1. Executive Summary

1.1 Introduction

The Federal Aviation Administration (FAA) owns, and the Metropolitan Washington Airports Authority (the Authority) operates, the Ronald Reagan Washington National Airport (DCA), which occupies approximately 733 acres of land and 127 acres of water situated along the western shore of the Potomac River in the Commonwealth of Virginia. The Airport is located in Arlington County, immediately north of the City of Alexandria, Virginia, and across the Potomac River from Washington, D.C.

The Authority prepared this draft Environmental Assessment (EA) of the potential environmental impacts associated with the redevelopment of Terminal B/C, the Secure National Hall, and related improvements. This EA has been prepared pursuant to the requirements and guidelines of FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*; FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*; and the *1050.1F Desk Reference*.

1.2 Purpose and Need

Additional information on the Purpose and Need for the redevelopment of Terminal B/C and the Secure National Hall is provided in Section 2.

1.2.1 SUMMARY OF THE AUTHORITY'S PURPOSE AND NEED

The overall level of service (LOS) of passengers utilizing Gates 35 and 35X does not meet the Airport's core values of providing a safe, predictable, and enjoyable travel experience. The volume of passengers in the holdroom areas at Gates 35 and 35X exceeds acceptable levels of service and contributes to congestion, results in confusion during multiple concurrent flight calls, and provides a poor overall passenger experience. Passengers must board a bus at the gate, travel to the hardstand apron, and load aircraft via a ramp/stairway. Additionally, passengers are exposed to weather (wind, rain, snow, ice) when boarding/unboarding busses and aircraft, which increases the risk of an accident.

With the current secure screening checkpoints (SSCPs) at each pier, airline passengers transferring between piers to connecting flights must either take a bus or exit the secure area of the arrival pier and clear security again at the SSCP of the departing pier. With most passengers' desire to clear security as soon as possible, they pass through the National Hall and the SSCP expeditiously to wait for their flight at the departure gate.

The inefficiency of this passenger flow increases the time to make a flight connection between piers, increases security lines, causes crowding in the pier holdrooms and hallways, and inconveniences passengers.

The Proposed Action would enhance passenger and airline operations by creating a facility that provides a more equitable LOS for all gates and convenient access between all gates for connecting passengers.

1.2.2 PROPOSED ACTION

The Authority's Proposed Action includes the key elements described below. All construction would take place on Airport land.

- Terminal B/C Redevelopment – New North Concourse (NNC)
  - replacement of 14 regional aircraft hardstand positions with 14 regional aircraft contact gates
  - relocation of utilities in the NNC project area
  - modifications to Gate 35 (concourse level) and Gate 35X (apron level)
- Secure National Hall
  - construction of two new SSCPs over the commercial and public vehicle arrivals level roadways and below the departures level roadways at the National Hall level (i.e., one north of the north Metro pedestrian bridge, the other south of the south Metro pedestrian bridge)
  - construction of new vertical-circulation passenger corridors
  - modification and relocation of concessions areas and support space
  - conversion of National Hall to a post-security secure area
- Other Elements
  - demolition of the Authority's Corporate Office Building (COB) and relocation of the Authority's employees to other Authority office facilities at DCA or Washington Dulles International Airport, or to an offsite location
  - demolition of Hangar 11 and relocation of tenants to renovated facilities in the South Hangar Line area at DCA
  - demolition and replacement of Hangar 12 with a similar facility in the same general area
  - modifications to the hydrant fueling system, including fuel lines and pits
  - modifications to site utilities, including relocation
  - modifications to the Central Utility Plant
  - modifications to the airport security fence
  - relocation of parking locations for aircraft that remain overnight at DCA
  - removal of existing Taxiway S pavement from Runway 15-33 to Taxiway N
  - addition of new connector Taxiway N2 from Taxiway N to Runway 15-33

1.2.3 FEDERAL ACTIONS

The FAA actions being requested by the Authority include:

- Approval of the updated Airport Layout Plan (ALP) for DCA, depicting the proposed airfield pursuant to 49 United States Code (USC) §§ 40103(b), 44718, and 47107(a)(16); 14 Code of Federal Regulations (CFR) Part 77, *Objects Affecting Navigable Airspace*; and 14 CFR Part 157, *Notice of Construction, Alteration, Activation, and Deactivation of Airports*
- Determinations under 49 U.S.C. §§ 47106 and 47107 relating to the eligibility of the Proposed Action for federal funding under the Airport Improvement Program (AIP) and/or under 49 U.S.C. § 40117, as implemented by 14 CFR § 158.25, to impose and use passenger facility charges (PFCs) collected at the Airport for the Proposed Action to assist with construction of potentially eligible development items shown on the ALP
- Determination under 49 USC § 44502(b) that the Proposed Action is reasonably necessary for use in air commerce
- Determination that the Proposed Action would meet the federal Clean Air Act requirements
- Continued close coordination with the Authority and appropriate FAA program offices, as required for safety during construction pursuant to 14 CFR Part 139 under 49 USC § 44706

1.2.4 TIMEFRAME OF PROPOSED ACTION

The Authority currently expects to submit the Final EA for the proposed improvements to the FAA in the third quarter of 2016 and anticipates that the FAA could issue its finding shortly thereafter. If the EA schedule is met, and the FAA issues a favorable finding, then the Authority plans to: initiate construction of the NNC in the final quarter of 2016 and complete construction by the end of 2022, as well as initiate construction of the Secure National Hall enhancements in the second quarter of 2017 and complete construction by the second quarter of 2020.

1.3 Alternatives

Section 3.2 provides information related to the planning and design guidelines and recommendations used in developing the alternatives, which include:

- FAA Advisory Circular (AC) 150/5630-13, Change 1, *Planning and Design Guidelines for Airport Terminal Facilities*, January 19, 1994
- FAA AC 150/5300-13A, Change 1, *Airport Design*, February 26, 2014
- Transportation Safety Administration (TSA), *Recommended Security Screening Guidelines for Airport Planning, Design and Construction*, May 2011
- International Air Transport Association (IATA), *Airport Development Reference Manual*, 10th Edition, December 2014

- Transportation Research Board, Airport Cooperative Research Program (ACRP), Report 25, *Airport Passenger Terminal Planning and Design Guidebook*, 2010.
- Metropolitan Washington Airports Authority, *Design Manual*, 2014

The process used to identify the range of alternatives to be considered, and the screening process used to determine which alternatives would reasonably satisfy the Purpose and Need for the redevelopment of Terminal B/C and Secure National Hall, and thus be carried forward for analysis of environmental consequences, are described in Sections 3.3 and 3.4, respectively.

A preliminary list of the anticipated permits and approvals needed is included in Section 3.5, and lists of applicable laws and regulations considered during the preparation of the EA are included in Section 3.6.

1.3.1 GENERAL DESCRIPTIONS OF ALTERNATIVES

New Concourse

The Authority conducted a number of studies to develop and consider the 14 Terminal B/C redevelopment alternatives and 11 Secure National Hall alternatives that are discussed in Section 3.0. In Section 3.3, Exhibits 3-3 through 3-16 depict the 14 Terminal B/C redevelopment alternatives, and in Section 3.4, Exhibits 3-22 through 3-32 depict the 11 Secure National Hall alternatives.

The principal differences among the Terminal B/C redevelopment alternatives are listed in **Table 1-1**. Exhibits are included in Section 3.3 of this EA.

- Alternative numbers starting with "NNC" are associated with the construction of a New North Concourse to the north of the existing North Concourse of Terminal B/C. The Alternative number starting with "NSC" is associated with the construction of a New South Concourse between the existing South Concourse of Terminal B/C and the Terminal A concourse.
- As noted in Section 2.3.2, the purpose of the New Concourse is to improve the passenger experience by providing contact gates for 14 regional aircraft presently operating from hardstands (i.e., off-gate aircraft parking areas where passengers embark and disembark) and an undersized passenger holdroom. The Embraer 175 (EMB175) was chosen as the design aircraft because it is representative of the aircraft that can be gated at the existing hardstands, is commonly used in the existing fleet, is projected to be utilized in the future fleet mix, and meets all existing DCA operational statutes, regulations and requirements.

Table 1-1: New Concourse Alternative Exhibit Numbers and Principal Facility Differences

ALTERNATIVE NUMBER	EXHIBIT	CONTACT GATES	HARDSTAND POSITIONS	RON POSITIONS	CONNECTOR BUILDING	CONCOURSE LEVELS	DEMOLISH COB	DEMOLISH HANGAR(S)
Existing			14	3 RA/2 NB				
NNC-1	3-3	11	8	0	Elevated	2	Yes	11 and 12
NNC-2	3-4	7	12	0	Elevated	2	Yes	11 and 12
NNC-3	3-5	4	8	0	Elevated	0	1/	No
NNC-4	3-6		12	0	Elevated	2	1/	No
NNC-5	3-7		12	0	Elevated	2 2/	No	11 and 12
NNC-6	3-8	14	0	3 RA/2 NB	Elevated	2	Yes	11
NNC-7	3-9	14	0	2 RA/1 NB	Elevated	2	Yes	11 and 12
NNC-8	3-10	15	0	0	Elevated	2	Yes	11 and 12
NNC-9	3-11	14	0	3 RA/2 NB	Ramped	2	Yes	11
NNC-10	3-12	15	0	3 RA/ 2 NB	Ramped	2	Yes	11 and 12
NNC-11	3-13	15	0	3 RA/2 NB	Ramped	1	Yes	11
NNC-12	3-14	17	0	3 RA/2 NB	Ramped	1	Yes	11 and 12
NNC-13	3-15	10	5	0	Ramped	1	Yes	11 and 12
NSC-14	3-16	14	14	NA	Direct	2	No	No

NOTES:

COB = Authority's Corporate Office Building

NNC = New North Concourse NSC = New South Concourse RA = Regional Aircraft

NB = Narrowbody Aircraft (e.g., Airbus A321)

RONs = parking positions for aircraft that remain at the airport overnight NA = Not Applicable

1/ Converts COB into a regional facility with holdrooms and passenger amenities on the second level and bus pick up and drop off on the ground level

2/ A new two-level structure developed on the north end of Terminal B/C would serve the remote regional hardstands with holdrooms and passenger amenities on the second level and bus pick up and drop off on the ground level.

SOURCE: Ricondo & Associates, Inc., *Ronald Reagan Washington National Airport, New North Concourse Concept Planning and Program Criteria Document (CPPCD)*, June 2014.
PREPARED BY: Ricondo & Associates, Inc., December 2015.

- Remain overnight (RON) positions are used by airlines to stage aircraft for early morning departures based on the airlines' operations. The Air Traffic Control Tower can also use RON positions to temporarily park aircraft that arrive early. The RON positions are not used for passenger loading. RON positions are desirable but not essential to the Proposed Action.
- Connector buildings provide access between the main terminal area and the concourse. In Table 1-1, the elevated connector buildings enable passengers to transit to and from the new concourse without having to change levels, which is considered a better passenger experience. In Alternative NSC-14, the new concourse connects directly to the terminal, making a connector building unnecessary.
- Of the New Concourse alternatives, two alternatives (NNC-5 and NSC-14) would not demolish or repurpose the Authority's COB, avoiding a substantial relocation of Authority employees.
- Three New Concourse alternatives (NNC-3, NNC-4, and NSC-14) would not involve the demolition of Hangar 11 and, in some cases, Hangar 12, which would involve the relocation of Authority employees and tenants of the hangar(s) demolished.

Secure National Hall

The number of SSCP lanes used at this level of planning was simply derived by using the total number of lanes at each concourse and adding lanes for redundancy and to accommodate possible future TSA programs. The North, Central, and South Concourses in Terminal B/C had 7, 5, and 8 SSCP lanes, respectively, for a total of 20 SSCP lanes. In preparing the January 2015 *Secure Terminal Technical Report*, planners assumed that up to 24 SSCP lanes would be required in a split SSCP scenario (i.e., security screening conducted at more than one location), or up to 20 SSCP lanes would be required in a consolidated SSCP scenario.

As part of the Authority's planning efforts, the number of SSCP lanes for two SSCPs was developed using a spreadsheet-based static analysis instead of simulation modeling based on the assumptions listed below. The new analysis used the November 6, 2014 flight schedule that included all of the recent slot divestiture operations (i.e., the transfer of takeoff and landing slots to other airlines required by the U.S. Department of Justice to meet concerns about the effects on competition resulting from the American Airlines/US Airways merger) and assumed the following: (1) peak departures would occur between 6:00 a.m. and 9:00 a.m.; (2) no connecting passengers during the peak departures period (although there may be some connecting passenger activity in the later portions of this period, all passengers going through the SSCPs were treated as originating passengers); (3) a 90-percent load factor; (4) the passenger show-up profile (i.e., the times passengers arrive at the terminal), ticketing, and SSCPs remains the same as in the 2011 DCA modeling analysis; (5) AA passengers would use the north SSCP and Delta Air Lines, United Airlines, Alaska Airlines, JetBlue, and Virgin America would use the south SSCP; and, (6) a security lane processing rate of 180 passengers per hour per lane (because TSA uses a rate of 150 standard passengers [i.e., passengers who cannot use the TSA pre-check lanes] per security lane and up to 240 passengers per hour per TSA pre-check lane, a blended rate of 180 passengers per hour per lane was used for the analysis). The outcome of this analysis is that 14 lanes at each of the two SSCPs would be required to accommodate demand and integrate flexibility for handling ebbs and flows in airline activity and changes in airline allocations and passenger distributions.

The principal differences among the Secure National Hall alternatives are listed in **Table 1-2**. Exhibits are included in Section 3.4 of the EA.

Table 1-2 (1 of 2): Secure National Hall Exhibit Numbers and Principal Facility Differences

ALTERNATIVE NUMBER	EXHIBIT	SSCPS	TOTAL LANES	LOCATIONS	OTHER
Existing		3	20 [1/]	At entries to existing concourses in Terminal B/C	
A	3-18	1	Up to 20	At the National Hall/Concourse level, spanning between the north and south Metro pedestrian bridges, and located beneath the upper level departures roadway	Restricts access to baggage claim area to ticketed passengers arriving at the Airport and collecting baggage.
B	3-19	2	Up to 24	Beneath the Departures Road with the security screening lanes occupying the space where the Metro bridges connect to the terminal	New and expanded connections between the Metro pedestrian bridges and Terminal B/C would primarily accommodate the SSCP queuing area; nonsecure passageways from the Metro pedestrian bridges to the Ticketing and Baggage Claim Levels and from the Ticketing Level to the new SSCP.
C	3-20	2	Up to 24	Beneath the Departures Road and adjacent to each Metro Bridge	The new facilities would accommodate the SSCP lanes and queuing area; includes passageways from the Metro pedestrian bridges to the new SSCPs.
D	3-21	1	Up to 20	Between the Metro bridges	Includes new pedestrian bridges connecting the Metro pedestrian bridges to the new SSCP and new passageways providing direct access to the National Hall.
E	3-22	3	Up to 20	At entries to existing concourses in Terminal B/C (i.e., the same as the existing condition)	The three existing SSCPs would remain in place but would be slightly expanded; the National Hall would remain as a nonsecure passageway for passengers and the general public; the Ticketing and Baggage Claim Levels would remain essentially unaffected.
F	3-23	2	16	At the north and south ends of the Ticketing Level Terrace	The intent was to locate two SSCPs with 12 lanes each. After further review, space limitations and TSA guidelines restricted this alternative to 8 lanes at each SSCP.
G	3-24	2	Up to 24	The available terrace area at the north and south ends of the Ticketing Level Terrace and extending into the National Hall	This alternative would use the available terrace area and extend the new SSCP checkpoints into the National Hall by creating a new platform over the existing SSCPs serving the North and South Concourses.

Table 1-2 (2 of 2): Secure National Hall Exhibit Numbers and Principal Facility Differences

ALTERNATIVE NUMBER	EXHIBIT	SSCPS	TOTAL LANES	LOCATIONS	OTHER
H	3-25	2	Up to 24	Outside the existing terminal building envelope just beyond the Ticketing Level Terrace areas and over the loading docks at the north and south ends of Terminal B/C	The terrace area would be used to create a corridor from the existing ticket lobby to the new SSCP; construction would impact both the Ticketing and the National Hall/Concourse Levels.
I	3-26	2	Up to 24	Outside the existing terminal building envelope just beyond the National Hall Concourse Level and over the loading docks at the north and south ends of Terminal B/C	Similar to Alternative H but having the SSCPs at the same level as the National Hall Concourse Level; avoids a level change and provides a better passenger experience.
J	3-27	2	Up to 28	Above the Arrivals Road and below the Departures Road (one north of the north Metro pedestrian bridge and the other south of the south Metro pedestrian bridge)	Includes a new enclosed corridor from the Ticketing Level Terrace areas to the ends of the terminal building on the north and south, where new escalators, stairs, and elevators would provide access between the levels and a secondary pathway from the SSCP to the Secure National Hall; maintains the existing clearances under the two Metro pedestrian bridges.
K	3-28	2	Up to 28	Above the Arrivals Road and below the Departures Road (one north of the north Metro pedestrian bridge and the other south of the south Metro pedestrian bridge)	Similar to Alternative J but does not include a new enclosed corridor from the Ticketing Level Terrace areas to the ends of the building and the secondary pathway; avoids the need to rebuild either Metro pedestrian bridge; maintains the existing clearances under the two Metro pedestrian bridges.

NOTES:

SSCP = security screening checkpoint

1/ The existing North, Central, and South Concourses in Terminal B/C have 7, 5, and 8 SSCP lanes, respectively.

SOURCE: Ricondo & Associates, Inc., *Ronald Reagan Washington National Airport, New North Concourse Concept Planning and Program Criteria Document (CPPCD)*, June 2014.

PREPARED BY: Ricondo & Associates, Inc., December 2015.

1.3.2 SCREENING OF ALTERNATIVES

First Level of Screening

The first level of screening was the same for both the Terminal B/C redevelopment and the Secure National Hall alternatives. To progress to the second level of screening, an alternative had to fulfill the Purpose and Need for the redevelopment of Terminal B/C or the Secure National Hall, as appropriate.

- **New Concourse**: Because Alternatives NNC-1, NNC-2, NNC-3, NNC-4, NNC-5, and NNC-13 would not provide a minimum of 14 contact gates for the EMB175 to replace the 14 regional aircraft hardstands, these alternatives would not fulfill the Purpose and Need and were thus eliminated from further evaluation. Each of the 8 remaining alternatives, referred to herein as the Shortlisted New Concourse Alternatives, could fulfill the Purpose and Need of the Proposed Action and were subjected to a second level of screening.
- **Secure National Hall**: Because Alternative E would not provide interconnectivity between the existing and proposed concourses of Terminal B/C, this alternative would not fulfill the Purpose and Need of the Proposed Action and was thus eliminated from further evaluation. Each of the 10 remaining alternatives (the Shortlisted Secure National Hall Alternatives) could fulfill the Purpose and Need of the Proposed Action and were subjected to a second level of screening.

Second Level of Screening – New Concourse

The second level of screening of the Shortlisted New Concourse Alternatives used the criteria defined below.

- **Passenger Experience**: Addresses the level of service (LOS) passengers encounter within the facility (e.g., comfort in holdrooms, ability to board aircraft using passenger loading bridges [PLBs], ability to move from the National Hall to the New Concourse without having to change levels, availability of amenities, etc.). Shortlisted New Concourse Alternatives that provided a passenger experience similar to the passenger experiences in the existing concourses of Terminal B/C are preferred by the Authority.
- **Affordability**: Conceptual rough order of magnitude (ROM) cost estimates were prepared for the alternatives. The ROM estimates include conceptual cost of work, conceptual estimated contract cost, and the total program cost to include the Authority's typical program markup. The program cost of each Shortlisted New Concourse Alternative is considered realistic and affordable by the Authority for the purposes of this EA.
- **Remain Overnight Positions and Pushback Areas**: RON parking positions are typical at many airports, including DCA. Continued use of RON positions for overnight parking is assumed as part of the operational characteristics of DCA. Airlines use RON positions to stage aircraft for early morning departures based on the airlines' operations. The Air Traffic Control Tower can also use RON positions to temporarily park aircraft that arrive early. The RON positions are not used for passenger loading. Pushback areas are paved areas that allow aircraft to be pushed back from the contact gates. Pushbacks are common practices used for concurrent departure operations and to open contact gates quickly to accommodate aircraft arrivals, thereby limiting the time arriving aircraft would need

to wait for a gate to become available. The Authority prefers to maintain the number of available spaces for RON parking.

- **Effect on Hangar 12**: If demolition is not required, then there is development potential for the Hangar 12 facility, which is considered an advantage by the Authority.
- **Operational Effectiveness**: Operational effectiveness covers a wide array of considerations, including the airlines' operations at a concourse, the Authority's ability to support a particular new concourse, the new concourse's ability to serve varying aircraft within the same Aircraft Design Group (ADG), airside operations (e.g., access and maneuvering of aircraft, visibility from the Airport Traffic Control Tower [ATCT] on taxilanes and taxiways, pushback of aircraft onto active taxiways, etc.) associated with a concourse, and the operational impact of a new concourse on adjacent facilities. Shortlisted New Concourse Alternatives that were not disruptive or were minimally disruptive to operations were preferred by the Authority.
- **Effect on Existing Aircraft Operations at Terminal B/C and the Hardstands during Construction**: Each Shortlisted New Concourse Alternative would cause reasonably similar impacts to the existing aircraft operations at Terminal B/C. These impacts are temporary and would not extend beyond the construction period.
- **Impact on Section 4(f) Resources**: The Historic Terminal A (1941 Building) and the South Hangar Line are listed in the National Register of Historic Places (NRHP) and are therefore protected by the National Historic Preservation Act of 1966 and Section 4(f) of the United States Department of Transportation (USDOT) Act of 1966, which was recodified and renumbered as Section 303(c) and protects public land resources.[1] The Virginia State Historic Preservation Officer (SHPO) has issued a conditional finding of No Adverse Effect for the impacts to Terminal A and the South Hangar Line.

A summary of the second level of screening is presented in **Table 1-3** and discussed briefly in this section. A ranking of "1" is the highest possible ranking. Because shortlisted Alternative NNC-6 received the highest ranking (i.e., the lowest total cumulative scores) of the Shortlisted New Concourse Alternatives, Alternative NNC-6 is the Authority's preferred alternative for a new concourse, and it is included in the Proposed Action of this EA.

- **Passenger Experience**: Alternatives NNC-6, NNC-7, and NNC-8 received the highest ranking. Alternatives NNC-9, NNC-10, NNC-11, and NNC-12 included a ramped connector building due to the differences in elevation of the existing concourse and new concourse floors. Alternative NSC-14 requires passenger to travel a considerable distance from the National Hall to the concourse.
- **Affordability**: The program cost of each Shortlisted New Concourse Alternative is considered realistic and affordable by the Authority for the purposes of this EA. Therefore, all alternatives were ranked equally. The costs could vary as the design process progresses and the Authority re-evaluates affordability throughout that process.

[1] 49 USC § 303(c).

Table 1-3: Summary of Second Level of Screening of New Concourse Alternatives

	PASSENGER EXPERIENCE	AFFORDABILITY	CONTACT GATES		RON POSITIONS		RETAIN HANGAR 12	OPERATIONAL EFFECTIVENESS	EFFECT ON EXISTING AIRCRAFT OPERATIONS	IMPACT ON SECTION 4(F) RESOURCES	TOTAL
ALT	RANKING	RANK	NUMBER	RANK	DETAIL	RANK	RANK	RANK	RANKING	RANK	RANK
NNC-6	1	1	14	1	3 RA/2 NB	2	1	1	2	1	10
NNC-7	1	1	14	1	2 RA/1 NB	2	2	1	2	1	11
NNC-8	1	1	15	2	0 RA/0 NB	3	2	3	2	1	15
NNC-9	2	1	14	1	3 RA/2 NB	2	1	2	2	1	12
NNC-10	2	1	15	2	3 RA/ 2 NB	2	2	3	2	1	15
NNC-11	3	1	15	2	3 RA/2 NB	2	1	3	2	1	15
NNC-12	2	1	17	3	3 RA/2 NB	2	2	2	3	1	16
NSC-14	3	1	14	1	NA 1/	2	1	3	2	2 2/	15

NOTES:

ALT = Alternative RA = Regional Aircraft NA = Not Applicable NB = Narrowbody Aircraft (e.g., Airbus A321) RON = Remain Overnight

A ranking of 1 represents the highest possible ranking.

1/ The vacated hardstand positions could be used for RON or deicing purposes, but the area between the SC and the NSC that is conveniently located adjacent to the SC would become unavailable.

2/ The NSC would restore the previous uses (e.g., holdrooms, passageways, etc.) of the National Register-listed Historic Terminal. NNC-6 would have minor effects on the historic South Hangar Line and a conditional finding of No Adverse Effect has been received for those effect.

SOURCE: Ricondo & Associates, Inc., *Ronald Reagan Washington National Airport, New North Concourse Concept Planning and Program Criteria Document (CPPCD)*, June 2014.
PREPARED BY: Ricondo & Associates, Inc., December 2015.

- **Contact Gates**: Each of the Shortlisted Concourse Alternatives would include 14 or more contact gates. Alternatives NNC-8, NNC-10, and NNC 11 would include 15 gates, and Alternative NNC-12 would provide 17 gates. Alternatives with more than 14 contact gates would enable the Airport to handle more flights. The Authority's purpose is to improve the passengers' experience using regional aircraft at the 14 existing hardstands without adding additional aircraft positions for passenger loading or for aircraft operations. Therefore, Alternatives NNC-8, NNC-10, NNC-11, and NNC-12 received lower rankings than the alternatives that provided 14 gates.
- **Remain Overnight Positions**: No alternative received the highest ranking because each alternative has some impact on RON positions. Because Alternative NNC-8 would not provide RON positions, it received the lowest ranking. All other alternatives were considered to have relatively similar number of RON positions.
- **Retain Hangar 12**: Only four alternatives (i.e., Alternatives NNC-6, NNC-9, NNC-11, and NSC14) would either retain the existing hangar or allow for a replacement hangar in the same general location.
- **Operational Effectiveness**: Alternatives NNC-6 and NNC-7 are expected to have minimal impacts, and Alternatives NNC-8, NNC-10, NNC-11, and NSC-14 are expected to have the greatest impact on future operations. Alternatives NNC-8, NNC-10, and NNC-11 would have gates operating from a separate pier, and Alternative NSC-14 would have three gates operating from the Historic Terminal Building. If AA was to operate its regional aircraft from the NSC, then either AA would have to relocate its other operations to the south side of Terminal B/C or split its operations between the north side of Terminal B/C and the NSC.
- **Effect on Existing Aircraft Operations**: Each of the NNC alternatives would involve similar challenges in maintaining existing aircraft operations during construction in the vicinity of the existing hardstands. The impacts would not be long-term. The construction of the NSC would involve the permanent relocation of the RON positions and deicing operations. At least some of the RON positions could be relocated to the existing hardstand area. The Authority is developing a long-term plan for improved deicing operations at DCA.
- **Impact on Section 4(f) Properties**: The Historic Terminal A and the South Hangar Line are included in the National Register of Historic Places. Tenants of Hangar 11, and possibly Hangar 12, would be relocated to similar facilities in the South Hangar Line. A conditional finding of No Adverse Effect has been received for the impacts to Terminal A and the South Hangar Line.

The Authority has selected Alternative NNC-6 as its preferred alternative for the new concourse. Using the criteria described above, Alternative NNC-6 received the highest ranking and was determined to best meet the Authority's Purpose and Need and criteria objectives. Alternative NNC-6 received the highest overall ranking when compared to all other alternatives and scored as high or higher than all other alternatives in the following categories: Passenger Experience, Contact Gates, Remote Overnight/Hardstand Positions, Operational Effectiveness, and Impact on Section 4(f) Properties. Although Alternative NNC-6 could have somewhat more impact on aircraft operations than Alternatives NNC-7 or NNC-9, those impacts are expected to be manageable and short-term during the construction period. Alternative NNC-6 will be carried forward for environmental analysis in Section 5 as the Proposed Action. Based on the screening criteria, the remaining

alternatives failed to rank as high as the preferred alternative and were not retained for further analysis in this EA.

Second Level of Screening – Secure National Hall

The second level of screening of the Shortlisted Secure National Hall Alternatives used the criteria defined in the following paragraphs:

- **Cost**: Conceptual ROM cost estimates were prepared for the alternatives. The ROM estimates include conceptual cost of work, conceptual estimated contract cost, and the total program cost to include the Authority's typical program markup. Alternatives with lower program costs received a more favorable ranking than alternatives with higher program costs.
- **Security Screening Checkpoint Area**: This criterion evaluates an alternative's ability to provide sufficient screening checkpoint space for queuing, ticket document control/checks, divesting area, screening lanes, and revest area consistent with TSA guidelines.
- **Hubbing Flexibility**: This criterion evaluates differences among the alternatives regarding the ease of movements for passengers, airline employees, and aircraft equipment in operational scheduling across multiple concourses.
- **Passenger Flows**: This criterion evaluates differences among the alternatives for the pre-security movement of passengers to the SSCPs and the post-security movement of passengers between concourses.
- **Post-Security Screening Checkpoint Concessions Program**: This criterion evaluates differences among the alternatives to support a robust post-SSCP concessions program with flexibility to accommodate future demand. Alternatives that were more supportive of a robust post-SSCP concessions program were preferable.
- **Pre-Security Screening Checkpoint Concessions Program**: This criterion evaluates differences among the alternatives to support a robust pre-SSCP concessions program with flexibility to accommodate future demand. Alternatives that were more supportive of a robust pre-SSCP concessions program were preferable.
- **Implementation and Constructability**: This criterion evaluates each alternative's impact on existing operations during construction. Alternatives that resulted in less negative impact to existing operations were preferable.
- **Passenger Convenience and Experience**: This criterion evaluates differences among the alternatives on wayfinding, level changes, walking distances, amenities offered along the way, the security screening process, and the overall experience of the trip from mode of arrival to the gate. Alternatives that resulted in less negative impacts (e.g., shorter walking distances) to the passenger experience were preferable.
- **Meeter, Greeter, and Well-Wisher Experience:** Similar to the passenger experience criterion, this criterion evaluates differences among the alternatives on experiences when seeing people off before a flight or meeting passengers upon arrival. Alternatives that maintain or enhance the sweeping vistas toward the airfield, the concessions offered, the waiting areas, and the overall feel of Terminal B/C were considered to be preferable.

- **Airport Operations Flexibility**: This criterion evaluates differences among the alternatives on the ability to easily move or adjust airline locations based on gate demand or changing flight schedules. Alternatives that more easily facilitated moving or adjusting airline locations were preferable.
- **Effects on Existing Architecture**: This criterion is the most subjective of the evaluation criteria. Terminal B/C was designed by the world renowned architect Cesar Pelli to create a vision for DCA and air travel to and from the airport serving the nation's capital. The sweeping vistas from the ticketing and National Hall level are noteworthy and enjoyed by passengers and the general public alike. The Authority invested significantly to create a facility that has functioned very well, is aesthetically pleasing, and imposes a sense of place. The Authority places a high value on respecting, preserving, and enhancing the aesthetics of the Airport's terminals as the Authority develops plans to accommodate airline and passenger demands.

Table 1-4 summarizes the Authority's evaluation of alternatives based on the above criteria. Alternative K received the best overall ranking, and it was the only Secure National Hall alternative that received the highest ranking for 7 of the 11 criteria (i.e., Cost, Security Screening Checkpoint Area, Hubbing Flexibility, Passenger Flows, Post-Security Concession Program, Meeter, Greeter, and Well-wisher Experience, and Airport Operations Flexibility). Alternatives F, H, and I had higher Implementation and Constructability rankings, but lower overall rankings than Alternative K. Similarly, Alternatives G, H, and I had higher Passenger Convenience and Experience rankings, but lower overall rankings than Alternative K. Based on the results of the second level of screening, the Authority selected Alternative K as its preferred Secure National Hall alternative, and it will be included in the Proposed Action of this EA.

1.4 Affected Environment and Environmental Consequences

Additional information on the Affected Environment and Environmental Consequences is provided in Sections 4 and 5, respectively. The analysis and conclusions by impact category are summarized in **Table 1-5**.

Table 1-4: Summary of Second Level of Screening of Secure National Hall Alternatives

ALTERNATIVE	ROM PROGRAM COSTS (2014 DOLLARS)	SECURITY SCREENING CHECKPOINT AREA	HUBBING FLEXIBILITY	PASSENGER FLOWS	POST-SECURITY CONCESSIONS PROGRAM	PRE-SECURITY CONCESSIONS PROGRAM	IMPLEMENTATION AND CONSTRUCTABILITY	PASSENGER CONVENIENCE AND EXPERIENCE	MEETER, GREETER, WELL-WISHER EXPERIENCE	AIRPORT OPERATIONS FLEXIBILITY	EFFECTS ON EXISTING ARCHITECTURE	TOTALS
	$ MILLION	RANKING	RANKING	RANKING	RANKING	RANKING	RANKING	RANKING	RANKING	RANKING	RANKING	RANKING
A	235	3	1	1	3	1	3	3	3	3	1	3	25
B	170	2	2	1	2	1	2	3	2	2	1	2	20
C	180	1	2	1	2	1	2	3	2	2	1	2	19
D	185	1	1	1	3	1	2	3	2	2	1	2	19
F	170	1	3	2	3	1	2	2	2	2	1	2	21
G	200	2	2	1	1	1	2	3	1	2	1	2	18
H	230	3	2	1	1	1	2	1	1	2	1	2	17
I	228	3	2	1	1	1	2	1	1	2	1	2	17
J	206	2	1	1	1	1	2	3	2	1	1	2	17
K	161	1	1	1	1	1	2	3	2	1	1	2	16

SOURCES: Ricondo & Associates, Inc., *Ronald Reagan Washington National Airport, Terminal B/C Advance Planning – Secure Terminal Technical Report*, January 2015; Darrin McKenna, Director, Ricondo & Associates, Inc., "Ronald Reagan Washington National Airport (DCA) 2015 New Secure Terminal Concept Development," memorandum to Mike Hines, Metropolitan Washington Airports Authority, May 19, 2015.
PREPARED BY: Ricondo & Associates, Inc., August 2015.

Table 1-5 (1 of 3): Summary of Potential Environmental Impacts by Resource Category

RESOURCE CATEGORY	IMPACT POTENTIAL	JUSTIFICATION
Air Quality	No Significant Impact	The Proposed Action emissions do not exceed *de minimis* levels.
Biological Resources including Fish, Plants, and Wildlife, Federally and State-Protected Species	No Significant Impact	Because of the location and extent of the proposed improvements, the existing operational use of the Airport property, and the transient nature of any species that could use the habitats near the LOPD, it is believed that rare, threatened, or endangered species, species of concern, or Species of Greatest Conservation Need would not be affected by the Proposed Action. There would be no taking or relocation of specimens. There would be no loss of critical terrestrial habitat.
Climate	No Significant Impact	The Proposed Action would not increase fuel burn GHG emissions over the No Action Alternative. GHG emissions associated with the NNC construction and demolition activities from fuel usage are expected; however, these emissions would be temporary and would comprise a very small fraction of the U.S. and global GHG emissions.
Coastal Resources	No Significant Impact	There are no coastal barrier resources protected by the Coastal Barrier resources Act of 1982 within the LOPD. Furthermore, it is believed that there would be no impacts to Virginia coastal resources protected by the Coastal Zone Management Act, so long as the Proposed Action is designed and constructed in accordance with the local, state, and federal guidelines described throughout this EA, and any corresponding stormwater permits and pollution prevention plans are updated accordingly.
Department of Transportation Act Section 4(f)	No Significant Impact	The Proposed Action would require modifications to the South Hangar Line and minor modifications to Terminal A. SHPO has issued a conditional No Adverse Effect finding. The physical use caused by the alteration of the structure would be a *de minimis* impact.
Farmlands	None	No farmland resources are present in the vicinity of the Proposed Action.
Hazardous Materials, Solid Waste, and Pollution Prevention	No Significant Impact	The Proposed Action would not require an increase in the use or storage of any hazardous materials, and operation of the Proposed Action improvements would not generate incremental solid waste.

Table 1-5 (2 of 3): Summary of Potential Environmental Impacts by Resource Category

RESOURCE CATEGORY	IMPACT POTENTIAL	JUSTIFICATION
Historical, Architectural, Archeological, and Cultural Resources	No Significant Impact	The SHPO for the Commonwealth of Virginia concurs that the Proposed Action would not cause an adverse effect on historic resources. Considering that the peninsula on which the airfield was constructed is predominantly manmade, and that the landside facilities are heavily developed, there is very little potential for archeological resources to be affected. An assessment of light emissions and visual impacts concluded that the Proposed Action would not affect nearby land uses or the District of Colombia-area viewshed. Tenants from the demolished Hangar 11 would relocate to renovated space in the South Hangar Line. The South Hangar Line and Terminal A are listed on the NRHP. SHPO determined that the renovation to the South Hangar Line and renovations to Terminal A would have no adverse effect on the condition that continued consultation takes place on the design of the new facilities. Therefore, there are no significant impacts to historic architecture.
Land Use	No Significant Impact	The Proposed Action is consistent with applicable land use plans, policies, and regulations. The Proposed Action would not disrupt communities, involve residential or business relocation, or induce socioeconomic impacts.
Natural Resources and Energy Supply	No Significant Impact	The natural resources and energy supply required by the Proposed Action are easily available at the Airport; no resources would be required with the No Action Alternative. Utilities required to support the Proposed Action are already provided at the Airport. Rare construction materials are not needed to implement either alternative.
Noise and Noise-Compatible Land Use	No Significant Impact	The Proposed Action would not result in a significant increase in aircraft noise when compared to the No Action Alternative. The Proposed Action could cause a temporary nighttime construction noise impact that could be mitigated to less than significant.

Table 1-5 (3 of 3): Summary of Potential Environmental Impacts by Resource Category

RESOURCE CATEGORY	IMPACT POTENTIAL	JUSTIFICATION
Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks	No Significant Impact	Neither alternative would result in significant socioeconomic impacts (e.g., residential or business relocations, division or disruption of established communities, alteration of surface transportation patterns, disruption of orderly planned development, or appreciable change in employment). The Proposed Action is contained entirely within Airport boundaries. Furthermore, because neither alternative world result in aircraft noise impacts on residential land uses or noise-sensitive facilities, no disproportionate impacts to minority or low-income populations or children are anticipated. Off-airport, during construction, the northbound approach of U.S. Route 1 would operate at LOS E during the p.m. off-peak hour compared to the No Action condition operation of LOS D. This temporary construction impact can be mitigated. On-airport, during construction, there would be a significant impact at the intersection of Route 233 and Abingdon Drive, causing increased delay at this on-airport intersection.
Visual Effects	No Significant Impact	The Proposed Action is not anticipated to affect the viewshed in the vicinity of the Airport or result in light emissions that would affect nearby land uses or marine navigation.
Water Resources including Wetlands, Floodplains, Surface and Ground Water	No Significant Impact	No fill or alteration of Waters of the U.S. would occur with the Proposed Action. The Proposed Action would not encroach upon a 100-year floodplain. The amount of water contaminants resulting from the Proposed Action improvements potentially affecting stormwater runoff would be unchanged between the Proposed Action and the No Action Alternative. The Proposed Action improvements would be designed and constructed to decrease potential inputs of chemical nutrients and sediments to the adjacent receiving waters.
Wild and Scenic Rivers	None	There are no wild and scenic river resources in the vicinity of the LOPD.
Cumulative Impacts	No Significant Impact	The environmental impacts of each alternative would not be considered significant when added to the impacts of other past, present, and reasonably foreseeable future actions.

NOTE: LOPD = limits of physical disturbance GHG – Greenhouse Gas

SOURCES: Ricondo & Associates, Inc., December 2015; HMMH, September 2015; Paciulli, Simmons & Associates, Ltd., September 2015; Wetland Studies and Solutions, Inc., September 2015.

PREPARED BY: Ricondo & Associates, Inc., December 2015.

1.5 Mitigation

Additional information on mitigation is provided in Section 6. During detailed future design and implementation of the Proposed Action, the Authority will:

- Abide by all permit terms.
- Develop and implement erosion and sediment control and stormwater management measures in accordance with the latest version of the *Virginia Erosion and Sediment Control Handbook* and Virginia Stormwater Management Laws and Regulations.
- Obtain and comply with all applicable permits and approvals associated with the enforceable policies of the Virginia Coastal Zone Management Program.
- Design and construct the project in accordance with the general performance standards of the Chesapeake Bay Preservation Act.
- Use best management practices to reduce air quality pollution during construction.
- Dispose of all material excavated from within the limit of physical disturbance (LOPD) off-airport, test the material prior to disposal, and dispose of any hazardous material in accordance with state and federal requirements.
- Continue coordination with the Virginia State Historic Preservation Officer (SHPO) as design of the new facilities progresses and obtain their final concurrence of No Adverse Effect.
- Coordinate with Arlington County transportation staff to implement signal-timing optimization to mitigate change from LOS D to LOS E in the peak hour on northbound U.S. Route 1 during hauling operations.
- Impose noise-reduction methods during construction if projected noise levels exceed the Authority's nighttime noise criterion of a Lmax of 55 dBA, as specified in the 2014 *Design Manual*. Noise mitigation measures that may be used are further described in Section 5.11.2.4.

The Authority does not anticipate the need for mitigation beyond what is discussed in this section.

1.6 Agencies and People Consulted

Section 7 provides a description of the consultation process employed throughout the preparation of this EA. Copies of the correspondence received from the agencies and the public are included in Appendix B.

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