's may take between 15-30 minutes before a noticeable affect will be realized.

Sector 46 is a continuation of Sector 47 so many of the TMI's used to reduce volume/complexity in 47 will be useful in 46. (*See Sector 47 guide for example of TMI's to assist in weather between CTR and ORW.)*



Scenario: Weather over PUT resulting in deviations to MERIT Departures and Overflights

N90 departures over MERIT route very close to other traffic flows out of Sector 47, specifically Q75. As these departures start to deviate, TMU should be advised and a restriction should be placed on these departures. In addition to MERIT restrictions:

-Deviations are to the West:

Stop selected Q-routes

Stop/slow departures from Sector 47 to allow for the MERIT Departures or vise-versa.

-Deviations are to the East:

More room, but can conflict with JFK Arrivals.

Increased MIT on MERIT Departures will allow more room for JFKs to descend.

Move JFK Arrivals to LFV..SEY if Area D workload allows.

Stop MERIT Departures to allow JFK Arrivals to descend until a departure reroute can be implemented or deviations stop.

Sector 47 may cap departure AoB FL230 until Area E. Coordination with Area E should be accomplished beforehand.

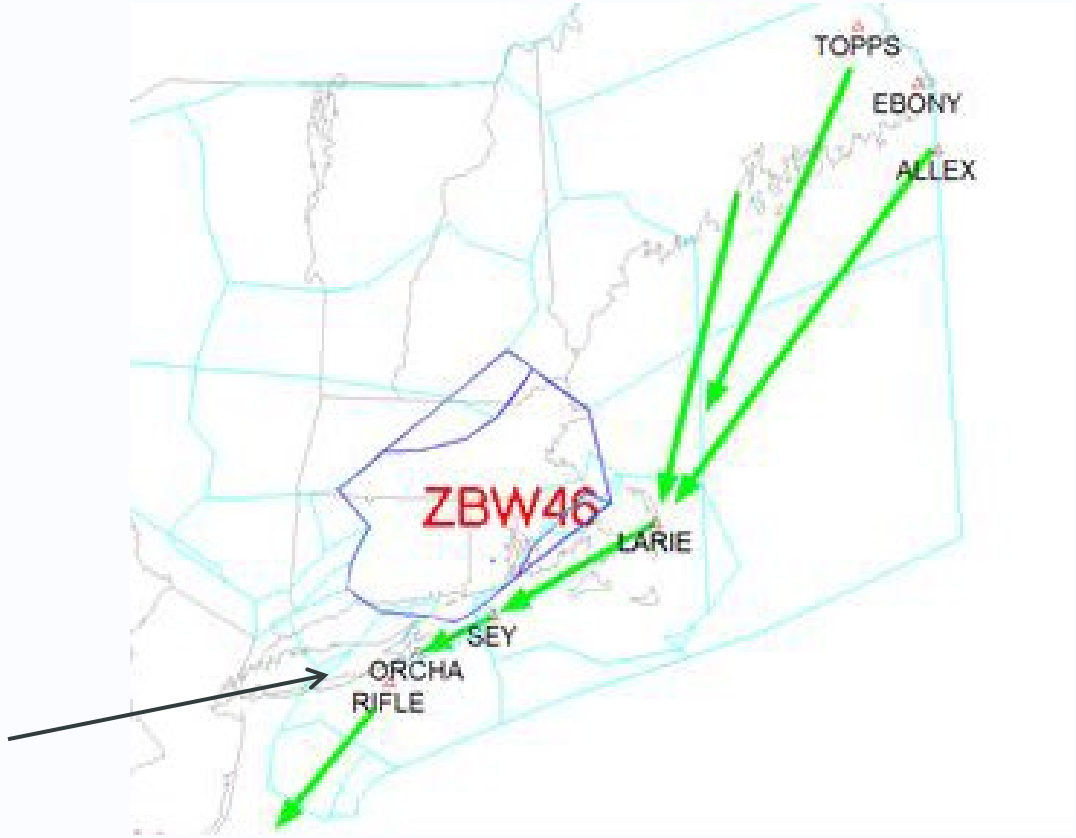
Reaching out to reroute KPHL and ZDC International Departures may be considered. Rerouting aircraft over ACK..(inner fix) can be accomplished quickly with sector-to-sector communications, but it can take 30 minutes or more for a reroute program to be implemented. Keep in mind Potomac departures can't go over AJGON HEADI RIFLE if ILG TFR is hot, so it's not always an option.

Due to the overlapping traffic flows in Sector 46, stopping one flow to allow for another to continue is very common. All available TMI's should be considered when MERIT departures begin to deviate to reduce the overall volume and complexity within the sector.

TMIs for Reducing Volume and Complexity at Sector 46 (*Estimated implementation time is ~15-30 minutes)*

NASOperations ATOSysOps

- MIT/MINIT (6-8 minutes) on PVD Approach Departures via PUT.
- MIT/MINIT on N90 for MERIT Departures. 10-15 MIT will help for volume. Higher MIT (20-25 MIT) may be needed for weather. If weather deviations become too much, STOP MERIT Departures.
- MIT/MINIT on PHL/ZDC International Departures via DITCH/RBV. Rerouting Departures into Sector 31 is an option but will increase workload on Sector 31/49.
- Reroute PHL arrivals via LARIE to keep them in Sectors 17/18 and out of Sector 46.
- MIT/MINIT (4-6 minutes) on A90 for PATSS/REVSS/BLZZR Departures. This restriction can be “As-One” if needed for weather.



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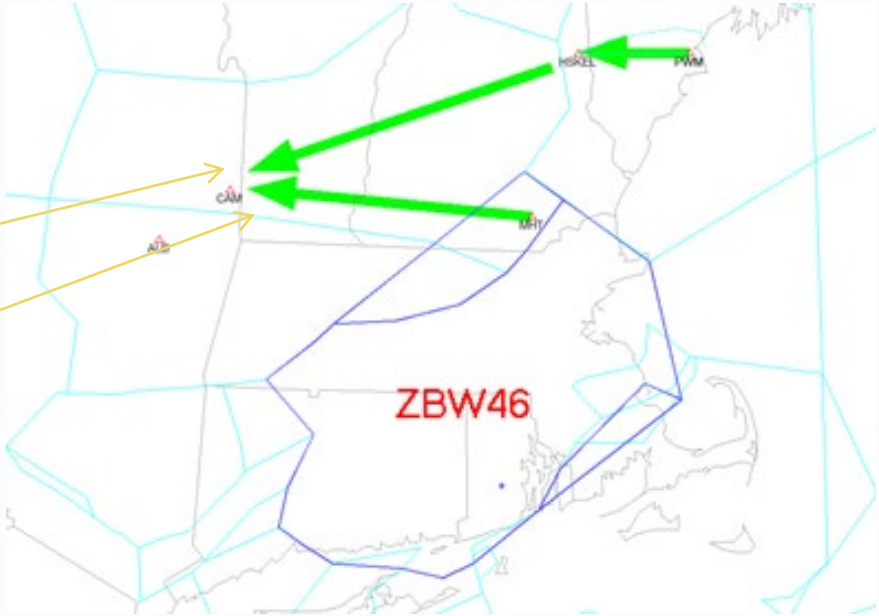
TMIs for Reducing Volume and Complexity at Sector 46 Continued

NASOperations ATOSysOps

- Reroute JFK arrivals from over ENE or PLYMM to CAM..IGN or LFV..SEY. Rerouting a few arrivals from Sector 02 to the IGN transition may ease spacing and volume issues at 46. Depending on Area D workload, rerouting all JFK arrivals from ENE to LFV..SEY will greatly reduce volume and complexity.
- Or reroute JFK arrivals via LARIE Q220 SEY as that Q-route was designed to give traffic room to descend around the SSOXS departures prior to SEY. There's a fix called "SKOWL" on it which can be used as a crossing fix to swap out from the SSOXS traffic. Coordinate with Area D.
- Reroute PPORT/NUBLE Departures over CAM to bypass Sector 46.
- Reroute BOS Departures from REVSS..CTR to HYLND..CAM..GONZZ
- Reroute KBWI/KDCA arrivals and select Q75 Departures via Q167. *(NOTE: REMOVING A90 DEPARTURES FROM 46 AND 47 AND "RUNNING THEM DOWN THE COAST" JUST MOVES THE OVERLOAD SITUATION FROM 46/47 TO 31/49. BE MINDFUL OF THIS WHEN REROUTING A90 DEPARTURES FROM A WESTBOUND ROUTE TO A SOUTHBOUND ROUTE.)*



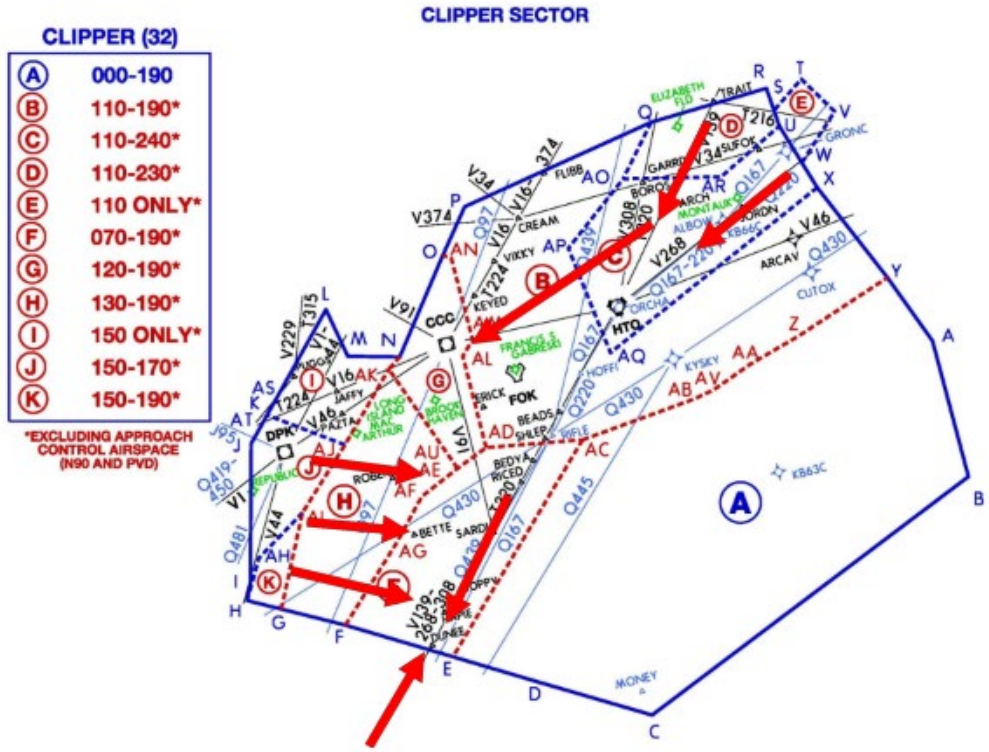
Federal Aviation Administration

Reducing Volume and Complexity at Sector 32

NASOperations
ATOSysOps

Sector 32 volume and complexity issues stem from triggering events like holding, spacing, weather, and VFR's transitioning from NY to Cape Airports.

Except for rare instances in the summer with multiple JFK arrivals and VFR's transitioning the sector, 32 can get busy quickly but also settles down very quickly as most aircraft only spend 4-5 minutes in the sector.



Federal Aviation Administration

Scenario: Weather South of HTO Resulting in Deviations on KJFK Departures.

NASOperations ATOSysOps

With two parallel departure routes in Sector 32, weather deviations require quick TMIs. Depending on which direction the aircraft want to deviate, and the status of W105, will change the TMIs needed to manage the situation. The first action should be MIT/MINIT on BETTE/HAPIE Departures as one.

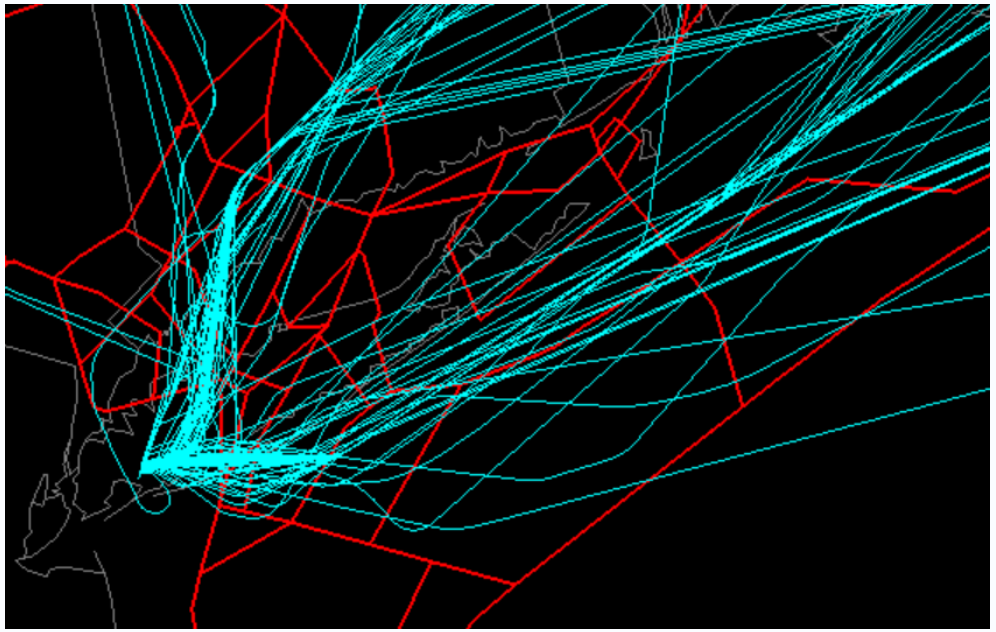
Deviations South of Track:

MIT/MINIT on BETTE/HAPIE departures AS ONE. No more action should be needed unless the aircraft are deviating so far south that they are Impacting ZNY's departure flow

Deviations North of Track:

This impacts multiple flows within Sector 32 and 31. Deviating aircraft could conflict with JFK Arrivals over PARCH resulting in a head-on, climbing & descending scenario.

BETTE/HAPIE departures may need to be suspended to allow for arrivals to descend. Deviating aircraft may also be head-on with climbing SSOXS/JUMPR Departures in Sector 31 or Sector 18.



Federal Aviation Administration

TMIs for Reducing Volume and Complexity at Sector 32 (*Estimated implementation time ~15-30 minutes)*

NASOperations ATOSysOps

- MIT on JFK Arrivals. This restriction should be passed to Area D as soon as possible
- MIT/MINIT on BETTE/HAPIE Departures, as one, if required
- MIT/MINIT on BEADS Departures. This reduces the total number of aircraft in the sector but is mostly used for volume/complexity issues in Sector 31.
- MIT on BOUNO Arrivals. Sector 32 has no room to sequence HPN arrivals via BOUNO so typically any restrictions from N90 need to be passed back to ZNY.
- MIT on ISP/FOK Arrivals. Sector 32 has no room to sequence these arrivals so typically any restrictions from N90 need to be passed back to ZNY.

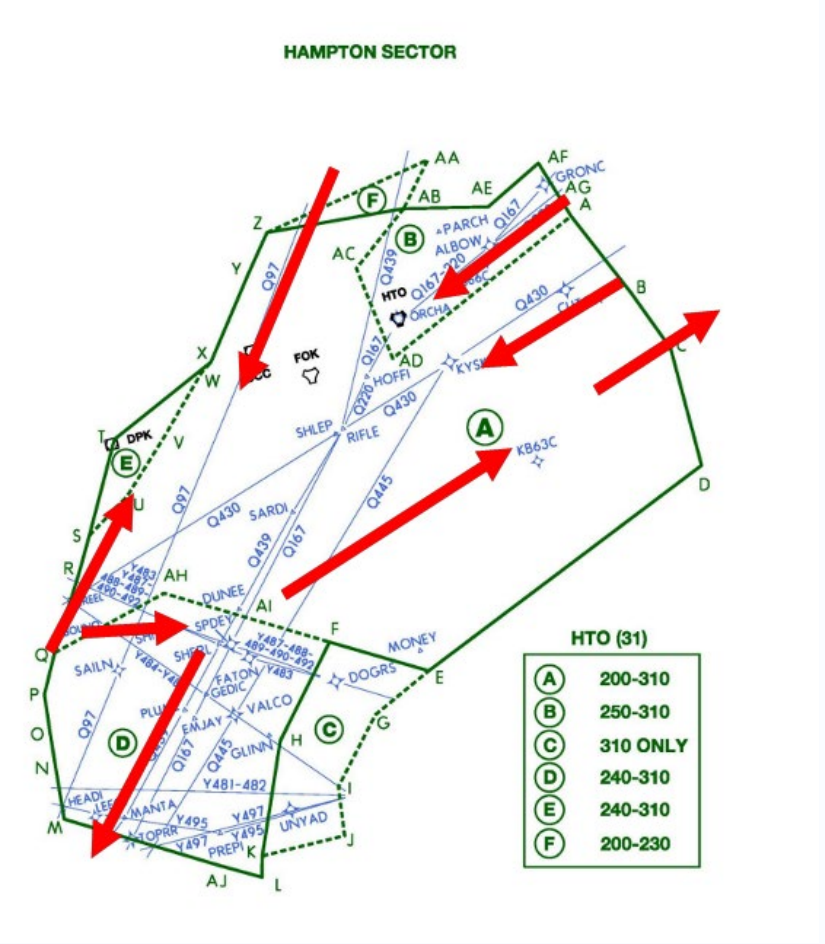
Federal Aviation Administration

Reducing Volume and Complexity at Sector 31

The volume and complexity at Sector 31 changes vastly between the day and evening operations. Major impacts to Sector 31 are seen from external factors like reroute programs, playbook options, and MIT.

When W105 is active, Sector 31 loses nearly half of its usable airspace, making MIT to neighboring facilities more difficult. MIT/MINIT/DSP may be required from upstream facilities.

The following slide contains a few examples of simple situations and questions that might help narrow down which TMI's need to be implemented.



Sector 31 Scenarios

NASOperations
ATOSysOps

Are KPHL arrivals deviating and unable to get back to their route over MANTA/BRIGS?

Deviating KPHL arrivals put a big strain the sector's ability to climb KBDL Coastal departures and BEADS departures as they are required to enter N66 AOB FL200. MIT or GS may be required.

Are en-route aircraft deviating? Is W105 or W107 hot?

If unable to get aircraft back on course or clear of the warning areas, a reroute or gate stop should be issued.

Coordinate with Giant Killer either and altitude to cap departures or fighters within W105 to allow aircraft to enter the Warning Area.

Is the top of the precipitation low enough that KBOS/KPVD Departures can climb above it?

If aircraft can top the weather then MIT/MINIT to control overall sector volume

If they cannot, how far do they need to deviate? Are they deviating east or west of Q97/Q167?

Too far east and they are in the Warning Areas. Too far west and they are in N56's airspace which is usually unacceptable.

MIT/MINIT on all departure flows or GS may be needed.

Can KBDL Coastal Departures climb above it?

Coastal Departures have a delayed climb profile so they may not be able to top the weather in the middle or southern part of the sector. MIT/MINIT or GS may be required.

Are KJFK Departures deviating into SSOXS/JUMPR Departures?

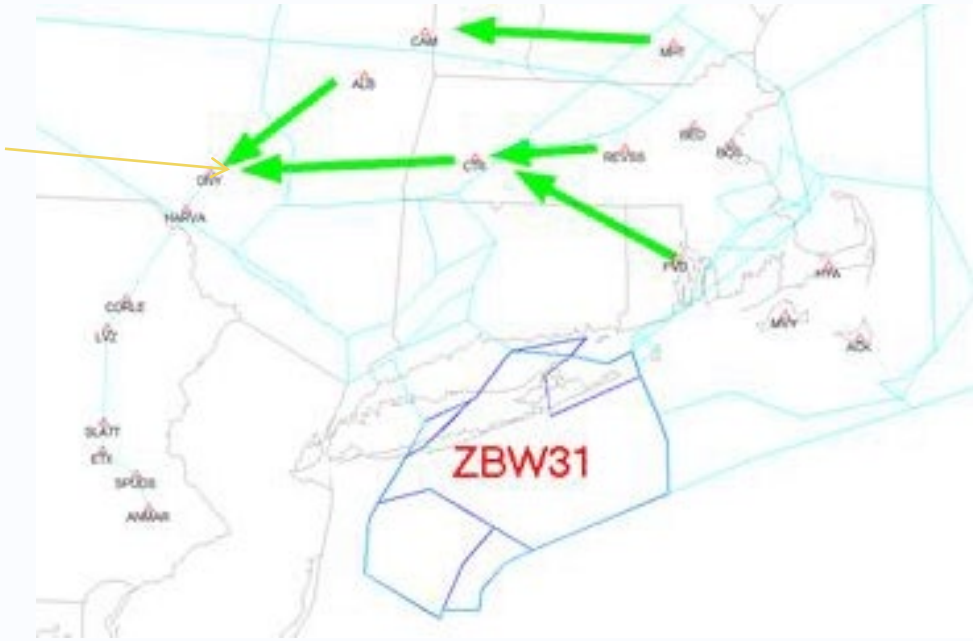
Which flow is preferred and GS the other.

Federal Aviation Administration

TMIs for Reducing Volume and Complexity at Sector 31 (*Estimated implementation time ~15-30 minutes)*

NASOperations ATOSysOps

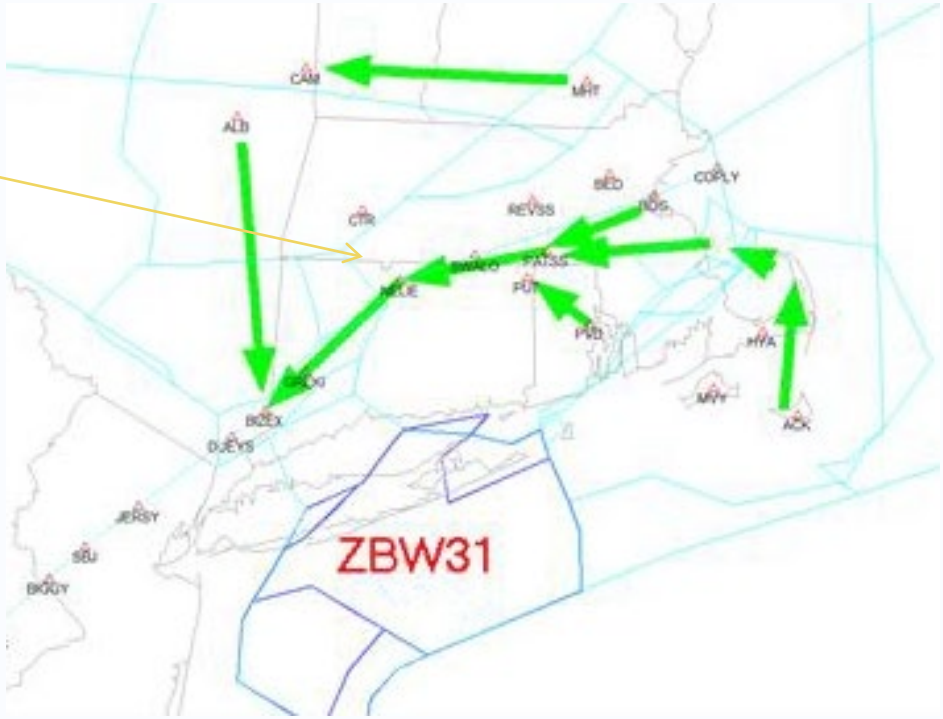
- DSP/MIT on PHL Arrivals over MANTA
- Reroute PHL Arrivals to DNY (NOTE: *Shifts increase in volume to Sectors 47/46 and other areas)*
- DSP BWI/DCA arrivals via Q167
- CAP BWI/DCA arrivals via Q167 AOB FL300 - *This is usually implemented when Sector 49 is split off and is used to reduce volume in 49 due to additional altitude restrictions from ZDC when 49 is open.*
- DSP/MIT/MINIT on Q97/Q167 traffic from BOS SSOXS/PVD JUMPR/BDL CSTL departures as needed



Federal Aviation Administration

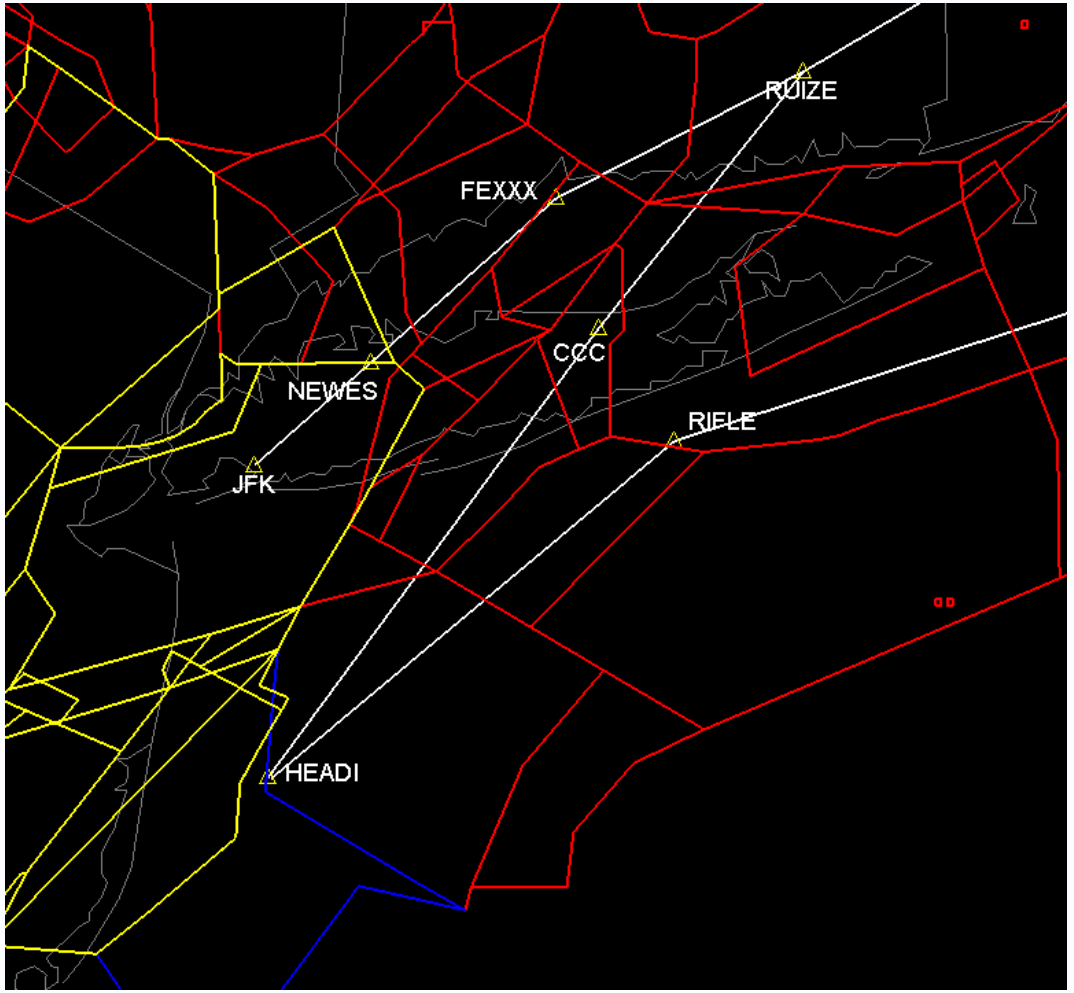
TMIs for Reducing Volume and Complexity at Sector 31 Continued

- Reroute Q167 KBWI/KDCA arrivals via BIZEX (NOTE: *Shifts additional volume to Sectors 47/46)*
- MIT on Q97/Q167/Q439 from ZDC traffic entering Sector 31
- MIT/MINIT on BEADS Departures
- MIT/MINIT on BETTE/HAPIE Departures
- MIT/MINIT on KPHL International Departures over DITCH
- MIT/MINIT on ZDC International Departures over RBV
  - The International Departure push in the evening adds additional volume and complexity issues. Due to the distance from Sector 31 it could take more than 30 minutes for a new TMI to be fully implemented and realized at the sector. Early communication with TMU is important to getting these restrictions in place prior to the departure push.



HEADI Play

- Coordination and discussion should always take place between TMU, Areas C, D, and the OMIC prior to HEADI route going into effect
  - Dynamic MAP Values
  - Warning Area status
  - ILG TFR routes
  - Staffing
- There are currently two HEADI routes to BOS
  - HEADI CCC RUIZE ROBUC3
  - HEADI RIFLE OOSHN5
- One of the above routes will be selected and published. Area C, however, will be able to move traffic to the other route when operationally advantageous.
  - Normally only ROBUC is published for ILG TFR, though this may be changed tactically.
- TMU will coordinate with ATCSCC to publish necessary MIT on the Advisory
  - ATCSCC has the final authority on any restriction over 10 MIT that may cause reportable delays.
  - Sectors should be de-combined prior to implementation.
- TMU will monitor HEADI traffic and will share with Area C for display and monitoring on the area TSD.
- TMU will update area ESIS to advise which routes are in effect
- Altitude restrictions for HEADI traffic *must* be sent to ZDC via NTML



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HEADI Play Continued

NASOperations
ATOSysOps

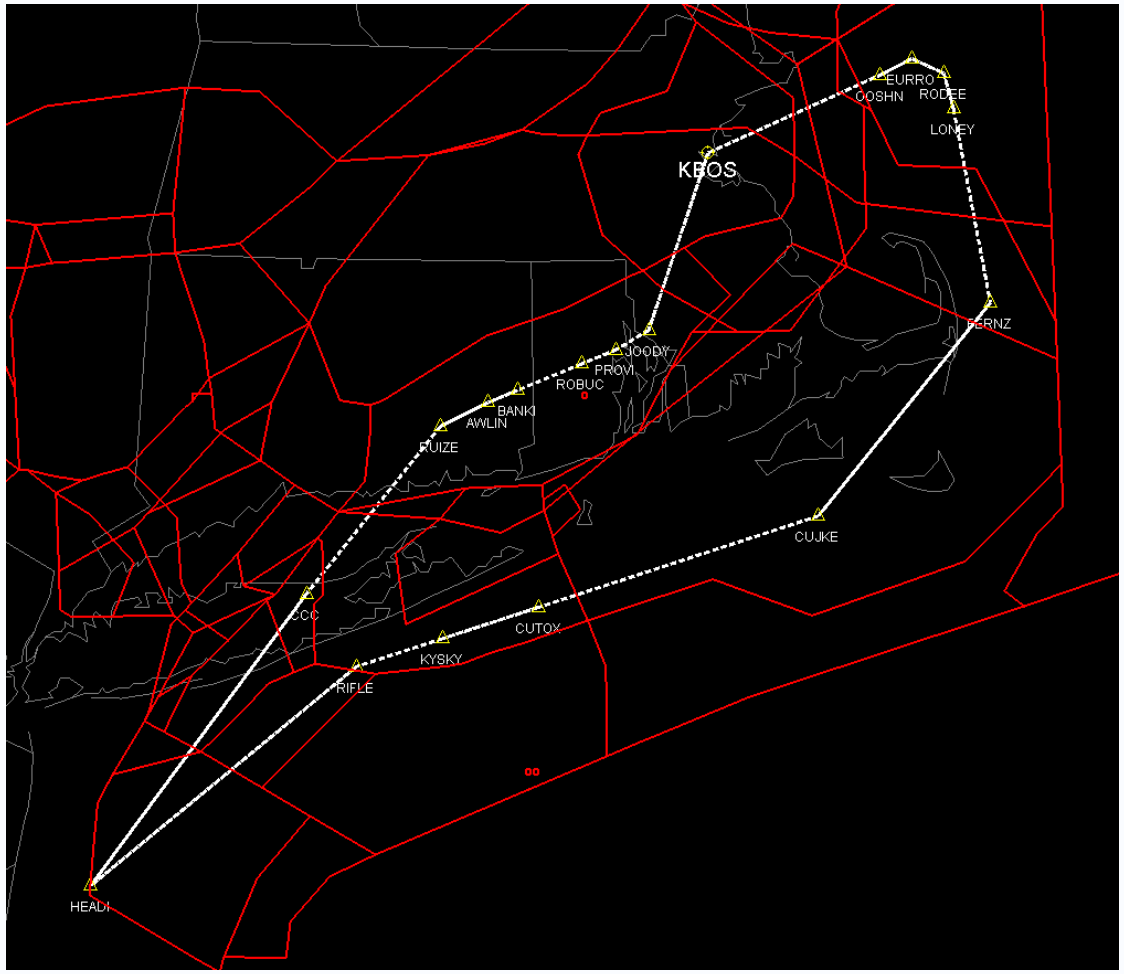
ILG TFR HEADI TRAFFIC

The TMIs below are for **ACK, BOS, HYA, MVY, and PVD** arrivals rerouted via HEADI due to the ILG TFR. Other departure points will remain on the standard route over JFK and enter Area E from ZNY. When the advisory goes into effect:

- TMU shall coordinate with Area C regarding demand and complexity.
- TMU will evaluate, and if necessary, implement TMIs to keep sector operations manageable.
    - Stop CSTL departure traffic excluding Caribbean “deep water” departures and PHL arrivals.
    - Consider BORQE/JENYY Deep Water Routes

- ZBW TMU shall pass the following altitude restrictions to ZDC as necessary:
    - BOS arrivals via HEADI enter ZBW AOB FL290.
    - PVD arrivals via HEADI enter ZBW AOB FL310.

- TMU will analyze sector volume and may tactically reroute traffic or implement CFR/MINIT.



Federal Aviation Administration

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HEADI Play Continued

NASOperations
ATOSysOps

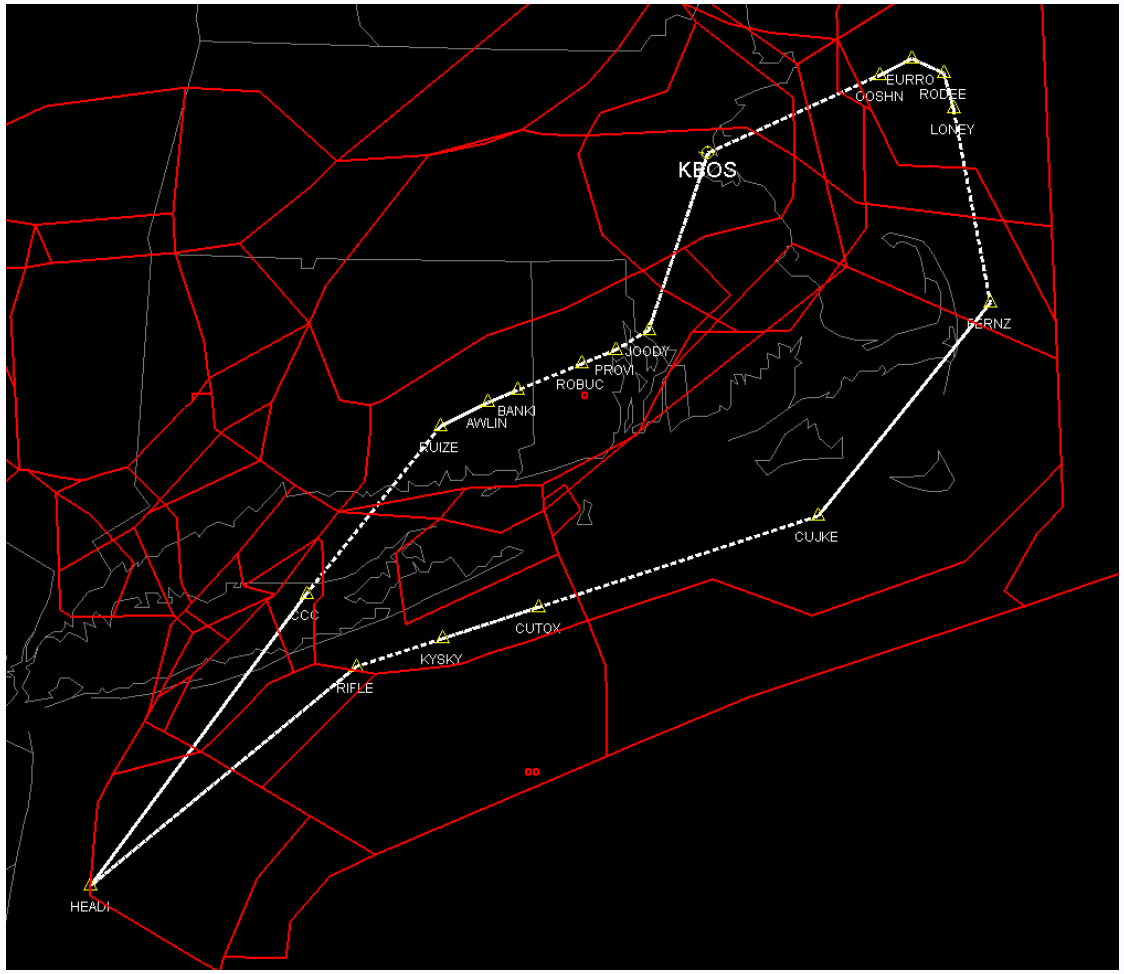
PARTIAL OR FULL HEADI PLAY

A partial play means that only certain departure points and/or destinations are listed on a playbook advisory. A full play means that all destinations and departure points are listed on the advisory. When the advisory goes into effect:

- TMU shall coordinate with Area C regarding demand and complexity.
- TMU will evaluate, and if necessary, implement TMIs to keep sector operations manageable.
    - Stop CSTL departure traffic excluding Caribbean “deep water” departures and PHL arrivals Reroute other CSTL departure traffic via VEERS or CTR.
    - Consider BORQE/JENYY Deep Water Routes
    - Consider MIT or stopping BEADS EMJAY departures to alleviate Sector
    - 31/32 complexity.

- ZBW TMU shall pass the following altitude restrictions to ZDC as necessary:
    - BDL, HFD, POU, SWF arrivals via HEADI shall enter ZBW AOB FL250.
    - BED, BOS, BVY, LWM, ORH arrivals via HEADI shall enter ZBW AOB FL290.
    - PVD arrivals via HEADI shall enter ZBW AOB FL310.

- TMU will analyze sector volume and may tactically reroute traffic or implement CFR/MINIT.



Federal Aviation Administration

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Reducing Volume and Complexity at Sector 49

NASOperations
ATOSysOps

Sector 49 is an ultra-high sector which is split when the volume/complexity at Sector 31 is being exceeded. This is usually caused by local or national reroute programs that move a large flows of traffic into Sectors 31/49.

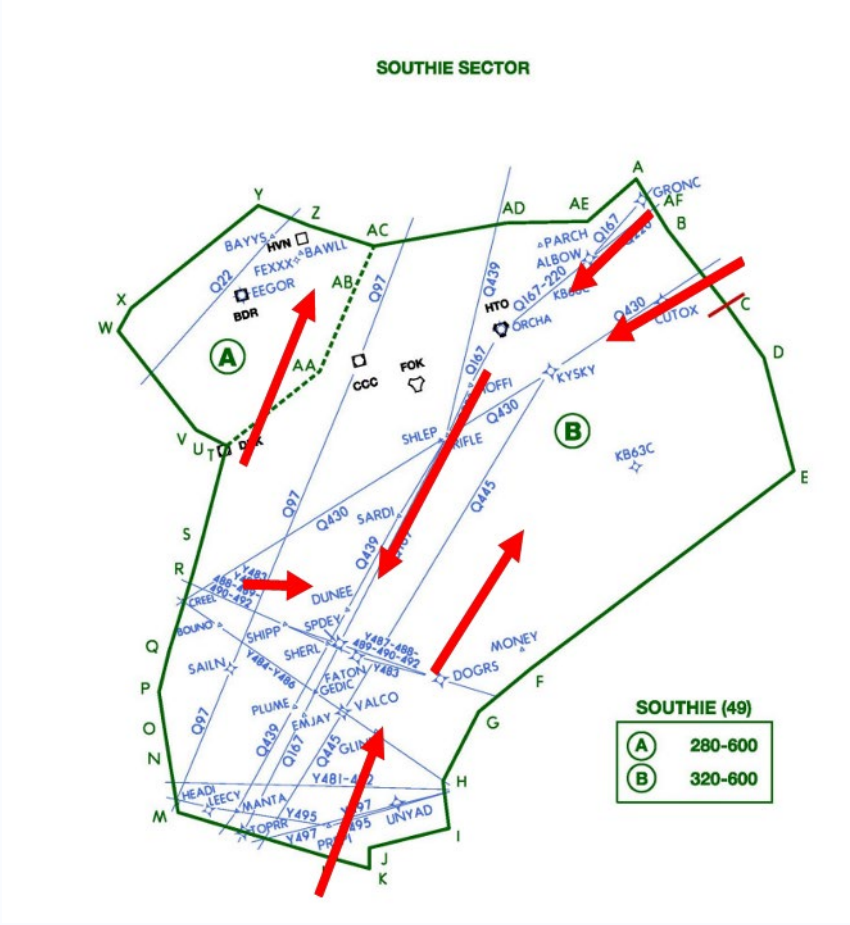
Whenever the Q-Routes into ZNY are closed, Q97/Q167 becomes the main exit routes for a large chunk of airborne traffic from Areas C and D. Complexity and volume climb drastically when a reroute program like the HEADI play is instituted.

When Sector 49 is open additional restrictions are placed on ZBW from the ZDC LOA.

KDCA/KBWI/ADW must enter ZDC AOB FL300

KRIC & Satellites /KORF & Satellites must enter ZDC AOB FL320

KRDU must enter ZDC AOB FL340



Federal Aviation Administration

TMIs for Reducing Volume and Complexity at Sector 49 (*Estimated implementation time ~15-30 minutes)*

NASOperations ATOSysOps

- DSP KBWI/KDCA arrivals via HTO
- Reroute KBWI/KDCA arrivals via BIZEX (NOTE: *Shifts additional volume to Sectors 47/46)*
- MIT/MINIT on Q97/Q167 traffic from BOS SSOXS/ PVD JUMPR/ KBDL CSTL departures
- MIT on Q97/Q167/Q439 from ZDC traffic entering Sector 31/49
- MIT/MINIT on BEADS Departures
- MIT/MINIT on BETTE/HAPIE Departures
- MIT/MINIT on KPHL International Departures over DITCH
- MIT/MINIT on ZDC International Departures over RBV
  - *(The International Departure push in the evening adds additional volume and complexity issues. Due to the distance from Sector 31/49 it could take more than 30 minutes for a new TMI to be fully implemented and realized at the sector. Early communication with TMU is important to getting these restrictions in place prior to the departure push.)*

Area D Guidebook Refresher

Sector 01/02 International Traffic Saturation

NASOperations
ATOSysOps

ZQM SEGREGATE FLOWS BY INF

- If the majority of the international flow is through Sectors 01/02, and Sector 17 is not as busy, ZQM can reroute some traffic to reduce volume. JFK arrivals via TUSKY – South and EWR arrivals via ALLEX – North would help balance volume between the sectors.
- ZQM reroute Q97/Q167 traffic via TUSKY EMJAY to move those flights to Sector 17

CAP CYHZ/CYSJ/CYFC/CYQM ARRIVAL/DEPARTURES AOB FL280.

- Restricting aircraft to Sector 15 will eliminate climbing/descending head on with the international flow.
- This can be coordinated with ZQM/ZUL or done tactically.

LBSTA & CELTK MIT/MINIT/SWAP

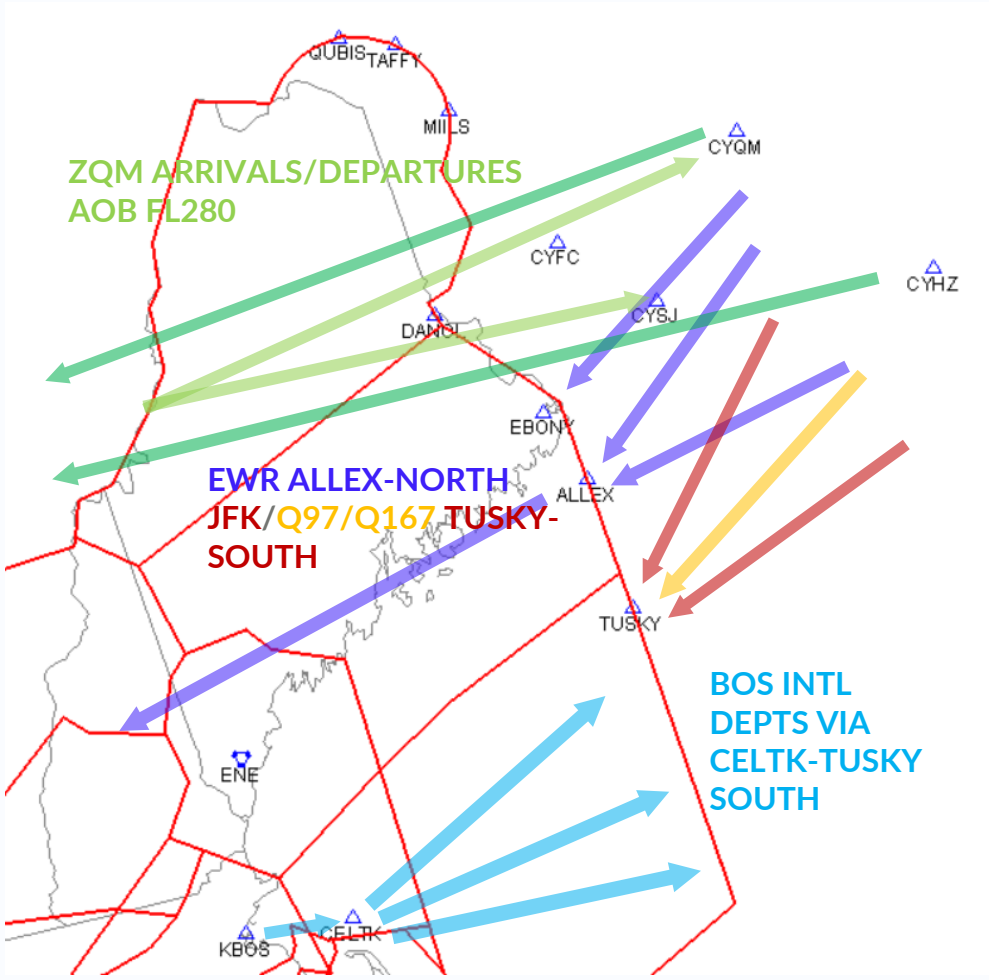
- If weather or volume is saturating sector 02, MIT or swapping LBSTA for CELTK and changing the first inner fix to TUSKY- South can alleviate some pressure by sending traffic into Sector 17 (be cognizant of Sector 17s volume).

MIT ON INTERNATIONAL INBOUNDS

- MIT can be passed back to ZQM. This can be done per INF, per destination, or both e.g., JFK 15MIT over ALLEX. If high MIT restrictions are anticipated to N90/PHL/PCT, this can be coordinated early in the day to help with sequencing.

MIT/MINIT ZNY/ZDC INTERNATIONAL DEPARTURES

- Departure restrictions at the major metro airports will slow departure traffic down if a sector is forecast to become over saturated.



Federal Aviation Administration

Sector 16 AREA B OOSHN JFUND Offloads/Holding

NASOperations
ATOSysOps

MINIT ON PWM-NUBLE, MHT-PPORT, and BOS LBSTA/CELTK DEPARTURES

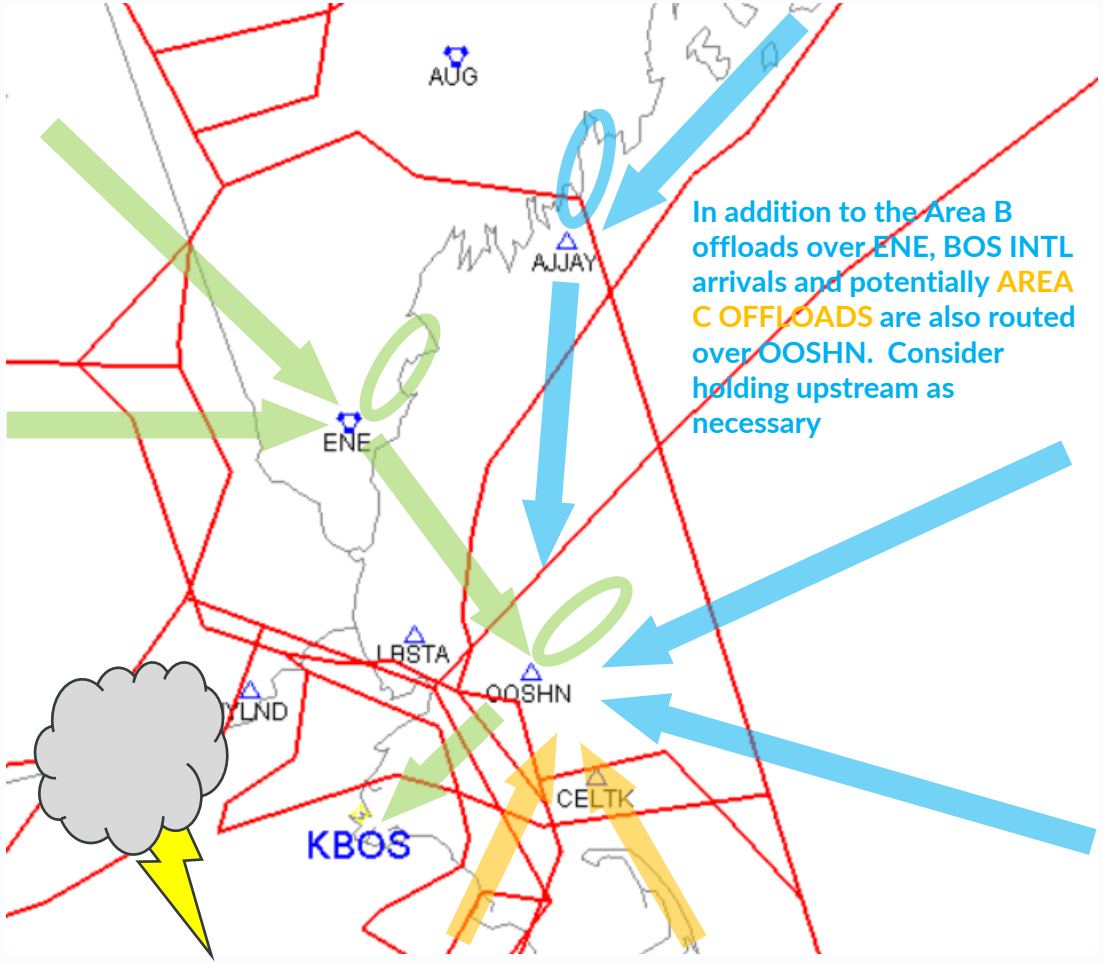
- Slowing the rate of departures into the sector will help manage volume and prevent sector saturation

MIT ON BOS ARRIVAL VIA OOSHN

- Pass back MIT to Area B as needed to prevent saturation. Increase if high international volume to BOS or also receiving BOS offloads from Area C to limit need for holding at OOSHN.

MONITOR HOLDING VOLUME AT OOSHN

- While in theory OOSHN can hold from 090-230, in reality 8-10 aircraft is about the max that should be held there. There are multiple other published holds upstream on the arrival that other sectors can hold in (ENE, AJJAY, and FERNZ). As OOSHN approaches its limit, inform other sectors to prepare to hold.



Federal Aviation Administration

Sector 16 AREA B OOSHN JFUND Offloads/Holding

NASOperations
ATOSysOps

MOVE ENE OOSHN FLOW TO AUG AJJAY OOSHN WHEN HYLND DEPTS BEGIN DEVIATING

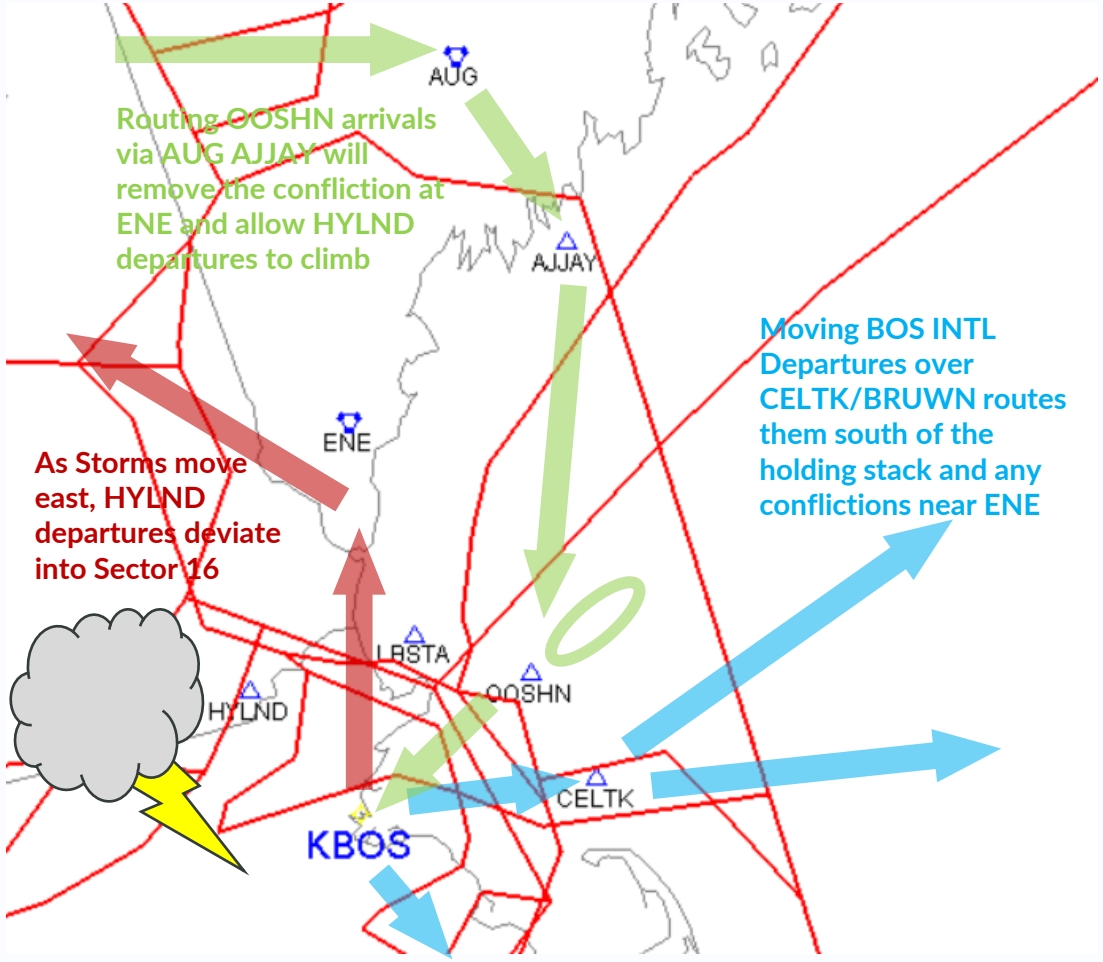
- If HYLND departures begin deviating into 16, request with TMU/Area B that OOSHN arrivals be moved further north as necessary to prevent head on conflicts. HYLND departures may be stopped all together if deviations become too extreme. Determine with TMU whether departures or arrivals are a priority and work one or the other if the deviations will not allow both.

LBSTA & CELTK MIT/MINIT/SWAP

- MIT or swapping LBSTA for CELTK and changing the first inner fix to TUSKY- South can help with conflicting flows north of OOSHN. International departures out of BOS can also be routed over BRUWN/ACK to remove them entirely from 16.

CANCEL SILENT CLEARANCES FOR PWM/MHT

- If the sector becomes too saturated, departures can be stopped. TRACON will call in advance to APREQ all departures.



Federal Aviation Administration

Sector 16/18 Area C ROBUC OOSHN Offloads/Holding

NASOperations
ATOSysOps

MINIT SSOXS/CAPE DEPARTURES

- Slow departure rate into Sector 18 to reduce volume and head on conflicts if weather is causing arrivals to deviate within the sector.

MOVE BOS CELTK DEPARTURES OVER LBSTA/BRUWN

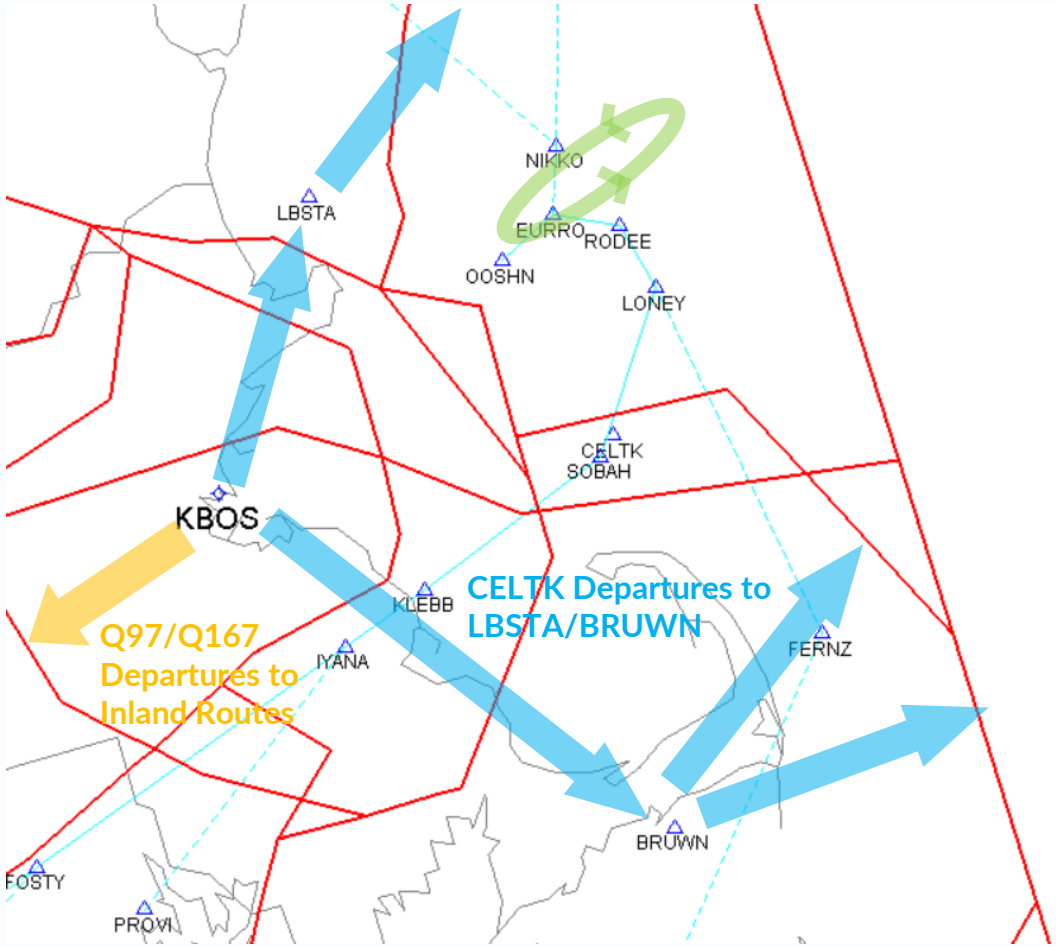
- Removes these flights from congested area in Sector 16 around OOSHN. ALLEX North via LBSTA, TUSKY South via BRUWN

REROUTE SSOXS/JUMPR DEPARTURES AND Q97/Q167 OVERFLIGHTS

- Inland routes via BIZEX Q75 or overwater routes via ACK/ZWY Oceanic will reduce sector congestion

IF W105 ACTIVE, TRY AND COORDINATE WITH GIANTKILLER FOR EARLY RELEASE

- W105 being active significantly reduces the volume of traffic sector 18 can handle. If Giantkiller is unable to release the airspace, the sector MAP number may need to be lowered.



Federal Aviation Administration

SECTOR 17 INTERNATIONAL TRAFFIC SATURATION

NASOperations
ATOSysOps

MIT ON INTERNATIONAL INBOUNDS

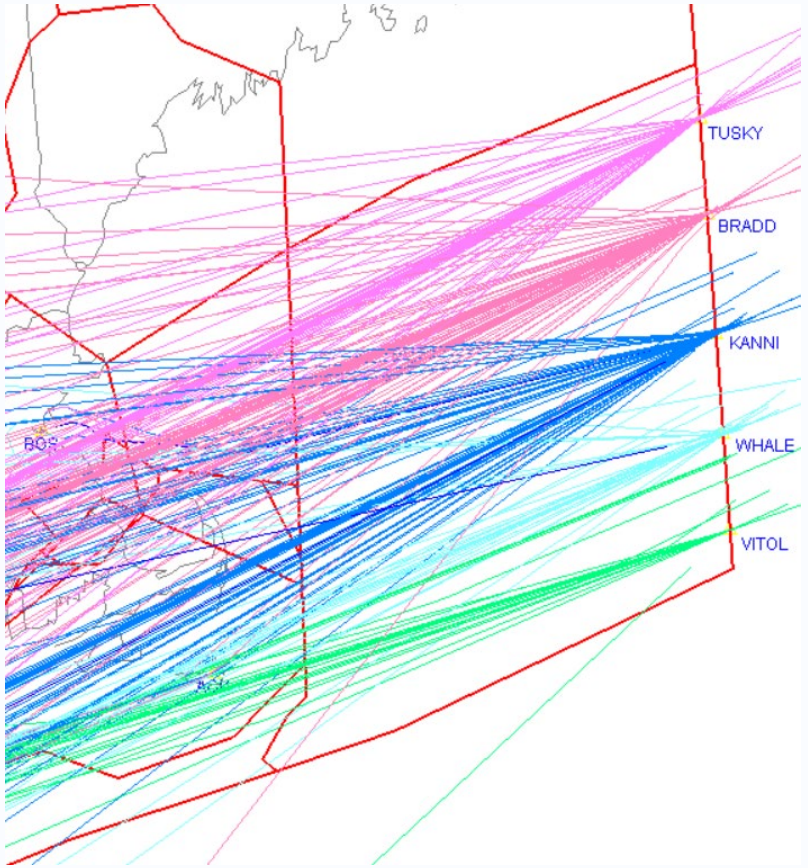
- MIT can be passed back to ZQM. The earlier this can be done the better. If high MIT restrictions are anticipated to N90/PHL/PCT, this can be coordinated early in the day to help with sequencing.

MIT/MINIT ZNY/ZDC INTERNATIONAL DEPARTURES

- Departure restrictions at the major metro airports will reduce volume if a sector is forecast to become over-saturated

CELTK MIT/MINIT/SWAP

- If weather or volume is saturating a sector, MIT or swapping the departure gate to LBSTA and changing the first INF can alleviate some pressure.



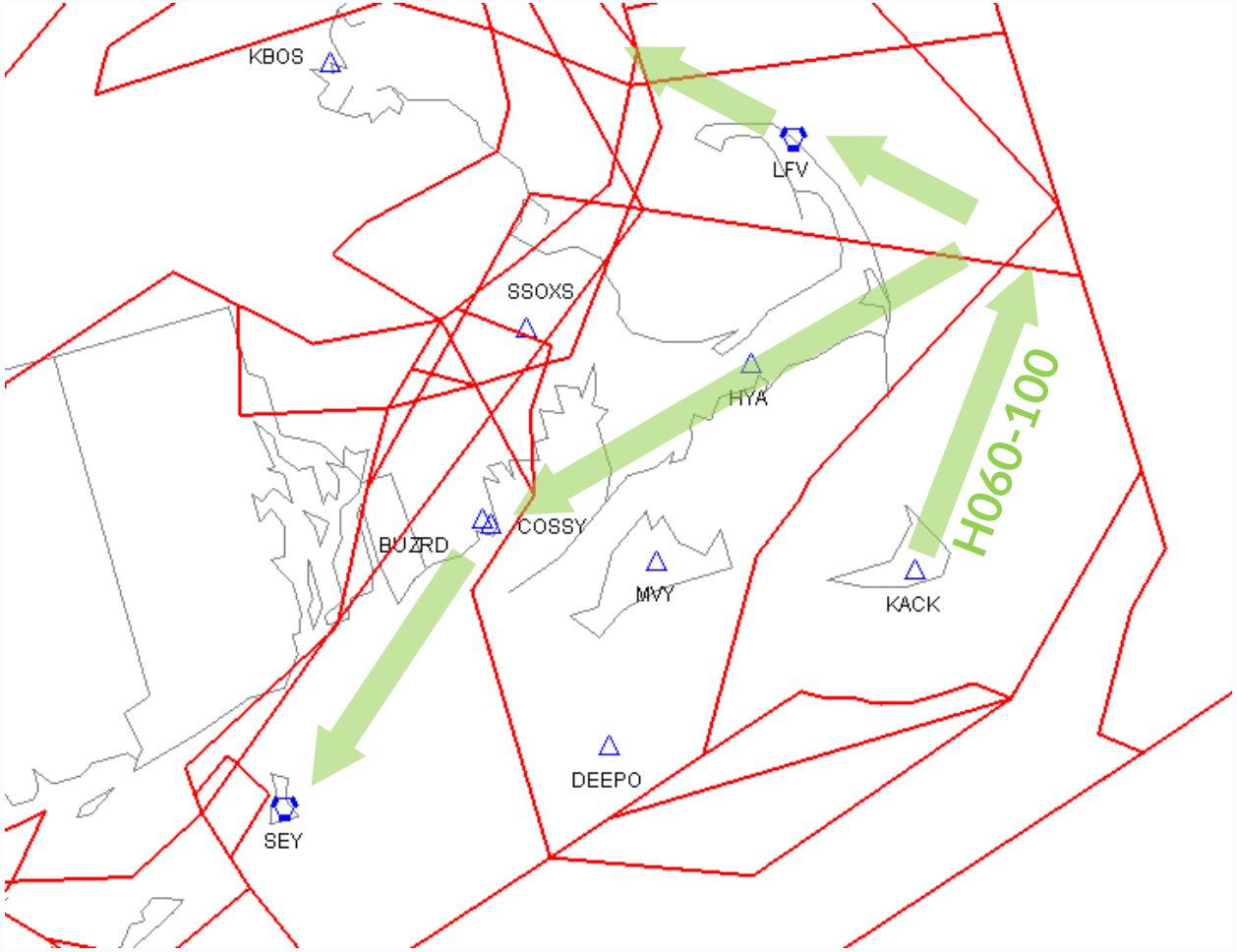
Federal Aviation Administration

SUMMER CAPE TRAFFIC

NASOperations
ATOSysOps

ACK DEPARTURES ON COORDINATED HEADING

- The Area D OSIC/CIC Coordinates with TMU - ACK Jet Departures on Heading ### from time HHMM-HHMM
- Heading will be between 060-100 per LOA
- All ACK jets will be delivered from A90 on this heading. Props will remain on normal routes.
- Reduces conflictions with other airport departures and overflights and allows for aircraft to climb and blend easier with the existing flow.
- Allows for sector 17 to have the potential to work some of these aircraft
- This should be entertained before the “3/4/5” restriction.



Federal Aviation Administration

SUMMER CAPE TRAFFIC CONTINUED

NASOperations
ATOSysOps

TBS CAPE ARRIVALS

- Used as needed, but primarily Friday/Sunday nights. CFR required for all N90 and internal ZBW departures.

"3/4/5" MINIT ACK/MVY/HYA DEPARTURES

- Minutes in trail off of Cape and Islands airports will reduce sector congestion.

MIT/MINIT ON DEPARTURES VIA SSOXS/JUMPR

- Slow departures to reduce congestion over BUZRD/COSSY/SEY

MIT/MINIT/SWAP GATES ON N90 BETTE/HAPIE DEPTS INDIVIDUALLY OR AS ONE

- Rerouting JFK departures over MERIT/GREKI will route the flights around Sector 18

REROUTE Q97/Q167 FLIGHTS

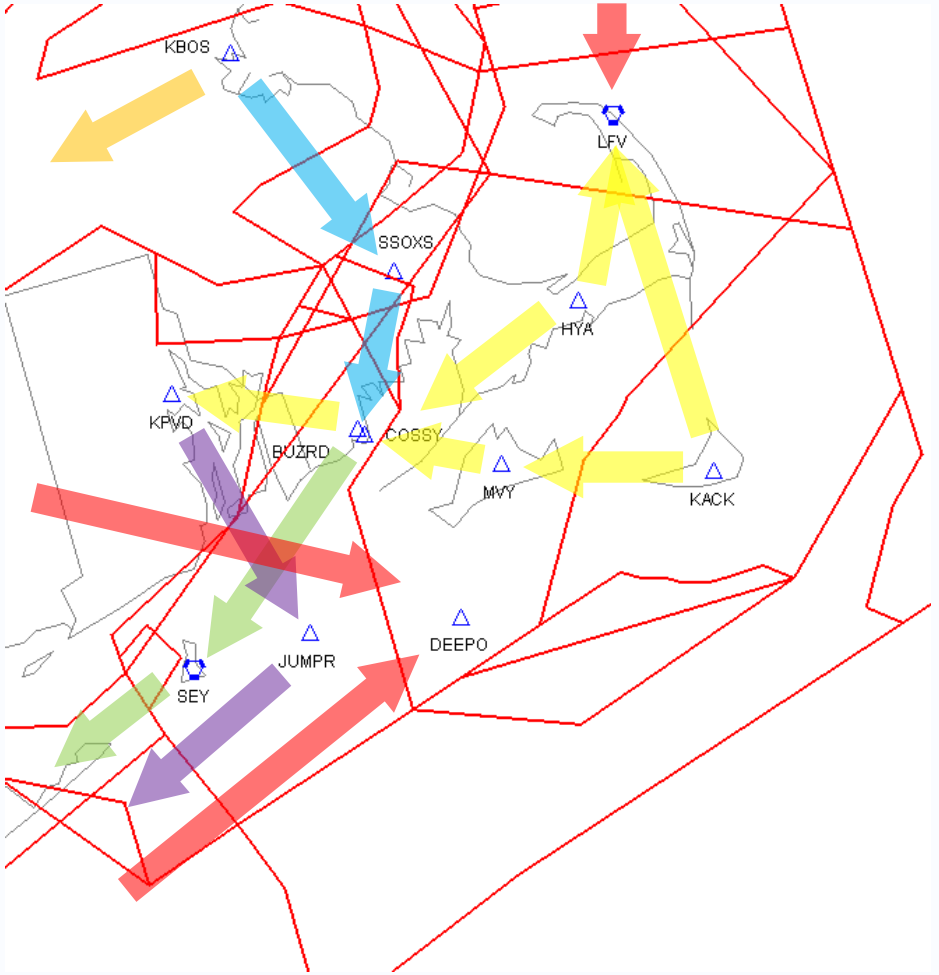
- Inland routes (e.g. BIZEX Q75) or overwater routes via ACK/ZWY will reduce sector congestion

MIT/MINIT ZDC/PHL INTERNATIONAL DEPARTURES

- Slows the overflight volume in the sector

CAP AIRCRAFT DESTINED TO N90 AIRPORTS AT 10,000FT

- This will route these flights in PVD approach and remove them from Sector 18



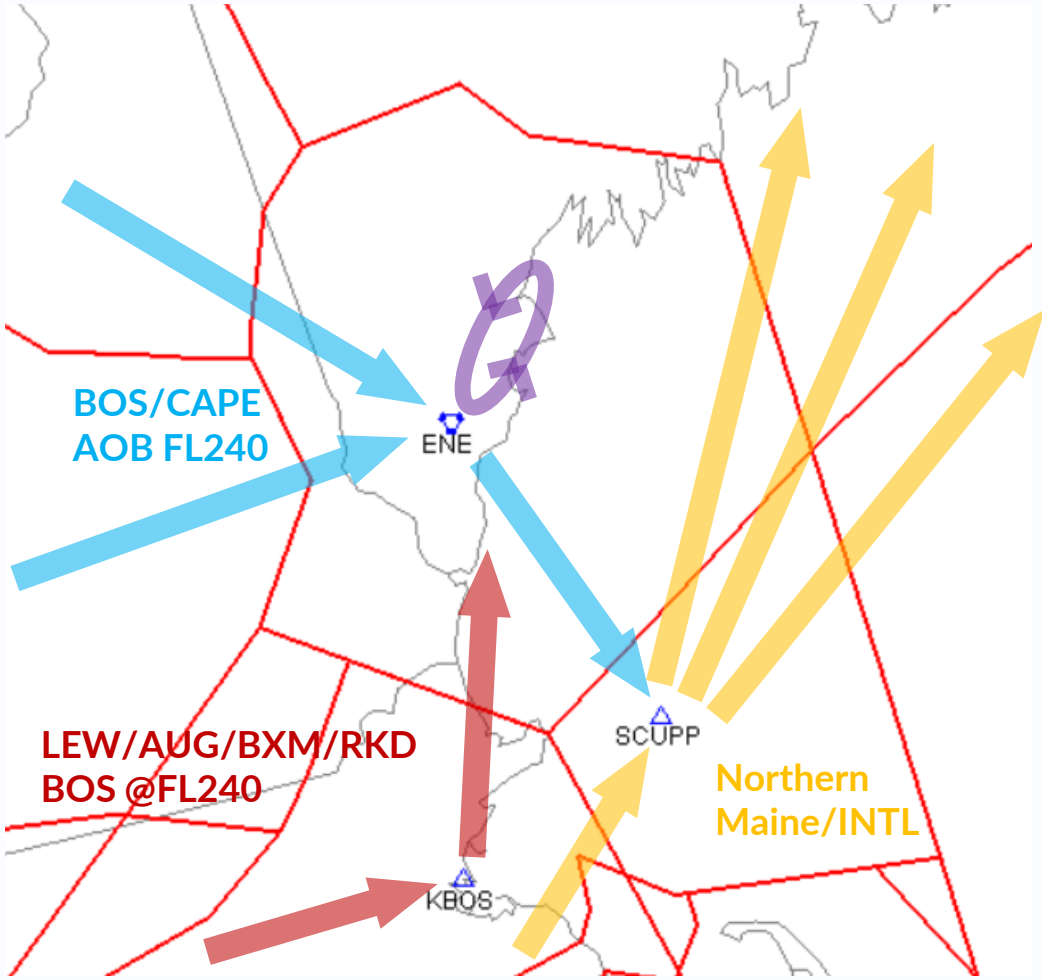
Federal Aviation Administration

SECTOR 02 HOLDING JFK ARRIVALS

NASOperations
ATOSysOps

COORDINATE STACK ALTITUDES AT ENE TO ALLOW OTHER FLIGHTS TO PASS

- Request Area B force OOSHN/Cape arrivals below the lowest used altitude.
- Request Area C have all LEW/AUG/BXM/RKD arrivals cross BOS at FL240 rather that a pilots discretion descent to FL240. This will give sector 16 time to descend the arrivals below the stack.
- Coordinate with Area C to route International/Northern Maine traffic around ENE. Consider SCUPP BGR/BHB/PQI or SCUPP <INF>. This will keep flights clear of the holding pattern.



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SECTOR 02 HOLDING JFK ARRIVALS

NASOperations
ATOSysOps

IF EXTENDED HOLDING IS EXPECTED, IDENTIFY ALTERNATE AIRPORTS AND HAVE GOOD ROUTES TO THESE AIRPORTS READY

- Normal routes may be impacted by weather. Verify current correct routing to avoid any further delays to the flights

POSSIBLE REROUTE OVER ALB/IGN

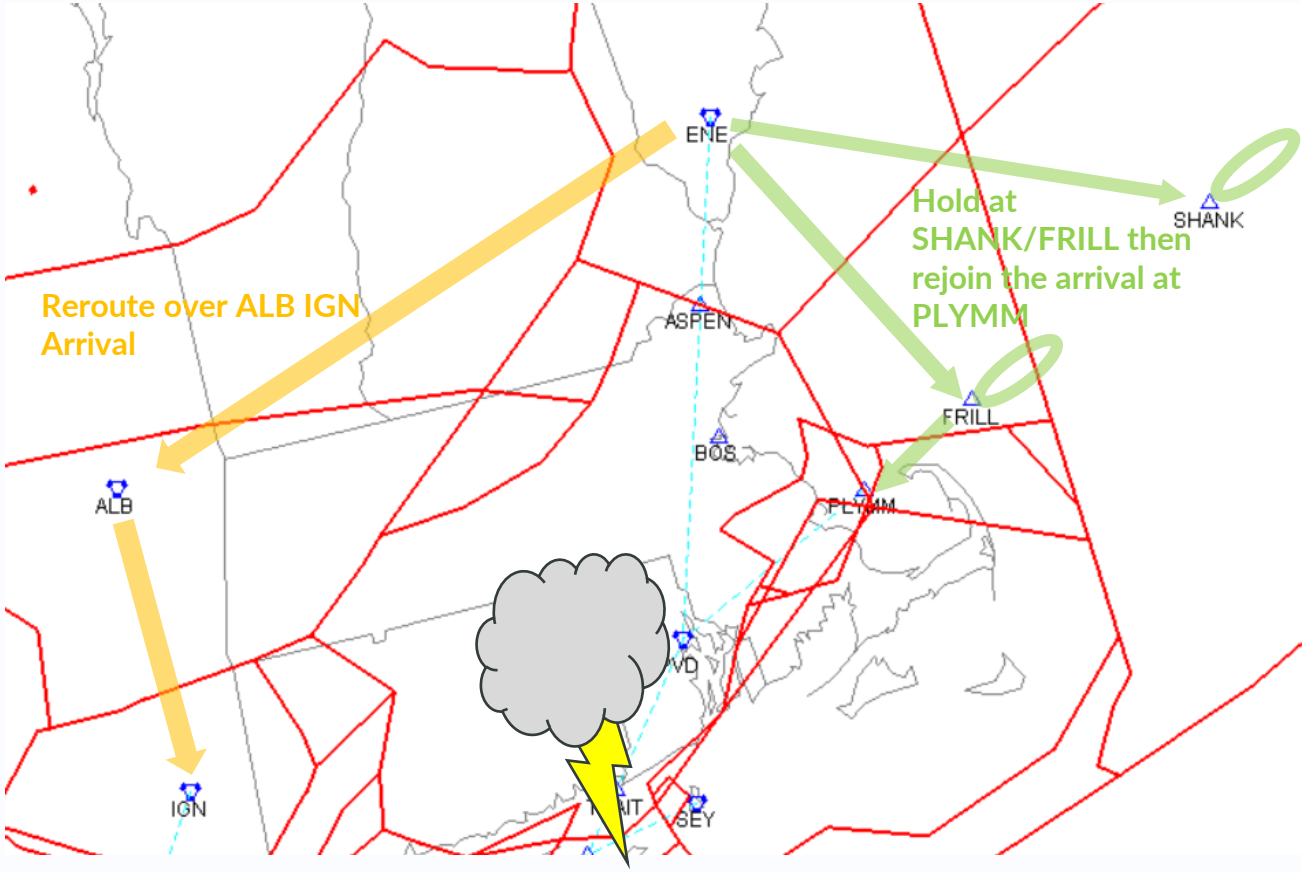
- This may place the aircraft on backside of weather once it moves through

CHANGE HOLDING FIX

- If main international flow is through sector 02, consider routing flights to FRILL/SHANK to hold

FOR PERIODS OF EXTENDED HOLDING ADVISE ZQM

- This may allow aircraft to slow down to conserve fuel and reduce potential holding time



Federal Aviation Administration

SECTOR 17 HOLDING JFK ARRIVALS

NASOperations
ATOSysOps

IF EXTENDED HOLDING IS EXPECTED, IDENTIFY ALTERNATE AIRPORTS AND HAVE GOOD ROUTES TO THESE AIRPORTS READY

- Normal routes may be impacted by weather. Verify current correct routing to avoid any further delays to the flights

FOR PERIODS OF EXTENDED HOLDING ADVISE ZQM

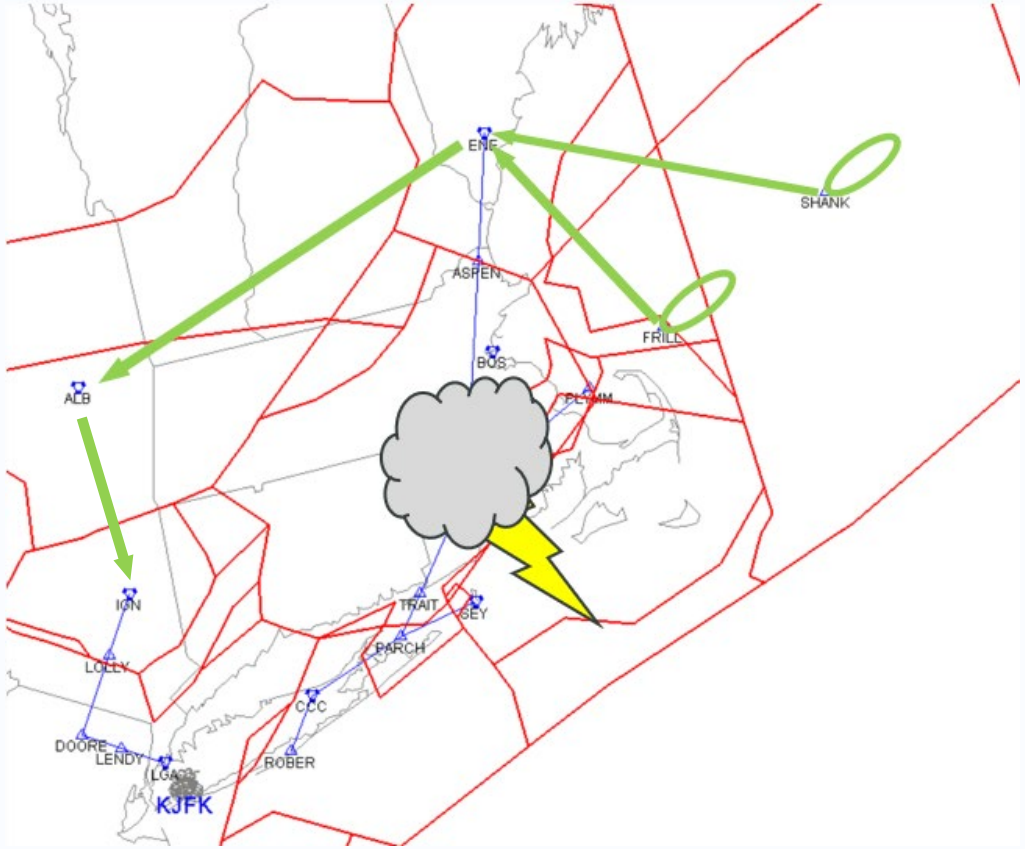
- This may allow aircraft to slow down to conserve fuel and reduce potential holding time

CHANGE HOLDING FIX

- If main international flow is through sector 17, consider routing flights to ENE to hold

POSSIBLE REROUTE OVER ALB/IGN

- This may place the aircraft on backside of weather once it moves through



Federal Aviation Administration

Area E Guidebook Refresher

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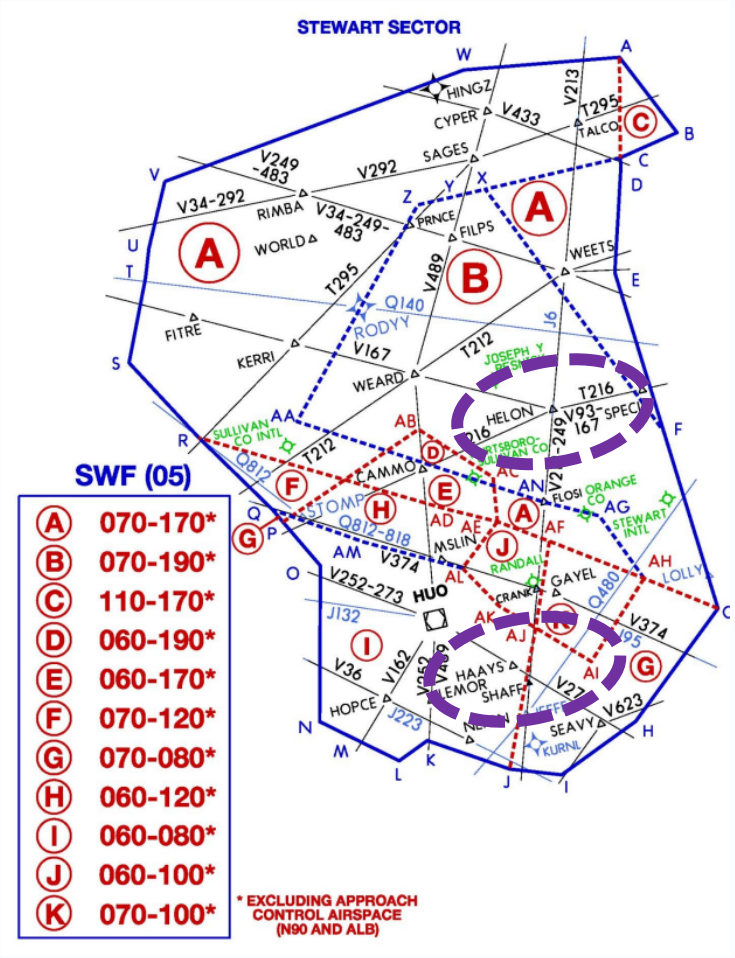
Sector 05: SWF

Scenario 1: Holding for EWR
Published Holding at HELON or SHAFF

NASOperations
ATOSysOps

- OSIC/CIC: Communicate how many you will hold before shutting off other sectors.
  *The sector can't typically hold more than **7 EWR** arrivals at SHAFF + HELON combined*
  *In addition, the sector can't typically hold more than **10 total aircraft** (EWR and SATS).*

- OSIC/CIC: Consider asking TMU to dynamically lower Sector 05's MAP value to reflect increased workload when holding



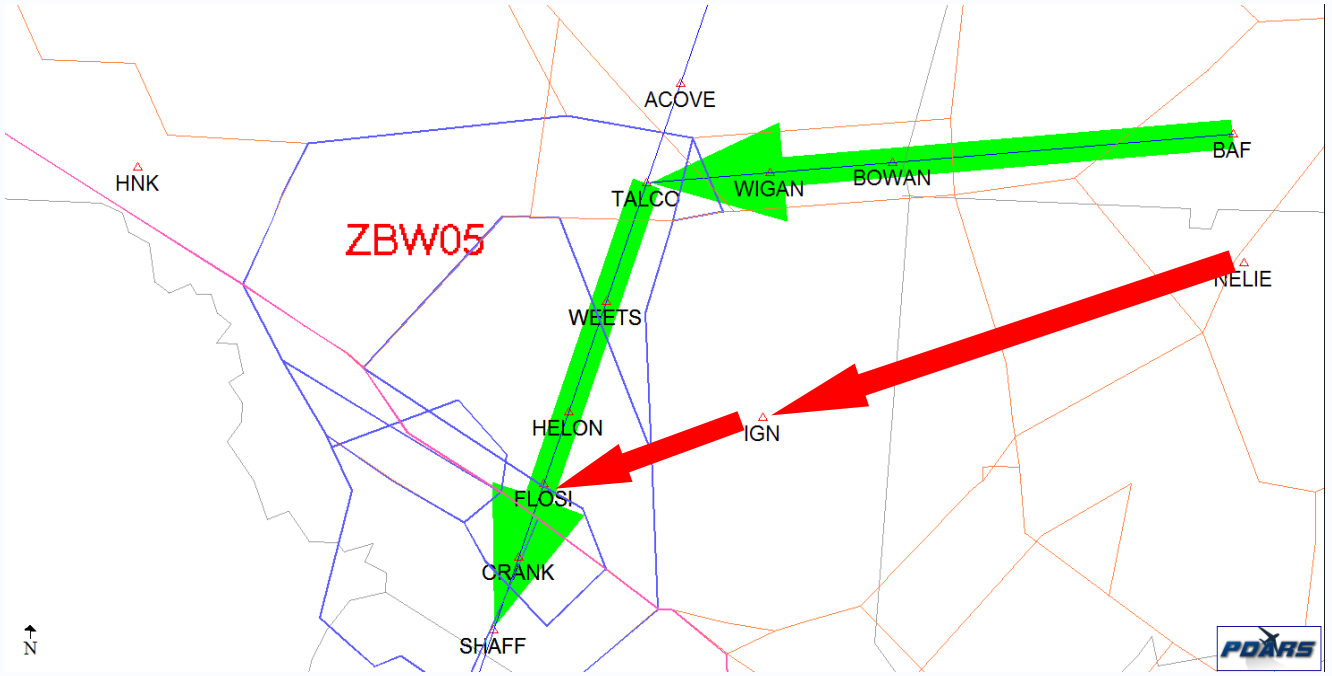
Federal Aviation Administration

Scenario 1: Holding for EWR
Published Holding at HELON or SHAFF
Continued

NASOperations
ATOSysOps

- Implement EWR Bypass
- APREQ for SWF departures
- Implement MIT or increase existing MIT for EWR SATS from Sectors 22 and 24 into Sector 05
- Implement MIT or increase existing MIT for HPN from Sectors 23 and 24 into Sector 05
- Consider an internal of 1st tier ground stop to EWR

EWR Bypass

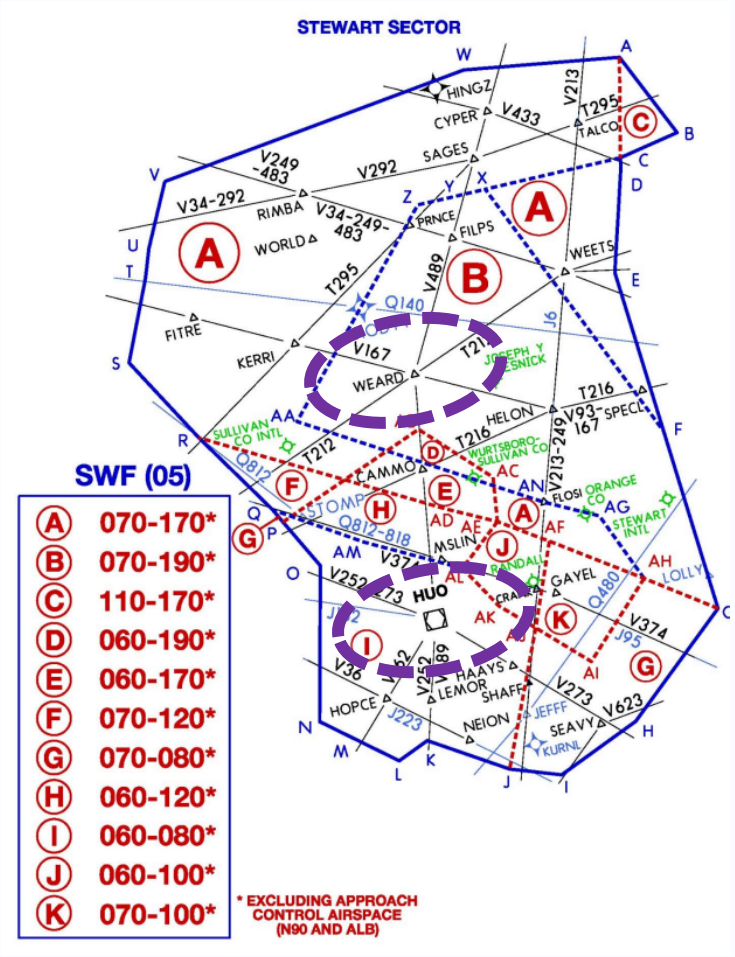


Federal Aviation Administration

Scenario 2: Holding EWR Sats (TEB/MMU/CDW/LDJ)
Holding at HUO and WEARD

NASOperations
ATOSysOps

- OSIC/CIC: Communicate how many you will hold before shutting off other sectors
  - *The Sector can't typically hold more than **5 aircraft** at HUO and WEARD combined due to altitude limitations*
  - *The Sector can't typically hold more than **10 aircraft TOTAL** (EWR + SATS)*
- OSIC/CIC: Consider asking TMU to dynamically lower Sector 05 MAP value to reflect increased workload when holding
- APREQ for SWF departures
- Implement MIT or Increase Existing MIT for EWR SATS from Sectors 22 and 24 into Sector 05
- Consider an internal of 1st tier ground stop to EWR SATS



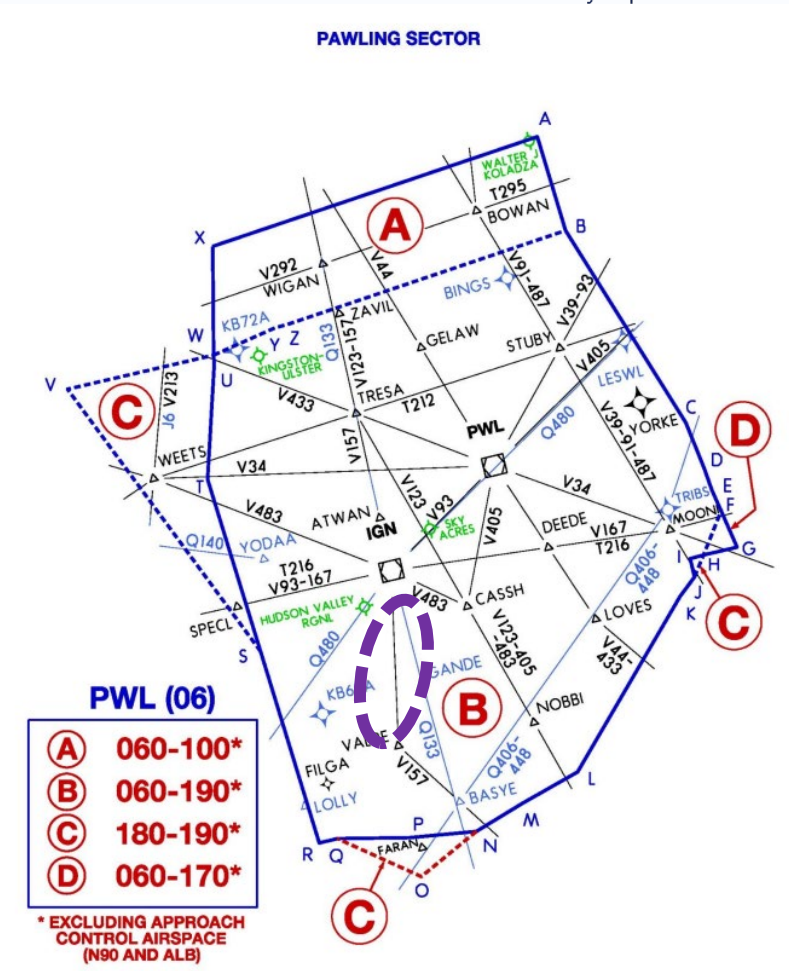
Federal Aviation Administration

Sector 06: PWL

Scenario 1: Holding LGA
Published Holding at VALRE

NASOperations
ATOSysOps

- OSIC/CIC: Communicate how many you will hold before shutting off other sectors
  The sector can't typically hold more than 6 LGA arrivals at VALRE and IGN. Additionally, the sector can't typically hold more than 8 HPN and LGA combined.
- Consider lowering the traffic monitor number to reflect increased workload when holding
- Implement EWR Bypass
- Increased/Implement MIT on HPN from Sectors 05 and 23
- MINIT on BDL via VEERS



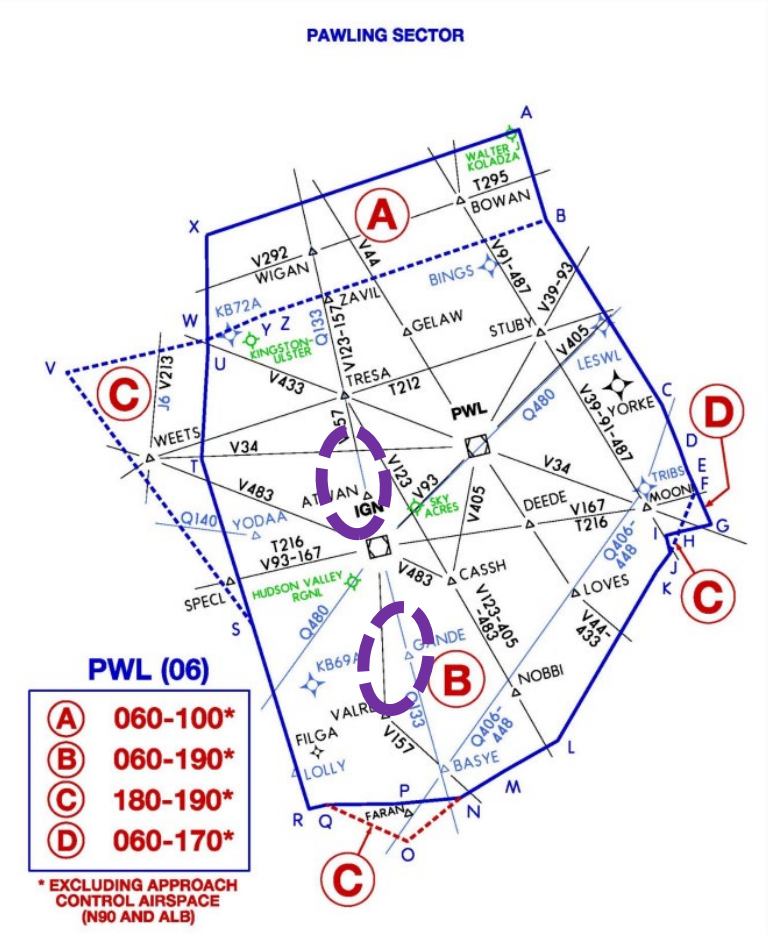
Federal Aviation Administration

Sector 06: PWL

Scenario 2: Holding HPN

NASOperations
ATOSysOps

- Communicate how many you will hold before shutting off other sectors
  - *The Sector can't typically hold more than 4 HPN arrivals at VALRE*
  - *The sector can't typically hold more than 8 HPN and LGA arrivals combined.*
- Consider lowering the traffic monitor number to reflect increased workload when holding
- Implement EWR Bypass
- Increased/Implement MIT on LGA from all other sectors (47/22/24)
- Consider an internal of 1st tier ground stop to HPN



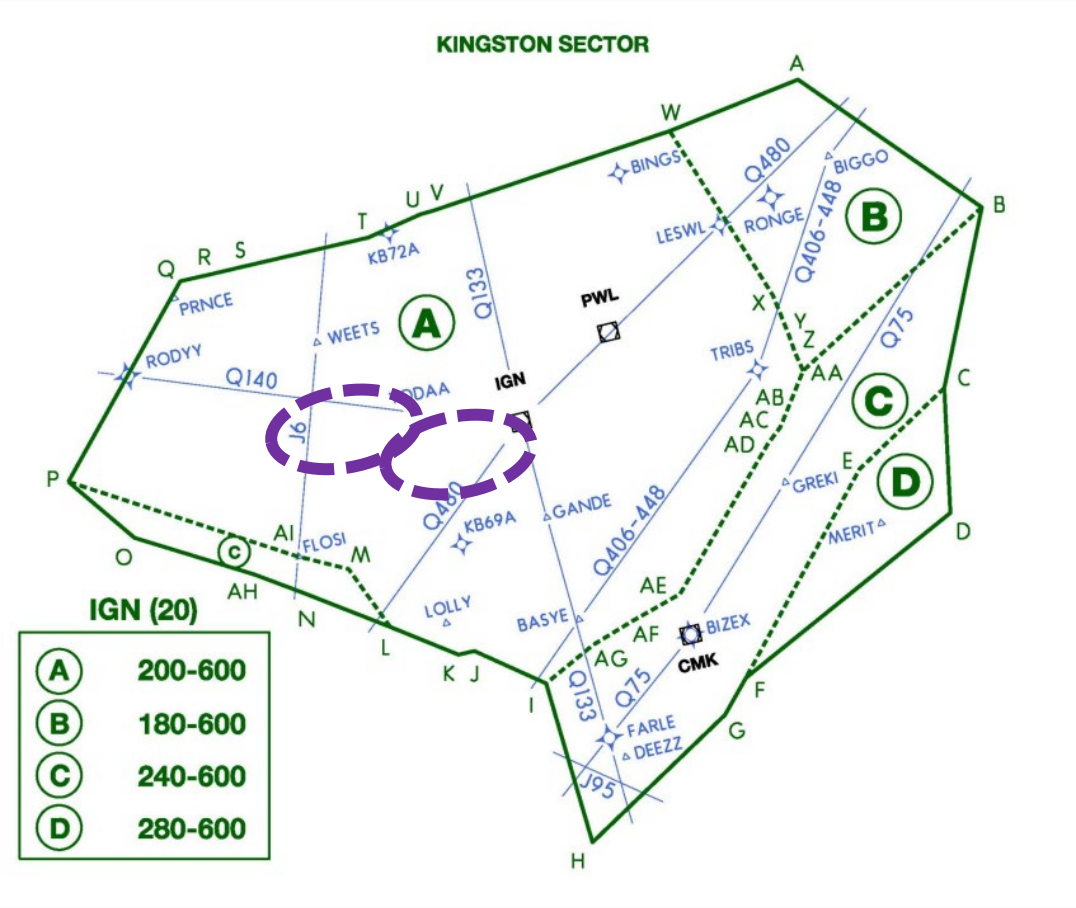
Federal Aviation Administration

Sector 20

Scenario 1: Holding JFK
Published Holding at YODAA and IGN

NASOperations
ATOSysOps

- Communicate how many you will hold before shutting off other sectors
  - *The sector can't typically hold more than 4 JFK arrivals*
- Consider lowering the Sector 20's monitor alert parameter (MAP value) to reflect increased workload when holding
- MINIT for BDL Departures via VEERS
- MINIT for ALB Departures via ACOVE & J6
- MINIT for BDR/OXC/HVN departures via JUDDS RONGE PWL
- Consider offloading IGN arrivals via PARCH arrival or via LOVES V44 DPK.
  - *Requires appropriate coordination with adjacent areas/facilities*

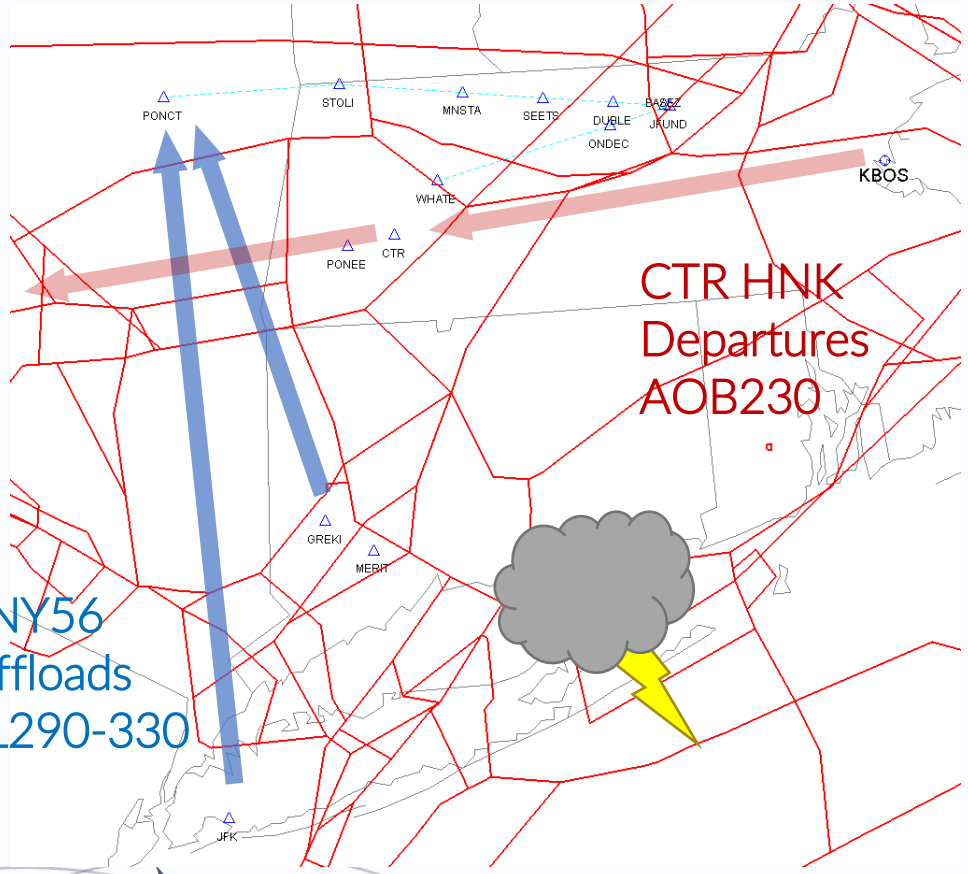


Federal Aviation Administration

Sector 20

Scenario 2: JFUND Offloads

NASOperations
ATOSysOps



- High altitude arrivals from ZNY56
  - Coordination will occur between Area B, E, and TMU before Area E starts offloading
  - Aircraft should be cleared direct PONCT, to enter Sector 38 between FL290-330, similar to Sector 10 restrictions
  - GREKI PONCT or JFK PONCT, depending on where they're coming from and what the weather will allow.
  - If CTR HNK starts to conflict with this offload, consider tunneling those flights through Sector 22, AOB FL230, until clear of Sector 38. This requires Area E and A coordination.

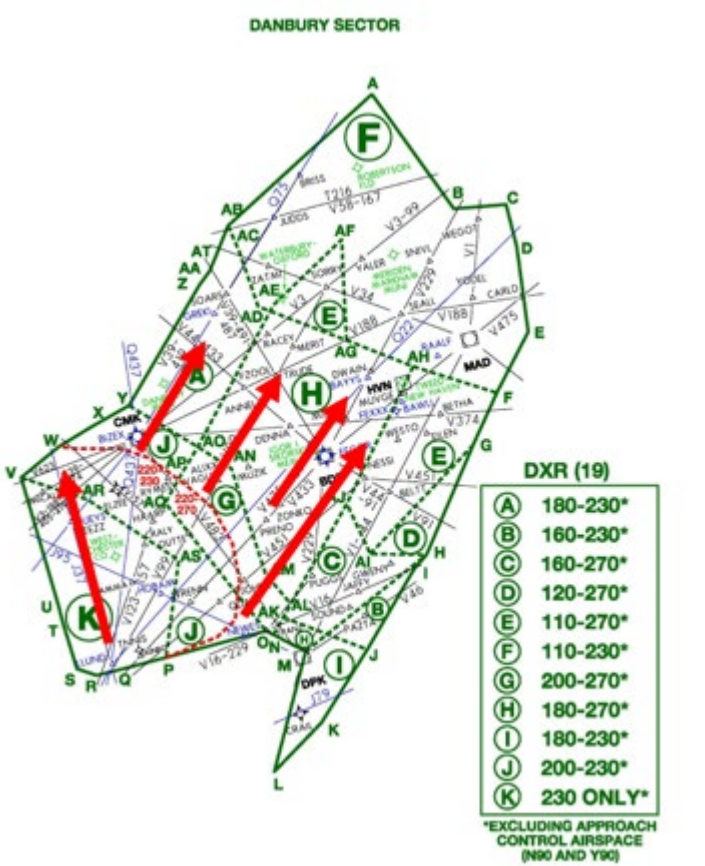
Federal Aviation Administration

Sector 19: DXR

Scenario 1: Weather over GREKI

NASOperations
ATOSysOps

- GREKI and MERIT MIT individually or as-one
- Have N90 vector GREKI traffic via MERIT..JUDDS, Sector 19 will have aircraft join route downstream (no CDRs).
- Pass-back BOS MIT to ZNY
- Reroute BOS ROBUC traffic via Q22 RBV RIFLE OOSHN-STAR or JFK PONCT JFUND
- STOP GREKI

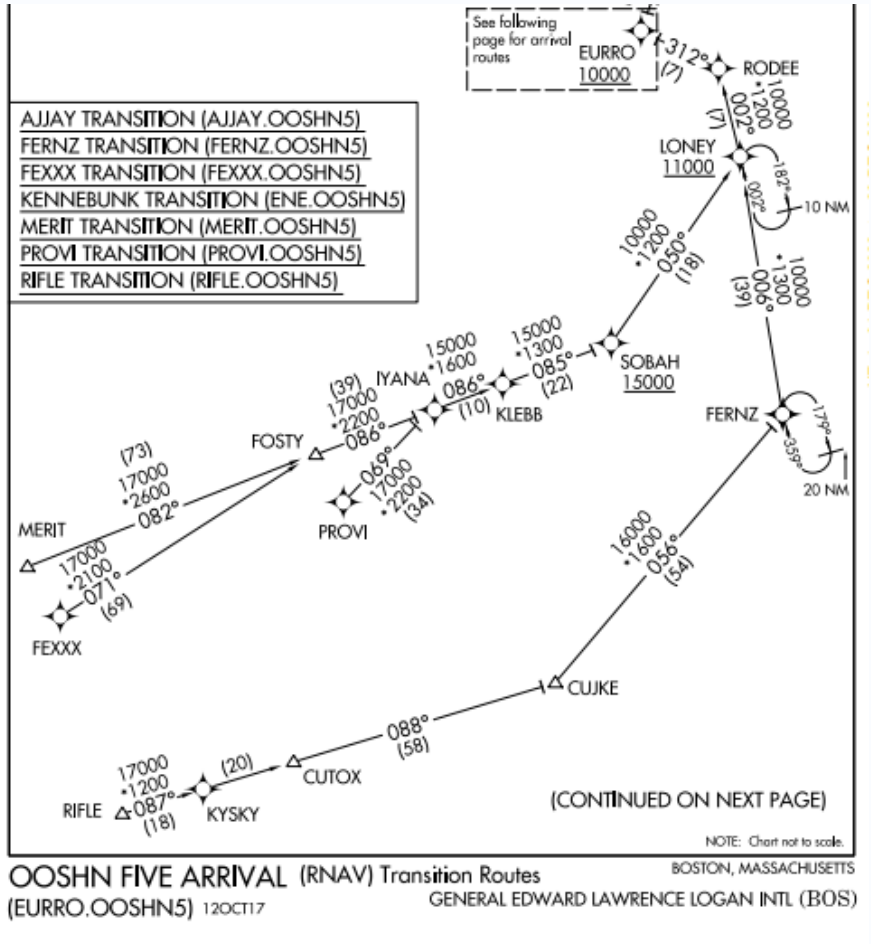


Federal Aviation Administration

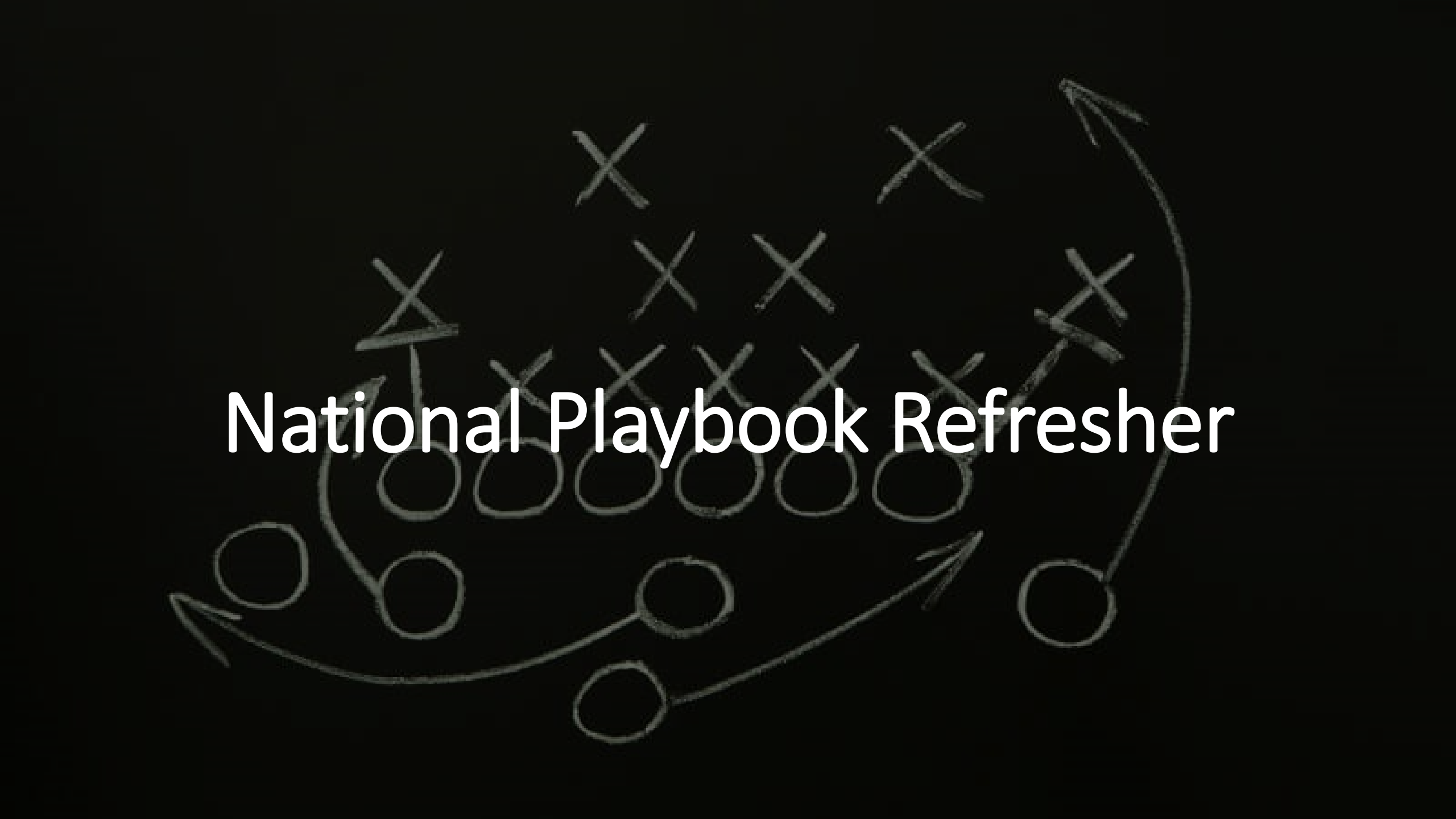
Sector 19
Scenario 2: Weather over MERIT

NASOperations
ATOSysOps

- MERIT MIT
- MERIT routed GREKI..JUDDS..PUT with MIT on GREKI/MERIT as one
- BOS MIT from ZNY
- BOS MIT from N90
- Reroute ROBUC traffic via Q22 RBV RIFLE OOSHN arrival or JFK PONCT JFUND arrival
- Reroute N90 ROBUC departures via BETTE RIFLE OOSHN arrival
- STOP MERIT



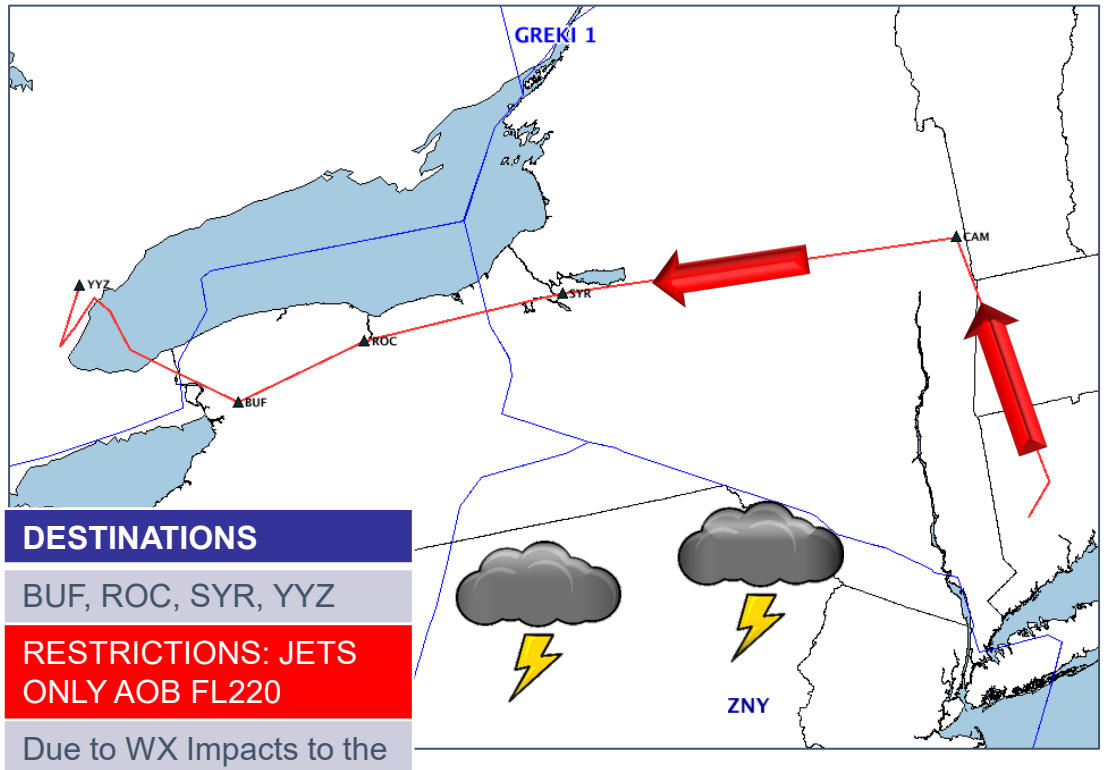
Federal Aviation Administration



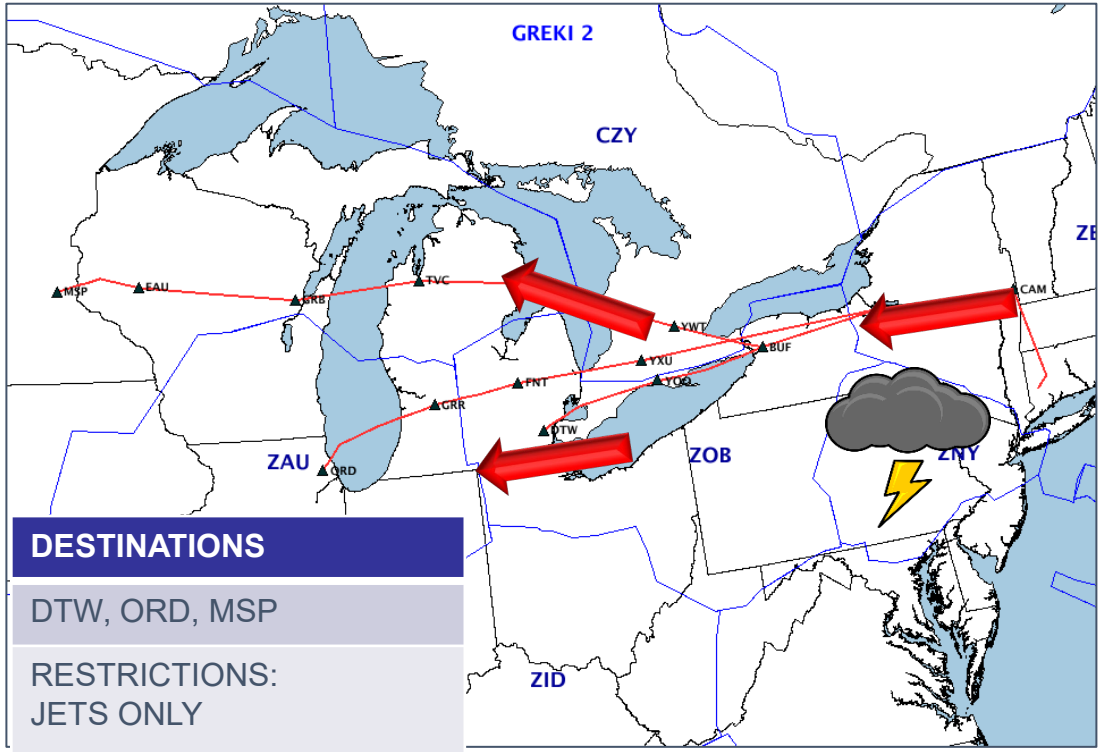
National Playbook Refresher

GREKI 1 and 2

NASOperations
ATOSysOps



DESTINATIONS
BUF, ROC, SYR, YYZ
RESTRICTIONS: JETS ONLY AOB FL220
Due to WX Impacts to the N90 North Gate Departures



DESTINATIONS
DTW, ORD, MSP
RESTRICTIONS: JETS ONLY
Due to WX Impacts to the N90 North Gate Departures, ZNY/ZOB Constraints

Federal Aviation Administration

GREKI 1/2 Playbook

NASOperations
ATOSysOps

- Requires ZBW to merge flow with the ZNY/N90 flow at CAM.
- TMU should request ZOB to reduce any MIT pass-back because ZBW is providing a merged/combined stream
- If CZY Staffing allows, ZBW flow can be rerouted via NOVON or BUGSY to reduce sector volume, complexity, and departure delays.
- GREKI 2 play may deliver up **90+** aircraft during the afternoon through the evening shift.
- This playbook may be tactically modified to include other destinations, such as MKE, MDW, CLE, CVG or PIT.

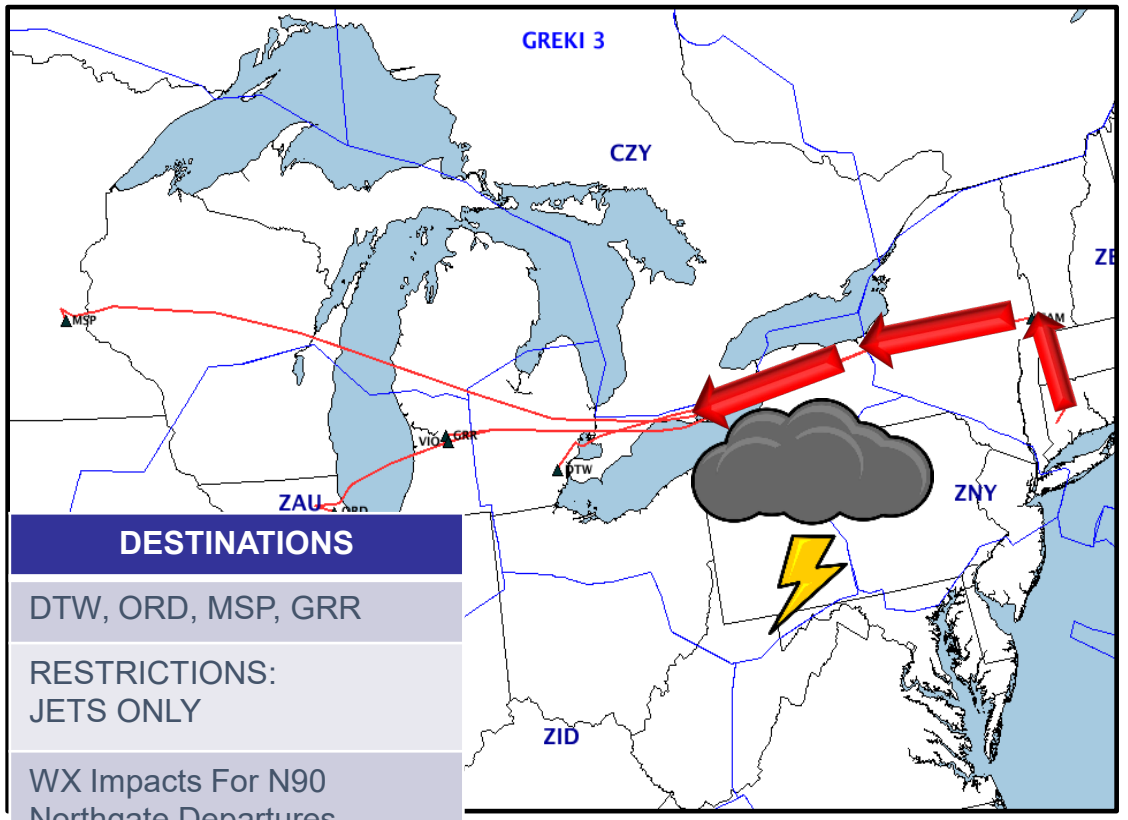
Federal Aviation Administration

GREKI 3

NASOperations
ATOSysOps

- **Used for CZY Constraints; Expect more usage this year**
- **Routes Bypass CZY Entirely.**

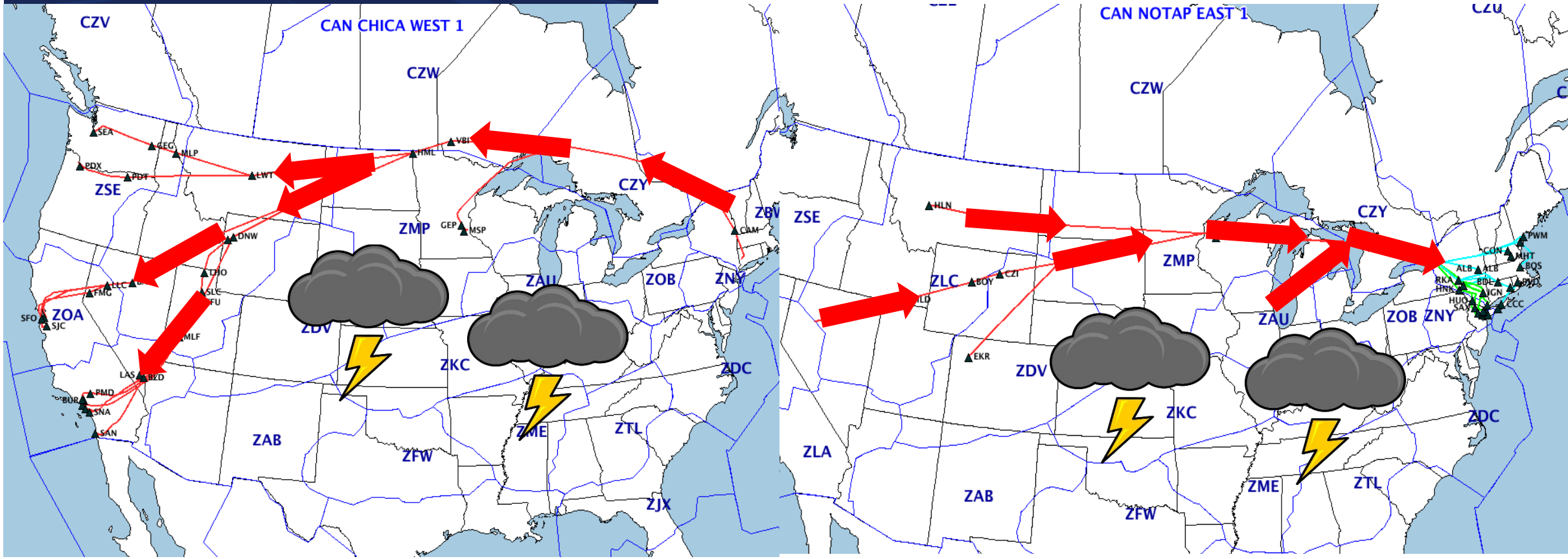
ORIGIN	ROUTE	DEST
KEWR KLGA KJFK KHPN KTEB	GREKI JUDDS CAM Q822 GONZZ DONEO TPGUN2	KDTW
KEWR KLGA KJFK KHPN KTEB	GREKI JUDDS CAM Q822 GONZZ ICHOL JAAJA BERYS Q440 SLLAP IDIOM MUSCL3	KMSP
KEWR KLGA KJFK KHPN KTEB	GREKI JUDDS CAM Q822 GONZZ CHAAP Q436 EMMMA WYNDE2	KORD
KEWR KLGA KJFK KHPN KTEB	GREKI JUDDS CAM Q822 GONZZ CHAAP Q436 EMMMA	KGRR



DESTINATIONS
DTW, ORD, MSP, GRR
RESTRICTIONS: JETS ONLY
WX Impacts For N90 Northgate Departures

Federal Aviation Administration

Canadian (CAN) Routes (East & West)



- Used when normal routing to the Midwest, Rockies, and West Coast impacted by WX.
- Flow Rerouted through Areas A, B, and E

CAN Routes and NavCanada 2023

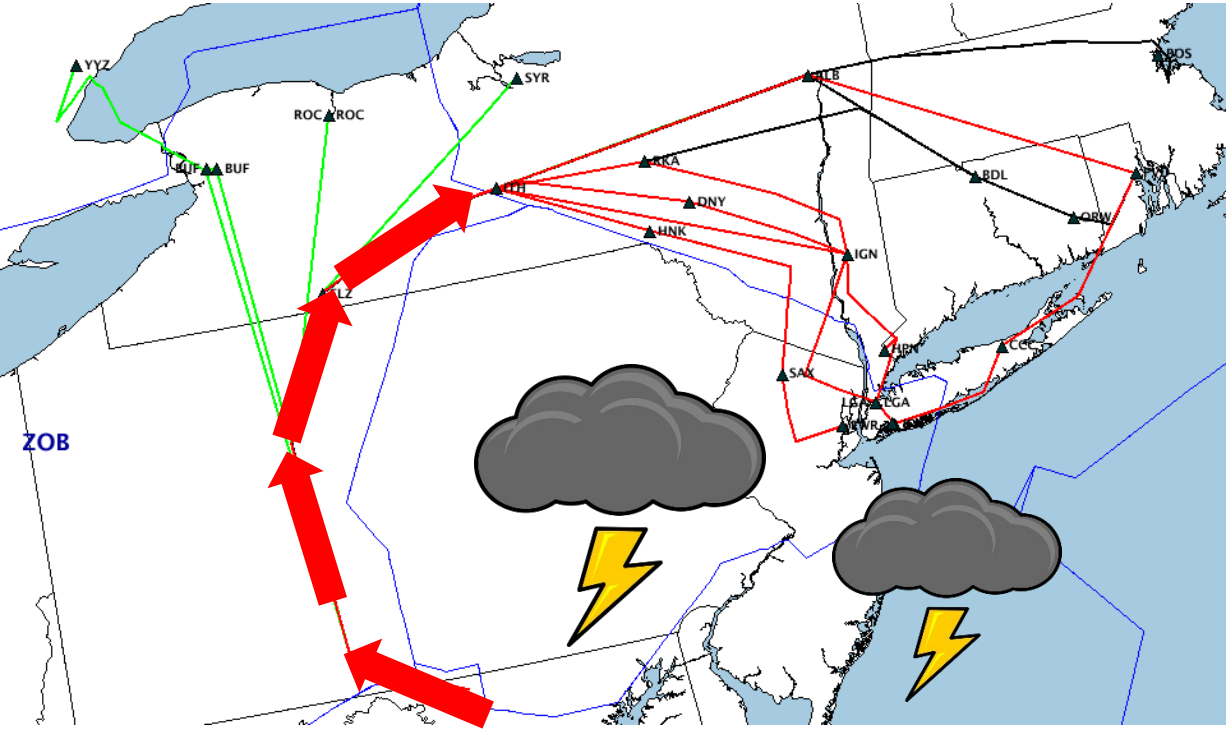
NASOperations
ATOSysOps

- CAN Routes require NavCanada's approval.
- NavCanada requires minimum 24 hours' notice to staff appropriately before a CAN Route can be used.
- **There are indicators that CAN Routes will not be readily available this year due to NavCanada constraints.**
- Early outreach and discussion will be critical this year.
- Other alternative plays may need to be used e.g. GREKI3

Federal Aviation Administration

WEVEL

NASOperations
ATOSysOps



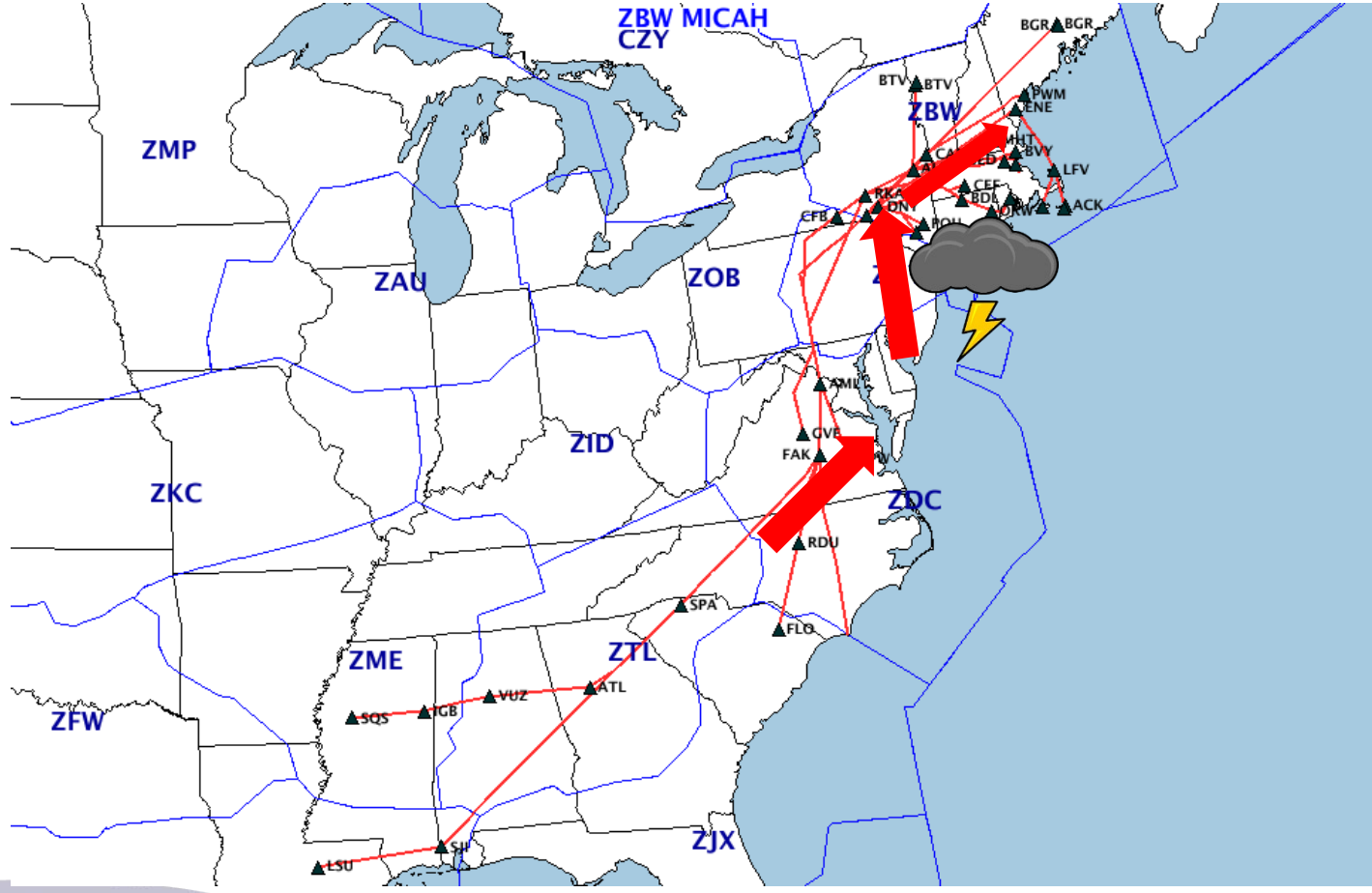
- **Impacted Area or Flow:** BWI/DCA/IAD Departures normally through ZNY and East Coast
- **Facilities Included:** ZDC ZNY ZOB ZBW
- **Restrictions: Aircraft capped AOB FL220**. Flight crews are instructed to not request higher for the entire flight

Federal Aviation Administration

ZBW MICAH

NASOperations
ATOSysOps

- Impacted Area or Flow: Arrivals From Mid-Atlantic and Southern US normally via DelMar, NJ, Long Island Area
- Facilities Included: ZME/ZFW/ZHU/ZTL/ZMA/ZJX/ZDC /ZNY/ZBW
- Restrictions: Flights enter ZBW AOA FL290 for ZBW24

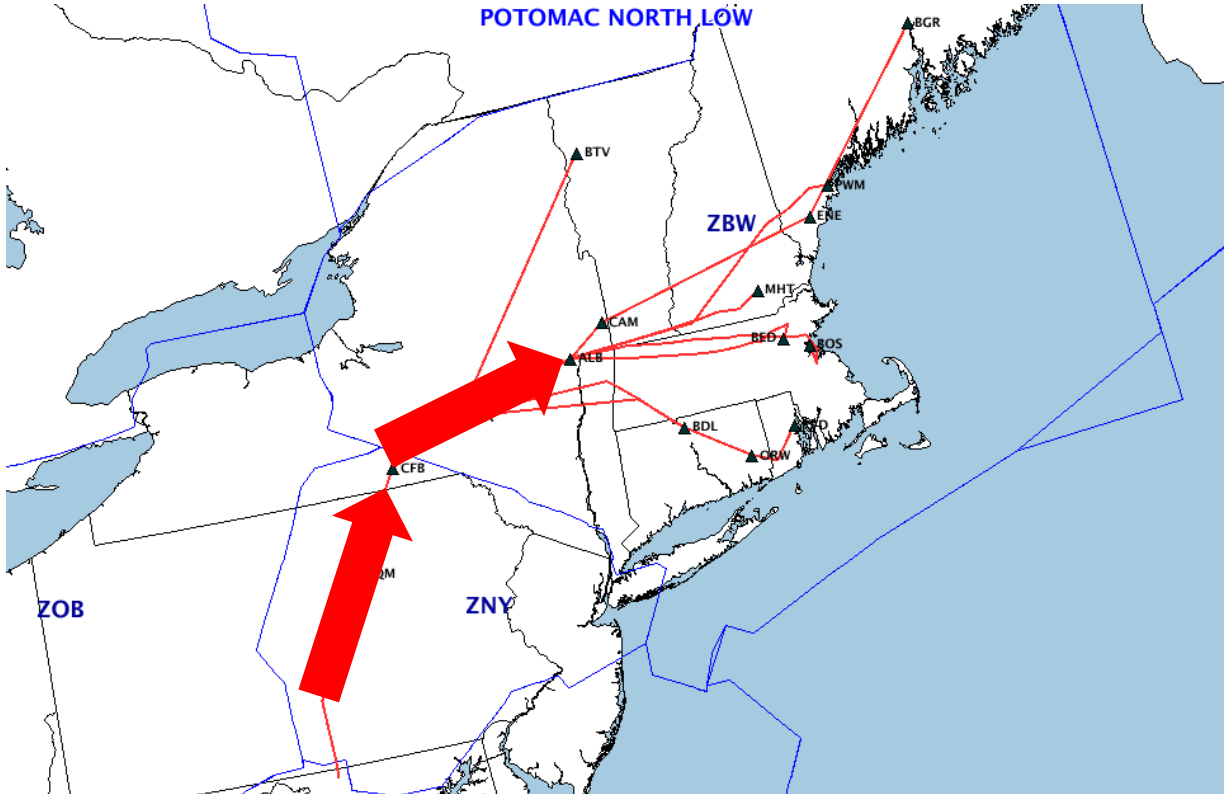


Federal Aviation Administration

POTOMAC NORTH LOW

NASOperations
ATOSysOps

- **Impacted Area or Flow:** SWAP ESCAPE ROUTES FOR BWI/DCA/IAD TO ZBW DESTINATIONS
- **Facilities Included:** PCT ZBW ZDC ZNY
- **RESTRICTIONS:** Jets capped at 170, pilots are instructed to not request higher.
- **SPECIAL NOTES**: ***THIS PLAYBOOK IS NOT TO BE USED IN CONJUNCTION WITH THE ZBW MICAH PLAYBOOK***



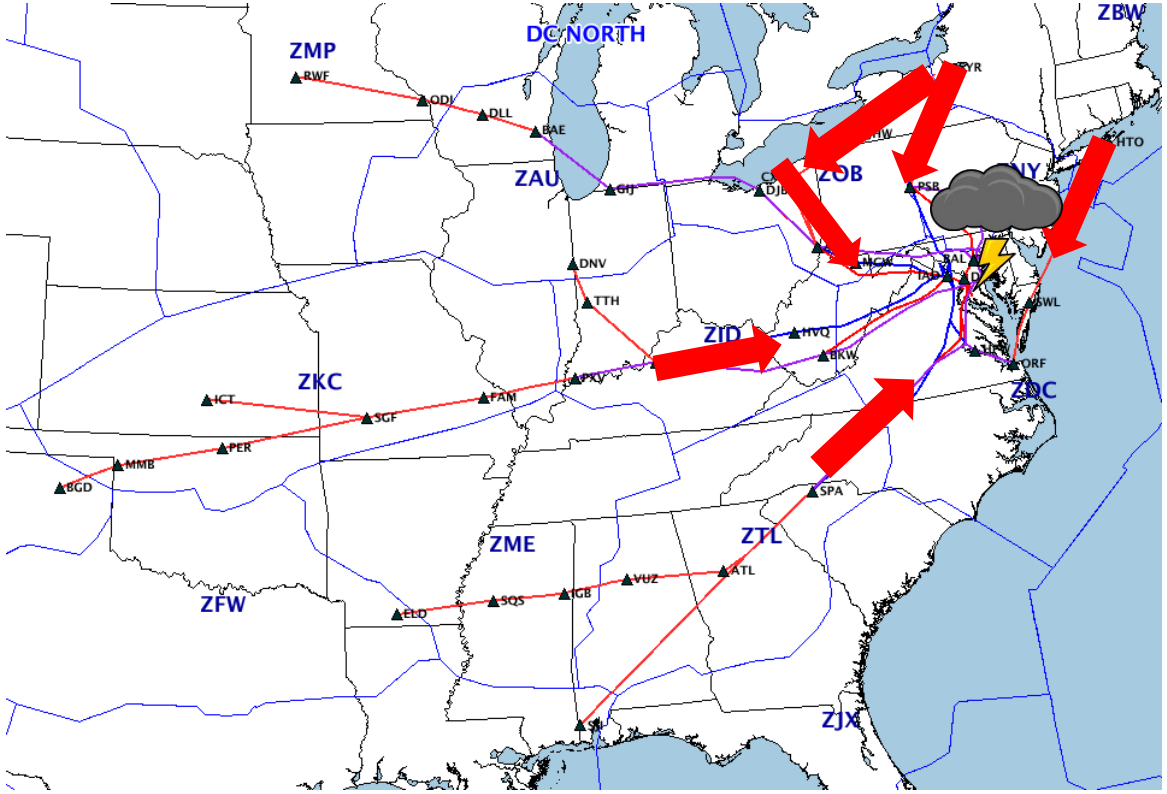
Federal Aviation Administration

DC NORTH 1

NASOperations
ATOSysOps

- Impacted Area or Flow: ZNY, Arrivals To DC Metros
- Facilities Included: ALL
- Restrictions: ZBW Traffic VIA SYR AOB FL200

ORIGIN	ROUTE	REMARKS
ZBW	SYR J59 PSB	AOB FL300
ZBW	GONZZ Q29 JHW CXR AIR	AOB FL200
ZBW	TOPRR Q167 ZJAAY ORF GEARS	



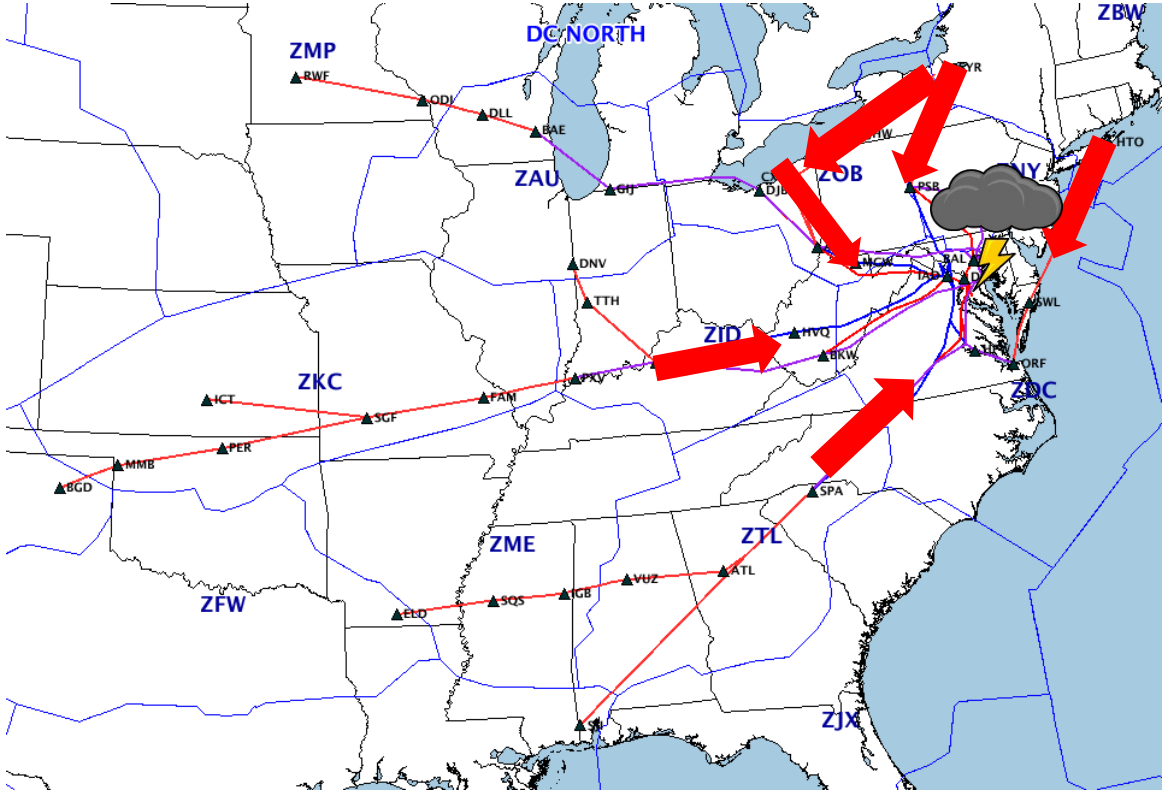
Federal Aviation Administration

DC NORTH 2

NASOperations
ATOSysOps

- Impacted Area or Flow: ZNY, Arrivals To DC Metros. **Uses normal coastal route to BWI/DCA**, coastal IAD route via GEARS TRRSK.
- Facilities Included: ALL
- Restrictions: ZBW Traffic VIA SYR AOB FL200

ORIGIN	ROUTE	REMARKS
ZBW	SYR J59 PSB	AOB FL300
ZBW	GONZZ Q29 JHW CXR AIR	AOB FL260
ZBW	TOPRR Q167 ZIZZI KNUKK ATR	



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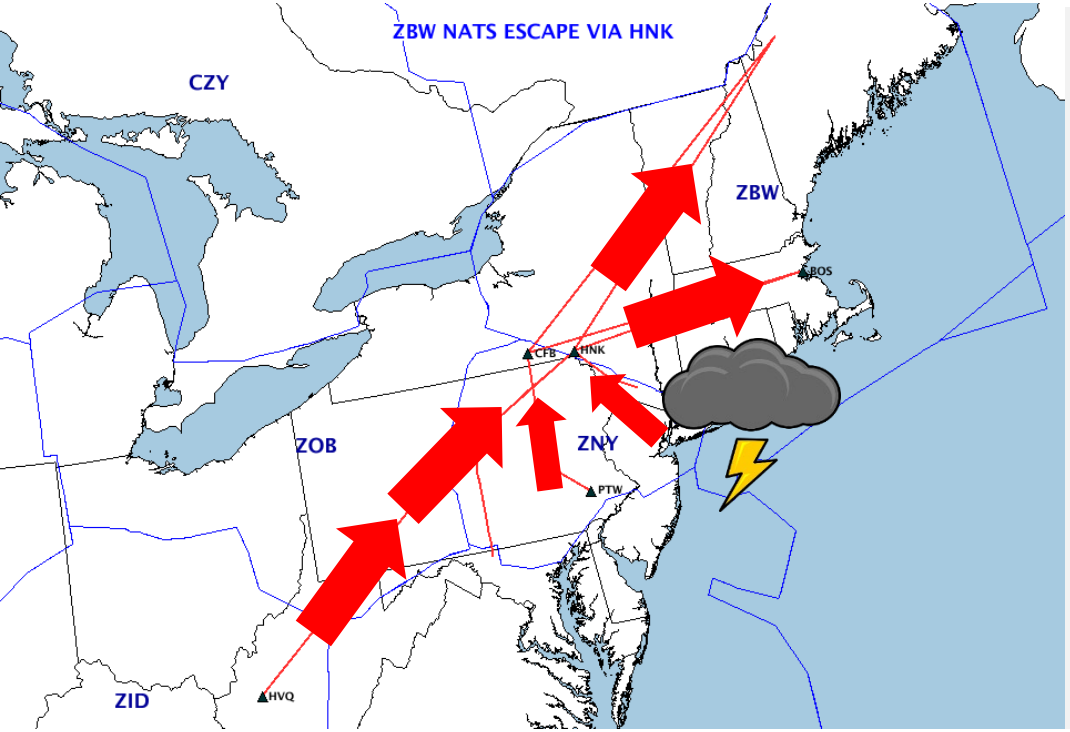
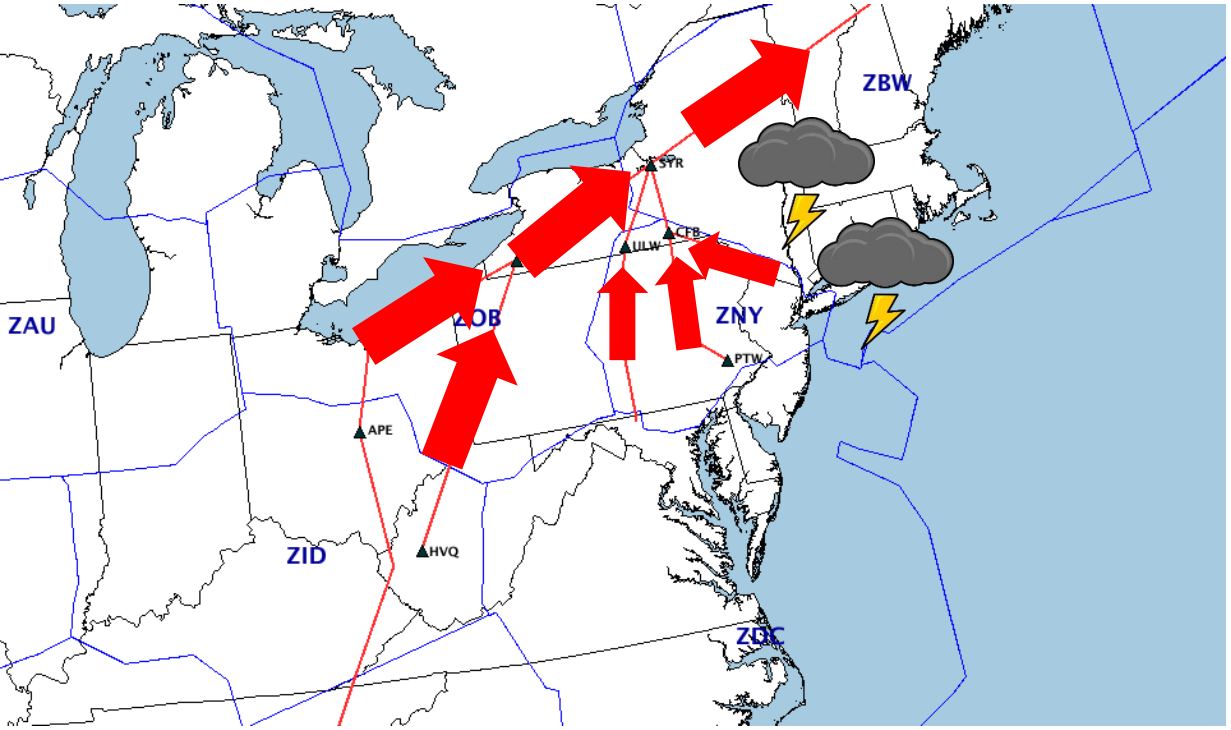
ZBW NATS ESCAPE VIA HNK



- **Impacted Area or Flow:** International Departures Through ZDC or ZNY
- **Facilities Included:** ZBW ZDC ZFW ZHU ZID ZME ZOB ZNY ZTL

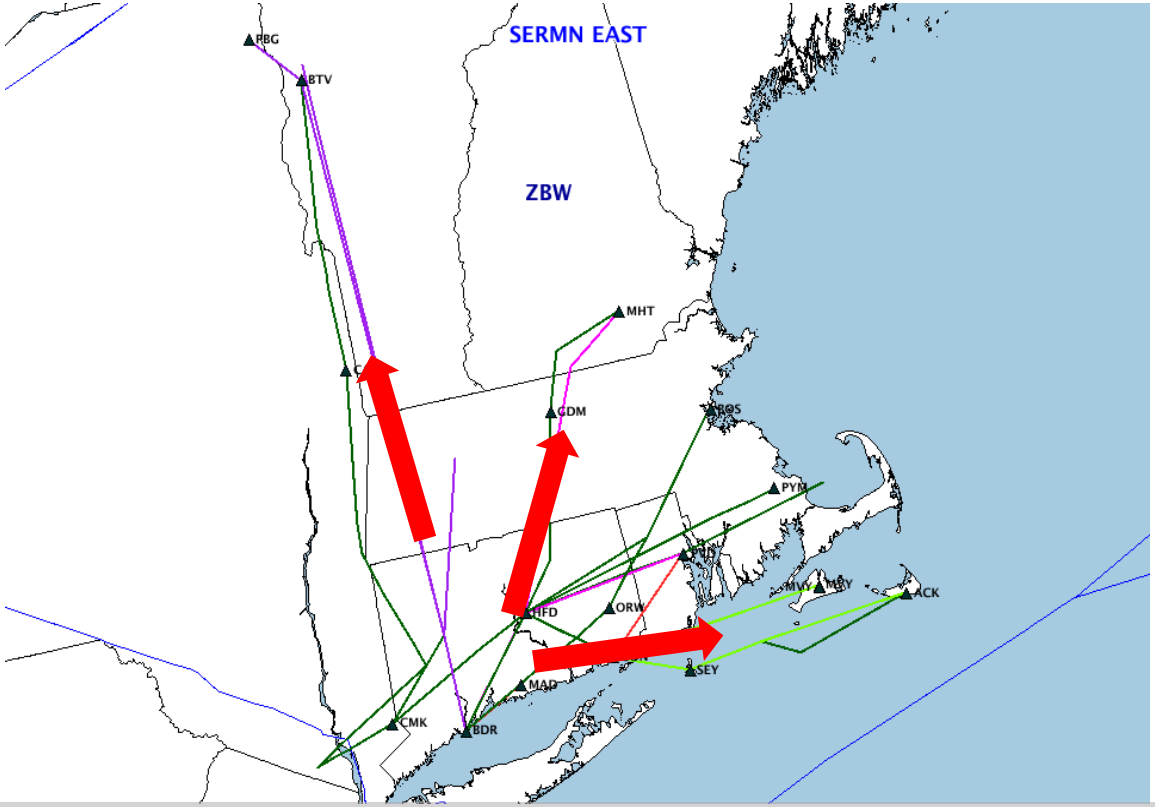
ZBW NATS ESCAPE VIA SYR

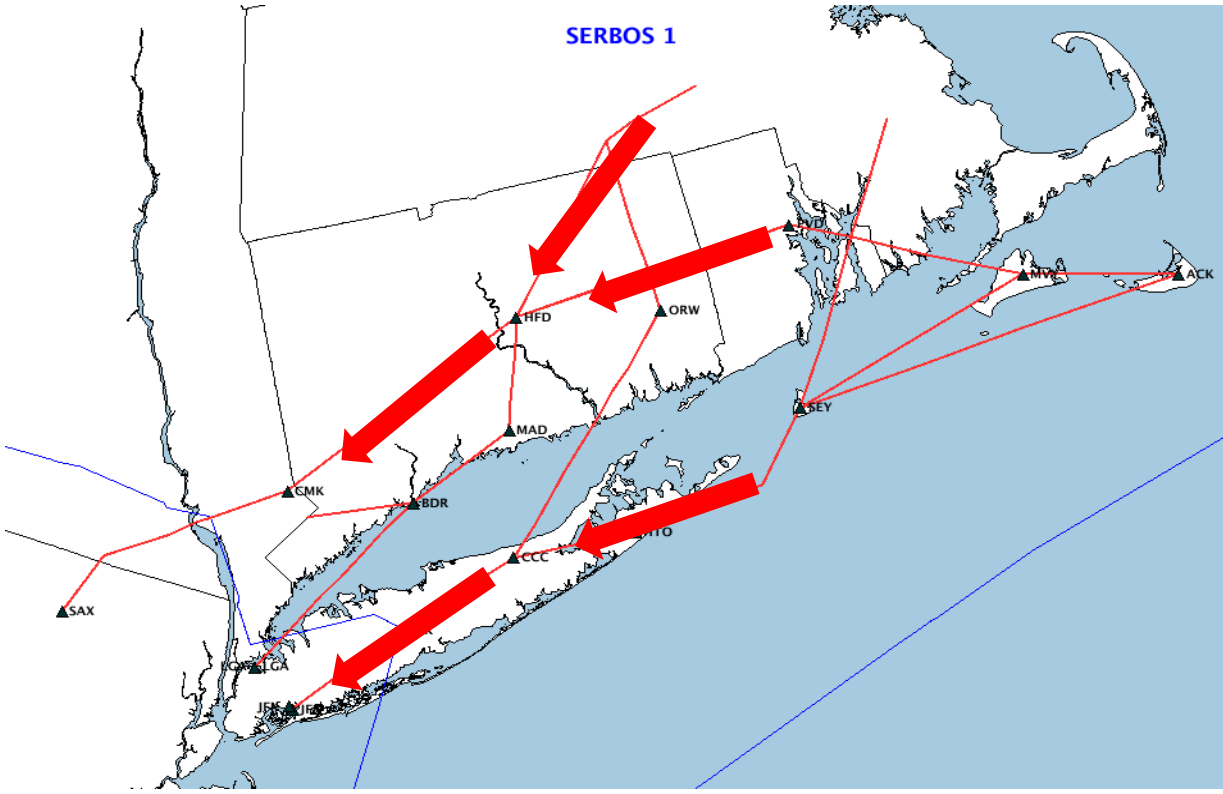


- **Impacted Area or Flow:** International Departures Through ZDC or ZNY
- **Facilities Included:** ZBW ZDC ZFW ZHU ZID ZME ZOB ZNY ZTL

SERMN EAST and SERBOS1

NASOperations
ATOSysOps





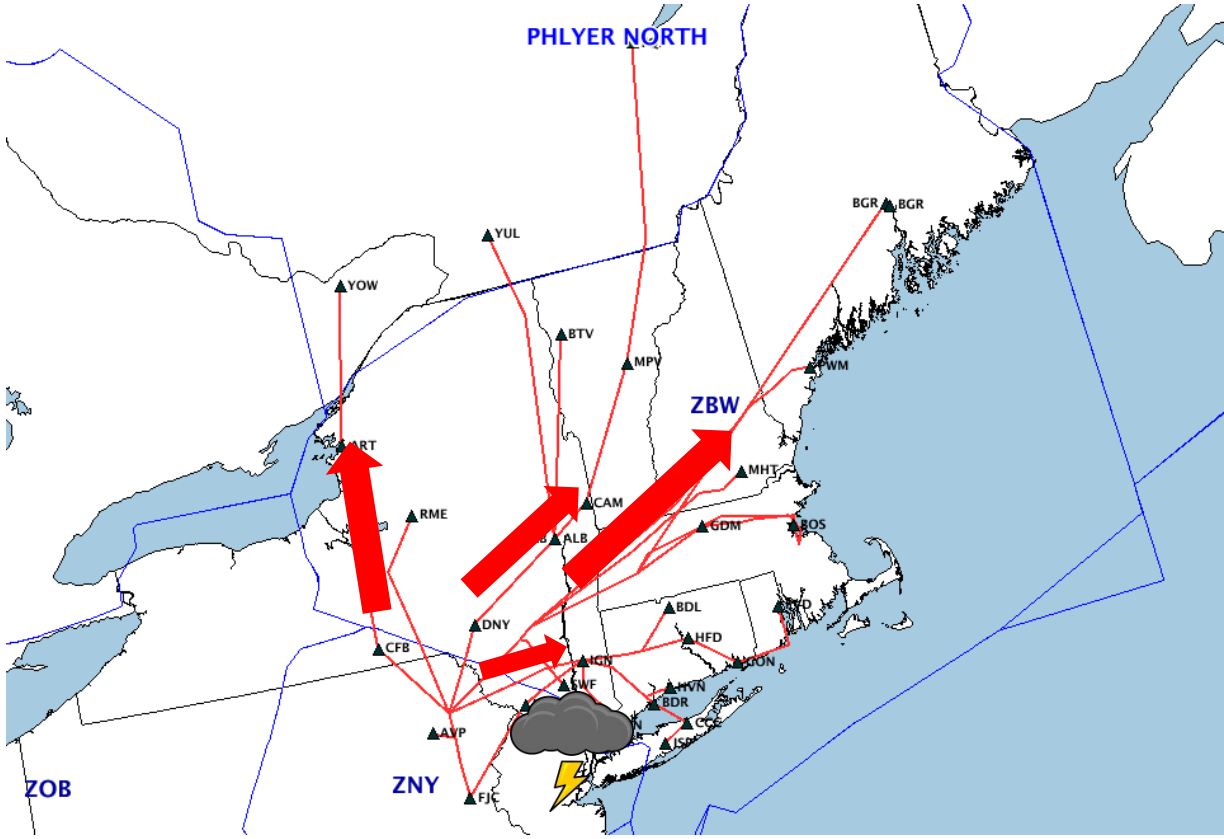
- TEC Escape Routes to and from N90. Jets stay AOB 100 on prop routing due to en-route constraints
- SERMN= **S**WAP **E**scape **R**oute **M**etro **N**ew York
- SERBOS = **S**WAP **E**scape **R**oute **B**oston

Federal Aviation Administration

PHLYER NORTH

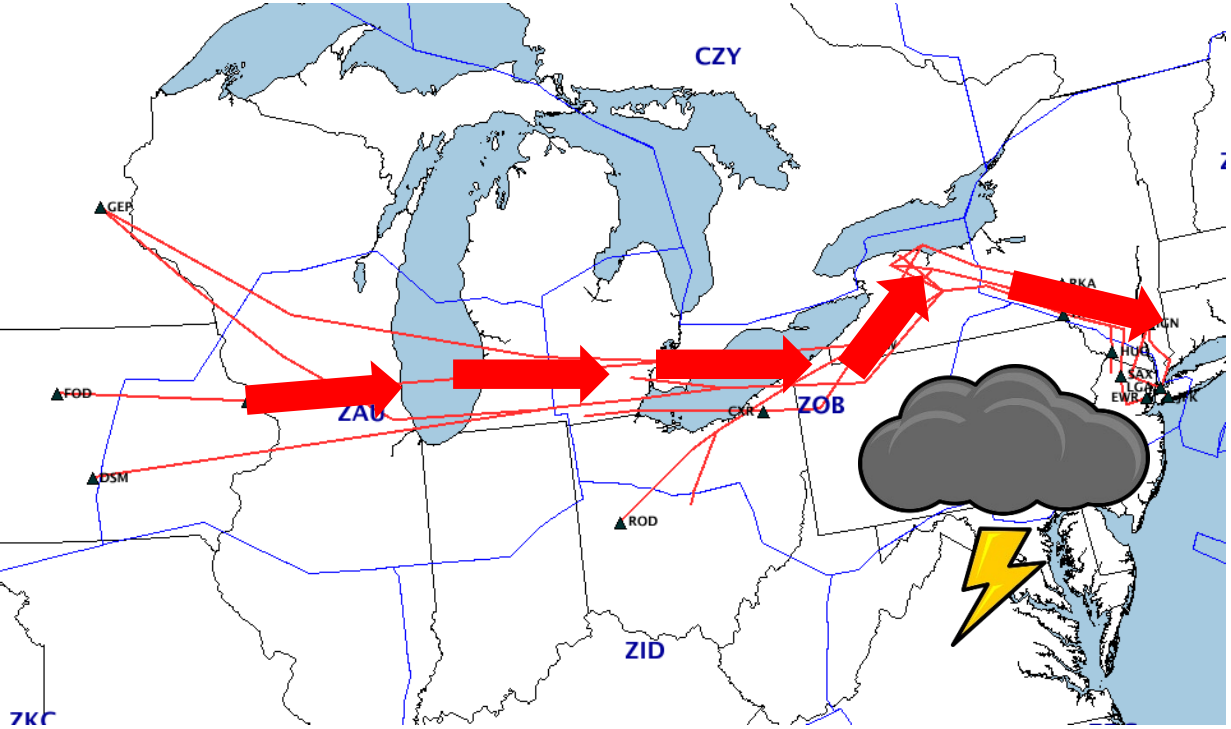
NASOperations
ATOSysOps

- **Impacted Area or Flow:** Terminal Enroute Control (TEC) Escape Route for PHL Departures to ZBW, N90, and Canada due to ZNY or N90 constraints. *Once clear of ZNY/N90, YOU **CAN** CLIMB THESE FLIGHTS! You may need to change their routing to comply with their new altitudes*
- Pilots are briefed not to request a higher altitude unless required by MEA.



Federal Aviation Administration

ZOB TO N90 THROUGH ZBW

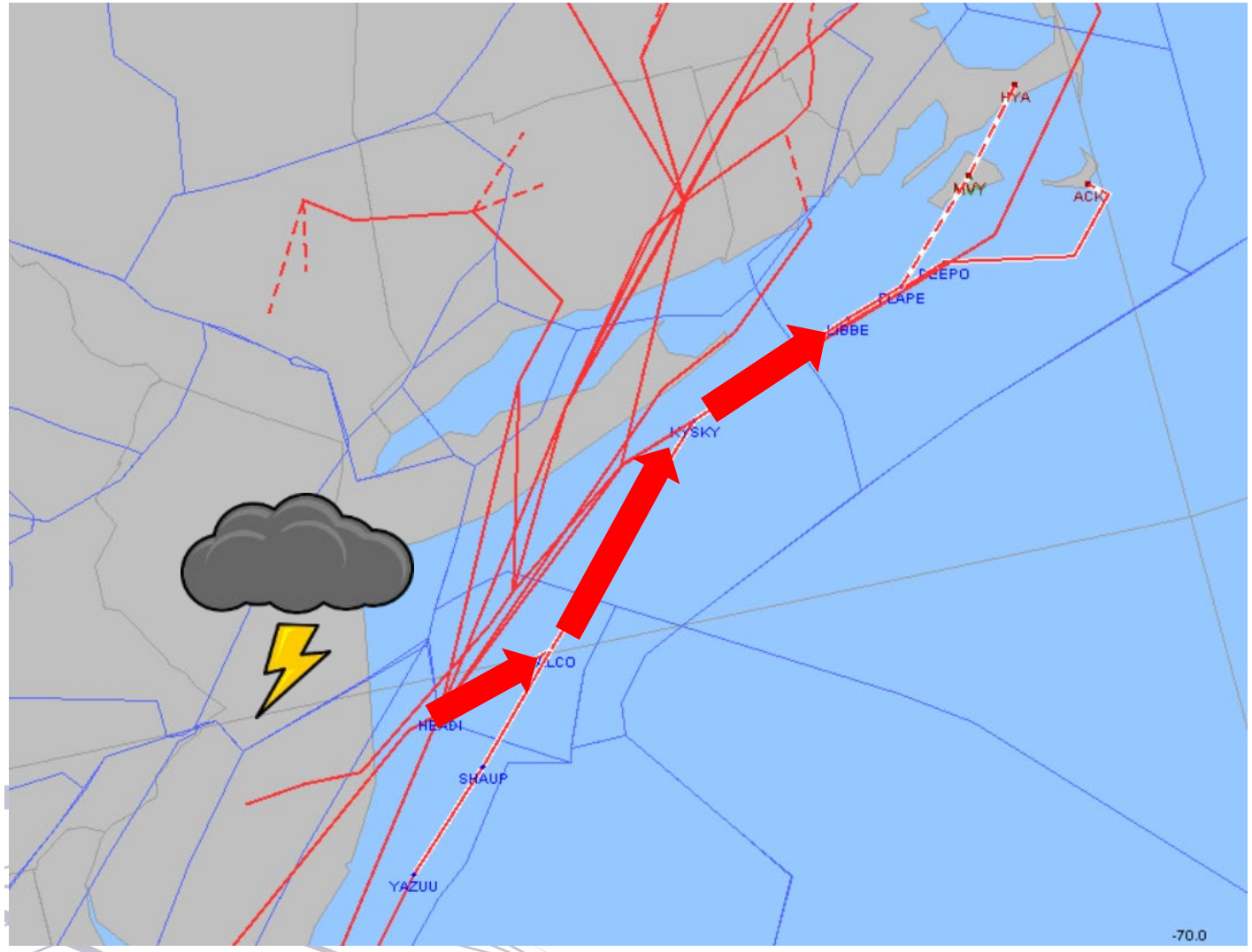


- **Impacted Area: Arrivals to N90 normally through ZNY**
- Facilities Included: ZAU ZBW ZID ZKC ZME ZMP ZOB
- Holding fixes at JEWLR (JFK), MERLN (EWR/MMU/TEB), and VAAPE (LGA/HPN)

ZBW HEADI

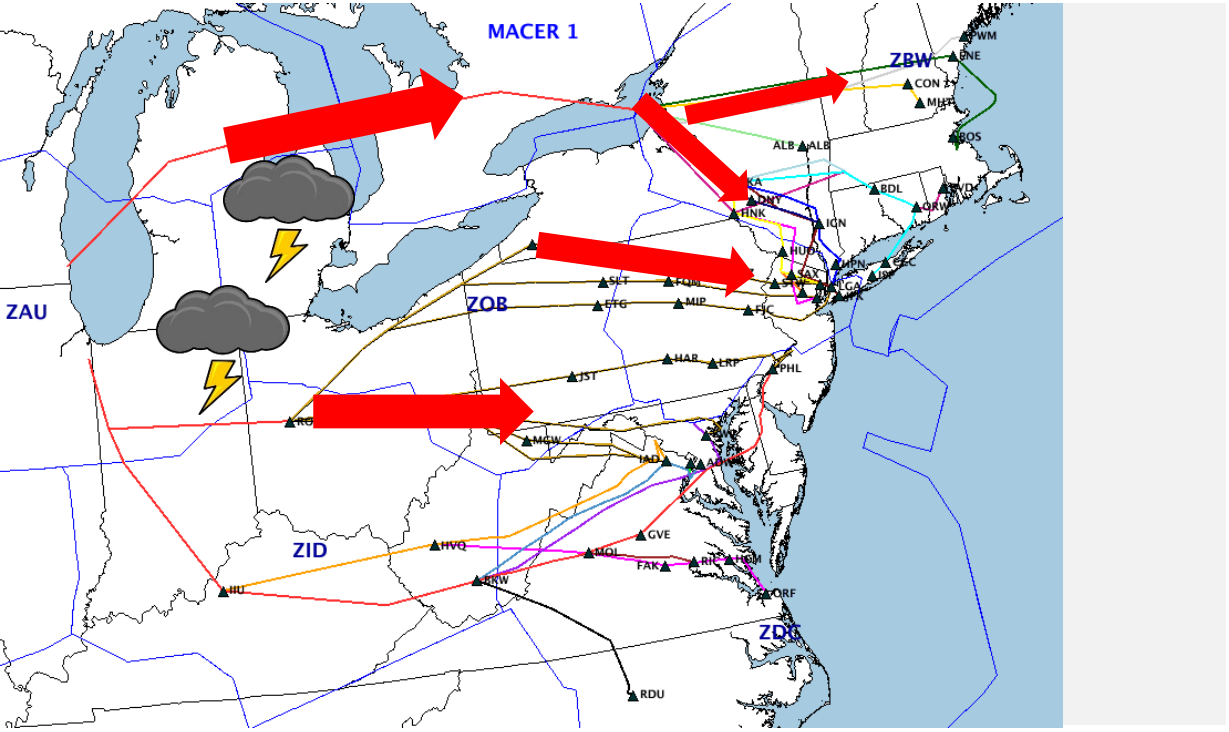
NASOperations
ATOSysOps

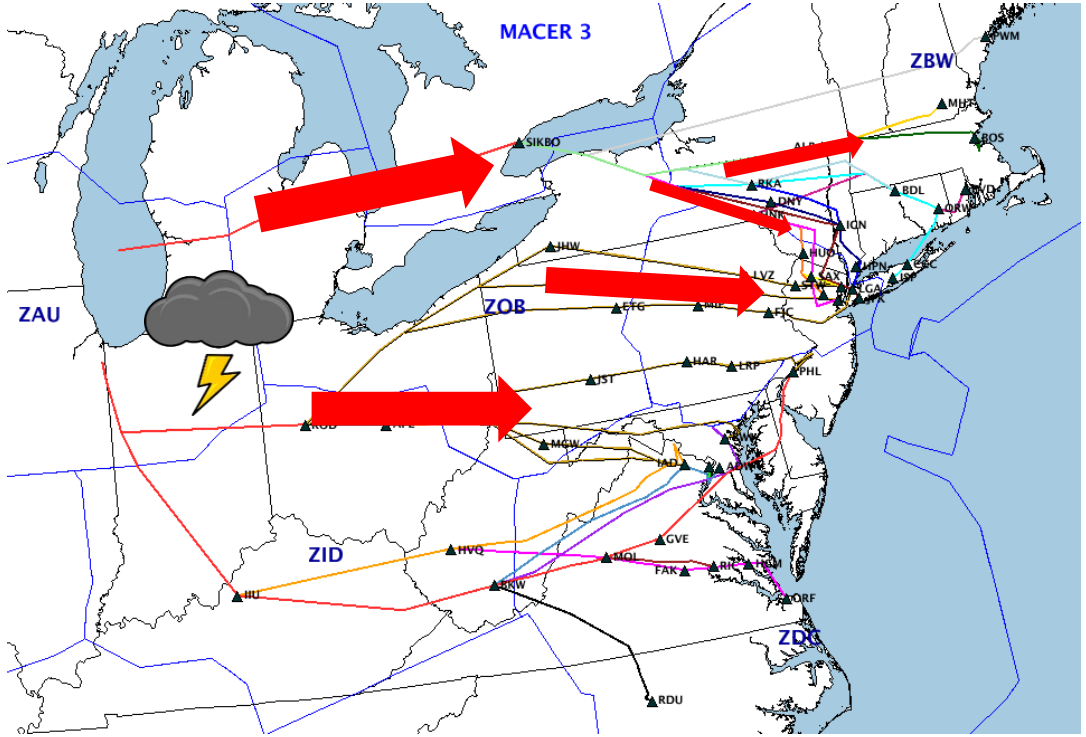
- Impacted Area or Flow: ZNY56
- TMU to share FEA with Area C, notify routes in effect via ESIS
- No CSTL departures, MIT Pass-backs to ZDC and N90 due to head-on traffic, favoring ZBW depts.
- One BOS route only – if via ROBUC, BOS Traffic AOB FL290, above all other traffic except PWM and BGR
  - Area C option to tactically offloads.
- New on 4/20: ACK, HYA, and MVY will be delivered via HEADI..VALCO.Q445.KYSKY from PCT + SHAUP Q445 KYSKY from ZJX/ZMA



MACER 1/2/3

NASOperations
ATOSysOps





- **Impacted Area: ORD Metro East Departure to Eastern US**
- MACER = (**M**ETRO **A**REA **C**HICAGO **E**SCAPE **R**OUTES)

Federal Aviation Administration

Thank You!