



**Approved by the NextGen Advisory
Committee October 2017**

**Joint Implementation Commitments
for
Improving Operations
in the Northeast Corridor
Phase Two - Interim Report**

Report of the NextGen Advisory Committee in Response to a Tasking from
The Federal Aviation Administration

October 2017

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Background/Introduction

In its February 22, 2017 meeting, the NextGen Advisory Committee (NAC) reached consensus to move forward with a tasking to focus on implementing NextGen in the Northeast Corridor (NEC) (Washington, DC/Baltimore, Philadelphia, New York and Boston airports and associated airspace). During the Committee's deliberations, members recognized that making continuous improvements to the system in the Northeast Corridor operationally benefits the entire US aviation system. They agreed that the work should start with defining what is included in implementing NextGen in the Northeast Corridor, highlighting the need for addressing the technical, operational and community issues that must be identified up front and then mitigated through the NAC collaborative process.

The Federal Aviation Administration (FAA) formally tasked the NAC in April 2017¹ (Appendix D) to develop recommendations for the collective set of FAA, airport, operator and community initiatives that focus on implementing NextGen in the Northeast Corridor. Recommendations were developed by the NEC NextGen Integration Working Group (NIWG).

This report responds to Phase 2 of the task request which states:

By October 2017, use the deliverables in Phase 1² to define joint implementation commitments for the Northeast Corridor, including government and industry milestones, and define how implementing those priorities would lead to measurable benefits. Subsequent to implementation, ensure benefits are measured.

Given this request, the following interim report focuses on implementations occurring in the first 18-month time frame from October 2017 through March 2019.

Each implementation includes:

- Description of the Initiative/Implementation/operational capability
- Benefit(s) Expected from the Implementation of the capability
- Timeline and Commitment by FAA/Industry
- Key Risks

The document also outlines preliminary information about Initiatives/Implementations occurring in 18-36 months, and those 3 years or greater. These were prioritized based on the benefits, readiness and availability of resources to implement.

¹ Tasking letter dated April 13, 2017 from Ms. Victoria Wassmer to Margaret Jenny, RTCA President.

² Phase 1 Tasking approved by the NAC on June 28, 2017: By June 2017, define success in terms of benefits to include determining how benefits will be measured. Identify opportunities most likely to lead to success, and identify hurdles that could result in implementation challenges. The emphasis should be on opportunities that can be implemented in less than 18-months. Implementations of up to three years may also be considered.

Implementation Hurdles (Risks)

As the NEC NIWG evaluated implementations, the following risks³, identified in Phase 1 and enhanced in the Phase 2 work, were considered:

- Overarching: Controller and support staffing and resources
- Collaborative engagement among all Air Traffic Control (ATC) operational lines of business and operators in the airspace
- Collective (industry/FAA) ability or willingness to (de)prioritize specific projects or initiatives
- Collective (industry/FAA) ability to adjust existing plans and schedules
- Cultural issues – i.e. controller, pilots, dispatcher acceptance and implementation
- Environmental - community issues and concerns
- Facility-level feedback and nuances that may impact individual initiatives
- Funding and budget priorities
- Mixed equipage of aircraft/differing capabilities
- Operator staffing and resources
- Rates of Performance Based Navigation (PBN) equipage or ability to leverage available equipage
- Pre-operational planning and agile flexibility in consideration of unforeseen constraints that require real time adjustments to the plan
- Results of feasibility and/or safety assessments
- Training

Executive Summary

The Northeast Corridor covers the most congested airports and airspace in the United States and has a significant effect on the daily operations of the national aviation system. The NEC represents a small amount of US land area, but about 20% of air traffic traverses the NEC. An approximately 20-mile region between Newark, LaGuardia and JFK airports, experiences about 4,000 air traffic operations each day. Not surprisingly, nearly 50% of aviation delays in the entire US National Airspace System (NAS) are attributable to the Northeast Corridor.

Given the complex and compact nature of NEC operations, and its connection to the rest of the NAS, small changes can have meaningful results. Single operational improvements in the NEC in recent years have yielded hundreds of thousands of minutes of annual delay savings.

The recommendations in this report identify initiatives that will enhance operations in the Northeast Corridor. This report's focus is on initiatives that may be completed or determined to be feasible within 18-months of October 1, 2017, many of which are underway or have been

³ These are similar to those identified by Task Force 5 and the NAC 2013 Prioritization.

previously considered by the FAA and Industry. Initiatives in the first 18-month timeframe are admittedly more ‘NowGen’ than ‘NextGen’. The recommendations in this report align with the Tier 1 Goal identified in the Phase 1 NEC report – “Improve Execution of Today’s Operation in the NEC.” These clear the path, establishing a foundation and framework for longer term effective implementation of NextGen.

In short, there can be no NextGen without successful deployment of these ‘NowGen’ capabilities. These are functional building blocks upon which the larger structure will be built; many of which are not technical, but also address change management issues discussed below.

While the first 18-months covers more immediately implementable initiatives, the NEC NIWG also includes two recommendations that are advanced and forward looking. These initiatives and additional NextGen-oriented initiatives will continue to receive consideration as future recommendations for the 18-36 month and 36+ month timeframe are developed. Some initiatives may begin implementation now with the expected completion in the longer term.

Recommended implementations are presented in one of four categories: Airports, Airspace and Procedures, Tactical Initiatives and Tools/Technology. The following describe the macro objective of initiatives in each category that are part of the overall solution set:

- **Airports:** build airport infrastructure on the airport surface, airport terminal buildings and air traffic towers that enable improved surface operations and airport throughput as well as ease implementation of NextGen tools
- **Airspace and Procedures:** design and evaluate operational procedures that improves utilization of existing airspace and airport capacity; and explore opportunities to deconflict traffic to and from close-in airports
- **Tactical Initiatives:** maximize and evolve the utilization of already deployed tools, routes and processes to improve movement of air traffic into, out of and within the NEC
- **Tools / Technology:** deploy new automation capabilities, decision support tools, and processes that enhance controller and operator information and decision making such that operational performance is improved in all operating conditions

The implementations recommended in this report require commitments from both the FAA and the Industry. These are dependent on financial and prioritized resources that the report attempts to define. In some cases, there is a high degree of funding certainty and in other implementations and associated commitments, the resources are in process to be available.

Aircraft equipage by the industry is an important area for the successful implementation of NEC initiatives. The rate of operators equipping aircraft is a critical element in the success of implementing NextGen and improvements in efficiencies, throughput and deconfliction of airports. The combination of equipage and implementation of ATC management tools governs the speed at which NextGen advances can occur.

The development of the recommendations included collaboration and coordination with FAA facilities that would be responsible for, and be engaged in the implementations. The specific milestones for both the industry and the FAA are supported by both entities. This “buy-in” is critical to the successful implementation of the recommendations.

Success of enhancing operations in the NEC is also dependent on issues of culture and change management in the FAA and the aviation industry. The human elements associated with training and acceptance by pilots and controllers, dispatchers are critical. Training on new tools, procedures and a commitment to use new capabilities are essential for NextGen to succeed.

Methodology

The development of the recommendation was led jointly by Industry representatives in close collaboration with FAA including the coordination and facilitation of discussions with NEC ATC facility management and labor teams. This ensured that the recommendations could be implemented.

The NEC NIWG began with over one hundred potential initiatives identified by Industry, Airport Authorities, FAA Headquarters and field facilities. Both FAA and Industry stakeholders on the NIWG worked collaboratively to reduce the number of candidate initiatives to a feasible set. In prioritizing the initiatives, the NIWG considered the following criteria:

- Did the initiative address deconfliction and airport/airspace throughput, consistent with the Phase 1 NEC recommendations?
- Had the initiative been previously discussed or worked with facilities? (This facilitated an emphasis on more mature designs and research ideas from the industry and FAA.)
- Could development, interdependency and environmental risk be mitigated to enable deployment in the first 18-month timeframe?

The resulting candidate capabilities were reevaluated by field facilities for feasibility⁴ and further discussed by the subgroup, and are included in this report. Proposed initiatives that are not included in this report have not been dismissed as possibilities for future NEC NIWG commitment recommendations. They will be discussed and considered as the NEC NIWG work continues.

Industry

- Co-chairs – Steve Brown, National Business Aviation Association/Warren Christie, JetBlue
- Industry NEC Lead Subject Matter Expert – Mark Hopkins, Delta Air Lines

⁴ Note that some initiatives recommended in this report will require ongoing coordination with field facilities for further validation

FAA Leads

- Pamela Gomez (Process)
- Rob Hunt
- Robert Novia

The work was divided into the following Subgroups to facilitate the analysis and evaluation of the implementations.

Airports

- FAA – Kent Duffy
- Industry – Jennifer Dermody, Metropolitan Washington Airports Authority

Airspace & Procedures

- FAA – Robert Novia
- Industry – Ralph Tamburro, Port Authority New York and New Jersey

Tactical Improvements

- FAA – Warren Strickland
- Industry – Joe Bertapelle, JetBlue

Tools/Technology

- FAA – Rob Hunt
- Industry – Rob Goldman, Delta Air Lines

Summary of Recommended Implementations

The recommended implementations for the NEC are designed to address key issues that negatively impact NEC operational performance today. This includes mitigations that address adverse weather which is a major issue in the NEC. Each implementation includes FAA and industry commitments to accomplish the implementations. Because of the interdependencies amongst the NEC initiatives and the associated impact on the national aviation system, it is important to continually assess and address as needed to ensure that system improvements are occurring and the dependent milestones are being met. The primary themes for the NEC recommendations are depicted in the following graphic and discussed below. This set of recommendations reflects the prioritized capability objectives identified in the Phase 1 NEC report:

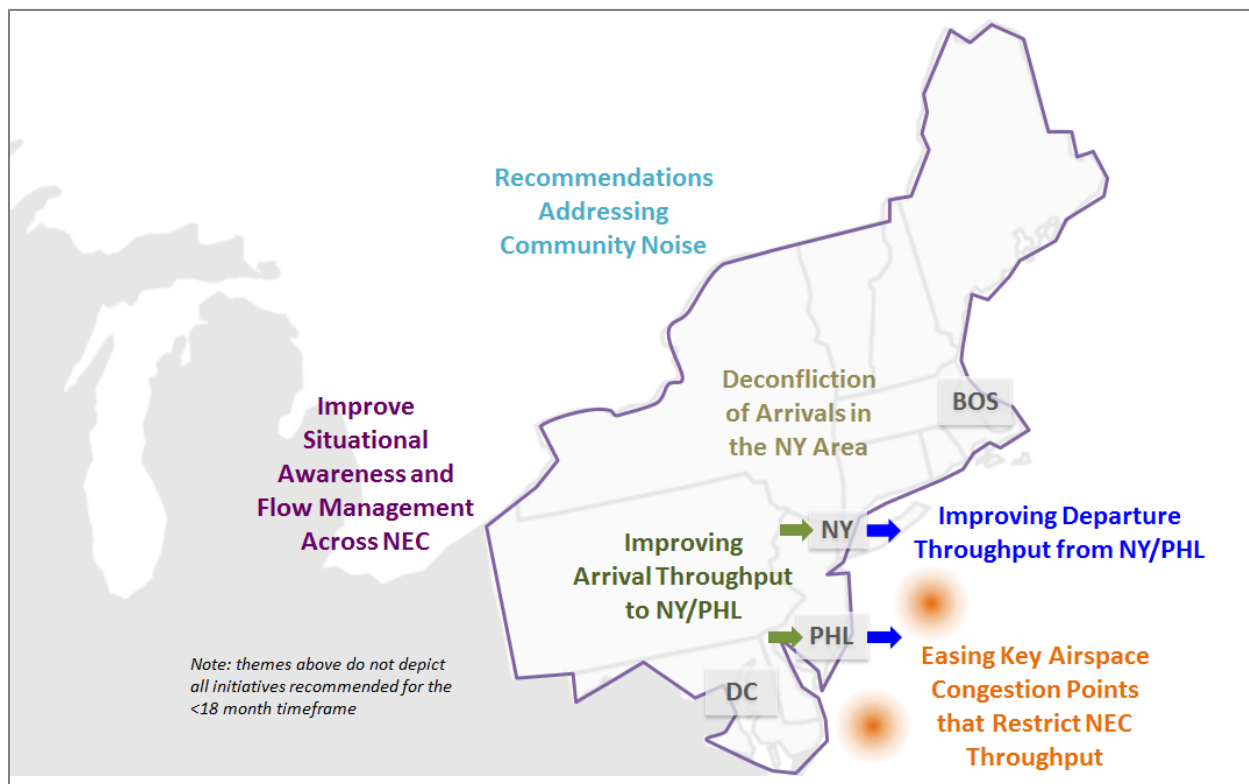


FIGURE 1 KEY THEMES FROM NEC RECOMMENDATIONS FOR THE FIRST 18-MONTHS

- **Deconfliction of Arrivals in the NY Area**

Deconfliction of air traffic to and from airports was the first priority of the Industry in the Phase 1 NEC report. Procedures that will deconflict traffic to and from New York airports and enhance throughput require significant operational resources, and implementation of these procedures is not practical in less than 18-months. The recommendations for the first 18-month timeframe include concept exploration, design and evaluation of proposed procedures.

- **Improving Departure Throughput from the New York and Philadelphia area**

Operators in the New York and Philadelphia (NY/PHL) area note that local weather, local traffic volume and weather constraints outside of these areas all combine to reduce the rate of departures from NY/PHL. Reducing departure rates in turn increases surface congestion and drives gate returns and cancellations. Surface saturation at airports can subsequently slow down the rate of arrivals. The current air traffic operation places an emphasis on arrivals. However, in the New York and Philadelphia areas, an equal emphasis is required on maintaining departure throughput to maintain system flow. A set of recommended initiatives focuses on improving departure throughput.

- **Improving Airport Arrival Throughput to New York and Philadelphia**

Along with the importance of moving departures out of the NY/PHL, some NEC initiatives focus on improving airport arrival throughput. Certain initiatives focus on enhancing arrivals into JFK, LaGuardia, Philadelphia and Newark airports⁵ that are seeking increased arrival throughput.

- **Easing Key Airspace Congestion Points that Restrict NEC Throughput**

Currently the En Route system has a tangled web of jet routes along the East Coast that drives controller workload and creates bottlenecks. A key NEC initiative focuses on replacing the existing complex of routes with more orderly PBN routes. It will address bottlenecks primarily in the Mid Atlantic airspace and should improve traffic flow to and from all key NEC airports.

- **Improve Situational Awareness and Flow Management Across NEC**

It is challenging in today's system for all stakeholders to maintain synchronized awareness on airspace availability and restrictions in the NEC. This can lead to less than optimal responses. Multiple initiatives focus on improving the information available to NEC stakeholders and the planning process that utilizes this information to make decisions for the NEC.

- **Recommendations Addressing Community Noise**

Noise impacts on communities from implementation(s) are an important consideration. The workgroup acknowledges the ongoing studies in the NEC (i.e., the New York and New Jersey Part 150 Studies, the MIT PBN Boston Noise Mitigation study, and the Community Roundtables reviewing the DC area Metroplex procedures). Specific recommendations are not included at this time, to avoid being pre-decisional or make assumptions about the outcome of these activities. Results and recommendations from the studies may be included in future deliberations.

⁵ Key recommendations in this report begin to focus on enhancing arrival throughput:

- JFK: a feasibility assessment of EoR Simultaneous operations to 13R RNP and 13L ILS is planned with the intention of eventually enabling use of a second arrival runway. This will increase the airport arrival rate.
- LGA: an RNAV transition to ILS 13 has been considered though not within the 18-month timeframe.
- EWR: does not have consistent utilization of its second arrival runways (4L/22R or 11/29); however, the need for full utilization has never been so great in recent years. Following the FAA's announcement in October 2016 to transition Newark from a Level 3 slot controlled airport to a Level 2 slot facilitated airport, the scheduled demand has increased to a point that requires full use of all runways at VFR rates for the airport to operate without traffic management initiatives in place. In the Summer of 2017, 60% of EWR arrivals were affected by GDPs on good weather days. Improving access to the second arrival runway at EWR will serve to reduce arrival delays.
- PHL: currently has two arrival runways; however, in certain weather conditions, the second runway (17/35) becomes unavailable, dropping the arrival rate. When PHL operates with just one arrival runway, Ground Stops and Ground Delay Programs are instituted driving delays and cancellations.

NextGen Initiatives

The initial work contained in this interim report of the NEC NIWG was focused on near-term implementations with Tier 1 goal of improving today's operation as well as lay the groundwork for introduction of more NextGen capabilities. Looking ahead, the future implementations will include initiatives that incorporate NextGen capabilities that support the path for the future.

The Guiding Principles (see Appendix B) suggest that the recommendations remain consistent with the overall NextGen's Trajectory Based Operation (TBO) Vision and PBN NAS Navigation Strategy. These also support the goals from Tiers 2 and 3 contained in the Phase 1 recommendation. Tier 2 is to Operate today's flights more efficiently and Tier 3 to maximize capacity, efficiency, throughput and schedule.

Specific NextGen oriented initiatives are:

1. Analyze and identify site(s) for new NextGen procedures – RNAV and Required Navigation Performance procedures for implementation beyond the initial time frame
2. Assess concept to allow simultaneous operations at widely spaced approaches to different airports

The benefits from these initiatives are dependent on the capabilities of the aircraft fleet.

The NEC NIWG had preliminary discussions, but reached no specific conclusions, about the possibility of identifying a "NextGen Airport" in the Northeast Corridor to maximize the use of NextGen procedures, aircraft equipage and air traffic control automation tools (not necessarily all, but could be a mix of capabilities). There are numerous direct and indirect consequences of such a recommendation that require more extensive review. This and potentially other NextGen analysis and implementations will be addressed in greater detail for the final report.

Implementation Detail

The work of the NEC NIWG was broken into four sub teams: Airports, Airspace and Procedures, Tactical Initiatives and Tools/Technology. A synopsis of the aspirations of each sub group is presented below. The specific commitments and milestones for each initiative is presented in Appendix A.

Airports

Infrastructure projects included in the first 18-month timeframe for Airports are mature, active projects that have been in planning and development for some time. This reflects the fact that large-scale infrastructure projects take several years to implement. There are limited risks associated with the first 18-month projects due to their maturity and the airport operators' commitment to complete the project. All of them have an operational component related to

traffic flow in the NEC. The projects provide throughput, surface efficiency, and level of service improvements that complement NextGen initiatives.

A project at JFK to improve high speed exits is expected to reduce runway occupancy time and enhance arrival throughput. Some NEC airports are becoming members of the Collaborative Decision Making (CDM) partnership, enhancing collaboration and surface operations. Runway enhancements in Philadelphia are also expected to drive surface improvements as well as improve payload and range for departing aircraft. Finally, expansion of the Baltimore Washington International Airport (BWI) international terminal will improve the airport's level of service along with operational flexibility.

Beyond the first 18-month timeframe, projects being evaluated and considered are expected to have a more significant impact because of the NEC NIWG coordination. This includes identifying projects that enhance or enable other NextGen initiatives in the Tools/Technology and Airspace and Procedures Sub Teams to optimize the benefits. With the addition of the NEC airports to the NIWG, the expectation is that the merits and possible next steps for worthwhile projects can be evaluated in advance of the February NAC meeting. Projects under consideration with a capacity or efficiency implication at the NEC airports include taxiway, high speed exit or other improvements to enhance surface operations, expanded space in control towers to accommodate NextGen equipment and enhanced data exchange between airports and the rest of the air traffic system.

Airspace & Procedures

The Airspace and Procedures enhancements directly deliver on three of the top four capability objectives identified in the Phase 1 Report: Deconflicting Airports, Improving Individual Airport Throughput, and Improving Airspace Throughput. Given the intricacies of implementing airspace or procedures efforts in the Northeast Corridor, it was noted during the deliberations that many of the candidate initiatives would require longer lead times, with pre-implementation milestones in the first 18-months but final implementation more likely in the 18-36 month or 36+ month timeframes. These initiatives represent a balance between the proposals that could be implemented within the first 18-months, and those that would provide high benefit, even if only during select conditions.

Deconfliction and airport throughput in the New York area is provided through better use of existing runways and procedures. Initiatives here provide additional departure throughput for LaGuardia and access to two arrival runways for Newark. PBN procedures and Established on Required Navigation Performance (EoR) for Kennedy, will provide arrival throughput benefits. Departure options are increased with access to the New York Offshore airspace for all New York metro airports, and with high-performance escape routes for capable operators at Teterboro and White Plains. At Philadelphia, the recommended initiatives leverage criteria changes and provide access to a second arrival runway, providing moderate to significant throughput increases during low visibility and unfavorable wind conditions. An overarching and farther-

reaching concept for the whole Northeast Corridor involves exploring the concept that allows for simultaneous operations on widely spaced approach courses to different airports. The concept has several potential applications and would help achieve desired deconfliction and airport throughput objectives.

Tactical Improvements

The Tactical Improvement initiatives focus on utilization, improvement and application of existing tools, processes and capabilities to further enhance operation in the NEC. Multiple tactical initiatives focus on moving departures out of the Northeast Corridor, particularly New York and Philadelphia. Some of these initiatives focus on simply improving use of existing capabilities, such as existing capped departure routes, while others, such as reducing pass back Miles In Trail (MIT) to New York departures, are more involved and require development of processes and agreements across multiple operational facilities to implement.

There are tools available to the air traffic operation, including those embedded in the Traffic Flow Management System and others in a prototype status. There may be further opportunities to utilize existing capabilities in the NAS simply through improved use of what is available today. To that end, recommendations also include conducting an inventory of existing tool deployment, expected benefits and current utilization. Increased utilization of tools in the operation will involve training for both controllers and operator personnel as well as an overall cultural change that leads to improved understanding and utilization of tools. Specific milestones in this area are still being developed and expected in the final report in February 2018.

Tools/Technology

For Tools and Technology, targeted areas of benefits include improved arrival and departure throughput and improved flow across the Northeast Corridor. Groups of tools and technologies initiatives have been prioritized in the areas of time based management, traffic flow management, and converging runway operations to deliver these benefits. These lay the groundwork for the future implementation of trajectory-based operations in the NEC.

The traffic management initiatives include implementation of Time Based Flow Management (TBFM) tools that are in process towards implementation but not yet in use at some of the Northeast corridor sites, including Integrated Departure Arrival Capability (IDAC) at New York area airports, and En Route Departure Capability (EDC) at New York Center. These items target improved airport departure throughput. Assessments are planned to determine airports to be prioritized to receive TBFM pre-departure scheduling to reduce delay variance. Application of TBFM pre-departure scheduling is planned for a single down-selected airport for within the first 18-month period, while additional airports are candidates beyond 18-months. The final TBFM-related initiative is improvements in the application of airborne metering into Philadelphia, intended to improve arrival throughput.

The traffic flow management initiatives include expanded adoption and improved use of Traffic Flow Management System (TFMS) capabilities across the Northeast Corridor. Milestones in this area are still being developed and expected in the final report in February 2018. Also targeted is improved situational awareness through expanded surface data sharing with operators, which in turn informs improved traffic flow management. Introduction of the Surface Visualization Tool (SVT) at Boston center is planned to improve flow management by providing greater situational awareness of surface activity at the center level. Use of a prototype NAS Operations Dashboard (NOD) will provide improved common situational awareness and facilitate fast problem identification and resolution in TFM decision-making.

Finally, expanded application of Converging Runway Display Aid (CRDA) is expected to provide improved arrival throughput at Philadelphia. Further applications of CRDA are being considered for beyond the first 18-month time horizon.

While the recent focus has been on prioritized initiatives in the next 18-months, the sub-team has started to identify initiatives for the 18-36 month and beyond 36-month timeframes, consistent with trajectory-based operations. Prioritization, schedule, and resource assessments resulted in the preliminary allocation of different timeframes for these candidate initiatives. Further development of these other candidates will follow the October 2017 NextGen Advisory Committee meeting.

Measurement Plan

Each of the recommended implementations includes a qualitative assessment of the benefits associated with the implementation along with the operational improvements and the risk. After the final recommendation is developed and approved by the NAC, the Joint Analysis Team (JAT) will develop a plan for conducting a baseline assessment of selected implementations and conduct a post implementation evaluation of individual implementations and their cumulative impact.

The baseline will focus on the metrics⁶ identified in Phase 1 – completion factor; arrival and departure delays, including variance; block times, including variance and throughput. The baseline will establish current performance in different operating conditions from which to measure future changes. The measurement plan should identify where multiple initiatives contribute to support the same airport/airspace level goals and metrics. Additionally, the measurement plan should highlight benefit improvement pools to help establish expectations and serve to inform future prioritization efforts, particularly those for the 18-36 month and 36+ month timeframes. Both industry and FAA are expected to furnish data and analysis resources

⁶ Measures identified in the Phase 1 NEC report are not under complete control of the FAA or the air traffic system. However, improvements in the NEC are expected to improve performance on these measures.

for this effort to include tool usage, procedure usage, equipage and progress toward data sharing.



Appendix A: Implementation Plans and Milestones

The graphic below presents the full set of recommended initiatives for the first 18-month timeframe for the Northeast Corridor. On the following page, a series of milestones to implement these initiatives is presented.

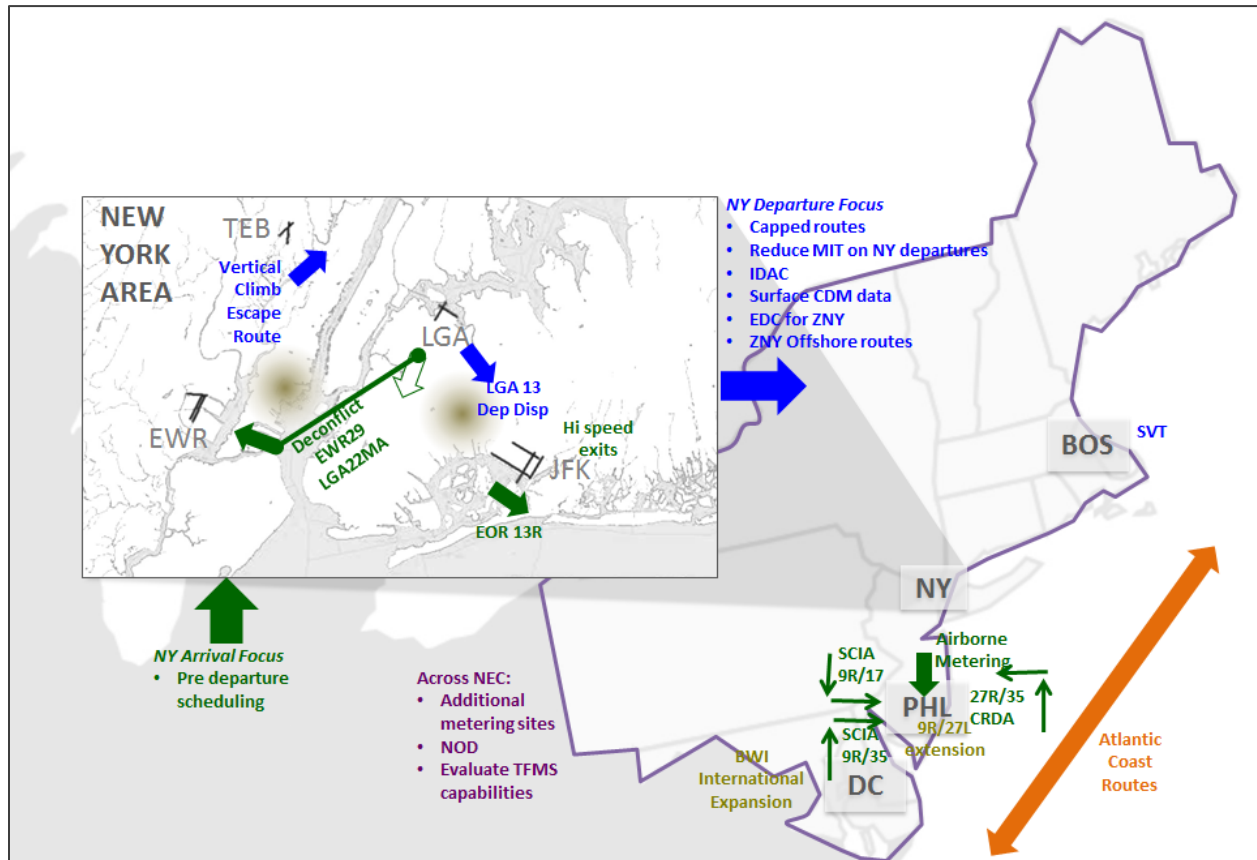


FIGURE 2 DETAILED VIEW OF INITIATIVES RECOMMENDED FOR THE NORTHEAST CORRIDOR – FIRST 18-MONTHS

NEC INTERIM REPORT MILESTONES FOR FIRST 18 MONTHS

Functional Area	Initiative	Operating Area	Key Benefits	Milestone (P=pre-implementation, IM=implementation, I=industry)	Milestone Title	Date	Notes
Airspace & Procedures	LGA13 departure dispersion using TNNIS, GLDMN, & NTHNS	LGA	Airport Departure Throughput	P	Conduct an environmental review for the use of dispersal headings for LGA13 departures using the current GLDMN, TNNIS and NTHNS SIDs within the current limitations specified in each procedure's existing CATEX.	Q2 - Q4 CY18	Following completion of the environmental review, the FAA plans to optimally use dispersal headings when operational conditions permit, using existing procedures and within the limitations and conditions of the current CATEX's.
				I	Operators will participate in community engagement activities for the use of dispersal headings for LGA13 departures using TNNIS, GLDMN, and NTHNS procedures	Q2 - Q4 CY18	Operators will participate in community engagement activities
					Implement LGA13 dispersal headings	Upon completion of previous milestones; finalize in Feb report	Rationale: Dependent Milestone: Plans to implement included in the narrative for Milestone above, pending Environmental Review
	RNAV transition to LGA ILS 13 that de-conflicts LGA/TEB/EWR	LGA	Deconfliction		RNAV transition to LGA ILS 13 that de-conflicts LGA/TEB/EWR	TBD in Feb report	High industry priority that will be further evaluated and considered in the Final Report. Design exploration will be considered by FAA. Delay driven by resource constraints.
	Modify LGA22 missed approach to deconflict with EWR29 RNAV GPS approach	EWR/LGA	Deconfliction & Airport Arrival Throughput	P	Complete feasibility study for the modified missed approach for LGA22	Q4 CY18	Complete feasibility study to develop an alternate missed approach for LGA RY 22 that de-conflicts with EWR RNAV GPS X RY 29 approach, enabling EWR to land two runways.
				I	Industry will participate in the feasibility study for the modified missed approach for LGA 22	Q4 CY18	
	Established on RNP for JFK 13R	JFK	Airport Arrival Throughput	P	Conduct feasibility assessment of EoR simultaneous operations to 13R RNP and 13L ILS	Q2 CY19	Complete a feasibility study of EoR simultaneous operations at JFK using existing JFK 13R RNP using RF legs and JFK 13L ILS procedures.
				I	Industry will participate in the feasibility assessment of EoR simultaneous operations to 13R RNP and 13L ILS	Q2 CY19	
	ZNY Offshore Airspace Redesign	JFK/EWR	Departure Airspace Throughput	P	Complete design of new PBN arrival and departure procedures for two airports from the ZNY oceanic transition sectors	Q1 CY18	Complete the design of new PBN arrival and departure procedures for JFK and EWR from the ZNY oceanic transition sectors.
				I	Following design completion for the new PBN arrival and departure procedures for JFK and EWR from the ZNY oceanic transition sector, Industry will contribute to associated community engagement activities	Q1 CY19	
				I	Industry will participate in design activities associated with the new PBN arrival and departure procedures for the ZNY oceanic transition sectors	Q1 CY18	
	Atlantic Coast Routes	NEC	Airspace Throughput	P	Complete design validation of eastern seaboard high altitude PBN routes. (Including SID/STAR connectivity)	Q2 CY18	Complete the design validation of eastern seaboard high altitude PBN routes, including SID/STAR connectivity
				I	Industry will participate in design activities associated for the Atlantic Coast Routes, including SID/STAR connectivity	Q2 CY18	
	Vertical Climb Escape Route - high performance escape route during SWAP/other constraints for a/c that can perform climb	TEB/HPN	Airspace & Airport Departure Throughput	P	Complete design and testing for Vertical Climb Escape Route for TEB/HPN	Q1 CY18	Complete design and testing for Vertical Climb Escape Route. The FAA plans to implement Vertical Climb Escape Route for TEB and HPN following validation of initiative. The FAA plans to complete the training and air traffic procedural activities prior to the implementation.
				I	NBAA resources or members to participate in design and testing	Q1 CY18	
				Complete training and coordination for Vertical Climb Escape Route High Performance Escape Route for TEB/HPN	Upon completion of previous milestones; finalize in Feb report	Rationale: Dependent Milestone: Plans to implement included in the narrative for the milestone above	

NEC INTERIM REPORT MILESTONES FOR FIRST 18 MONTHS

Functional Area	Initiative	Operating Area	Key Benefits	Milestone (P=pre-implementation, IM=implementation, I=industry)	Milestone Title	Date	Notes
					Implement Vertical Climb Escape Route for TEB/HPN	TBD in Feb Report	Rationale: Dependent Milestone: Plans to implement included in the narrative for the milestone above
	Update minima for existing SCIA procedure to PHL 9R/17	PHL	Airport Arrival Throughput	P	Update the minimas for existing SCIA procedure to PHL 9R/17	Q3 CY18	Update the minima for the existing SCIA procedure to PHL 9R/17.
				IM	Implement SCIA to PHL 9R/17	Q4 CY18	
	SCIAs with RNAV for 9R/35	PHL	Airport Arrival Throughput	P	Conduct safety assessment of SCIA operations with RNAV for PHL 9R/35	Q4 CY18	Conduct a safety assessment of SCIA operations with RNAV for PHL 9R/35 in Q3 CY 2018.
				I	Industry will provide expertise to support the safety assessment of SCIA operations with RNAV for PHL 9R/35	Q4 CY18	
	Concept Exploration and Operational Feasibility Analyses	NY metros	Airport Arrival Throughput	P	Conduct concept exploration of simultaneous operations on widely spaced approaches to different airports	Q2 CY19	Conduct a concept exploration of simultaneous operations on widely spaced approach courses to different airports in the New York area.
			I	Industry will participate in the concept exploration of simultaneous operations on widely spaced approaches to different airports	Q2 CY19		
Tactical Initiatives	Conduct a feasibility study to create a process to reduce and/or eliminate passback MIT for departures from NEC	NEC	Airport Departure Throughput	P	Conduct a feasibility study to create a process to reduce and/or eliminate passback MIT for departures from NY	Q1 CY19	
	Expand consistent usage of defined and existing capping and tunneling for departures/arrivals to/from the NEC (for example, PHL/ER/DUCT WEST, SERMN etc.) through required advisories	NEC	Airspace Departure Throughput	IM	Expand consistent usage of defined and existing capping and tunneling for departures/arrivals to/from the NEC through required advisories	Q2 CY 18 - Q1 CY19	
				I	Airspace users to complete training to support capping and tunneling for departures/arrivals to/from the NEC	Q2 - Q4 CY18	
	Continue to develop the PERTI process using the Collaborative Decision Making process	NEC	Delay, Variance, Completion Factor		Continue to develop the PERTI process using the Collaborative Decision Making process	TBD in Feb Report	This work will continue to be supported throughout the NAS to support all NAS operation. Consider a future milestone for the February 18 report.
Airports	With CDM partnership, PANYNJ will exchange flight data with FAA/airlines for EWR, JFK, LGA. Improved surface management expected in particular at JFK with surface metering	NY	Surface Efficiency, Delay Variance	IM	PANYNJ exchange flight data with FAA/airlines	Q1 CY19	
	JFK - surface construction to relocate and build new high speed exits	JFK	Surface Efficiency, Airport Arrival Throughput	I	Relocate high-speed exits on runway 4R/22L- better location on runway to reduce Runway Occupancy Time (ROT)	Q1 CY18	
	PHL – Runway 9R/27L Extension – 1,500 foot extension that will enable larger aircraft/higher payloads to depart for long-haul international service. Will also provide additional taxiways for more efficient departure queuing.	PHL	Surface Efficiency, Delay Variance	I	Extend Runway 9R/27L by 1,500 feet and supporting taxiway improvements	Q4 CY18	
	BWI – International Concourse E Extension – Provides additional international gates and overnight parking; allows for growth in international service and accommodate changes in fleet mix.	BWI	Surface Efficiency, Level of Service	I	Extension of International Concourse E	Q4 CY18	

NEC INTERIM REPORT MILESTONES FOR FIRST 18 MONTHS

Functional Area	Initiative	Operating Area	Key Benefits	Milestone (P=pre-implementation, IM=implementation, I=industry)	Milestone Title	Date	Notes
Tools & Technologies	TBFM Pre-departure scheduling to PHL, EWR, BOS or LGA	PHL, EWR, BOS or LGA	Delay Variance	P	Complete assessment for early TBFM pre-departure scheduling to determine which arrival airport and associated departure airports will execute this capability	Q2 CY18	
				I	Complete training of airspace user personnel to support TBFM pre-departure scheduling	Q1 CY19	
				IM	Implement TBFM Pre-Departure Scheduling at selected airport	Q1 CY19	
	Improve Airborne Metering to PHL	PHL	Airport Arrival Throughput	P	Complete review/update of adaptation for improving airborne metering to PHL	Q1 CY19	
				P	Complete TBFM refresher training for metering to PHL	Q1 CY19	
				IM	Improve airborne metering to PHL	Q1 CY19	
	Conduct an analysis to determine the sequence of remaining airports to receive en route metering	For example, LGA, EWR, JFK, etc.	Airport Arrival Throughput	P	Conduct an analysis to determine the sequence of remaining airports to receive en route metering	Q1 CY19	
	Implement EDC for ZNY	NY metros	Airport Departure Throughput	P	Complete Training and establish operating agreements to support EDC at ZNY	Q1 CY18	
				IM	Implement EDC at ZNY	Q1 CY18	
	Implement TBFM IDAC for up to 4 NY Area Airports: EWR, LGA, JFK, TEB	EWR, LGA, JFK, TEB	Airport Departure Throughput	P	Deploy/Relocate Equipment/Software to support IDAC deployment at 4 NY area Towers	Q1 CY18	
				IM	Implement TBFM IDAC at 4 NY Towers	Q2 CY18	
	Better use of existing TFMS capabilities (such as RAPT, Improved Departure Viewer, Diversion Tracking Application, SAA, and other options) where already available	NEC	TBD - could impact multiple operational benefits		Develop training strategy for better use of existing TFM capabilities by FAA personnel	TBD in Feb Report	FAA to develop desired operational outcomes in the NEC. The training language needs to be better revised to see how the NEC operation can be improved with change management in mind. Investigate for inclusion in Feb report. Standard recurring training is still ongoing as an annual requirement for TFMS.
					Complete execution of training strategy for better use of existing TFM capabilities by FAA personnel	TBD in Feb Report	Refine milestones into something more meaningful to improve NEC operations for the February Report
					Develop training strategy for better use of existing TFM capabilities by airspace users	TBD in Feb Report	
					Complete execution of training strategy for better use of existing TFM capabilities by airspace users	TBD in Feb Report	
	Use BOS SWIM Visualization Tool at ZBW	ZBW	Taxi Out Times, Maintain Airport Throughput	IM	Implement BOS SWIM Visualization Tool at ZBW	Q2 CY18	
	Expand number of operators sharing surface data with FAA to improve flow management	NEC	Taxi Out Times, Maintain Airport Throughput	I	JetBlue provide improved aircraft intent data via surface data elements	Q4 CY17	
				I	United Airlines provide improved aircraft intent data via surface data elements	Q4 CY17	
				I	Southwest Airlines provide improved aircraft intent data via surface data elements	TBD	
	Use NOD Prototype for Common Planning Coordination and Awareness between FAA and Users	NEC	TBD - could impact multiple operational benefits	P	Complete 90 day trial of the use of the NOD Prototype for Common Planning Coordination and Awareness between FAA and airspace user	Q1 CY18	
			I	Industry provide input/feedback on use of prototype	Q2 CY18		
			P	Complete study report of the NOD prototype trial	Q3 CY18		
CRDA at PHL RWY27R/35 for RNAV approaches	PHL	Airport Arrival Throughput	IM	Implement CRDA DCIA application for PHL 27R/35 for RNAV approaches	Q1 CY19		

Appendix B: Assumptions and Guiding Principles

Assumptions

From Phase 1, the industry members from the NextGen Advisory Committee Subcommittee (NACSC) served as the Northeast Corridor (NEC) Task Group (TG) and identified the following Assumptions for the effort to impact the Northeast Corridor:

- The NEC includes the Washington, DC/Baltimore, Philadelphia, New York and Boston airports and associated airspace
- Time frames for NEC effort are the first 18-months, 18-36 months, 3+ years
- Adverse weather is a major issue in improving operations in the NEC
- Factors for Success/Hurdles/Risk Factors
 - Assume financial support will materialize to move forward on prioritized initiatives
 - FAA Northeast corridor staffing key to success, daily operations and implementing new capabilities
 - Unless sufficient staffing levels are achieved in the Controller work force, Traffic Management Units, Air Traffic Control System Command Center and supervisory workforce in facilities providing service in the Northeast corridor, the goals outlined in this document relative to implementation of technologies, procedures and processes will not be achievable.
 - Priorities for NEC may negatively impact timing of other initiatives
 - Equipage may determine desire to implement certain initiatives and ability to achieve benefits
 - Environmental issues/concerns are critical in reviewing capabilities
- Areas of Focus
 - Key driver of variation in operations is decision-making by different individuals (operator & air traffic), each with own experience and skill level
 - Scheduled operators are focused on schedule integrity and reduction of block times where opportunities exist
 - On-demand operators focused on flying time minimization
- Willingness to be key site for new capabilities

Guiding Principles

The Task Group identified the following Guiding Principles for the effort to improve performance in the Northeast Corridor:

- Capabilities should have an overall positive system-wide effect on NEC
 - Improving overall system performance may have some limited local negative impacts; these should be minimized

- Capability discussion requires understanding of trade-offs – develop strategies to address
- Effort should establish quantitative “stretch” goal(s)
- Block times and called and actual rates should be the focus through this effort
- No new equipage mandates
- NEC is unique; hence capabilities in the NE Corridor may be unique
- Considerations in establishing priorities
 - Priorities should enable full utilization of available capacity in NEC, especially during peak demand periods and/or during irregular operations (IROPs)
 - Buy-in from local communities and governments should be sought as soon as possible
 - Effort should remain consistent with the overall NextGen’s TBO Vision and PBN NAS NAV Strategy
 - Process needs to recognize “burn-in” (i.e., technical and non-technical issues associated with the introduction of new capabilities into the system) component to implementation; burn-in should be addressed and continually improved
 - Priorities should be consistent with critical resource availability (technical, controllers, tech pilots, etc.)
 - Important to evaluate the effects of improvements/enhancements at an airport/airspace area adjacent or in close proximity

Appendix C: NEC NextGen Integration Task Group

Air Line Pilots Association (ALPA)
Airlines for America
American Airlines, Inc.
Baltimore/Washington International Thurgood Marshall Airport (BWI)
Delta Air Lines, Inc.
Federal Aviation Administration (FAA)
FedEx Express
General Aviation Manufacturers Association
Harris Corporation
HMMH
ITI Aviation
JetBlue Airways
Landrum-Brown
Leidos
Metron Aviation, Inc.
Metropolitan Washington Airports Authority
National Air Traffic Controllers Association (NATCA)
National Business Aviation Association
PASSUR Aerospace
Philadelphia International Airport
Port Authority of New York & New Jersey
Professional Aviation Safety Specialists
Raytheon
RTCA, Inc.
Southwest Airlines
The Boeing Company
The MITRE Corporation
United Airlines, Inc.
UPS

Appendix D: FAA Tasking Letter





U.S. Department
of Transportation

**Federal Aviation
Administration**

Office of the Deputy Administrator

800 Independence Ave., S.W.
Washington, D.C. 20591

April 13, 2017

Ms. Margaret Jenny
President, RTCA, Inc.
1150 18th St. NW.
Washington, DC 20036

Dear Ms. Jenny:

The NextGen Advisory Committee (NAC) met on February 22, 2017, and agreed to make the Northeast Corridor (NE Corridor) a priority region in the Federal Aviation Administration's (FAA) ongoing implementation of NextGen. The FAA supports the aviation industry's recommendation to address improvements in the NE Corridor, defined for this task as the airspace from Washington, D.C., to Boston, including Philadelphia and New York City.

NAC member input received to date underscores the complexity of the NE Corridor in implementing and effectively utilizing NextGen capabilities. Success will require collaboration and consensus among many diverse and competing stakeholders. Consequently, we believe it is essential that stakeholders begin by working together to define what they view as the primary challenges and opportunities, as well as how success will be defined. Given the broader infrastructure program being contemplated by the administration, we would like the NAC to begin work immediately to inform the infrastructure program for improvements in the region.

We all recognize that NextGen requires significant investment from a variety of stakeholders, including the government, as well as those who manage airports and operate aircraft in the aviation system. Here is the question to be addressed by the NAC: What collective set of FAA, airport, operator and community initiatives can improve the NE Corridor?

The FAA requests that the NAC undertake the NE Corridor tasking in the phases outlined below.

- Phase 1: By June 2017, define success in terms of benefits to include determining how benefits will be measured. Identify opportunities that are most likely to lead to success, and identify hurdles that could result in implementation challenges. The emphasis should be on initiatives that can be implemented in less than 18 months. Implementations of up to three years may also be considered.
- Phase 2: By October 2017, use the deliverables in Phase 1 to define joint implementation commitments for the NE Corridor, including government and industry milestones, and

define how implementing those priorities would lead to measurable benefits. Subsequent to implementation, ensure benefits are measured.

The NE Corridor tasking should leverage the 2013 NextGen Prioritization criteria. As appropriate, the tasking should incorporate previous NAC recommendations to the fullest extent possible and leverage previous Tactical Operations Committee recommendations.

The FAA and other aviation stakeholders involved in implementing the NE Corridor initiative have limited resources. The NAC will need to include recommendations on which commitments and/or other existing priorities should be removed from current NextGen Priorities.

It is important to draw on what has worked well in the past and identify how to move forward. We look forward to the opportunity to share lessons learned at the upcoming NAC subcommittee meeting. If I can be of assistance, please contact me or James T. Eck, FAA Assistant Administrator for NextGen, at (202) 267-7111 or email James.Eck@faa.gov.

Sincerely,



Victoria B. Wassmer
Acting Deputy Administrator

cc: James T. Eck, Assistant Administrator, NextGen
Teri L. Bristol, Chief Operating Officer, Air Traffic Organization
Winsome Lenfert, Acting Associate Administrator, Airports
Jenny Solomon, Assistant Administrator for Policy, International Affairs, Environment and Energy
John Hickey, Deputy Associate Administrator, Aviation Safety