NextGen Update
April 2015

Aeronautics and Space Engineering Board

Presented by
Edward L. Bolton, Jr.
Assistant Administrator for NextGen
Federal Aviation Administration
Delivering Major NextGen Investments

Legacy System
- Radar
- Voice Communications
- Disparate Information

NextGen
- Satellite
- Voice & Digital Communications
- Automated Decision Support Tools

Foundation
- En Route Automation Modernization (ERAM)
- Terminal Automation Modernization/Replacement (TAMR)

NextGen
- Automatic Dependent Surveillance-Broadcast (ADS-B), System Wide Information Management (SWIM), Data Communications, National Airspace System (NAS) Voice System (NVS), Terminal Flight Data Manager (TFDM)
NextGen Facilities and Equipment
Funding Levels included in Capital Investment Plan (CIP)*

(Note: Excludes Personnel & Related Expenses and IOT&E)

*Projection based on 2015 version of the FAA Capital Investment Plan
Building a Sustainable NAS for All

Focus Shifts Over Time

- **2005**: NextGen Foundation
- **2015**: Targeted NextGen Capabilities
- **2020**: Integrated NextGen Capabilities
- **2025+**: Advanced Capabilities
- **2030+**: NextGen Foundation

**2015**
- Deploy Transformational and Foundational Systems
- Maximize Operational Use of Available Capabilities
- Procedurally Enable New Entrants
- Eliminate Surplus Capabilities and Services
- Integrate NAS-wide operations and performance

**2025+**
- Enable Advanced Aircraft-Centric Operations

*Initial Transformation in NAS Operations Complete*
NextGen Benefits
(aka McKinsey Study)

- McKinsey/FAA team developed NextGen business cases tailored to each major U.S. carrier
- Derived from and consistent with overall NextGen Business Case
NextGen Priorities

- May 15, 2014: Status to Hill
- June 3, 2014: NAC Interim Deliverable to FAA
- June 15, 2014: NAC Final Deliverable to FAA
- July 28, 2014: Interim Report to Hill
- October 8, 2014: Final Report
- December 8, 2014: Signed
### NextGen Regional Benefits: Metroplex

<table>
<thead>
<tr>
<th>Metroplex</th>
<th>Fuel Savings (Gallons of fuel in millions)</th>
<th>Value of Fuel Savings (Fuel costs in millions)</th>
<th>Carbon Savings (Metric tons of carbon in thousands)</th>
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<tr>
<td><strong>Houston</strong>*</td>
<td>3</td>
<td>$9.20</td>
<td>31</td>
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<td>North Texas</td>
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<td>$10.30</td>
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<tr>
<td><strong>Northern California</strong></td>
<td>2.3</td>
<td>$6.50</td>
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<td>D.C.</td>
<td>2.5</td>
<td>$6.40</td>
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<td>$8.30</td>
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<tr>
<td>Charlotte</td>
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<td>$10.20</td>
<td>35</td>
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<tr>
<td>Southern California</td>
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<td>Cleveland/Detroit</td>
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<td>$2.80</td>
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<td>11</td>
<td>36</td>
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Metroplexes listed in order of project phase completion

NextGen Priorities depicted in green. * Final number of procedures not determined.
## NextGen Regional Benefits: Wake RECAT

<table>
<thead>
<tr>
<th>Airport Name</th>
<th>Airport ID</th>
<th>Date Implemented</th>
<th>Study Completed</th>
<th>Observed Benefits</th>
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<th>Estimated Annual Savings to Operators</th>
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<td>Avg. Taxi Time</td>
<td>Avg. Flight Time</td>
<td>Increase in Throughput</td>
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<td>Savings (min)</td>
<td>Savings (min)</td>
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<td>Memphis</td>
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<td><strong>Total:</strong></td>
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</table>
Drivers of Our Future

**Ongoing Progress**
- Executing Programs
- Delivering Capabilities

**Emerging Challenges**
- New Entrants (Commercial Space, Unmanned Aircraft Systems)
- Cybersecurity
- International
- Interagency Planning Office
- Equipage
- Fiscal Uncertainty

**Lessons Learned**
- MITRE Report
- OIG Study
- DIG Report
- NAC Report
- 30-Day Report (Chicago Fire)
- Budget Process Review
Building the Future

Foundational Infrastructure
- ERAM
- TAMR
- ADS-B Out
- SWIM

Expanded NextGen

Lock in NextGen
- NAS Voice System
- Automatic Dependent Surveillance - Broadcast In
- Data Communications
- New Entrants

Post Mid-Term

NAC Priorities
- Expanded Performance Based Navigation
- Initial Data Comm
- Increased Surface Efficiency
- Expanded Multiple Runway Operations

Agile and Resilient NAS