

Boston Logan International Airport Noise Study



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May 2007

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Mitigation Measure for RW 14-32

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■ 2002 Record of Decision:

- Noise Abatement Study and Review of Preferential Runway Advisory System

“.....FAA Massport and the Logan Community Advisory Committee (CAC) will work jointly to develop the scope...”

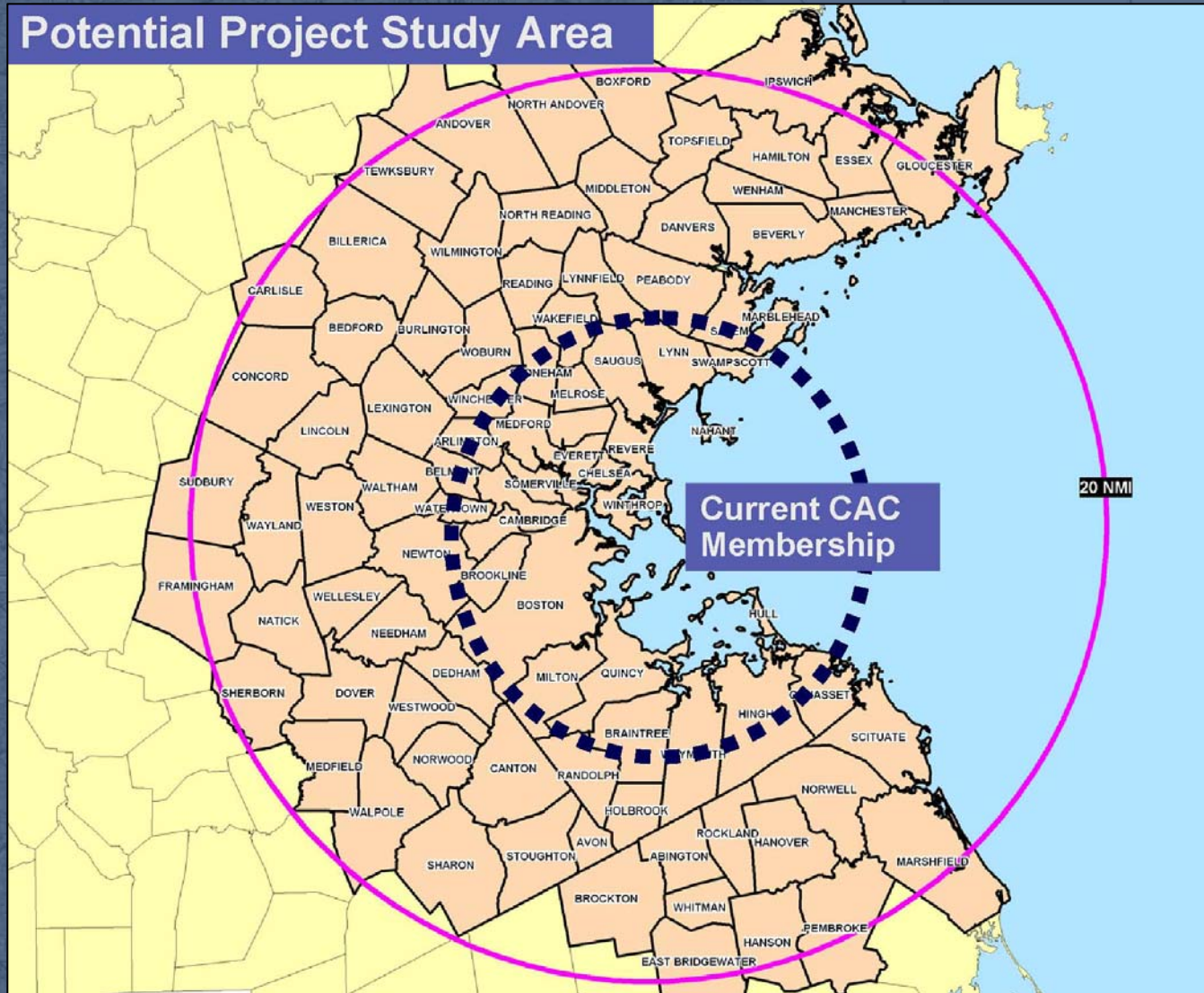
- Study openly scoped with the Logan CAC, Massport and FAA
- Two consultant teams: project and independent



The study area, based on flight tracks....

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Phase One

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- Alternatives developed through brainstorming sessions
- Screening for safety and operational fatal flaws by the FAA
- Redrawn, reshaped in an iterative process with the CAC, FAA and MPA



Phase One

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- Changes in noise experience are outside 65 DNL
- Supplemental noise metrics used to illustrate changes
- Independent consultant prepared a matrix to clarify noise changes after each alternative



Phase One Strategies

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10pm	On Time
7:14pm	On Time
12:48pm	On Time
6:05pm	On Time
3:00pm	On Time
4:03pm	On Time
7:55pm	LANDED
11:01am	LANDED
1:06pm	On Time
7:11pm	LANDED



- Alternatives raised shoreline crossing altitudes
- Extended sector boundaries to allow controllers the ability to implement the procedures and raise shoreline crossing altitudes
- Utilized RNAV to potentially reduce dispersion over shoreline communities



Beyond the technical work ... Decisions from CAC

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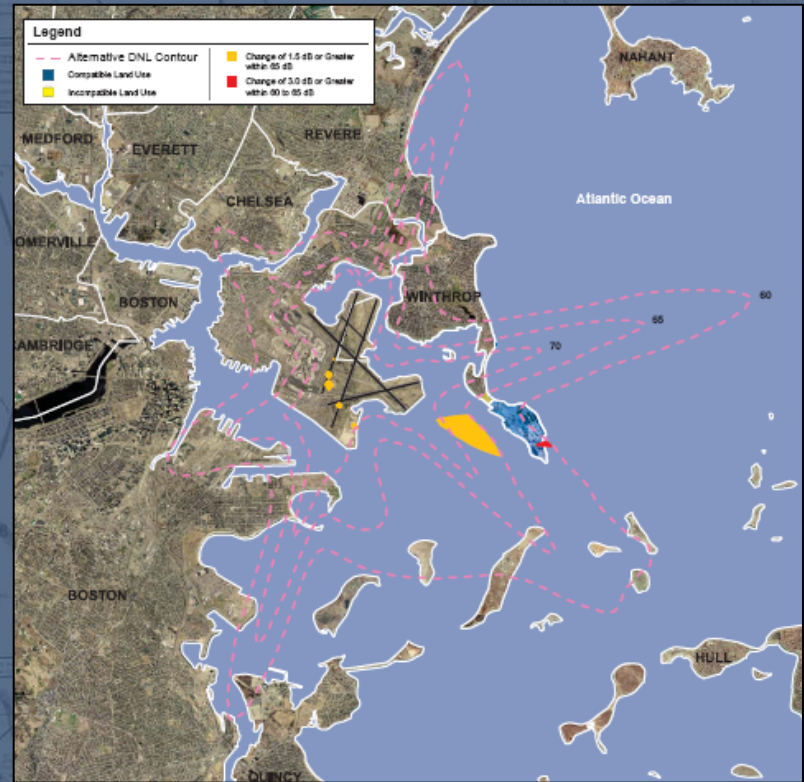
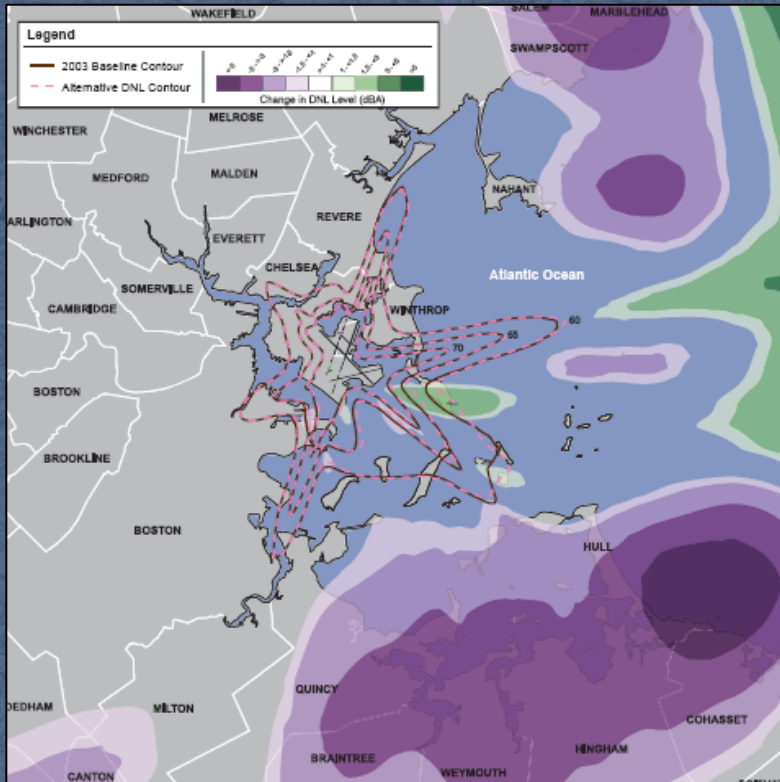
- The CAC met in accordance with Robert's Rules of Parliamentary Procedure
- Objective was to determine the disposition of the Phase 1 alternatives
- The CAC voted to endorse nine of the thirteen alternatives (eleven combined alternatives) for cumulative environmental impact analysis
- Four of the alternatives were not endorsed by the CAC and were dropped from further consideration



Cumulative Results: DNL Contours

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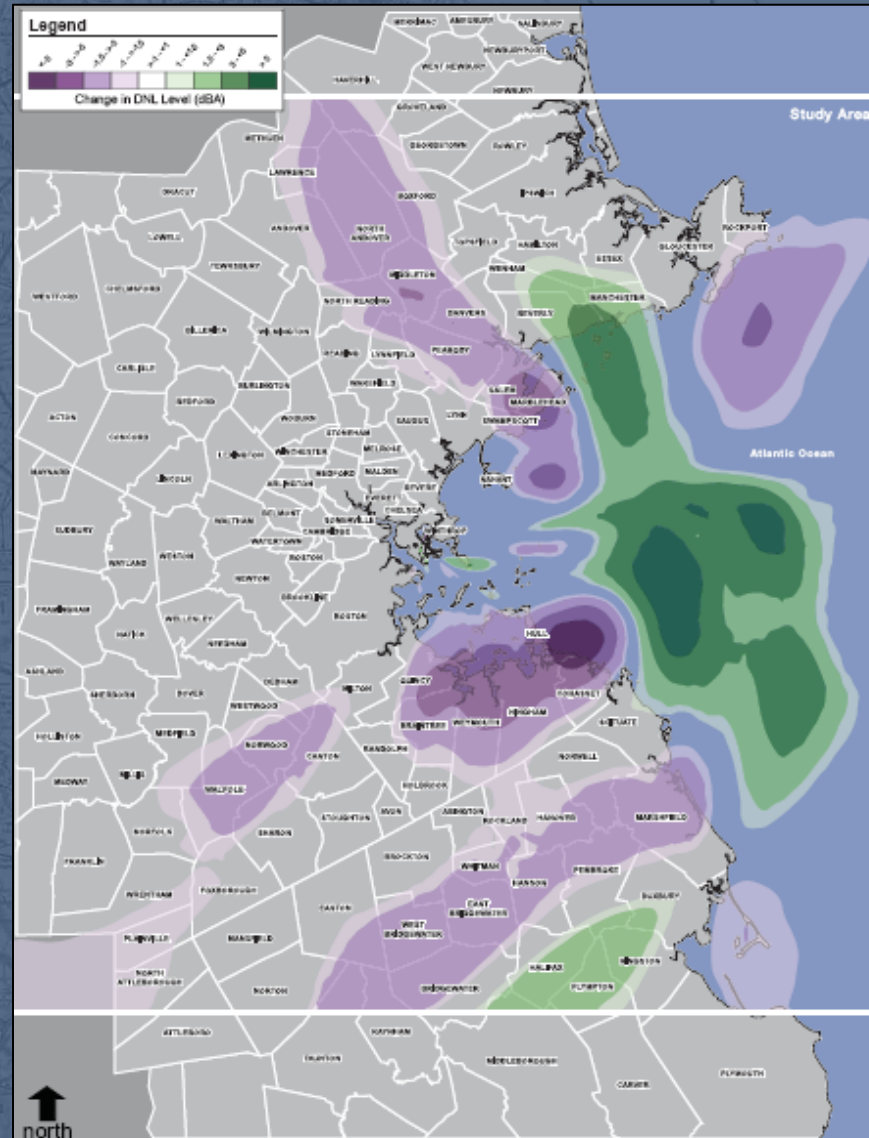
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Study Area Cumulative Results – Change in DNL

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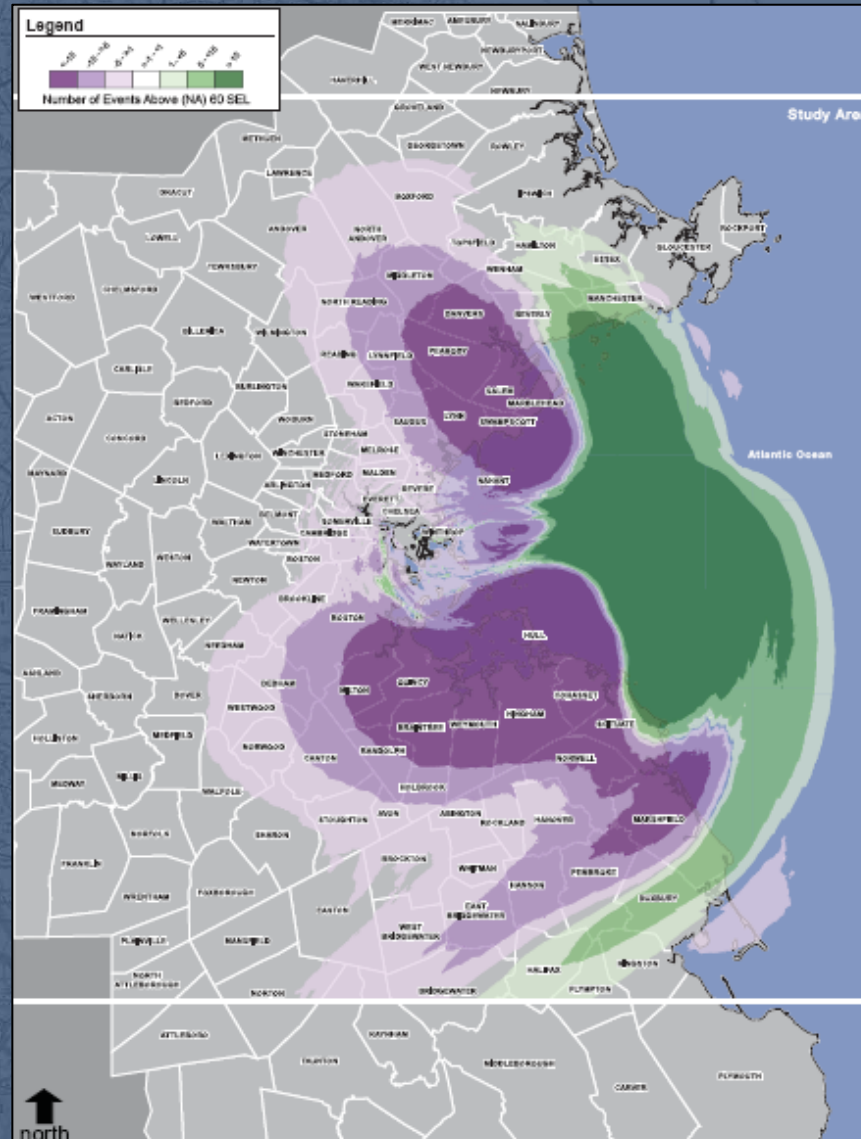
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CAC Supplemental Metric Cumulative Results: Change in Number of Events Above SEL 60 dBA

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Phase 1 Next Steps

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3:00pm	On Time	
4:03pm	On Time	
21	7:55pm	LANDED
22	11:01am	LANDED
22	1:06pm	On Time
22	7:11pm	LANDED



- FAA environmental review per FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*
- Massport requests implementation
- Phase 1 implementation concurrent with Phase 2 analysis



Three Phased Approach

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- **Phase 1:** Early Implementation Alternatives- any alternative with noise abatement potential requiring minimal environmental review
- **Phase 2:** Alternatives Affecting Densely Populated Communities and Preferential Runway Advisory System (PRAS)
- **Phase 3:** EIS/EA on Phase 2 alternatives



Phase 2

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- Beginning the alternative analysis process
- Scoping with CAC to re-visit the 14 alternatives carried over from Phase 1 and identify any additional alternatives
- Establish aircraft noise and operational baseline



Phase 2 Alternatives

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Measures generally...

- Alter runway use patterns
- Apply dispersed headings from runways
- Develop offset procedures to minimize overflight of densely populated areas
- Apply different late-night runway use patterns

CAC: Measures strive to provide more equitable distribution of aircraft noise



Alternatives Identification Process

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- Three types of concepts will be identified for evaluation:
 - Phase 1 concepts that were identified as having potential environmental impacts and were retained for further evaluation in Phase 2 (up to 15)
 - Ground noise concepts (up to 5)
 - Other concepts not previously identified (up to 10)



Phase 2 – Concept Examples

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7:55pm	LANDEE
11:01am	LANDEE
1:06pm	LANDEE
11pm	LANDEE



Alternative 19

- All runways – develop fanning departure procedures based on route of flight. (Alternative 21)



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11pm	LANDEE



Alternative 1E

- RNAV/FMS or DME departure procedure from Runway 14 to increase altitudes over land.



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1:06pm	On Time
11pm	LANDEE



Alternative 3

- Runways 27 and 33 – develop RNAV/FMS and classic departure procedures for fanning. (Alternative 17)



Phase 2 – Concept Examples

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Alternative 4D

- Runway 32 – develop RNAV approach procedure that maximizes flight over water. (Alternative 16)

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Phase 2 – Concept Examples

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■ Alternative 18

- Runway 4L and 22R – remove noise emission restriction to achieve more utilization of this runway. (Alternative 20)



Phase 2 – Concept Examples

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11:01am	LANDED
1:06pm	On Time
7:11pm	On Time



Alternative 27

- After runway use to provide a more equal balance in the number of departures between Runway 27 and 33. (Alternative 25)



Level 1 Screening Analysis Process

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Level 1 Screening Analysis Goals

- Identify concepts that can be implemented safely
- Identify concepts that are technically feasible
- Identify concepts that are capable of operating within existing air traffic facilities and airspace structure.



Level 2 Screening Analysis Process

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Level 2 Screening Analysis Goals

- Refine concepts to configuration level for further analysis
- Conduct a detailed operational review of each configuration to ensure feasibility
- Qualitatively assess whether each configuration would decrease noise impacts on surrounding communities.
- Configurations that survive the Level 2 Screening Analysis will be modeled to determine their noise reduction potential.



Level 3 Screening Analysis Process

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■ Level 3 Screening Analysis Goals

- Quantitatively examine alternatives (refined configurations) retained in the Level 2 Screening process based upon Level 3 criteria.
- Alternatives that survive the Level 3 Screening Analysis will be examined cumulatively.
- BOS/TAC/CAC will make a final recommendation on alternatives for implementation to Massport and FAA at the conclusion of the Level 3 Screening Analysis

