Approved by the
NextGen Advisory Committee
June 2018

Phase 2 Addendum to Priorities for Improving Operational Performance in the Northeast Corridor (NEC) through CY2021

Report of the NextGen Advisory Committee

June 2018

Contents

Executive Summary

This addendum includes the FAA and Industry commitments through December 2021, laying out the activities and initial milestones to implement initiatives in the NEC.

The core objectives for the NEC remains increasing throughput, improving efficiency and reducing delays at the NEC airports, in particular, the New York airports. Deconfliction of the airports, utilizing airspace effectively, and exploiting available airfield capacity are reflected in the NEC operational need areas. FAA and Industry commitments address all ten of the ten areas. Commitments focus on the initiatives that can provide throughput increases and delay reduction in the near-term. This involves leveraging available capabilities and equipage, but includes transformational opportunities as part of a holistic approach.

For the future, the NEC workgroup should remain intact. Continuity of the collaborative process and collective engagement between the FAA,, and Airports is essential. The role of the next phase of the NEC workgroup would be monitoring of the numerous pre-implementation milestones and implementation commitments. Regular coordination and collaboration between Industry and FAA will be required to stay abreast of ongoing implementations; industry expectations on concept/feasibility assessments; agreements to potentially farm out certain activities to other industry bodies like CDM, and expectations for industry participation on community engagement.

Initiatives, Milestones and Commitments through December 2021

Joint Milestones

In the March 2018 report, the NEC workgroup[1] identified the ten operational need priority areas for the NEC through 2021, and proposed a set of initiatives that would address those needs in that timeframe (see Appendix A). No specific milestones were included in the March 2018 report as the FAA was conducting internal reviews of these proposed initiatives.

The FAA completed its review and provided a response in early May. The response includes commitments that address all ten of the operational need areas, and include several initial Trajectory Based Operations (iTBO) capabilities for the NEC. These commitments build on the 18-month milestones approved by the NAC in October 2017.

With the FAA response, Industry developed a set of commitments and milestones that support and complement the FAA's plans for the NEC. Industry points of contact (POCs) have been identified for each milestone. These POCs will provide responsibility and accountability, and continue the collaborative process between the FAA and Industry. The Industry POCs can serve as touch points for the FAA/NATCA NEC Collaborative Working Group (CWG) as the NEC efforts

[1] The term "NEC workgroup" is used as an umbrella reference for the NEC NIWG and subsequent Industry-based workgroup active after May 29, 2018. This differs from the FAA/NATCA NEC Collaborative Working Group initiated in late 2017, which has no current industry involvement.

continue. This NEC CWG was established in December 2017 to coordinate the facilitation and integration of airspace, Performance Based Navigation (PBN) and conventional procedures, policy, training, technology, and automation enhancements as pertaining to the NEC.

Implementation milestones for the NEC through December 2021 include:

- Implementing high altitude PBN routes supporting the whole NEC by providing increased airspace throughput
- Implementing PDRR/ABRR enhancements
- Improving arrival time-based management at PHL and EWR
- Improving departure management for flights destined to LGA
- Installing non-federal GBAS at JFK and LGA

Examples of pre-implementation milestones include:

- Concept assessments for two arrival runway operations at EWR, including 7110.308 operations
- Design and evaluation of PBN procedures to support deconfliction of New York airports
- Identification of enhancements to support data driven TFM decision making
- Viability assessment of ZDC high altitude airspace redesign
- Collaborative process for emerging NEC applications within the iTBO waterfall

Airport infrastructure milestones include enhancements at BOS, JFK, PHL, and DCA. There are also joint milestones for further study of the applicability of the advanced technology areas identified in the March 2018 NEC report (GBAS, FIM, ADS-B In, and EFVS).

The full listing of milestones and commitments is included in tables in Appendix B.

Industry Role in Concept Assessments

While the majority of commitments through 2021 are pre-implementation milestones, the complexity of the NEC operation require thorough planning and analysis. The joint commitments to complete necessary concept assessments and feasibility analyses will support implementation milestones in the future.

Industry agrees to partner with the FAA in completing all NEC feasibility and concept assessments. Transparency throughout the assessment process will help all parties understand and acknowledge study findings. Working collaboratively on these assessments provides insight into benefits and consequences. This information will also help synchronize FAA and Industry investments, moving toward agreed upon goals and increasing confidence that those goals can be achieved.

For the concept assessment work, the Industry will be available to work closely with the FAA/NATCA NEC Collaborative Work Group and its subject matter experts. Industry participants may provide perspectives on operational need, current and future aircraft

equipage and air crew operating procedures. NEC Industry members are committed to provide resources to support these activities, to include but not limited to subject matter experts, data analysis, simulator access, and where available simulation modeling.

Industry Commitment to Community Involvement Activities

An important element for successful implementation of NEC initiatives is the communication and affirmation of the need for change and the engagement and support of all stakeholders throughout the process. Industry is committed to working with the FAA in communicating the need for NextGen in the NEC. Airports will play a key role in this process and will work with the FAA as it continues to develop its community involvement strategy for the NEC. As the FAA identifies specific community involvement activities, Industry will actively participate with the FAA in NEC community involvement efforts, such as roundtables, briefings to elected/appointed officials, discussions with other stakeholders, and/or the public forums. Industry roles can include:

- Describing proposed initiatives and the associated benefits
- Explaining operator and airport roles in development and implementation of procedures
- Answering operator and airport specific inquiries and describing operator procedures and limitations
- Discussing fleet advancements and expected noise source reductions.

Industry is committed to supporting regular communications regarding NEC activities to ensure that the set of initiatives fits together in a cohesive way.

Considerations for Future NEC Planning

The set of joint commitments from FAA and Industry address the majority of the proposed initiatives from the NEC March 2018 report. Of the remaining initiatives, there are four that Industry would like considered for future inclusion as an FAA NEC commitment:

- Modified LGA/EWR airspace to deconflict EWR Runway 29 GPS, and new GPS and RNP approach
- Multiple PBN approaches for LGA Runway 31, including RNAV (GPS) transitions to existing procedures and exploitation of RNAV to LOC RWY 31
- ROBER OPD to JFK Runways 22L/R
- Use of CRDA to increase airport throughput at JFK

The RNAV approach procedures for TEB Runways 19 and 24 are understood to be largely developed and are scheduled for implementation in 2019. If there is a delay to the planned implementation schedule for these procedures, the workgroup recommends addressing that delay in conjunction with other NEC procedures.

Industry has a strong interest to understand how TBFM metering to LGA could be added to the current list of initiatives, and is planning to continue pursuing the possibility of this opportunity with the FAA. An Industry pre-implementation milestone to supply the FAA with benefits cases for TBFM metering at LGA, as well as other NEC airports, is included.

Ground Based Augmentation System (GBAS) was identified in the March 2018 as a key technology with benefit opportunities in the NEC. Some aircraft operators have invested in GBAS, however greater airport equipage and FAA support is needed for leveraging benefits from GBAS in the NEC. In the report the NEC identified several necessary FAA actions, including:

- Retaining current level of support per PBN NAS Navigation Strategy (2016)
- Supporting GLS Cat II operational approval for a Cat I system, or alternative Cat II approval, and leverage GBAS adverse all-weather capability.
- Studying GLS options for noise abatement in the NEC by using higher GP angles not to exceed Autoland limitations.
- Partnering with Airports and Industry in NEC to support training and advanced procedure development as more aircraft are equipped to take advantage of capability.
- Supporting future industry investments in GLS Cat III capability.

At this point, the FAA is still considering these recommendations. Additional coordination and communication with the NEC workgroup is needed to move forward with this important technology opportunity for the NEC.

For the future, the NEC workgroup should remain intact. Continuity of the collaborative process and collective engagement between the FAA, and Airports is essential. The role of the next phase of the NEC workgroup would be monitoring of the numerous pre-implementation milestones and implementation commitments. Regular coordination and collaboration between Industry and FAA will be required to stay abreast of ongoing implementations; industry expectations on concept/feasibility assessments; agreements to potentially farm out certain activities to other industry bodies like CDM, and expectations for industry participation on community engagement.

Propelling NextGen in the NEC

During the March 2018 NAC meeting, the Committee asked if a NextGen airport should be pursued in the NEC. Building on previous workgroup deliberations and previous findings of the NAC concerning the definition of NextGen, the workgroup recommends against defining or designating a singular NextGen airport.

NextGen is not a point solution but is a systems approach of planned implementation of different programs tailored to the needs of overall NAS operations; there is no one turnkey solution. Solution sets need to be scaled to the operational needs of a specific area. Also,

some capabilities are implemented on or in the airport environment, others in the airspace, and others across the NAS.

NextGen implementations must apply the appropriate capability to the operational need or problems so there may be a variety of solutions across the NAS, impacting the busiest and most capacity constrained airports as well as others in the NAS. The FAA's iTBO plan and its supporting capabilities are foundational elements building incrementally to the full TBO vision. As seen in the joint commitments for the NEC, these components are being deployed in the NEC, but in an appropriately tailored manner.

Appendix A: NEC Implementation Initiatives and Operational Need Areas

The table below was included in the March 2018 report "Priorities for Improving Operational Performance in the Northeast Corridor through CY2021" and presented a set of potential implementation initiatives.

Initiative Category	Initiative Specifics
Data Driven TFM	• Collaborative SOP around existing available or prototype capabilities (IDRP, RAPT, NOD w DRS) for use during SWAP 2018 • Emerging applications and capabilities for opportunities within iTBO scope/waterfall for 2018+
Multiple Airport Deconfliction	• RNAV transition to ILS LGA13, and RNAV LPV, RNP and/or GLS to LGA13 • Modified LGA/EWR airspace to deconflict EWR29 GPS, and new GPS and RNP approach • Multiple PBN approaches for LGA31, including RNAV (GPS) transitions to existing procedures and exploitation of RNAV to LOC RWY 31
Crosscutting Departure Throughput	• PDRR with technology and process changes in place • Expanded low altitude and escape route structure • Enhanced management for fix/route closure during irregular ops • ZDC09 (MAP changes, splitting sector) • Vertical climb escape route/high performance escape route • ACR and ZNY offshore routes • TBFM metering and pre-scheduling
Metro NY Airport Throughput and Efficiency	• Existing tools/investments to increase airport throughput: CRDA for JFK, high-speed turn-offs at EWR • Existing PBN procedures modified as needed to increase use and reduce pilot and controller workload • Tools to assist managing final approach spacing <u>LaGuardia</u> • Dispersal headings (TNNIS, NTHNS, GLDMN) <u>Teterboro</u> • RNAV SID TEB19 • RNAV approach procedures for TEB19 and TEB24 <u>Kennedy</u> • EoR for 13R • ROBER OPD to 22L <u>Newark</u> • 22L and 29 arrivals • 4L visuals

The initiatives included in the table above are intended to address the highest priority operational needs for the NEC. The following represent the ten top priority operational needs for the NEC:

Deconfliction and Throughput Focused Operational Needs

- Improvement for constrained NEC departure routes - during normal and severe weather operations
- Address loss of airport throughput due to airport/airspace interactions when arriving LGA Runway 13
- Address loss of airport throughput due to airport/airspace interactions when arriving LGA Runway 31
- Improvement in arrival throughput at EWR and delay reduction (i.e. GDPs)
- Provide satellite airport access to NY area airspace and deconflicting satellite operations from the major airports where possible

Growth Focused Operational Needs

- Provide full utilization of available LGA capacity
- Improvement of JFK runway usage and delay reduction
- Improvement of PHL runway usage and delay reduction
- Provide reduced separation and spacing and improved access to NEC airports

Data Driven Traffic Flow Management

- Evolve TFM to incorporate data-driven decision-making to better manage demand/capacity imbalance in the NEC

Appendix B: Milestone and Commitment Detail

This section contains the five tables that detail the milestones and commitments for the NEC from October 2017 through December 2021. These tables include the milestones and commitments from the October 2017 report "Joint Implementation Commitments for Improving Operations in the Northeast Corridor Phase Two - Interim Report."

- **NEC Industry Milestones through Dec 2021**
  Includes Industry commitments organized by the 10 Operational Need Areas. The initiative is identified (similar to the structure used in October 2017 NEC report). Where a corresponding FAA milestone date exists, it is referenced in the table. An Industry POC has been identified for each commitment/milestone.

- **FAA NEC Milestones through Dec 2021**
  Includes the FAA milestones and commitments presented to the NEC workgroup on May 9, 2018, organized to match to 10 Operational Needs Areas. Some additional information (provided by the FAA at the May 17 and May 24 NEC workgroup meetings) has also been included.

- **Additional Airport NEC Initiatives**
  Includes milestones and commitments associated with the initiatives identified by the NEC Airports subgroup. These milestones were identified in the May 9, 2018 FAA briefing.

- **Advanced Technology Initiatives**
  Includes FAA responses and joint milestones discussed at the May 17 NEC workgroup meeting.

- **Completed FAA and Industry NEC Milestones**
  Includes milestones identified as completed as of June 13, 2018.

NEC Industry Milestones through Dec 2021

Need Area	Initiative	Commitment/Milestone	Corresponding FAA Date	Draft Industry Date	Industry POC
Efficient Departures	Process to reduce and/or eliminate passback MIT for departures from NEC	Industry will participate in feasibility study to create a process to reduce and/or eliminate passback MIT for departures from NY	Q1 CY19	Q4 CY18 (End of Season Review)	PANYNJ (Ralph Tamburro)
	TBFM Pre-departure scheduling to PHL, EWR, BOS or LGA	Industry will provide examples of beneficial application of early TBFM pre-departure scheduling to PHL, EWR, LGA, and BOS		Q4 CY18 (through TBFM customer mtg)	DAL (Mark Hopkins, Rob Goldman) AAL (Eric Silverman)
		Industry will complete training of airspace user personnel to support TBFM pre-departure scheduling	Q1 CY19	Q1 CY19	UAL (Susan Pfingstler)
	En route metering for remaining NEC airports	Industry will provide input and review an analysis to determine the sequence of remaining airports to receive enroute metering	Q3 CY19	Q4 CY18 (Sep or Oct NCF)	Industry NCF Chair (Mark Hopkins)
	ZDC airspace redesign (aka ZDC09)	Industry will provide input to routing designs for the ZDC airspace redesign alternatives to reduce traffic management restrictions	Q3 CY19	Q3 CY19	AAL (Wes Googe)
	Eastern Seaboard high altitude PBN routes (aka Atlantic Coast Routes)	Industry will continue to support ongoing design work and implementation Eastern Seaboard high altitude PBN routes (including SID/STAR connectivity) through ZBW, ZNY and ZDC airspace	Q3 CY20	Q3 CY20	AAL (Wes Googe)
	ZNY Offshore Airspace Redesign	Industry will support design and implementation ZNY Offshore PBN Routes	Q4 CY19	Q4 CY19	AAL (Wes Googe)
	PDRR with technology & process changes in place	Industry will evaluate the use multi-route TOSs to communicate departure and arrival trajectory preferences from/to PHL and NY area airports	Q3 CY20 (PDRR)	TBD	DAL (Mark Hopkins, Rob Goldman) UAL (Susan Pfingstler) AAL (Eric Silverman) A4A (Mike Cirillo)
	Expand consistent usage of defined and existing capping and tunneling for departures/arrivals to/from the NEC	Airspace users to complete training to support capping and tunneling for departures/arrivals to/from the NEC	Q2 CY18 - Q1 CY19	Q2-Q4 CY18	DAL (Mark Hopkins, Rob Goldman) UAL (Susan Pfingstler) AAL (Eric Silverman) A4A (Mike Cirillo)

Note: A blank entry under "Corresponding FAA Date" reflects an Industry milestone that does not have a corresponding FAA milestone

NEC Industry Milestones through Dec 2021 (continued)

Need Area	Initiative	Commitment/Milestone	Corresponding FAA Date	Draft Industry Date	Industry POC
Deconflict LGA13	RNAV transition to LGA ILS 13 that deconflicts LGA/TEB/EWR	Industry will provide input and review the concept assessment to deconflict LGA/EWR/TEB when on LGA 13 ILS	Q1 CY19	Q1 CY19	DAL (Mark Hopkins, Rob Goldman) PANYNJ (Ralph Tamburro)
Deconflict LGA31	LGA31 RNAV approach that approximates the LGA31 EXPWY VIS approach	Industry will provide input to evaluation of designs for LGA31 RNAV approach that approximate the LGA31 EXPWY VIS approach and is usable for most operators	Q3 CY19	Q3 CY19	JetBlue (Joe Bertapelle) DAL (Mark Hopkins) PANYNJ (Ralph Tamburro)
EWR Capacity	Modified LGA22 missed approach to deconflict with EWR29 RNAV GPS approach	Industry will participate in feasibility study for the modified missed approach for LGA22	Q4 CY18	Q4 CY18	PANYNJ (Ralph Tamburro) & UAL (Glenn Morse)
	EWR 22L/29 Arrivals	Industry will provide input and review concept assessment for EWR 22L/29 arrival operations	Q2 CY19	Q2 CY19	UAL (Glenn Morse)
	EWR CSPO Departures	Industry will provide input and review feasibility and initial safety analysis for CSPO departure concepts	Q3 CY19	Q3 CY19	UAL (Glenn Morse)
	CRDA for EWR 22L/11	Industry will provide input and review CRDA feasibility analysis for EWR 22L/11 to lower minima	Q4 CY19	Q4 CY19	UAL (Glenn Morse)
	7110.308 at EWR	Industry will provide input and review of FAA evaluation of the impact and benefit of applying 7110.308 at EWR	Q1 CY20	Q1 CY20	UAL (Glenn Morse)
	CRDA for EWR 4R/29	Industry will provide input and review of CRDA feasibility analysis for EWR 4R/29 to lower minima	Q4 CY19	Q4 CY19	UAL (Glenn Morse)
Satellites	Vertical Climb Escape Route	NBAA will provide expertise to design refinement for Vertical Climb Escape Route		Q3 CY18	NBAA (Heidi Williams, Dean Snell) PANYNJ (Ralph Tamburro)
	TEB RW19 RNAV SID	Industry will provide input and review concept analysis for TEB RW19 RNAV SID for overnight operations	Q2 CY19	Q2 CY19	NBAA (Heidi Williams, Dean Snell) PANYNJ (Ralph Tamburro)

NEC Industry Milestones through Dec 2021 (continued)

Need Area	Initiative	Commitment/Milestone	Corresponding FAA Date	Draft Industry Date	Industry POC
LGA Capacity	LGA13 departure dispersion using TNNIS, GLDMN, & NTHNS	Operators will participate in community engagement activities	Q2 - Q4 CY18	Q2 - Q4 CY18	DAL (Rob Goldman)
	Modify GLDMN/NTHNS RNAV SIDs to address noise concerns	Industry will provide input to the evaluation of the alternatives to the GLDMN/NTHNS RNAV SIDs to address noise concerns	Q2 CY19	Q2 CY19	DAL (Rob Goldman)
		Industry will work with FAA to mitigate climb gradient concerns	Q2 CY19	Q2 CY19	AAL (Wes Googe) DAL (Rob Goldman)
JFK Capacity	Established on RNP for JFK 13R	Industry will provide input and review feasibility assessment of EoR simultaneous operations to 13R RNP and 13L ILS	Q2 CY19	Q2 CY19	JetBlue (Joe Bertapelle) PANYNJ (Ralph Tamburro)
	JFK surface construction to relocate and build new high speed exits	PANYNJ will create new high-speed exit on runway 31R to reduce Runway Occupancy Time (ROT)		Q4 CY19	PANYNJ (Ralph Tamburro)
PHL Capacity	SCIAs with RNAV for 9R/35	Industry will provide input and review safety assessment of SCIA operations with RNAV for PHL 9R/35	Q4 CY18	Q4 CY18	AAL (Eric Silverman) SWA (Rick Dalton)

NEC Industry Milestones through Dec 2021 (continued)

Need Area	Initiative	Commitment/Milestone	Corresponding FAA Date	Draft Industry Date	Industry POC
Reduced Separation & Increased Access	Simultaneous operations on widely spaced approaches to different airports	Industry will participate in concept exploration of simultaneous operations on widely spaced approaches to different airports	Q2 CY19	Q2 CY19	PANYNJ (Ralph Tamburro)
		Industry will identify and prioritize applications in NY area for simultaneous operations on widely spaced approaches to different airports to expedite addressing deconfliction issues	Q2 CY19	Q2 CY19	PANYNJ (Ralph Tamburro)
	GBAS at JFK and LGA	PANYNJ will install Non-Fed GBAS at JFK and LGA		Q4 CY19	PANYNJ (Ralph Tamburro)
	Existing PBN procedures modified as needed to increase use and reduce pilot and controller workload	PANYNJ with Industry will conduct an review of existing PBN procedures, determine operator issues, identify needed modifications, and prioritize needed changes		Q1 CY19	PANYNJ (Ralph Tamburro)
	Minimum Radar Separation (MRS) on final approach	Industry will provide input and review feasibility study of reduced Minimum Radar Separation (MRS) on final approach including collision risk, impacts on go around rate, and runway occupancy restrictions	Q1 CY20	Q1 CY20	UAL (Glenn Morse)
	Effective NEC community involvement	PANYNJ with operators will partner with the FAA in developing a Community Involvement strategy for the NY area		Q3 CY18	PANYNJ (Ralph Tamburro) A4A (Mike Cirillo) DAL (Mark Hopkins) NBAA (Heidi Williams)

NEC Industry Milestones (concluded)

Need Area	Initiative	Commitment/Milestone	Corresponding FAA Date	Draft Industry Date	Industry POC
Data Driven TFM	Data driven TFM decision making	Industry will provide input and review operational analysis to identify enhancements to improve data driven TFM decision making	Q4 CY19	Q4 CY19	Mark Hopkins
		Industry will engage in a collaborative process for emerging NEC applications for capabilities within iTBO scope/waterfall	Q4 CY19	Q4 CY18 (start of FY19)	PANYNJ (Ralph Tamburro) A4A (Mike Cirillo) DAL (Mark Hopkins) AAL (Eric Silverman) Select regional carriers
		Industry will engage in a collaborative process for emerging NEC applications for SWAP 2019	Q4 CY19	Q4 CY18 (End of Season Review)	PANYNJ (Ralph Tamburro) A4A (Mike Cirillo) DAL (Mark Hopkins) AAL (Eric Silverman) Select regional carriers
	Expanded number of operators sharing surface data with FAA to improve flow management	Southwest Airlines provide improved aircraft intent data via surface data elements		TBD	SWA (Rick Dalton)
		FedEx provide improved aircraft intent data via surface data elements		Q4 CY19	FedEx (Phil Santos)
	Fight data exchange between PANYNJ with FAA/airlines for EWR, JFK, LGA, through CDM partnership	PANYNJ exchange flight data with FAA/airlines	Q1 CY19	Q1 CY19	PANYNJ (Ralph Tamburro)

FAA NEC Milestones through Dec 2021

Need Area	Mile-stone	Solution/Candidate	Timeframe	Targeted Benefit Pool
Efficient Departures	P	Conduct a feasibility study to create a process to reduce and/or eliminate passback MIT for departures from NY	Q1 CY19	Improve Throughput: Increase use of existing capacity
	P	Complete assessment for early TBFM pre-departure scheduling to determine which arrival airport and associated departure airports will execute this capability	Q2 CY18	Improve Throughput: Increase use of existing capacity
	IM	Implement TBFM Pre-Departure Scheduling at selected airport	Q1 CY19	Improve Throughput: Increase use of existing capacity
	P	Conduct an analysis to determine the sequence of remaining airports to receive en route metering	Q1 CY19	Improve Throughput: Increase use of existing capacity
	IM	Implement DSP Enhancements	Q3 CY20	Improve Throughput: Increase use of existing capacity Flight Efficiency: Improved Redistribution of necessary delay
	P	Determine viability and model ZDC airspace redesign alternatives to reduce traffic management restrictions	Q3 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
	IM	Implement Eastern Seaboard high altitude PBN routes (including SID/STAR connectivity) through ZBW, ZNY and ZDC airspace	Q3 CY20	Improved Throughput: Increasing existing capacity during specific operating conditions
	IM	Implement ZNY Offshore PBN Routes	Q4 CY19	Improved Throughput: Increase existing capacity during specific operating conditions
	IM	Implement PDRR/ABRR Enhancements	Q3 CY20	Improve Throughput: Increase use of existing capacity Flight Efficiency: Improved redistribution of necessary delay
	IM	Improved departure management for flights destined to LGA	Q1 CY20	Improve Throughput: Increase use of existing capacity
	P	Conduct Integrated Departure Route program (IDRP) prototype re-familiarization sessions	Q1 CY19	Improve Throughput: Increase use of existing capacity
	IM	Expand consistent usage of defined and existing capping and tunneling for departures/arrivals to/from the NEC	Q2 CY18- Q1 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
Deconflict LGA13	P	Complete concept assessment to deconflict LGA/EWR/TEB when on LGA 13ILS	Q1 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
Deconflict LGA31	P	Evaluate LGA31 RNAV approach design alternatives that approximate the LGA 31 EXPWY VIS approach and is usable for most operators	Q3 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions

P – Pre-implementation IM - Implementation

FAA NEC Milestones through Dec 2021 (continued)

Need Area	Mile-stone	Solution/Candidate	Timeframe	Targeted Benefit Pool
EWR Capacity	P	Complete feasibility study for the modified missed approach for LGA22	Q4 CY18	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Complete concept assessment for EWR 22L/29 arrival operations	Q2 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Perform feasibility and initial safety analysis for CSPO departure concepts	Q3 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Conduct CRDA feasibility analysis for EWR 22L/11 to lower minima	Q4 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Conduct CRDA feasibility analysis for EWR 4R/29 to lower minima	Q4 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
	IM	Improve Arrival Time-Based Management (TBM) to EWR	Q4 CY21	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Conduct analysis to evaluate the impact and benefit of applying 7110.308 at EWR	Q1 CY20	Improved Throughput: Increasing existing capacity during specific operating conditions
Satellites		Complete training and implement Vertical Climb Escape Route for TEB/HPN	TBD	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Complete concept analysis for TEB RW19 RNAV SID for overnight operations	Q2 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
LGA Capacity	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	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Evaluate design alternatives to the GLDMN/NTHNS RNAV SIDs to address noise concerns	Q2 CY19	Address noise concerns
JFK Capacity	P	Conduct feasibility assessment of EoR simultaneous operations to 13R RNP and 13L ILS	Q2 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions

P – Pre-implementation IM - Implementation

FAA NEC Milestones through Dec 2021 (concluded)

Need Area	Mile-stone	Solution/Candidate	Timeframe	Targeted Benefit Pool
PHL Capacity	IM	Implement SCIA to PHL 9R/17	Q4 CY18	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Conduct safety assessment of SCIA operations with RNAV for PHL 9R/35	Q4 CY18	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Complete review/update of adaptation for improving airborne metering to PHL	Q1 CY19	Throughput: Increase use of existing capacity
	P	Complete TBFM refresher training for metering to PHL	Q1 CY19	Improve Throughput: Increase use of existing capacity
	IM	Improve airborne metering to PHL	Q1 CY19	Improve Throughput: Increase use of existing capacity
	IM	Implement CRDA application for PHL 27R/35 for RNAV approaches	Q1 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
	IM	Improve Arrival Time-Based Management (TBM) to PHL	Q4 CY20	Flight Efficiency: Improved Redistribution of Necessary Delay Improve Throughput: Increase use of existing Capacity
Separation & Access	P	Conduct concept exploration of simultaneous operations on widely spaced approaches to different airports	Q2 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Perform feasibility study of reduced Minimum Radar Separation (MRS) on final approach including collision risk, impacts on go around rate, and runway occupancy restrictions	Q1 CY20	Improved Throughput: Increasing existing capacity during specific operating conditions
	P	Benefits assessment for gate docking technologies to improve surface management	Q3 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
Data Driven TFM	P	Complete study report of the NOD prototype trial	Q3 CY18	Improve Throughput: Increase use of existing capacity
	P	Insert DRS info into the NOD prototype and make available to Industry	Q3 CY18	Improve Throughput: Increase use of existing capacity
	IM	PANYNJ exchange flight data with FAA/airlines	Q1 CY19	Improve Throughput: Increase use of existing capacity
	P	RAPT Refresher Training for FAA personnel	Q2 CY18	Improve Throughput: Increase use of existing capacity
	P	Conduct operational analysis to identify enhancements to improve data driven TFM decision making	Q4 CY19	Improve Throughput: Increase use of existing capacity

P – Pre-implementation IM - Implementation

Additional Airport NEC Initiatives

Mile-stone	Solution/Candidate	Timeframe	Targeted Benefit Pool
IM	Extend PHL Runway 9R/27L by 1,500 feet and supporting taxiway improvements	Q4 CY18	Improved Throughput: Increasing existing capacity during specific operating conditions
P	Conduct assessment of additional PHL 27L high speed exits*	Q3 CY20	Improved Throughput: Increasing existing capacity during specific operating conditions
P	Conduct assessment of PHL 27R departure queue taxiway*	Q3 CY20	Improved Throughput: Increasing existing capacity during specific operating conditions
P	Conduct assessment of PHL taxiway extension for end around operations*	Q4 CY21	Improved Throughput: Increasing existing capacity during specific operating conditions
P	Conduct GBAS evaluation/assessment at BOS	Q4 CY19	Improved Throughput: Increasing existing capacity during specific operating conditions
I	Create additional BOS tower space for TFDM equipment to enable surface metering	Q4 CY21	Improve Throughput: Increase use of existing capacity
IM	Extension of BWI International Concourse E	Q4 CY18	Improved Throughput: Increasing existing capacity during specific operating conditions
P	Conduct assessment of DCA north end hold pads	Q3 CY20	Improved Throughput: Increasing existing capacity during specific operating conditions

P – Pre-implementation IM – Implementation

* These three concept assessments are a result of proposed changes supported by local Air Traffic and operators. Operators, in particular American Airlines and Southwest Airlines, will continue to participate in these assessments with Philadelphia Airport.

Advanced Technology Initiatives

Mile-stone	Advanced Technology Concept	Industry Recommendations	Commitment	Timeframe
P	Flight Interval Management	The FAA and Industry should conduct a review of results of 2017-2019 FIM demonstrations, including the cost and benefits, prior to the FAA's final investment decision. The review determines the final status of future recommendation on IM development and implementation.	Joint Industry/FAA milestone to review the relevant information and recommend next steps	Q3 CY20
P		The FAA should conduct a NEC-specific benefit study (including safety cases, demonstration data, etc.). This study should be followed by presentations for FAA and Industry Executive leadership, creating a critically important collective commitment to close the business case.	Project benefits at select NEC locations	Q3 CY20
P	CDTI Assisted Pilot Procedure (CAPP)	The FAA should accelerate the development of operational criteria for the CAPP use, including conducting studies to determine lead/follow requirements, controller requirements, and defining the conditions under which CAPP procedure is allowable.	Joint Industry/FAA milestone to assess opportunities to expand the use of CDTI-assisted operations beyond CAVS	Q4 CY19
P	Enhanced Flight Vision System (EFVS)	The FAA should complete benefits studies to determine requirements for reaching Cat II/III equivalent operations in the NEC. These studies should include the relative advantages to primary and secondary airports and how often arrival rates would improve if these benefits did exist.	Joint Industry/FAA milestone to project benefits at select NEC airports	Q4 CY19
		The FAA should complete studies to analyze the effects of mixed EFVS equipage aircraft operations in the NEC, including determining what level of equipage is required to begin realizing significant benefit. As EFVS installation is completely dependent on the operator, these studies will help define benefits for each specific carrier's operations, as well as the potential timeframe to achieve immediate return on the investment.		
	Ground-Based Augmentation System (GBAS)	The FAA should: • Retain current level of support per PBN NAS Nav Strategy • Support GLS Cat II operational approval for a Cat I system, or alternative Cat II approval, and leverage GBAS adverse all-weather capability. • Study GLS options for noise abatement in the NEC by using higher GP angles not to exceed Autoland limitations. • Partner with Airports & Industry in NEC to support training and advanced procedure development as more aircraft are equipped to take advantage of capability. • Support future industry investments in GLS Cat III capability.	TBD The FAA is still considering these recommendations	

P – Pre-implementation IM - Implementation

Completed FAA and Industry NEC Milestones

Need Area	Mile-stone	Solution/Candidate	Timeframe
Efficient Departures	P	Complete training and establish operating agreements to support EDC at ZNY	Q1 CY18
	IM	Implement EDC at ZNY	Q1 CY18
	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
	P	Complete design of new PBN arrival and departure procedures for two airports from the ZNY oceanic transition sectors	Q1 CY18
	I	Industry will participate in design activities associated with the new PBN arrival and departure procedures for the ZNY oceanic transition sectors	Q1 CY18
	P	Complete design validation of Eastern Seaboard high altitude PBN routes (including SID/STAR connectivity)	Q2 CY18
	P	Industry will participate in design activities associated with Atlantic Coast including SID/STAR connectivity	Q2 CY18
Satellites	P	Complete design and testing for Vertical Climb Escape Route for TEB/HPN	Q1 CY18
	P	NBAA Resources or members to participate in design and testing	Q1 CY18
JFK Capacity	IM	Relocate high-speed exits on JFK runway 4R/22L better location on runway to reduce Runway Occupancy Time (ROT)	Q1 CY18
PHL Capacity	IM	Update the minima for existing SCIA procedure to PHL 9R/17	Q3 CY18
Data Driven TFM	I	JetBlue provide improved aircraft intent data via surface data elements	Q4 CY17
	I	United Airline provide improved aircraft intent data via surface data elements	Q4 CY17
	P	Commence 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 NOD prototype	Q2 CY18
	IM	Implement BOS Surface Viewer Tool at ZBW	Q2 CY18

P – Pre-implementation IM – Implementation I - Industry

Appendix C: Participants in the Northeast Corridor Task Group

Air Line Pilots Association (ALPA)
Airlines for America
American Airlines, Inc.
Baltimore/Washington International Thurgood Marshall Airport (BWI)
Beacon Management Group
Delta Air Lines, Inc.
Federal Aviation Administration
FedEx Express
General Aviation Manufacturers Association
Harris Corporation
HMMH (DP)
JetBlue Airways
Landrum and Brown, Inc.
Leidos
Massachusetts Port Authority
Metron Aviation, Inc.
Metropolitan Washington Airports Authority
MIT Lincoln Laboratory
NASA
National Air Traffic Controllers Association (NATCA)
National Business Aviation Association
NOISE (The National Association to Insure a Sound Controlled Environment)
PASSUR Aerospace
Philadelphia Airport
Port Authority of New York & New Jersey
Professional Aviation Safety Specialists (PASS)
Raytheon
RTCA, Inc.
Sandel Avionics, Inc.
Southwest Airlines
The Boeing Company
The MITRE Corporation
United Airlines, Inc.
United Parcel Service (UPS)
Vianair