



**Federal Aviation  
Administration**

# **GAO Analysis and Project Update of the NY/NJ/PHL Airspace Redesign**

Presented to: Congressional Staffers

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# GAO's Review of the NY/NJ/PHL Metropolitan Area Airspace Redesign

- Request Made in June 2007 by Congressmen Oberstar, Costello, Andrews and Sestak
- Initial interview by GAO with DOT and FAA was conducted in August 2007
- Record of Decision on this project was issued on September 5, 2007
- Review process included several interviews with FAA project staff and consultants
- Exit interviews conducted in April 2008



# Summary of GAO's Examination Questions

- To what extent did the FAA follow key legal procedures and requirements in conducting its' environmental review?
- To what extent was the methodology used by FAA to asses the operational and noise impacts reasonable?
- What is the likelihood that FAA will meet its project time frames and cost of implementing its airspace redesign project?



# What the GAO Evaluated

- FAA's Compliance with the National Environmental Policy Act (NEPA)
- Compliance with environmental justice directives
- Applied the legal requirements of the above as well as the Administrative Procedures Act (APA) reasonableness standard (not arbitrary and capricious).



# Summary of GAO's Conclusions First

- Statement of Purpose and Need – which defines the objective of the project
- In this case it was to increase the efficiency and the reliability of the airspace while enhancing safety and reducing delays
- FAA actions were determined to be reasonable
- Reasonable in scope as it was not defined too narrowly or broadly
- Reasonably excluded noise reduction



# Summary of GAO's Conclusions Second

- Range of alternatives was reasonable
- Included a no action alternative which served as a baseline
- Included other alternatives that met the project's purpose and need
- Discussed alternatives that were eliminated from detailed analysis
- Remaining alternatives were explored and objectively evaluated



# Summary of GAO's Conclusions

## Third

- The FAA found that the redesign in itself would not increase traffic demand and flight operations
- As a result, the FAA did not consider potential environmental impacts of the system improvements
- Courts have uniformly upheld similar decisions – the purpose of the project was not to induce growth and did not include capacity-enhancing construction such as a new runway
- FAA actions were considered reasonable in not analyzing the indirect environmental effects



# Summary of GAO's Conclusions

## Fourth

- Actions were taken to insure public outreach including conducting a early and open process
- Provided reasonable notice of and holding of public meetings
- Adequately solicited and responded to public comments
- These actions to insure public involvement throughout the environmental process were considered reasonable



# Summary of GAO's Conclusions

## Fifth

- FAA followed environmental justice directives
- Followed Executive Order 12898 and related guidance and Orders
- Prepared an analysis that identified minority and low- income populations impacted by the purposed redesign
- Determined whether these populations experienced disproportionate impacts and involved them throughout the environmental review process
- Mitigated significant impacts by altering arrival procedures, departure headings, raising arrival altitudes, and other related measures



# METHODOLOGY

- Assessment of operational and noise impacts was reasonable
  - Based on the FAA's own guidance for conducting airspace redesign
  - Standards from the aviation analytical community
  - The opinion of the independent aviation experts
- The FAA followed its own process and used tools specified in its guidance
- Used the best modeling tools available and appropriate data
- Used experienced contractors



# GAO Recommendations – NY NJ PHL Airspace Redesign Project

- Develop and follow a detailed implementation plan that includes a time and cost schedule, risk mitigation plan, transition planning, and monitoring and evaluation plan
- Follow a post-implementation evaluation plan that includes an adaptive management strategy for monitoring of the redesign and communicating the results to key stakeholders



# GAO Recommendations – Future Airspace Redesigns

- Conduct a benefit-cost analysis for the purpose of assessing the economic effect of alternatives for airspace redesigns to include implementation costs and the economic effect associated with noise
- Conduct an uncertainty analysis of key assumptions and inputs – particularly on elements within aviation demand forecasts to assess the extent to which the estimated impacts would change using different values for key assumptions and inputs

# ACCORDING TO GAO

- Uncertainty analysis and cost benefit analysis would have provided more information and could have benefited the decision makers and the public



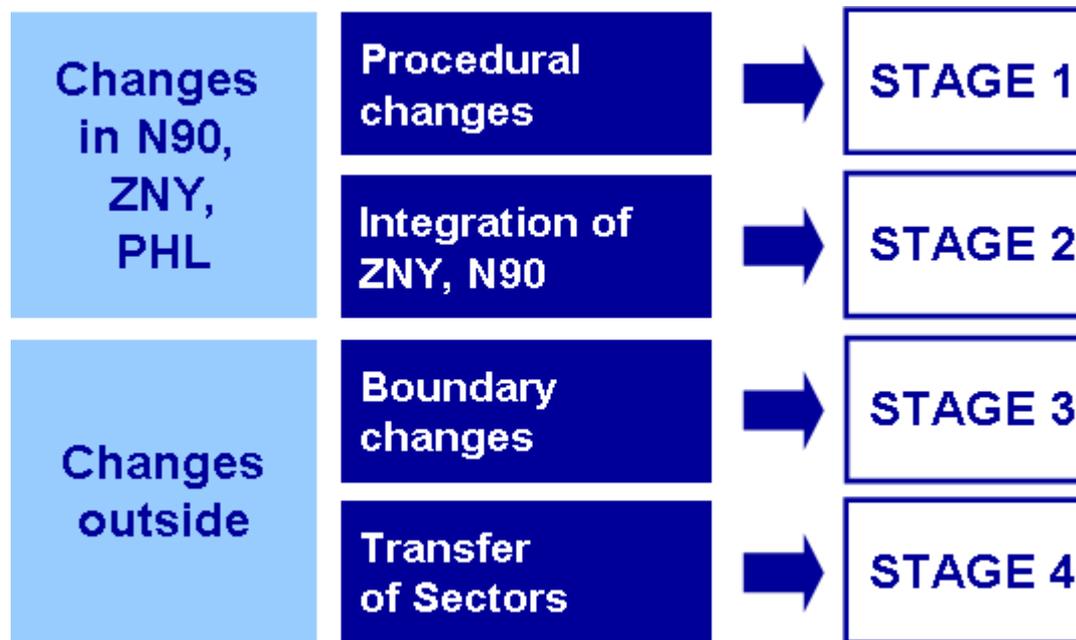
# SUMMARY OF DOT/FAA's Involvement

- During the draft report phase the FAA reviewed the document and provided technical comments
- These comments were incorporated into the final document by the GAO as appropriate
- Additional comments and responses were not provided because of pending litigation

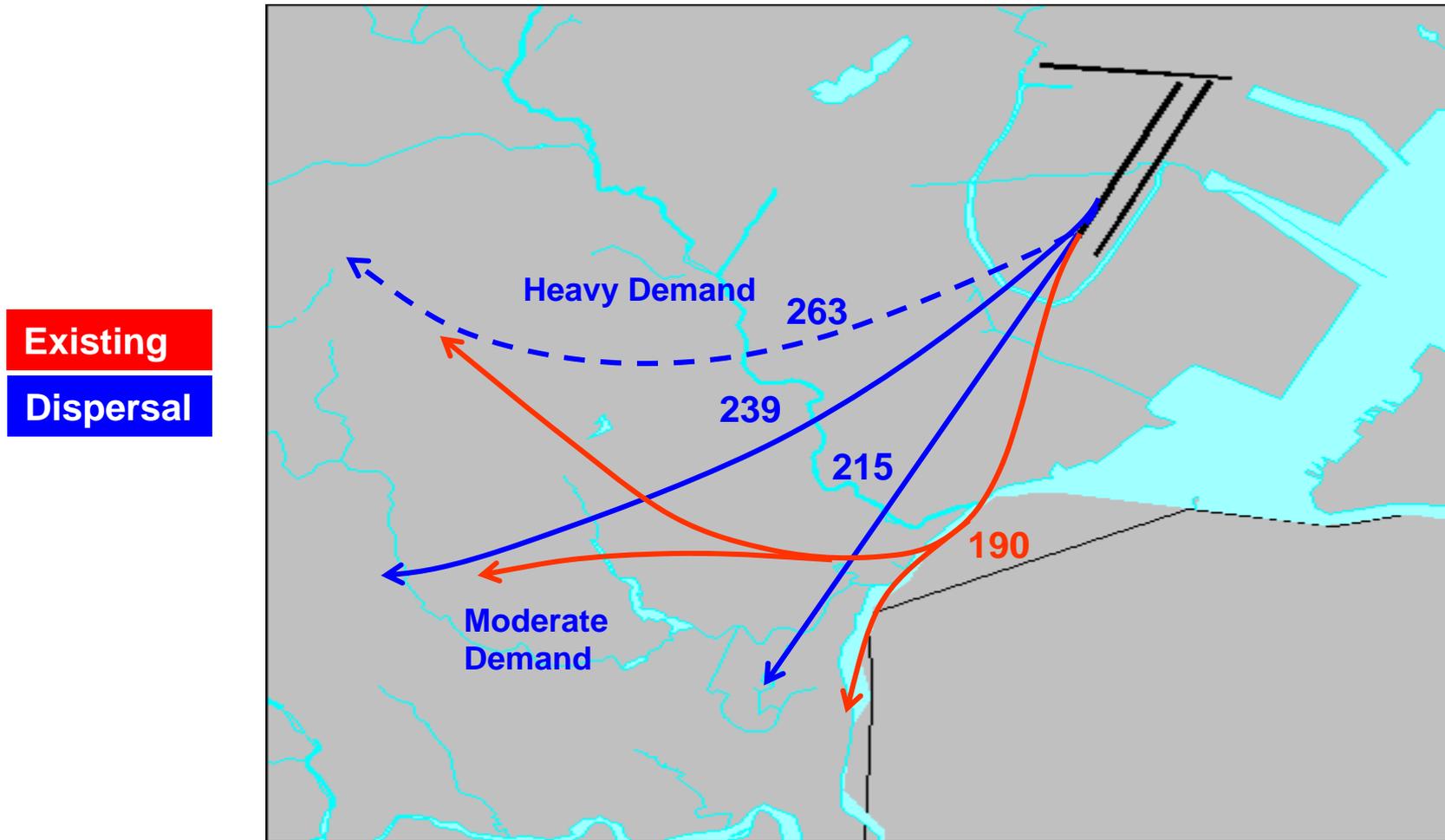


# Implementation Overview

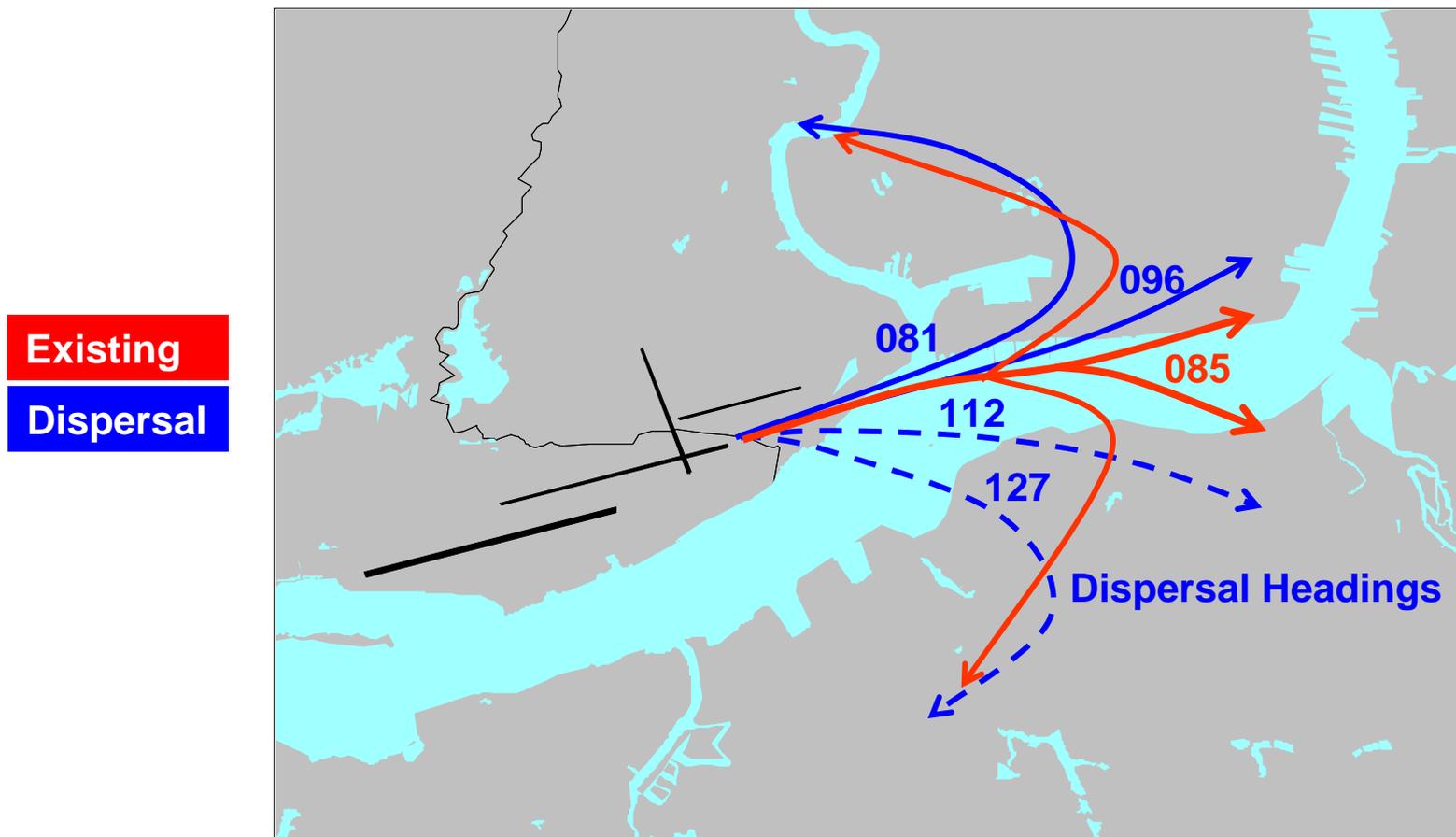
- Implementation Plan began developed immediately following the signing of Record of Decision (September 5, 2007).
- Initial changes to airspace were implemented on December 19, 2007
- Implementation approach was segregated into four stages in the ROD
- Each stage will take from 12 to 18 months and stages will overlap



# Newark Departure Headings Runway 22L/R

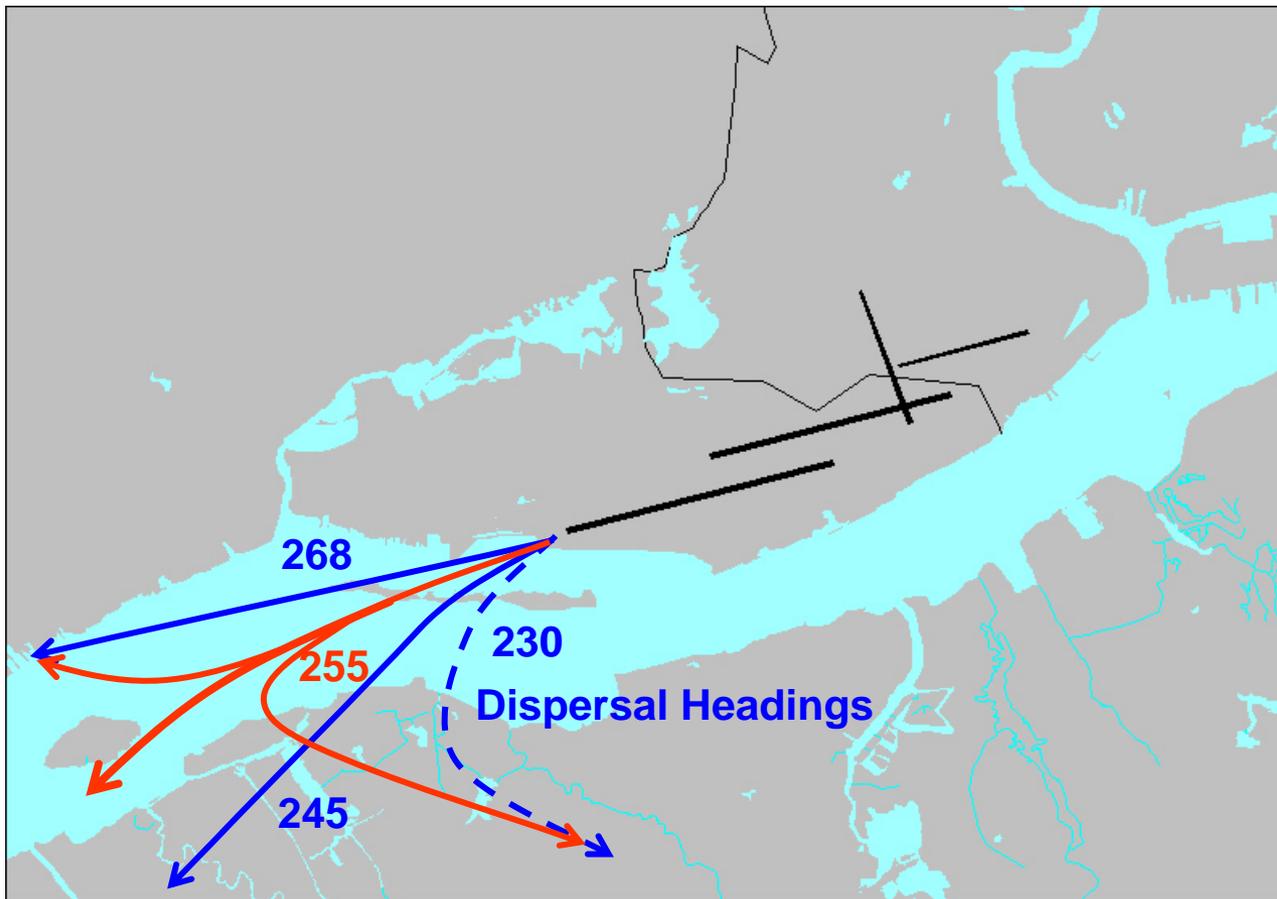


# Philadelphia Runway 9L/R Departures



# Philadelphia Departure Headings Runway 27L/R

Existing  
Dispersal

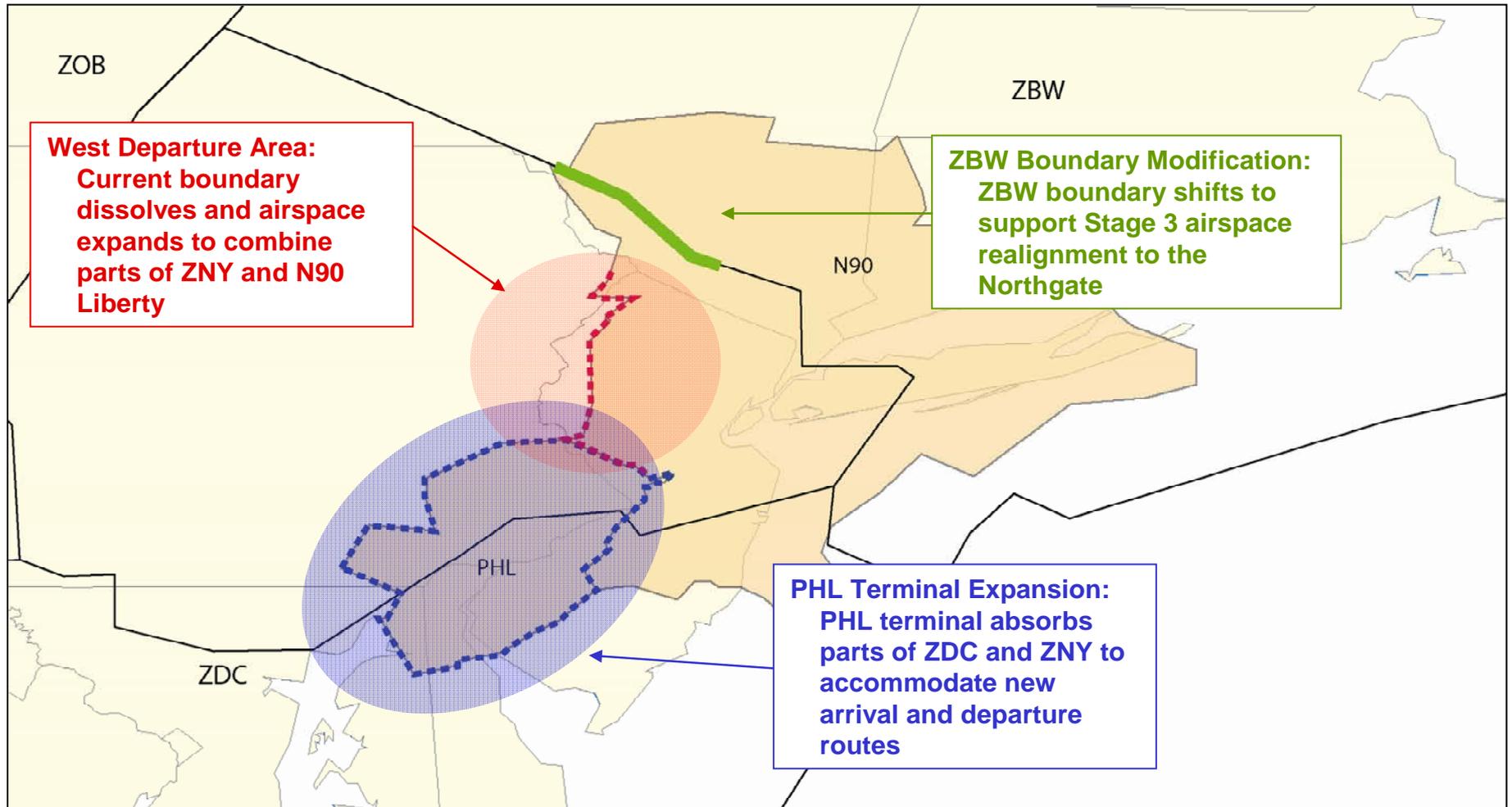


# Key Elements of Stage 1 (9/5/2007 – 3/6/2009)

## Establish Procedures and RNAV Overlays

- PHL - Dispersal Headings off RWY 09 and 27
- PHL- RNAV Overlay Procedure for River Approach for 9L
- PHL - New Departure Procedures (DITCH SID)
- EWR Dispersal Headings off 22s and RNAV Procedure
- LGA LDA 22 RNAV Procedure
- LGA Dispersal Headings and RNAV Procedures off RWY 31 & 4
- JFK CR1 (13) Approach RNAV Procedure
- JFK RWY 31R Right Turn Departure Procedure
- JFK (SID RWY 22R/04L) RNAV Overlay of Departure Procedures
- MMU RNAV Overlay Procedures for RWY 23 Departures
- TEB Arrival and Departure Procedures (RNAV overlay)
- ZNY Westgate Dual J80 Route from BRNAN Fix Westward

# Stage 2: Minor Airspace Realignment

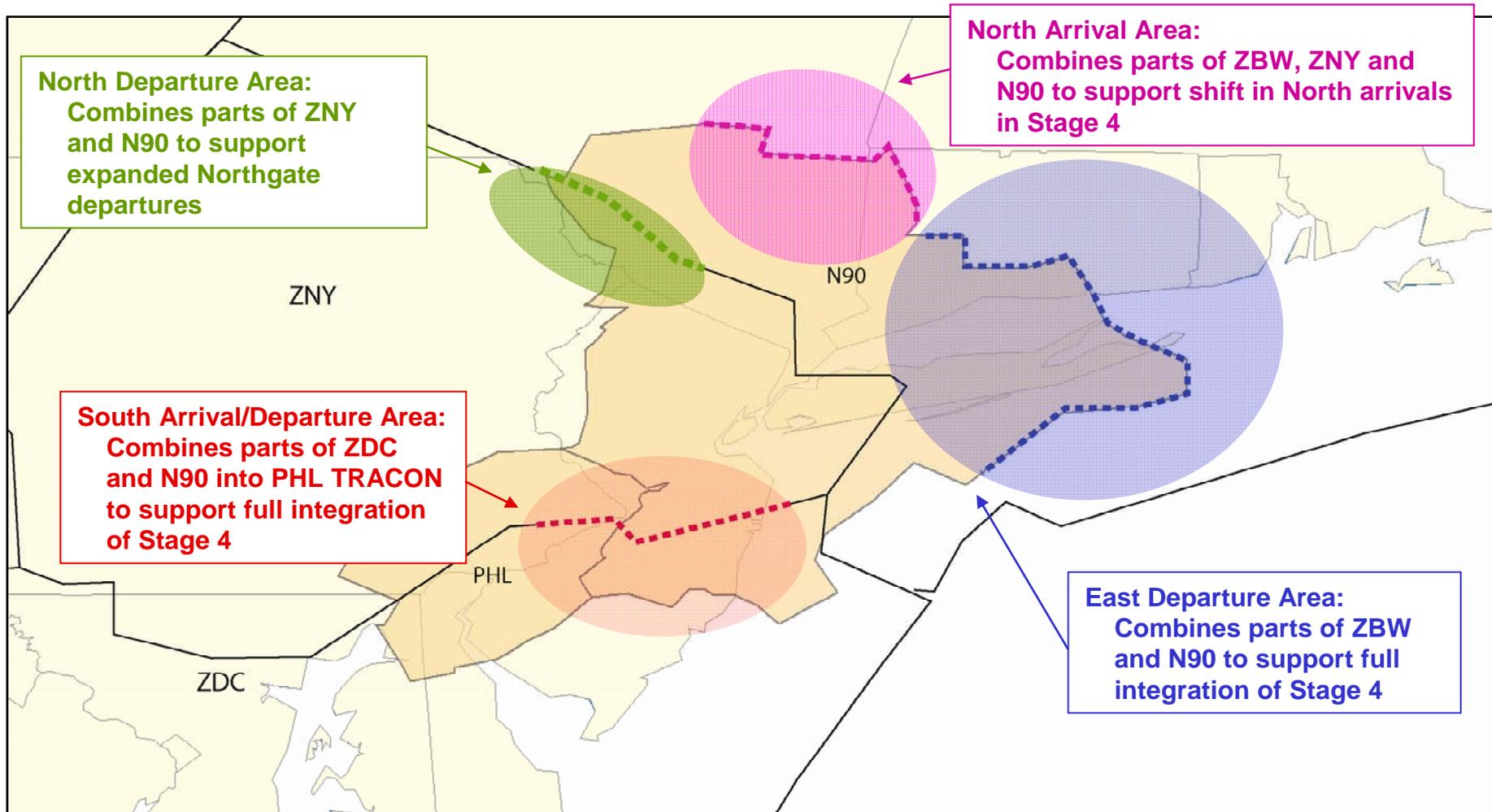


# Key Elements of Stage 2 (4/1/2008 – 10/1/2009)

- **Relocate and Expand West Airways**
  - Redesign NYNJPHL West Corridor
    - ZNY HITL – June 2008; N90 HITL Oct 2008; Combined HITL Feb 2009
  - Apply Altitude Restriction on JFK En Route Arrivals for High and Low Capacities
  - JFK Improvements
    - Reroute ISP Arrivals over LENDY
    - Reroute JFK Europe Arrivals via ROBER
  - Reroute Traffic to New West Airways
  - Reroute Traffic to Existing West Airways
- **Reconfigure PHL**
  - Reconfigure and Reroute Departures
  - Reroute Arrival Streams
  - Additional Dispersal Headings for RWY 09 and RWY 27



# Stage 3: Major Airspace Realignment

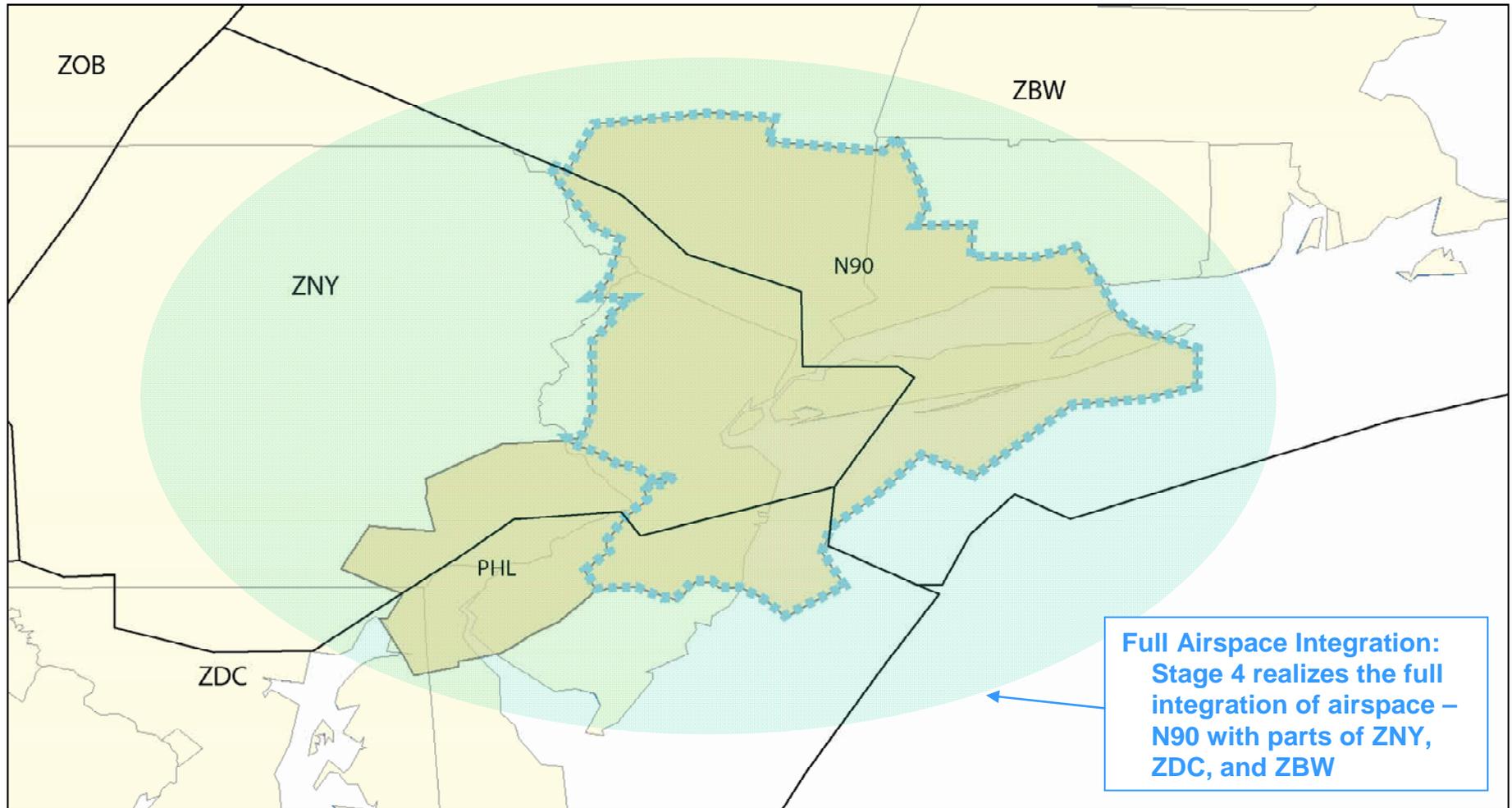


# Key Elements of Stage 3 (5/11/2010 – 11/9/2011)

- **Relocate and Expand North Airways**
  - Redesign NYNJPHL North Corridor (ZNY, N90)
  - Reroute Northbound PCT Departure Routes
  - Redistribute Some ZNY Northgate Departures to ZNY Westgate
  - Redistribute Traffic on New North Routes
- **Facilitating Stage 4 Elements**
  - Apply Altitude Restriction on LGA to Separate NY and PHL Traffic
  - Provide Arrival Coordination for Traffic Flow Management
  - Apply Terminal Separation Rules (allowing less stacking and MIT)
  - Additional MXE Departure Fix
  - Arrival Shift LGA and EWR
  - Facility Boundary Adjustments at ZNY, ZBW, ZDC, N90
  - Implement 3rd Dispersal Heading at EWR



# Stage 4: Full Airspace Integration



# Key Elements of Stage 4 (3/10/2011 – 9/7/2012)

- **Relocate and Expand South Airways**
  - Redistribute Traffic on New South Routes
  - Redesign NYNJPHL South Corridor
  - Apply Traffic Flow Management Rules for South Airway
- **Relocate and Expand East Airways**
  - Redesign NYNJPHL East Corridor
  - Redistribute Traffic on New East Routes
  - East Airway Apply Traffic Flow Management Rules
- **Align TEB and MMU Departure Gates feeding EWR Departures**
- **Change Altitude Restrictions**
- **Create Continuous Decent Approach Procedures**
- **All other Locations Apply Traffic Flow Management Rules**



# SUMMARY

- FAA has sixty days to respond to GAO report
- Awaiting outcome of pending litigation – FAA brief is due 12/12/08
- Continue to develop a detailed implementation timeline
- Continue implementation



# QUESTIONS?

