Environmental Assessment, Section 106 Evaluation, and Section 4(f) Statement

Replacement Terminal
Kansas City International Airport

Final – February 2019

PREPARED FOR
U.S. Department of Transportation
Federal Aviation Administration

This environmental assessment becomes a Federal document when evaluated, signed, and dated by the Responsible FAA Official.

SCOTT D TENER

Digitally signed by SCOTT D TENER
Date: 2019.02.21 08:50:36 -06'00'

Responsible FAA Official

Date

PREPARED BY
Landrum & Brown, Incorporated

GENERAL INFORMATION ABOUT THIS DOCUMENT

This final document includes the Final Environmental Assessment (EA), Section 106 Evaluation, and Section 4(f) Statement for a new replacement terminal project for the Kansas City International Airport (KCI). The Proposed Action includes the demolition of Terminal A and construction of a new replacement terminal on Airport property located on the existing Terminal A site. There are currently no aircraft operations at Terminal A as it was de-activated in 2014. The Proposed Action also includes construction of a new parking structure and demolition of the existing Terminals B and C after the new terminal is in operation. The City of Kansas City, Missouri, Aviation Department (KCAD), in cooperation with the Federal Aviation Administration (FAA), prepared this document to disclose the analysis and findings of the potential environmental impacts of the Proposed Action and the No Action Alternative. General changes/updates between this document and the Draft EA and Section 106 Evaluation include: (1) consolidation of the Section 4(f) statement and EA/Section 106 Evaluation into one document; (2) addition of an appendix summarizing comments and addressing comments; (3) minor editorial changes, changes for clarity, or additional information to provide further explanation; (4) other changes to the Draft EA and Section 106 Evaluation to respond to comments (if applicable); (5) updates to reflect consultation under Section 106 of the National Historic Preservation Act that has occurred since publication of the Draft EA; and (6) updates to the requested federal actions. Scoping Meetings for agencies and the public were held on March 15, 2018 to provide an opportunity to comment on the scope of environmental issues to be addressed. The Draft EA and Section 106 Evaluation was released on August 23, 2018. The Draft Section 4(f) Statement was released on September 10, 2018. A Public Hearing was conducted on September 24, 2018. The comment period for the Draft EA and Section 106 Evaluation was open from August 23, 2018 to October 2, 2018. The comment period for the Draft Section 4(f) Statement was open from September 10, 2018 to October 10, 2018. Notices of the opportunities to comment on the Draft EA and Section 106 Evaluation, and Section 4(f) Statement were published in the Kansas City Star newspaper and were sent to governmental agencies and to individuals and organizations who expressed interest in commenting on the proposed project. The document presented herein represents the final document for the federal decision-making process, in fulfillment of FAA's policies and procedures relative to National Environmental Policy Act (NEPA) and other related federal requirements. The final document is available to the public online at http://FLYKCI.com and at http://www.kci-edgemoor.com. In addition, a paper copy of the Final EA, Section 106 Evaluation, and Section 4(f) Statement is available for public review at each of the following locations during normal business hours.

Locations to Review the Final EA, Section 106 Evaluation, and Section 4(f) Statement	
Mid-Continent Library Boardwalk Branch 8656 N. Ambassador Drive Kansas City, MO 64154	Mid-Continent Library Parkville Branch 8815 Tom Watson Parkway Parkville, MO 64152
Mid-Continent Library Platte City Branch 2702 Prairie View Road Platte City, MO 64079	City of Kansas City, Aviation Department 601 Brasilia Ave. Kansas City, MO 64153
Federal Aviation Administration Central Region Airports Division 901 Locust St., Room 364 Kansas City, MO 64106-2325	

Contents

Page

Contents

Page

Contents

Page

List of Tables

List of Exhibits

List of Acronyms

ACHP	Advisory Council of Historic Preservation
ADA	Americans with Disabilities Act
AEDT	Aviation Environmental Design Tool
ALP	Airport Layout Plan
APE	Area of Potential Effects
APU	Auxiliary Power Units
ATADS	Air Traffic Activity System
ATAG	Aviation Terminal Advisory Group
ATCT	Airport Traffic Control Tower
BMPs	Best Management Practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalencies
CUP	Central Utility Plant
dB	decibels
DNL	Yearly Day-Night Average Sound Level
DOI	Department of Interior
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
EIS	Environmental Impact Statement
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
FR	Federal Register
GA	General Aviation
GHG	Greenhouse Gas
GSE	Ground Support Equipment
HFC	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
KCAD	City of Kansas City, Missouri, Aviation Department
KCI	Kansas City International Airport
KCP&L	Kansas City Power and Light

List of Acronyms

N_20	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAS	National Airspace System
NAVAID	Navigational Aids
NEPA	National Environmental Policy Act of 1969
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NOA	Notice of Availability
NPL	National Priorities List
NRHP	National Register of Historic Places
O_3	Ozone
PCD	Program Criteria Document
Pb	Lead
PFC	Perfluorocarbons
PM	Particulate Matter (PM_{10} & $PM_{2.5}$)
SDAT	Sector Design Analysis Tool
SF_6	Sulfur Hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TAF	Terminal Area Forecast
TAMP	Terminal Area Master Plan
THPO	Tribal Historic Preservation Officer
TWA	Trans World Airlines
USC	United States Code
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compounds

THIS PAGE INTENTIONALLY LEFT BLANK

Kansas City International Airport
Environmental Assessment, Section 106 Evaluation, and
Section 4(f) Statement

Chapter 1

1

1 Purpose and Need

1.1 Introduction

The City of Kansas City, Missouri (City), the owner of the Kansas City International Airport (KCI or Airport) in Platte County, Kansas City, Missouri proposes to construct a replacement passenger terminal building (the Proposed Action). The City of Kansas City, Missouri, Aviation Department (KCAD) is responsible for the operations of KCI. The Proposed Action would not induce or change the number or type of aircraft operations at KCI.

This Environmental Assessment (EA) analyzes the potential environmental effects of the Proposed Action, which includes the demolition of Terminal A and the existing short term parking structure adjacent to Terminal A and the construction of a new replacement terminal on Airport property to be located on the existing Terminal A site. There are no aircraft or passenger operations at Terminal A as it was de-activated in 2014. The Proposed Action also includes construction of a new parking structure at the existing Terminal A site and demolition of the existing Terminals B and C after the proposed new replacement terminal is in operation. The Proposed Action does not include the demolition of either of the existing parking garage structures adjacent to Terminals B and C. A more complete listing of the elements of the Proposed Action is provided in Section 1.5.

This EA has been prepared pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA)[1] implementing NEPA regulations issued by the Council on Environmental Quality (40 Code of Federal Regulations (CFR) 1500-1508), and the Airport and Airway Improvement Act of 1982 (Public Law 97-248), as amended.

The purpose of this EA is to identify and assess the potential environmental impacts of the Proposed Action and its reasonable alternatives. Depending upon whether certain environmental thresholds of significance are exceeded or not, this EA may lead either to a Finding of No Significant Impact (FONSI) or to the requirement for the preparation of an Environmental Impact Statement (EIS). The Federal Aviation Administration (FAA) is the lead Federal agency to ensure compliance with NEPA for this Proposed Action; therefore, this EA has also been prepared in accordance with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures,* and FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*.

[1] PL 91-190, as amended; codified at 42 U.S.C. 4321 et seq.

1.2 EA Document Organization

The EA contains the following content:

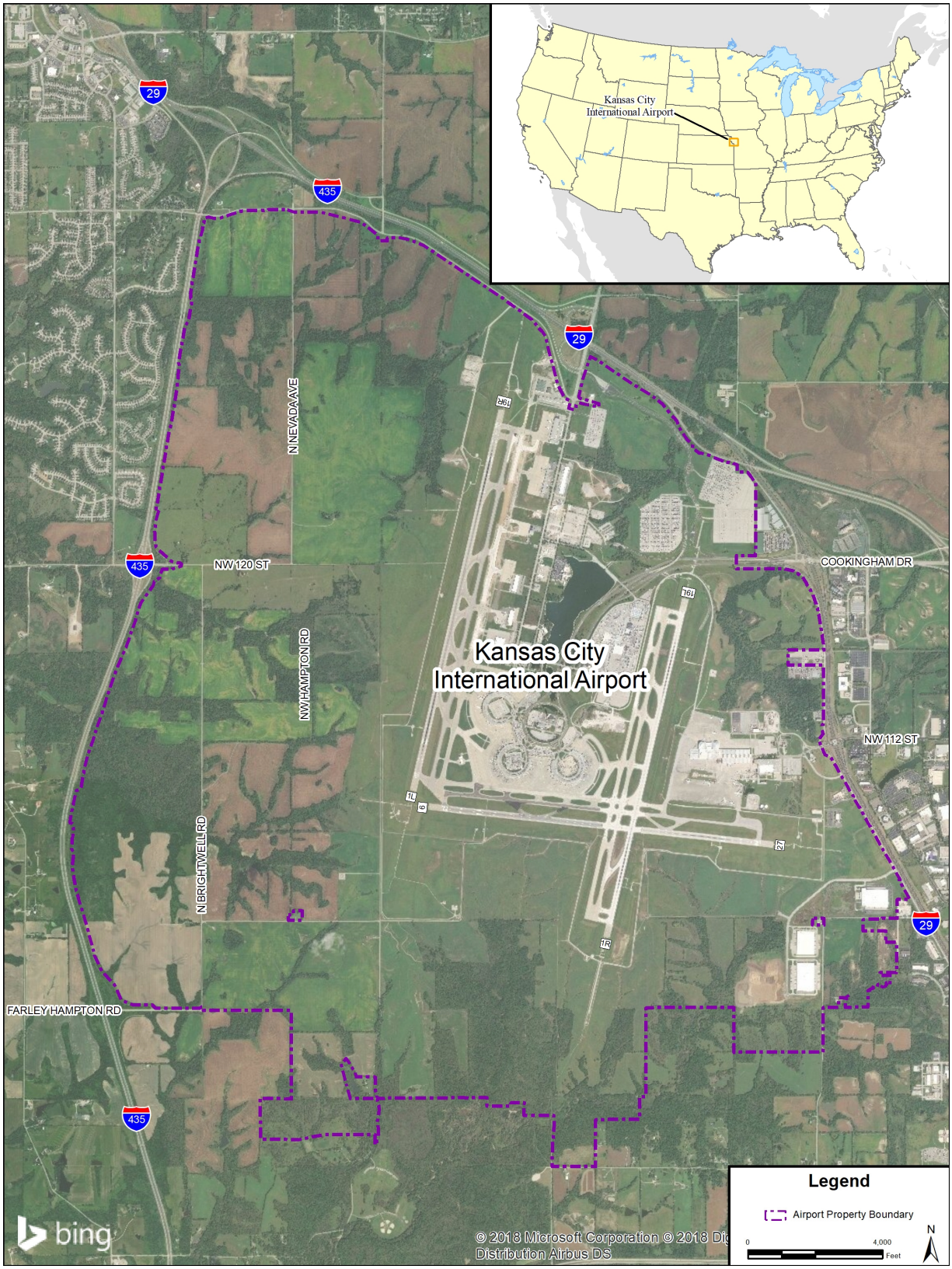
- **Table of Contents:** The table of contents lists the chapters, exhibits, and tables presented throughout the EA. It also lists the appendices and the acronym list.
- **Chapter 1 – Purpose and Need:** This chapter describes the underlying purpose and need for the Proposed Action. It presents the problem being addressed. This chapter also provides a detailed description of the Proposed Action and describes what the City and KCAD are trying to achieve.
- **Chapter 2 – Alternatives:** This chapter provides a comparative analysis of the No Action Alternative, the Proposed Action, and other reasonable alternatives to fulfill the purpose and need. This chapter sharply defines the issues and provides a clear basis for choice among options by the approving official. This chapter provides an overview of the identification and screening of alternatives considered, the process used to screen and evaluate reasonable alternatives, the alternatives carried forward for detailed environmental evaluation, and brief descriptions of those alternatives considered but dismissed.
- **Chapter 3 – Affected Environment, Environmental Consequences, and Mitigation:** This chapter describes the existing environmental conditions within the study areas as well as discusses and compares potential environmental impacts/consequences associated with the Proposed Action and the alternatives identified for evaluation. A discussion of potential mitigation measures is also provided, where applicable.
- **Chapter 4 – Coordination and Public Involvement:** This chapter discusses agency coordination and public involvement associated with this EA, Section 106, and Section 4(f) Statement process.
- **Chapter 5 – List of Preparers:** This chapter includes the names and qualifications of the staff that were primarily responsible for preparing the EA.
- **Appendices:** This section of the EA consists of material that substantiates any analysis that is fundamental to the EA.

1.3 Background

KCI is a publicly owned passenger and air cargo airport. KCI is located in the southeast section of Platte County, Missouri, approximately 18 miles northwest of downtown Kansas City. The Airport encompasses approximately 11,000 acres of land and is generally bounded on the north by Interstate (I)-29/435, to the east by I-29, to the west by I-435, and to the south by State Route 152. Access to the Airport is provided via I-435 and I-29. **Exhibit 1-1** shows the general Airport location and surroundings.

The airfield system consists of three runways, which include two parallel runways and a crosswind runway. The two parallel runways (1R/19L and 1L/19R) are oriented in a north-south direction. Runway 9/27, the crosswind runway, is oriented in an east-west direction. The Airport has three passenger terminals named Terminal A, B, and C. In 2014, passenger airlines were consolidated into two terminals (Terminals B and C) and the third terminal (Terminal A) was de-activated.

Exhibit 1-1 Airport Location



In 1966, the City approved moving and expanding the City's main airport to the site of the Mid-Continent Airport. The Mid-Continent Airport consisted of one runway, Trans World Airlines (TWA) facilities, a control tower, and access roads. The control tower at Mid-Continent Airport was later demolished to make room for a new tower. Kansas City architects Kivett and Myers designed the current terminals at KCI. Many design decisions were driven by TWA, which envisioned that KCI would be its hub, with 747's and supersonic aircraft taking people from Kansas City to all points on the globe. Streets around the Airport were named Mexico City Avenue, Brasília Avenue, Paris Street, London Avenue, and Tel Aviv Avenue.

TWA vetoed concepts that had people movers, which it deemed too expensive. TWA insisted on the "Drive to Your Gate" concept, with flight gates 75 feet from the roadway. The new terminals were dedicated on October 23, 1972.

Originally, there were to be four terminals; however, only three were built. The three KCI passenger terminals have a unique structure in the shape of rings. Each ring has short-term parking in the center of the ring. Therefore, it was possible for travelers to park, walk as little as 100 feet, and go directly to their gate. Arriving travelers could leave their gate and walk immediately out of the terminal without passing through any corridors.

TWA's vision for the future of flight proved obsolete almost from the start. The terminals turned out to be unfriendly to the 747 aircraft since the greater number of passengers accommodated on 747s spilled out of the limited gate areas into the halls. Security checkpoints, added in the 1970's to stem hijackings, proved difficult and expensive to implement since they had to be installed at each gate area rather than a centralized area. The difficulty in providing space for security checkpoints was compounded by the new security requirements implemented in response to the 9/11 terrorist attacks. Security measures continue to change and the existing terminals are limited in space to accommodate new equipment and procedures.

The geometric forms of the terminals and the textured concrete surfaces express the Brutalist architectural style. Physical characteristics of Brutalist architecture include linear, fortress like and blockish structures, often with a predominance of concrete construction. Initially the style was applied to government buildings, low-rent housing, and shopping centers to create functional structures at a low cost, but eventually designers adopted the look for other uses such as college buildings and other commercial facilities. For the KCI terminals, the architects combined the light-colored concrete with ample glazing, high ceilings and wood elements to help soften the cold look and feel of the exposed concrete structure on the interior.

Aviation Activity

The FAA publishes its forecast annually for each U.S. airport, including KCI. The Terminal Area Forecast (TAF) is "*prepared to assist the FAA in meeting its planning, budgeting, and staffing requirements. In addition, state aviation authorities and other aviation planners use the TAF as a basis for planning airport improvements*."[2] The most recent release is the 2017 TAF, which was issued in January 2018.

The 2017 TAF includes historical information on aircraft operations from fiscal year 1990 through 2016 and forecasts for 2017 to 2045. At airports with FAA Airport Traffic Control Towers (ATCT) like KCI, FAA air traffic controllers provide historical aircraft operations data for the TAF, which count landings and takeoffs. These aircraft operations are recorded as either air carrier, commuter & air taxi, General Aviation (GA), or military. Air carrier is defined as an aircraft with seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds carrying passengers or cargo, for hire or compensation. Commuter and air taxi aircraft are designed to have a maximum seating capacity of 60 seats or a maximum payload capacity of 18,000 pounds carrying passengers or cargo for hire or compensation. According to the 2017 TAF, aircraft operations at KCI increased from 120,942 in 2015 to 121,394 in 2016. Passenger enplanements at KCI increased from 5,103,973 in 2015 to 5,330,923 in 2016. A copy of the 2017 TAF for KCI is provided in **Appendix F**.

1.4 Purpose of and Need for the Proposed Action

The following section discusses the purpose of and need for the project. This EA analyzes alternatives that would address those needs and accomplish that purpose. The purpose of the Proposed Action is to provide a better customer experience for passengers and to ensure continued safe, secure and efficient airport operations by providing space for current and potential future demand while avoiding duplication of services and systems. The City and KCAD have identified a number of deficiencies within the existing terminal facilities that would need to be addressed in order to meet the project's purpose, as described in more detail below. The assessment of needs is based on meeting current demand, consistent with the 2017 FAA Terminal Area Forecast. The Proposed Action would not induce or cause growth in the number or type of aircraft operations at KCI beyond what was forecast for the existing airport. No additional airlines are expected to start services at the Airport as a result of implementation of the Proposed Action. In addition, the number and type of aircraft are anticipated to be the same between the existing terminal facility and the proposed replacement terminal for the same future year.

[2] FAA, Terminal Area Forecast Summary, Fiscal Years 2017-2045.

Improve Passenger Experience

The 2008 Master Plan Update for KCI identified the need for an updated passenger terminal complex to provide a passenger processing facility that would meet and exceed customer service expectations. Currently, Terminal A has 21 gates available and totals 353,300 square feet. Terminal B has 19 gates and totals 389,000 square feet. Terminal C has 22 gates and totals 362,800 square feet. Therefore, KCI currently has the potential for 62 gates. Passengers circulate through each terminal by means of a pedestrian corridor situated outside of security screening that varies in width from 15 feet to 25 feet and runs the entire length of each terminal building. Once inside, most passenger services, such as concessions, hotel and shuttle kiosks, guest seating and restrooms, can be found on the side of the corridor closest to the curbfront. Airline services, such as ticketing, baggage handling, and hold rooms and security, are typically located on the side of the corridor closest to the aircraft apron, with a few minor exceptions. In each terminal, the circulation corridor is outside of the security checkpoints and there is no similar corridor on the hold room side beyond the security screening. Consequently, passengers are essentially “locked” once they enter into an airline’s seating areas and cannot pass through to other parts of the terminal. Furthermore, there is no means to transfer between terminals without exiting security and re-screening at the other terminal. The existing terminals have a lack of adequate restrooms, restaurants, shopping, and lounges.

All three terminals received interior renovations in 2004. However, the existing terminals would require extensive and expensive work to improve public accessibility, passenger processing, and update utility infrastructure.[3]

Increase efficiency and reduce costs of operations

Currently, Terminals A, B, and C are configured internally to operate in a separate but identical manner. Security-related updates have been occurring at KCI since the opening of the terminals due to several airline hijackings occurring in the aviation industry in the 1970’s. These included the screening of passengers with metal detectors and physical separation of ticketed passengers from non-ticketed passengers in the terminals. Additional security requirements implemented after the terrorist attacks on September 11, 2001 have required further modifications.

These security updates were difficult to achieve in the KCI terminals due to the space available and the limitation of the design of the terminals. As a result, interior modifications were implemented to provide separate security screening locations for small groups of gates. In addition, glass walls were constructed to keep screened passengers from being able to receive items from non-screened passengers. The shallow depth of the terminal concourse from the gate to the front door of the terminal is a significant challenge in the effort to ensure safety and security of the passengers and the aircraft.

[3] None of the utility infrastructure under and entering into the existing terminals were replaced in 2004. The underground utility feeds were 36 years old at the time of the 2008 Master Plan Update and would be nearing 50 years in 2020

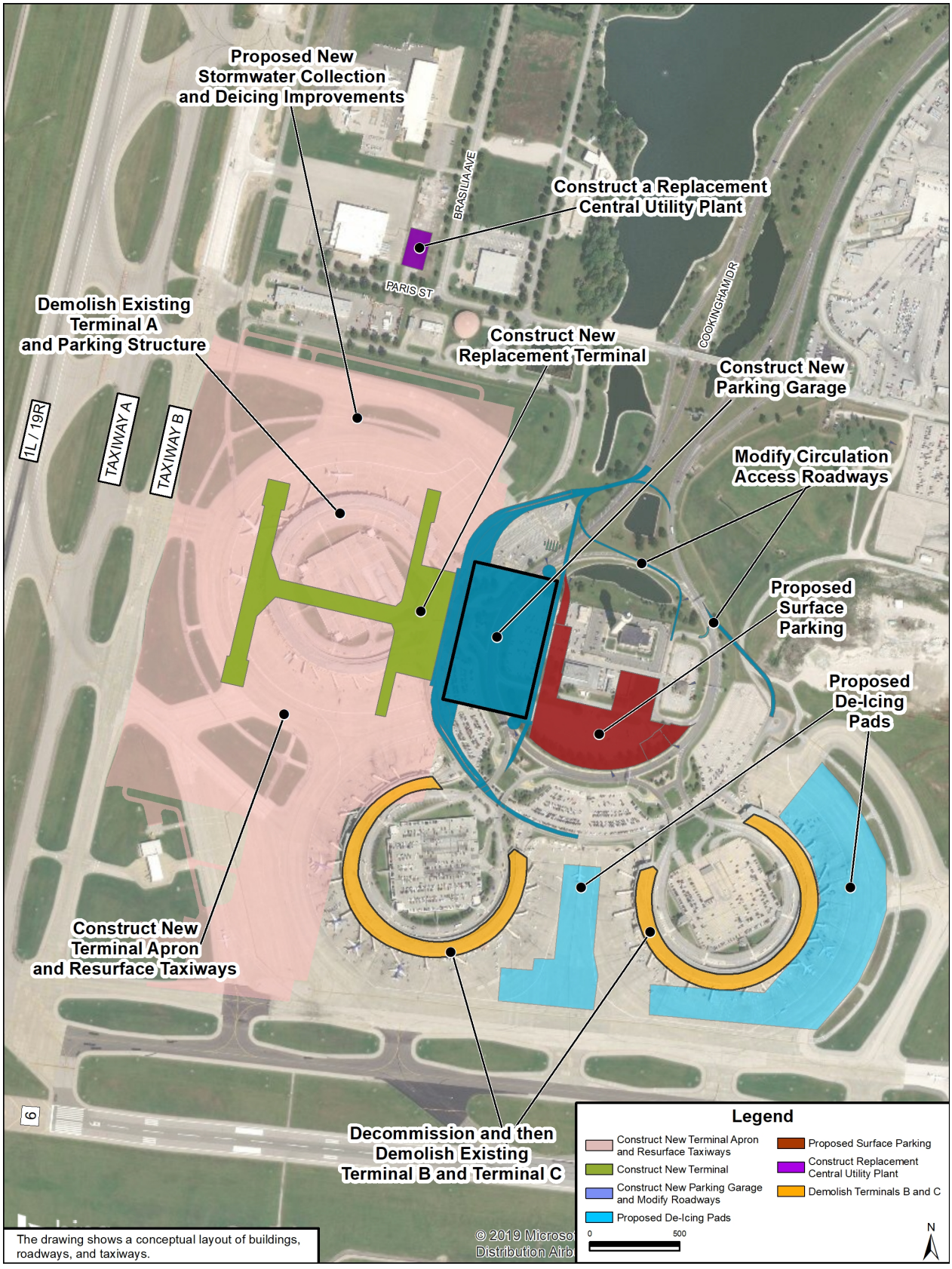
Currently KCAD must incur operating and maintenance costs for three separate but identical Terminals. Terminal A is not being used for aircraft or passenger operations and is effectively mothballed, however KCAD continues to incur costs to maintain and secure these facilities. All three terminals are individually heated and cooled.

1.5 Description of the Proposed Action

The Proposed Action as shown on **Exhibit 1-2** consists of the development and operation of a replacement terminal at KCI. The Proposed Action includes the following major elements:

- Demolish existing Terminal A, including the Terminal A parking garage and aircraft apron;
- Construct a new replacement terminal (initial build to 39 gates, future 42 gates) and provide updated utilities including water lines;
- Construct a new parking garage and surface parking lot;
- Construct new terminal apron area around the replacement terminal including providing new fuel hydrants;
- Modify existing roadways and construct new roadways in the terminal area;
- Construct various storm water collection system improvements including improved glycol recovery system (deicing) and facilities;
- Construct replacement Central Utility Plant (CUP) and provide redundant electrical underground electrical power utility feed;
- Resurface and rehabilitate the taxiways in the vicinity of the replacement terminal; and,
- Decommission and demolish existing Terminal B and Terminal C and consolidate airline operations at the new replacement terminal (Terminal B and C would remain open during construction of the new terminal).
- The Proposed Action is anticipated to provide 39 gates upon opening with potential future expansion to 42 gates. Therefore, the Proposed Action would have less gates than that of the existing Terminals A, B, and C. The Proposed Action would occur completely on Airport-owned property and would not include any highway or rail improvements. The Terminal B and C demolition sites would remain vacant with appropriate ground cover. The Terminal B and C parking lots would remain operational for employee parking and/or customer parking. A new security fence would be constructed to divide the parking areas from the airport operations areas.

Exhibit 1-2 Proposed Action



1.6 Requested Federal Actions

- Unconditional approval of the Airport Layout Plan (ALP) to depict the proposed improvements pursuant to 49 USC §§ 40103(b) and 47107(a)(16).
- Determination under 49 USC § 44502(b) that the airport development is reasonably necessary for use in air commerce or in the interests of national defense.
- Approval of a Construction Safety and Phasing Plan to maintain aviation and airfield safety during construction pursuant to FAA Advisory Circular (AC) 150/5370-2F, Operational Safety on Airports During Construction (14 CFR Part 139 [49 USC § 44706]).
- Approval of changes to the airport certification manual pursuant to 14 CFR Part 139 (49 USC § 44706).
- Determinations, through the aeronautical study process, under 14 CFR Part 77, regarding obstructions to navigable airspace (49 USC Section 40103 (b) and 40113).
- Determinations under 49 USC 47106 and 47107 relating to the eligibility of the Proposed Action for federal funding under the Airport Improvement Program (AIP) and/or determinations under 49 USC 40117, as implemented by 14 CFR 158.25, to impose and use passenger facility charges (PFCs) collected at the airport to assist with construction of potentially eligible development items shown on the ALP including the proposed construction of the replacement terminal and associated actions that may directly or indirectly impact FAA facilities including but not limited to utility relocations.

1.7 Timeframe of the Proposed Action

Construction of the proposed terminal replacement project would only occur after the FAA has issued a finding on this EA. Design of the project is currently ongoing in order to define specific elements of the Proposed Action, including grading and drainage requirements, foundations, building heights, and structural materials to be used. If the FAA approves the Proposed Action at the beginning of 2019, final design, demolition, and construction activities are proposed to begin in 2019 (after FAA approval) and continue into 2022. Opening of the new replacement terminal is proposed in 2022.

THIS PAGE INTENTIONALLY LEFT BLANK

Kansas City International Airport
Environmental Assessment, Section 106 Evaluation, and
Section 4(f) Statement

Chapter 2

2

2 Alternatives

2.1 Introduction

This chapter describes alternatives to the Proposed Action and evaluates the ability of the alternatives to meet the purpose and need described in Chapter 1. Federal guidelines concerning the environmental review process describe a reasonable range of alternatives that are feasible or practical from a technical and economic standpoint and using common sense.[4] Federal agencies may consider the applicant's purposes, needs, and common sense realities of a given situation in the development of alternatives.[5]

2.2 Background

Beginning in 1995, KCAD initiated a variety of planning efforts to address the planning of terminal facilities such as development of an airport master plan and terminal improvement program. The 2008 Master Plan Update provided a vision for the growth and development of KCI facilities and land use decisions. In 2011 the Advance Terminal Planning Study initiated research and analysis that produced the Program Criteria Document (PCD) for KCAD and the Terminal Area Master Plan (TAMP) for the FAA which recommended a single new terminal to replace the three existing terminals. Following the release of the PCD and TAMP, the Mayor of Kansas City formed the Aviation Terminal Advisory Group (ATAG) in July 2013 and tasked the Group with recommending an optimal configuration of the terminal. In the ATAG's May 2014 Final Report it recommended that, "Subject to final cost estimates, Terminal Concept Alternative 3 (a new single terminal) was found to be the best for Kansas City."

After the release of ATAG's Final Report, the airlines serving KCI, led by the Airport's major market share carrier, Southwest Airlines, were still not convinced that building a new terminal would be less expensive than renovating the existing terminal facilities. To address the airlines' concerns, KCAD and the airlines initiated the Exhibit K Agreement that defined a process to more fully explore various alternatives.

The Exhibit K process included a detailed alternatives analysis and was a unique collaborative process involving a working partnership between the airlines serving KCI and KCAD. During the April 26, 2016 presentation at City Council, the airlines agreed to the Exhibit K recommendation of designing and building a new single consolidated terminal complex. The airlines do not support any other terminal alternative at KCI. On November 7, 2017, Kansas City, Missouri residents voted (with 75% of the vote) in favor of building a new single terminal at KCI.[6] Copies of the Master Plan, Exhibit K documentation, and the City's committee activities are found on KCI's website.[7]

---

4 CEQ Memorandum to Agencies, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Answers to Question 2A, March 23, 1981

5 *Guidance Regarding NEPA Regulations*, CEQ, 48 Federal Register 34263 (July 28, 1983).

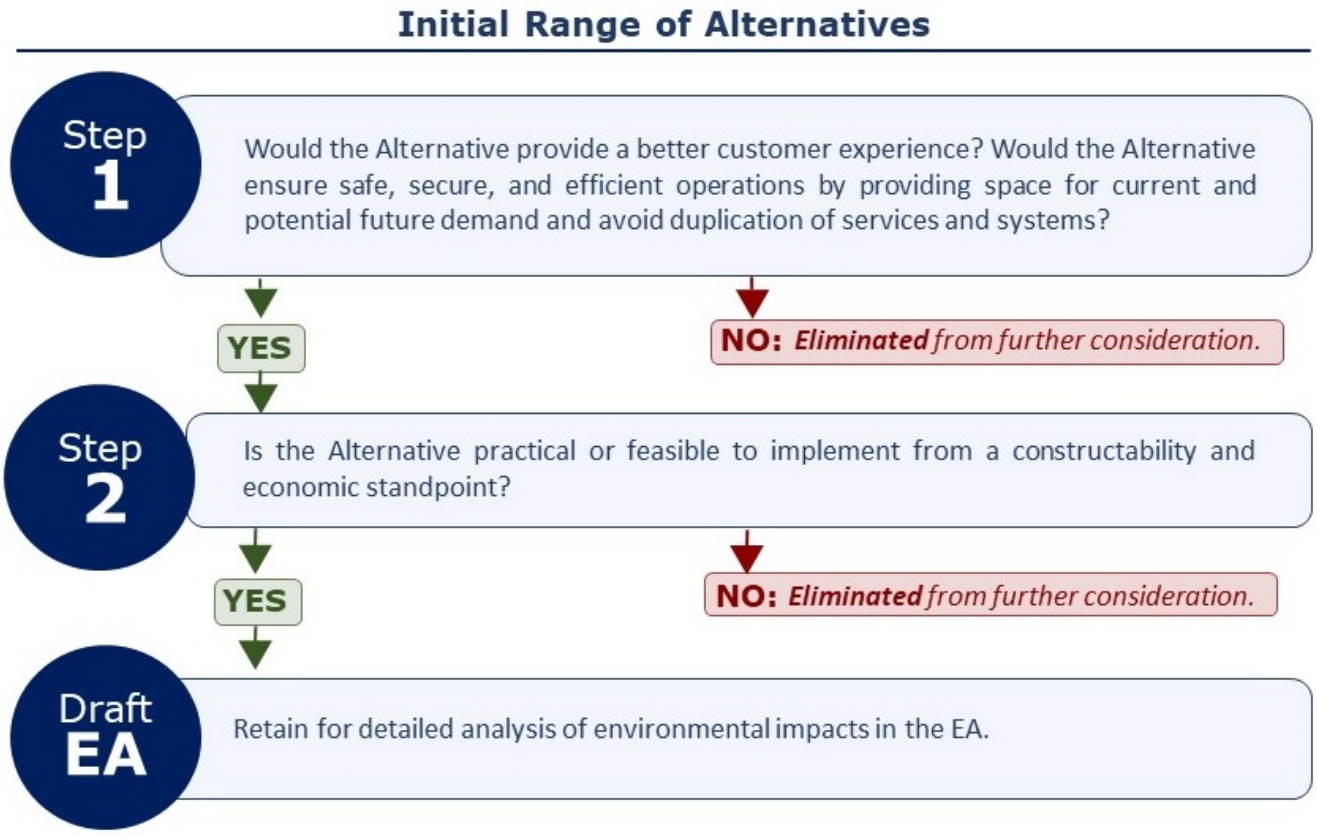
6 Sample Ballot State of Missouri Special Election November 7, 2017. Question 1 "Shall the City of Kansas City be authorized to construct a new passenger terminal at Kansas City International Airport and demolish existing terminals as necessary, with all costs paid solely from the revenues derived by the City from the operation of its airports and related facilities, and without the issuance of general airport revenue bonds unless such general airport revenue bonds have received prior voter approval?" Access online at https://www.kceb.org/useruploads/11nov7seven17/Sample_Ballot-Final_Website_11-17.pdf.

7 http://www.flykci.com/newsroom/terminal-master-plan/

2.3 Alternatives Screening Process

For this evaluation, a multi-step screening process was used to identify a range of reasonable alternatives responsive to the Purpose and Need. The first step in this screening process was to determine if an alternative can address the Purpose and Need by providing a better customer experience for passengers. In addition, this step considered whether the alternative would ensure safe, secure, and efficient airport operations by providing space for current and potential future demand while avoiding duplication of terminal services and systems. The second step evaluation considered whether the alternative was practical or feasible to implement from an economic and constructability standpoint. An alternative that would result in substantial redevelopment costs but providing the same operational benefits would not be retained for detailed evaluation. Constructability considers the direct impact on existing facilities and structures, infrastructure, and natural features. These physical characteristics can affect engineering costs, project schedules, operational safety and efficiency, and construction sequencing or phasing. An alternative that would result in substantial constructability or technical issues would not be retained for detailed evaluation. If an alternative advanced through both steps, it was retained for a more detailed environmental evaluation in the EA. The screening process for the reasonable alternatives is portrayed conceptually in **Exhibit 2-1**.

Exhibit 2-1 Alternatives Screening Process



2.4 Initial Alternatives

This section provides a brief description of six (6) alternatives that are subject to the multi-step screening process. The initial range of alternatives to be evaluated includes the No Action Alternative, replacing the three existing terminals with one new facility, and major renovations to the existing terminals. Three locations for the one new replacement terminal facility include the existing Terminal A site in the central terminal area, the existing Terminal C/D site in the central terminal area, and a South Greenfield site located between Runway 9/27 and State Highway 152. These three sites are shown on **Exhibit 2-2**. The major renovations to the existing terminals are shown on **Exhibit 2-3**.

2.4.1 Alternative 1: No Action Alternative

With the No Action Alternative, no changes would be made from the existing conditions and the terminals would remain as they are today. Terminal A would remain de-activated and operations would continue at Terminal B and C.

2.4.2 Alternative 2: Renovate the Existing Terminals with Two New Central Processors for Terminals A and B

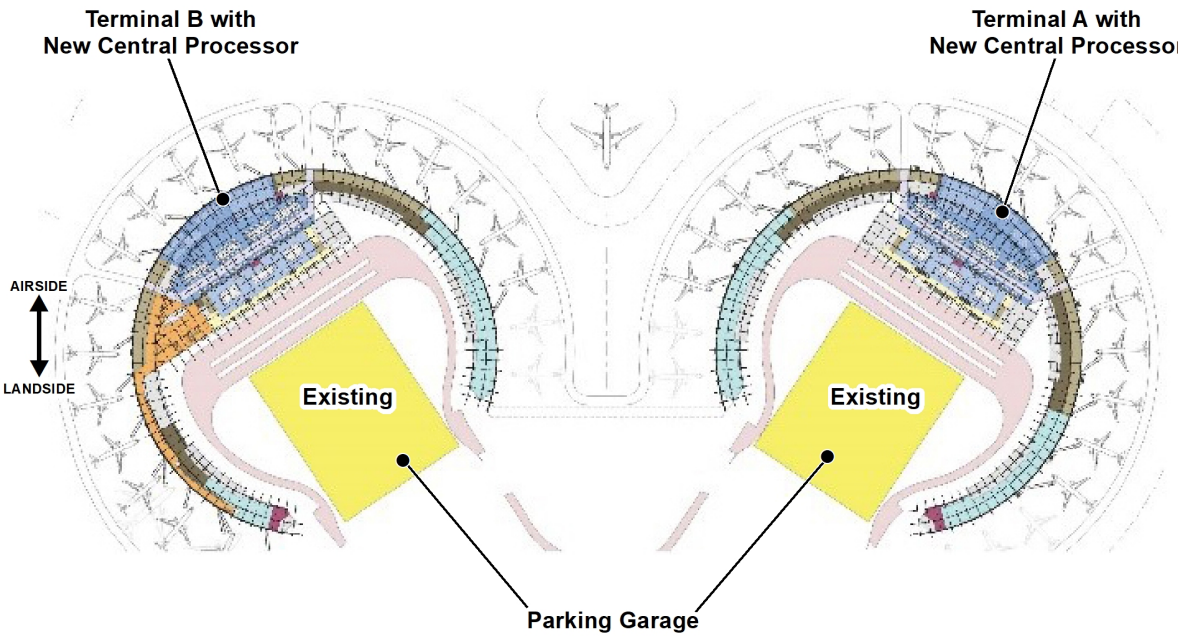
Alternative 2 would reuse two of the existing terminals, Terminals A and B. As shown on Exhibit 2-3, Terminal A and B would be renovated to include two new separate central processors, one for each terminal. The two new separate central processors would allow adequate space for security screening. This alternative would reuse some of the existing terminal approach and recirculation roadways, and the aircraft aprons. Alternative 2 would reuse existing spaces within the existing building footprints. The renovation to Terminal A would be initiated first. Operations from Terminal B would then be transferred to the renovated Terminal A while Terminal B was renovated. Finally, operations from Terminal C would be transferred to the renovated Terminal B. This alternative would result in the de-activation and ultimate demolition of Terminal C and the reactivation of a renovated Terminal A and B.

2.4.3 Alternative 3: Renovate the Existing Terminals with One New Central Processor for Terminals A and B

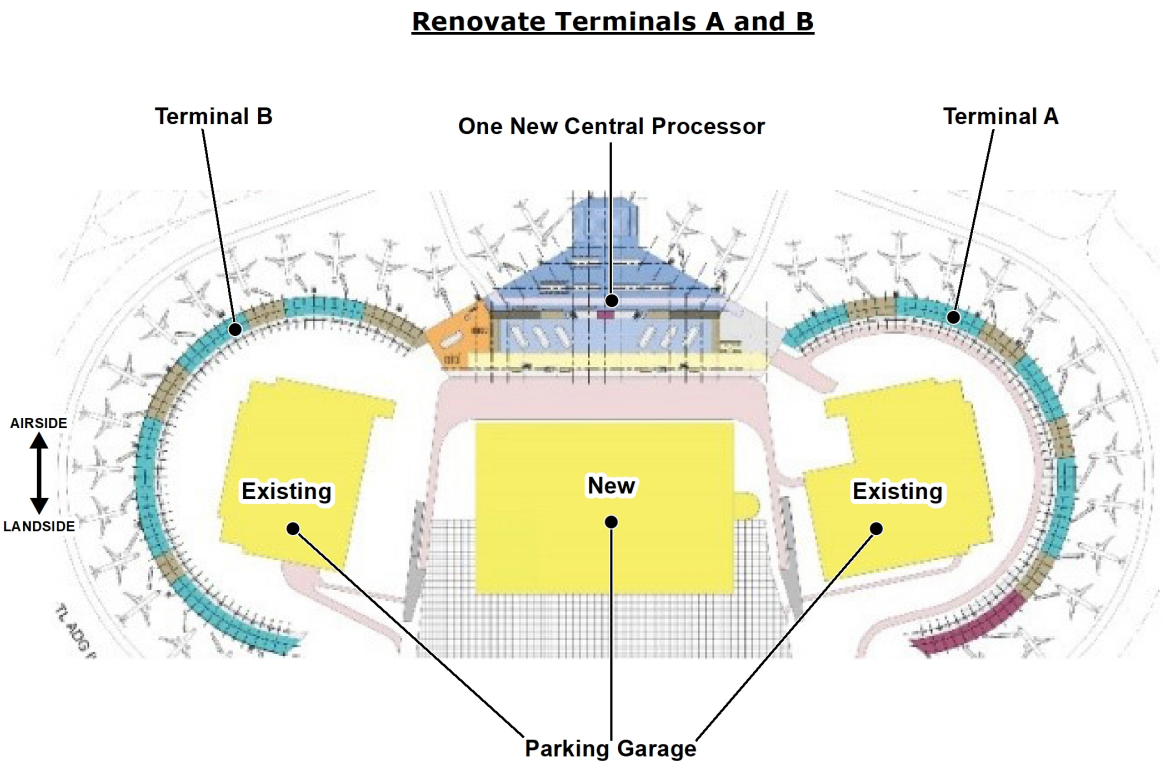
Alternative 3 would reuse two of the existing terminals, Terminals A and B. As shown on Exhibit 2-3, Terminal A and B would be renovated with a new central processor for both of the terminals. The new central processor would allow adequate space for security screening. This alternative would reuse some of the terminal approach and recirculation roadways, and the aircraft aprons. Alternative 3 would reuse existing spaces within the existing building footprints. The renovation to Terminal A would be initiated first. However, both Terminal A and B would be closed for major renovations for a period of time leaving only Terminal C in operation. After the renovations were complete, this alternative would result in the de-activation and ultimate demolition of Terminal C and the reactivation of a renovated Terminal A and B.

Exhibit 2-2 Replacement Terminal Sites

Exhibit 2-3 Renovate Existing Terminals



Source: PGAL and Wellner Architetcts, 2015



Source: PGAL and Wellner Architetcts, 2015

2.4.4 Alternative 4: New Replacement Terminal at Site A

Alternative 4 provides for the replacement of the three existing terminals into one new replacement terminal at Site A. This site is located in the central terminal area at the location of the existing Terminal A site. Currently Terminal A is not being used for aircraft operations or for passenger operations. This alternative would include the demolition of Terminal A. This alternative allows for the continuation of airport operations at Terminals B and C while the replacement terminal is being built. Terminals B and C would be demolished after operations were transferred to the replacement terminal.

2.4.5 Alternative 5: New Replacement Terminal at Site C/D

Alternative 5 provides for the replacement of the three existing terminals into one new replacement terminal at Site C/D. This site is located in the central terminal area at the location of the existing Terminal C site and the undeveloped Terminal D location. This alternative would include the demolition of Terminal C. This alternative allows for the continuation of airport operations at Terminals A and B while the replacement terminal is being built. Terminals A and B would be demolished after operations were transferred to the replacement terminal.

2.4.6 Alternative 6: New Replacement Terminal at South Site

Alternative 6 provides for the replacement of the three existing terminals into one new replacement terminal at a greenfield site located south of the existing terminal complex. This alternative allows for the continuation of airport operations at Terminals B and C while the replacement terminal is being built. Terminals A, B, and C would be demolished after operations were transferred to the replacement terminal.

2.5 Step One: Achieves Purpose and Need

The following section describes the Step One evaluation of each initial alternative, which evaluates each alternative's ability to satisfy the Purpose and Need statements.

2.5.1 Alternative 1: No Action Alternative

While the No Action Alternative does not meet the Purpose and Need, the No Action Alternative must be carried forward in the assessment of environmental impacts as required by 40 CFR. § 1502.14(d).[8] The No Action Alternative serves as a baseline to compare the impacts of the other alternatives.

[8] See also FAA Order 1050.1F, Para. 6-2.1d.

2.5.2 Alternative 2: Renovate the Existing Terminals with Two New Central Processors for Terminals A and B

Alternative 2 was developed with the goal to reuse and repurpose where possible any of the existing apron, terminal, and landside facilities that could be adapted to provide adequate facilities to meet airport operational needs and requirements.

Terminals A and B have structural constraints that include its concrete foundation walls and structural support columns that cannot be moved since they are integral to the structural integrity of the building roof system. These structural constraints significantly impact the ability to readjust and change the size and configuration of interior spaces. The horseshoe geometry of these terminal buildings further constrain the ability to change and adapt space that is needed to provide TSA security screening checkpoint lanes and moving walkways that require a more rectangular shape. The existing terminal shape also limits most passenger services, such as concessions, hotel and shuttle kiosks, and guest seating and restrooms.

By providing two new central processors, one each in Terminal A and B, this alternative would allow security screening efficiency to minimize staffing costs. However, as described in the 2017 Exhibit K Overview, the resulting renovated terminal complex would still be substandard at a substantial construction cost bringing into question its cost/benefit compared to a brand new terminal.[9] For these reasons, this alternative was originally dismissed from further evaluation in the 2017 Exhibit K Overview planning process. Based on the independent review in this EA, this Alternative was not carried forward for Step Two evaluation because it did not meet the stated purpose and need.

2.5.3 Alternative 3: Renovate the Existing Terminals with One New Central Processor for Terminals A and B

Alternative 3 was developed with the goal to reuse and repurpose where possible any of the existing apron, terminal, and landside facilities that could be adapted to provide adequate facilities to meet airport operational needs and requirements.

Terminals A and B have structural constraints that include its concrete foundation walls and structural support columns that cannot be moved since they are integral to the structural integrity of the building roof system. These structural constraints significantly impact the ability to readjust and change the size and configuration of interior spaces. The horseshoe geometry of these terminal buildings further constrains the ability to change and adapt space that is needed to provide TSA security screening checkpoint lanes and moving walkways that require a more rectangular shape. The existing terminal shape also limits most passenger services, such as concessions, hotel and shuttle kiosks, and guest seating and restrooms.

[9] See discussion of Major Renovation Alternative A (MR A) available online at http://www.flykci.com/newsroom/terminal-master-plan/

By providing a new central processor for Terminal A and B, this alternative would allow security screening efficiency to minimize staffing costs. However, as described in the 2017 Exhibit K Overview, the resulting renovated terminal complex would still be substandard at a substantial construction cost bringing into question its cost/benefit compared to a brand new terminal.[10] For these reasons, this alternative was originally dismissed from further evaluation in the 2017 Exhibit K planning process. Based on the independent review in this EA, this Alternative was not carried forward for Step Two evaluation because it did not meet the stated purpose and need.

2.5.4 Alternative 4: New Replacement Terminal at Site A

This alternative would afford a better opportunity to incorporate updated passenger processing including TSA's Pre✓™, bag self-tagging, and check-in. This alternative would provide the space needed today and in the future for security screening to ensure the safety and security of the passengers and the aircraft in an efficient manner. Passenger amenities, such as adequately sized restrooms beyond security and a more robust and profitable concession program, could be provided. In addition, the new replacement single terminal could allow non-aviation revenue opportunities to be maximized, including an increase in revenues from concessions and parking operations.

This alternative would provide for a more environmentally friendly building design and new efficient mechanical, electrical, and plumbing systems with new underground utility feeds. This alternative would also reduce the cost of operating and maintaining three separate terminals by utilizing common use systems. By replacing three terminals with one new terminal facility, it is estimated that operation and maintenance costs would be reduced by 15% by utilizing common use systems.

This Alternative would provide a better customer experience, would provide space for current and future security requirements, would reduce operational costs, and would eliminate the duplication of terminal systems and parking garages. Therefore, this Alternative was carried forward for Step Two evaluation.

2.5.5 Alternative 5: New Replacement Terminal at Site C/D

Similar to Alternative 4, this Alternative would provide a better customer experience, would provide space for current and future security requirements, would reduce operational costs, and would eliminate the duplication of terminal systems and parking garages. Therefore, this Alternative was carried forward for Step Two evaluation.

[10] See discussion of Major Renovation Alternative B (MR B) available online at http://www.flykci.com/newsroom/terminal-master-plan/

2.5.6 Alternative 6: New Replacement Terminal at South Site

Alternative 6 provides for the replacement of the three existing terminals into one new replacement terminal at a greenfield site located south of the existing terminal complex.

Similar to Alternative 4 and Alternative 5, this Alternative would provide a better customer experience, would provide space for current and future security requirements, would reduce operational costs, and would eliminate the duplication of terminal systems and parking garages. Therefore, this Alternative was carried forward for Step Two evaluation. **Table 2-1** summarizes the Step One evaluation findings.

Table 2-1 Step One Screening Summary

Alternative	Step One Screening Criteria	
	Would the Alternative provide a better customer experience? Would the Alternative ensure safe, secure, and efficient operations by providing space for current and potential future demand and avoid duplication of services and systems?	**Move to Step Two**
Alternative 1:No Action	No	**Yes**
Alternative 2: Renovate the Existing Terminals with Two New Central Processors for Terminals A and B	No	**No**
Alternative 3: Renovate the Existing Terminals with One New Central Processor for Terminals A and B	No	**No**
Alternative 4:New Replacement Terminal at Site A	Yes	**Yes**
Alternative 5: New Replacement Terminal at Site C/D	Yes	**Yes**
Alternative 6: New Replacement Terminal at South Greenfield Site	Yes	**Yes**

Note: Yes- Satisfies Step One screening criteria
No- Does not satisfy Step One screening criteria

2.6 Step Two: Practical or Feasible to Implement

Based on the findings from the Step One screening, three alternatives were identified as satisfying the Purpose and Need, in addition to the No Action Alternative. The second step of the evaluation analyzed these alternatives a step further to evaluate if the alternative is practical or feasible to implement from an economic and constructability standpoint.

2.6.1 Alternative 1: No Action Alternative

While the No Action Alternative does not meet the Purpose and Need, the No Action Alternative must be carried forward in the assessment of environmental impacts as required by 40 CFR § 1502.14(d).[11]

2.6.2 Alternative 4: New Replacement Terminal at Site A

The new replacement terminal at Site A would allow for uninterrupted operations during construction of the replacement terminal. In addition, there would be no changes to the Federal Inspection Services currently in Terminal C. This Alternative site, as shown on Exhibit 2-2, would also maintain efficient airside and landside operations because of its close proximity to the longest and most heavily used runway, 1L/19R, and to the Airport's supporting facilities. Because of these reasons, Alternative 4 was carried forward for detailed analysis of environmental impacts.

Based on the independent review in this EA, this Alternative was retained for detailed analysis of environmental impacts in the EA because it was practical and feasible to implement from a constructability and economic standpoint as identified in the Exhibit K Overview.[12]

2.6.3 Alternative 5: New Replacement Terminal at Site C/D

Due to the topography at Site C/D, extensive fill would be needed for this alternative in order to maintain appropriate grades at the apron and terminal. Development at Site C/D, as shown on Exhibit 2-2, could limit any potential future expansion of the current Consolidated Rental Car facilities.

In addition, Terminal C currently houses KCI's only international gate with Customs and Border Protection facilities for arriving international passengers. Development at Site C/D would require the construction of temporary Federal Inspection Services in either Terminal A or Terminal B adding additional expense and operational inefficiencies. This Alternative site, as shown on Exhibit 2-2, would also not maintain efficient airside and landside operations because of its farther distance to the longest and most heavily used runway, 1L/19R, and to the Airport's supporting facilities.

For these reasons, this alternative was originally dismissed from further evaluation in the 2015 Terminal Area Master Plan.[13] Based on the independent review in this EA, this Alternative was eliminated from detailed analysis of environmental impacts in the EA because it was not practical or feasible to implement from a constructability and economic standpoint.

---

11 See also FAA Order 1050.1F, Para. 6-2.1d.
12 See discussion of New Terminal Alternative A (NT A) available online at http://www.flykci.com/newsroom/terminal-master-plan/
13 See discussion of Site C/D Site in the Terminal Area Master Plan April 2015 available online at http://www.flykci.com/newsroom/terminal-master-plan/

2.6.4 Alternative 6: New Replacement Terminal at South Site

Alternative 6, which is situated away from the existing terminal core, would allow uninterrupted operations in the existing terminal core during construction activities. However, as a greenfield terminal building location, the South Site alternative would require significant improvements, including: new utility feeds; additional infrastructure like water, natural gas, and sewer lines; new entrance roads and a highway interchange, and airside expansion including new parallel taxiways to Runway 9/27. These infrastructure improvements would add significantly to the capital cost of this alternative. This Alternative site, as shown on Exhibit 2-2, would also not maintain efficient airside and landside operations because of its farther distance to the longest and most heavily used runway, 1L/19R, and to the Airport's supporting facilities. In addition, there would be destruction of natural resources including wetlands, streams, and potential wildlife habitat. Building on a greenfield site would also result in increased costs due to potential environmental mitigation requirements and potential reconstruction/modifications to I-29, I-435, and upgrades to State Route 152.

For these reasons, this alternative was originally dismissed from further evaluation in the 2011 Advance Terminal Planning Study.[14] Based on the independent review in this EA, this Alternative was eliminated from detailed analysis of environmental impacts because it was not practical or feasible to implement from a constructability and economic standpoint. **Table 2-2** summarizes the Step Two evaluation findings.

Table 2-2 Step Two Screening Summary

Alternative	Step Two Screening Criteria	
	Is the Alternative practical or feasible to implement from a constructability and economic standpoint?	**Move to Detailed Environmental Assessment**
Alternative 1:No Action	No	**Yes**
Alternative 4:New Replacement Terminal at Site A	Yes	**Yes**
Alternative 5: New Replacement Terminal at Site C/D	No	**No**
Alternative 6: New Replacement Terminal at South Greenfield Site	No	**No**

Note: Yes- Satisfies Step Two screening criteria
No- Does not satisfy Step Two screening criteria

[14] See discussion of Master Plan South Option in the Strategic Summary Advance Terminal Planning Study April 2013 available online at http://www.flykci.com/newsroom/terminal-master-plan/

2.7 Alternatives Carried Forward for Detailed Evaluation

2.7.1 No Action Alternative

To satisfy the intent of NEPA, FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*; FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*; and other special purpose environmental laws, a No Action Alternative is carried forward in the analysis of environmental consequences.

With the No Action Alternative, the Proposed Action would not be constructed and the existing terminals would operate the same as current conditions. The No Action Alternative does not meet the stated purpose and need for this project. Although not always feasible nor practical, the No Action Alternative is a required alternative under NEPA and applicable FAA orders and serves as the baseline for the assessment of future conditions/impacts.

2.7.2 Proposed Action Alternative (Alternative 4: New Replacement Terminal at Site A)

Based on KCAD's specific goals, airline recommendations, FAA operational requirements, and criteria including affordability, airside, terminal, and landside characteristics, ability to meet security needs, support facilities, availability of utilities, environmental impacts, implementation, and other strategic considerations, KCAD has selected the Proposed Action as the preferred alternative.

Kansas City International Airport
Environmental Assessment, Section 106 Evaluation, and
Section 4(f) Statement

Chapter 3

3

3 Affected Environment, Environmental Consequences, and Mitigation

3.1 Introduction

Pursuant to the environmental documentation requirements of FAA Orders 5050.4B, *NEPA Implementing Instructions for Airport Actions*, and 1050.1F, *Environmental Impacts, Policies, and Procedures*, this chapter succinctly describes existing environmental conditions of the potentially affected geographic area for the proposed construction of the replacement terminal and associated projects at KCI. The potential environmental effects resulting from implementation of the Proposed Action and the No Action Alternative are also presented in this chapter. Where applicable, this chapter presents a discussion of mitigation measures to avoid and minimize potential adverse environmental impacts of the Proposed Action.

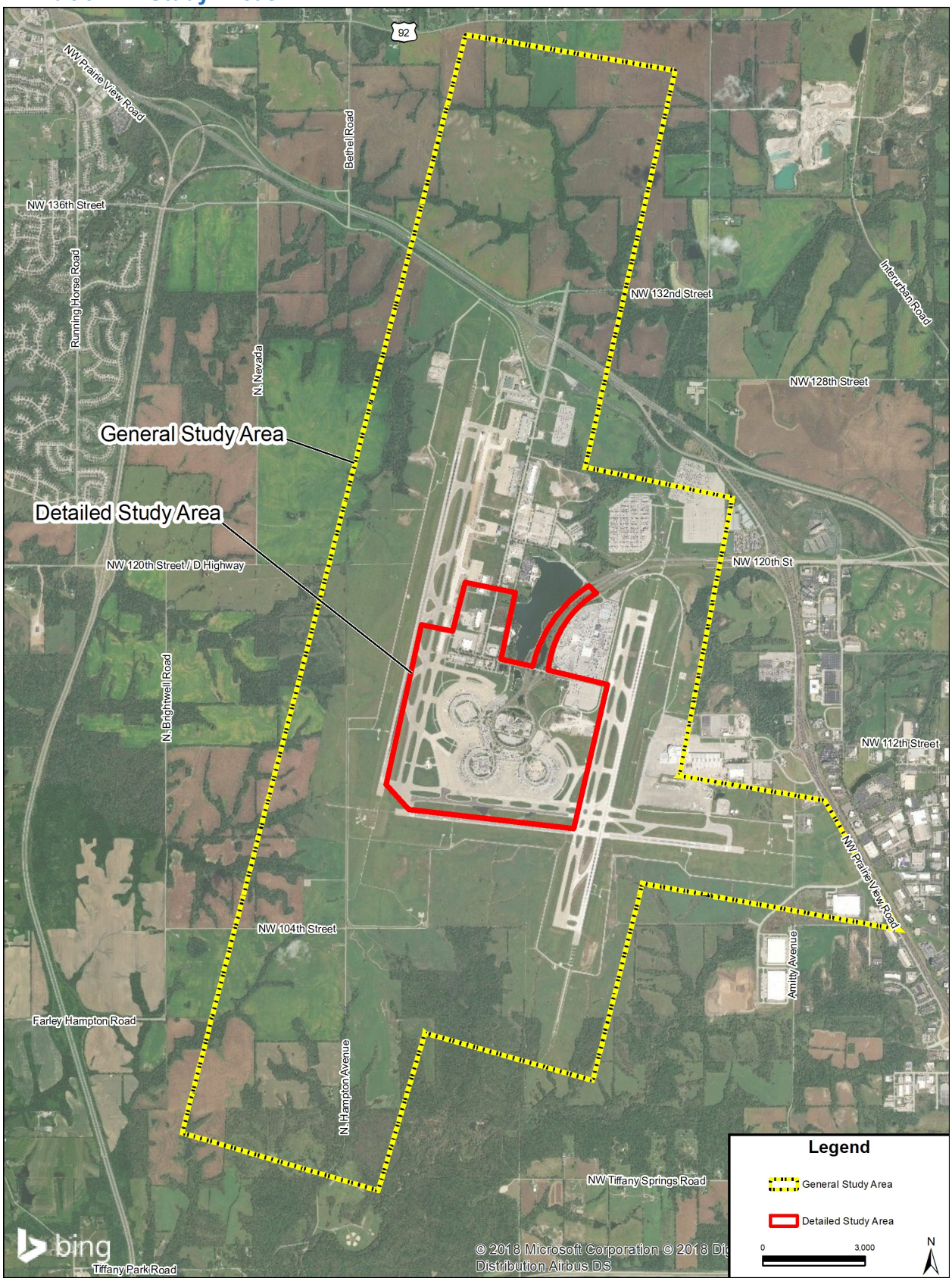
3.2 Identification of the Study Areas and Analysis Years

For the purposes of this evaluation, two study areas have been defined. The General Study Area depicts the areas surrounding the Airport. A further refined Detailed Study Area depicts the area that may be physically disturbed (direct impacts) with the development of the Proposed Action. Both study areas are shown on **Exhibit 3-1**.

The General Study Area covers approximately 7,040 acres. The most recent Airport noise study was used as the best available prediction of significant noise levels. The General Study Area was drawn based on the 65 DNL from the noise study, but enlarged to take into account the potential increase in the area exposed to 65 DNL that could occur as a result of the Proposed Action. The General Study Area boundary lines were squared off to follow roadways and other identifiable features where available. The Detailed Study Area covers approximately 700 acres and is defined as the area where direct impacts may result from the Proposed Action and its alternatives.

The Affected Environment Existing Conditions are based on calendar year 2017. The environmental consequences analysis discloses the impacts for the projected future conditions in 2022 and 2027. The FAA uses 2022 as a basis for analysis because 2022 is the projected implementation year of the Proposed Action. In addition, 2027 is used as a basis for analysis, most notably for air quality and noise and noise-compatible land use, because it represents a condition five years beyond the opening year.

Exhibit 3-1 Study Areas



3.3 Resource Categories Not Affected

Based on the results of a site visit and database search, the Proposed Action would have no direct or indirect impact to the following categories because these resources do not occur within the Study Areas.

- Coastal resources: There are no coastal zones in the state of Missouri.
- Prime and unique farmlands: The Proposed Action does not include the conversion of any important farmlands to non-agricultural use. The Natural Resources Conservation Service (NRCS) confirmed via letter, dated March 6, 2018, found in **Appendix A** that the Farmland Protection Policy Act does not apply to the Proposed Action.
- Wild and scenic rivers: A review of the Wild and Scenic Rivers System list[15] indicated that there are no designated State or National Scenic Rivers within or immediately adjacent to Airport property.

These resources have been eliminated from further consideration and evaluation in the EA.

3.4 Environmental Resources Potentially Affected

The following sections describe and disclose the potential environmental impacts resulting from the No Action Alternative and the Proposed Action. The analysis includes considerations of direct, indirect, and cumulative impacts including potential impacts from construction and demolition activities and operation after opening.

Direct impacts, as defined by 40 CFR § 1508.8(a), CEQ Regulations, are caused by the Proposed Action and occur at the same time and place. Indirect impacts per 40 CFR § 1508.8(b) are caused by the Proposed Action and are later in time or farther removed in distance, but are still reasonably foreseeable. Cumulative impacts per 40 CFR § 1508.7 are the impacts on the environment which results from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

[15] Department of the Interior, 2018, National Wild and Scenic Rivers System. Available online at: https://www.rivers.gov/missouri.php Accessed February 2018.

3.5 Air Quality

The Clean Air Act, including the 1990 Amendments, (CAA) provides for the establishment of standards and programs to evaluate, achieve, and maintain acceptable air quality in the U.S. Under the CAA, the United States Environmental Protection Agency (EPA) established a set of standards, or criteria, for six pollutants determined to be potentially harmful to human health and welfare.[16] The EPA considers the presence of the following six criteria pollutants[17] to be indicators of air quality: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$),[18] sulfur dioxide (SO_2), and, lead (Pb).[19]

If the air quality assessment for the Proposed Action were to show that any of the federal *de minimis* thresholds established under the CAA were equaled or exceeded, further, more detailed analysis to demonstrate conformity would be required, which is referred to as a General Conformity Determination. Conversely, if the analysis were to show that none of the relevant thresholds were equaled or exceeded, the Proposed Action at KCI would be presumed to conform to the applicable State Implementation Plan (SIP) and no further analysis would be required under NEPA and the CAA.

Emissions for this analysis were computed using Version 2d of the Aviation Environmental Design Tool (AEDT). The AEDT was developed under the guidance of the FAA and is the only model generally approved by the FAA for use in air quality assessments for NEPA purposes.

3.5.1 Affected Environment Existing Conditions

Air quality conditions in Platte County were compliant (attainment) with all the federally-regulated air quality standards in effect at the time of the preparation of this environmental review. However, in the past, the county has experienced high levels of the one-hour concentration of ozone resulting in the establishment of a maintenance plan for ozone for development in Platte County. Although the one-hour ozone standard has been revoked in favor of the 1997 and 2008 eight-hour standard, the one-hour ozone maintenance plan remains in effect in the current effective Missouri SIP. As such, for the purposes of this environmental review, Platte County will be assumed to be designated maintenance for the ozone standard.

---

16 EPA, Code of Federal Regulations, Title 40, Part 50 (40 CFR Part 50) *National Primary and Secondary Ambient Air Quality Standards (*NAAQS).

17 Identification of criteria pollutants available online at https://www.epa.gov/criteria-air-pollutants and in FAA 1050.1F Desk Reference.

18 PM_{10} and $PM_{2.5}$ are airborne inhalable particles that are less than 10 micrometers (coarse particles) and less than 2.5 micrometers (fine particles) in diameter, respectively.

19 Airborne lead in urban areas is primarily emitted by vehicles using leaded fuels. The chief source of lead emissions at airports would be the combustion of leaded aviation gasoline in small piston-engine general aviation aircraft. In general, an analysis of lead is limited to projects that emit significant quantities of the pollutant (e.g., lead smelters) and is generally not applied to transportation projects. For lead, a major source, as defined by EPA for a Nonattainment New Source Review permitting program would be emitting over 100 tons per year. Lead emissions from piston driven aircraft at KCI would be considerably lower; therefore, an analysis of lead is not included in this emissions inventory.

3.5.1.1 Emissions Sources

The number and type of aircraft operations at any airport directly affects the amount and type of emissions. There are a total of 123,357 aircraft operations for 2017 at KCI according to FAA's Air Traffic Activity System (ATADS). The specific number and type of aircraft modeled in AEDT are provided in **Appendix B**.

Mobile sources of air emissions include motor vehicles and other engines and equipment that can be moved from one location to another. These are typically classified as "road sources" and "non-road sources." Road sources include automobiles, light-duty and heavy-duty trucks. No significant changes are anticipated to passenger vehicles accessing the short-term parking garages located directly in front of the terminals or the long term parking areas. While the Proposed Action includes the demolition of the existing Terminal A parking garage, it also includes the construction of a new parking garage next to the replacement terminal. Therefore, neither the Proposed Action nor the No Action alternative would significantly affect road sources of emissions and therefore were not included in the inventory.

The larger jet aircraft use auxiliary power units (APUs) while at the gate to operate the heating, air conditioning, and electric systems. The APU is also used to 'start up' or restart the aircraft engines before departing from the gate area. Neither the Proposed Action nor the No Action alternative would affect APU emissions and therefore were not included in the inventory.

Non-road sources include airport ground support equipment (GSE) and construction equipment. Typical GSE include airport equipment that provides air conditioning, air start, baggage tractors, belt loaders, catering vehicles, and emergency vehicles. Neither the Proposed Action nor the No Action alternative would affect GSE emissions and therefore were not included in the inventory.

3.5.2 Environmental Consequences

3.5.2.1 No Action Alternative

There are a total of 134,110 aircraft operations forecast for 2022 at KCI according to the FAA's 2017 TAF. There are a total of 145,145 aircraft operations forecast for 2027 at KCI according to the FAA's 2017 TAF. The 2017 TAF is provided in **Appendix F** and the specific number and type of aircraft modeled in AEDT are provided in **Appendix B**. Aircraft average taxi time for the 2027 No Action Alternative is expected to remain the same as the 2022 No Action Alternative because the airfield is anticipated to operate the way it does today and the airfield has the capacity to accommodate the projected forecast increase in aircraft operations.

3.5.2.2 Proposed Action

No change to the number of aircraft operations or fleet mix would occur as a result of implementing the Proposed Action. Therefore, the number of operations and fleet mix for the 2022 No Action Alternative would remain the same for the 2022 Proposed Action. Similarly, the number of operations and fleet mix for the 2027 No Action Alternative would remain the same for the 2027 Proposed Action.

According to the airlines operating at the airport and FAA Air Traffic Management, the Proposed Action would cause aircraft operations to shift from the existing Terminals B and C to the proposed replacement Terminal A. This in turn would be expected to cause a shift in runway use patterns at KCI. It is expected that there would be a decrease in aircraft operations on Runway 01R/19L and a subsequent increase in aircraft operations on Runway 01L/19R. From FAA Air Traffic Management, the Proposed Action would be anticipated to include a shift of up to 15% of the total air carrier traffic from Runway 01R/19L to Runway 01L/19R.[20] The expected shift in operations from 01R/19L to 01L/19R would result in a reduction in the distance aircraft travel from the replacement terminal to the primary runway because Terminal B and C would not be in use and all operations would be operating out of the proposed replacement terminal. Runway 01L/19R is the primary runway and would be the closest runway to the proposed replacement terminal. The specific runway utilization and AEDT assumptions are provided in **Appendix B**.

Emissions Summary

The results of the emission inventory prepared for the Proposed Action were compared to the results of the No Action Alternative of the same future year to disclose the potential increase in emissions caused by the Proposed Action as shown in **Table 3-1**. Carbon monoxide and oxides of nitrogen provide the greatest overall emissions contribution. These pollutants are produced from the incomplete combustion of aircraft engines.

Table 3-1 Emissions Summary

Scenario	Tons of Pollutants per Year					
	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Existing Conditions	409.11	68.80	422.07	41.90	3.31	3.31
***de minimis* Threshold**	**Not Applicable**	**100**	**100**	**Not Applicable**	**Not Applicable**	**Not Applicable**
2022 No Action Alternative	442.10	78.53	453.77	44.42	3.67	3.67
2022 Proposed Action	440.63	78.32	453.57	44.37	3.66	3.66
Net Emissions	*-1.47*	*-0.22*	*-0.20*	*-0.05*	*-0.01*	*-0.01*
2027 No Action Alternative	482.22	85.82	491.22	48.13	3.92	3.92
2027 Proposed Action	480.59	85.58	491.01	48.07	3.90	3.90
Net Emissions	*-1.62*	*-0.24*	*-0.22*	*-0.06*	*-0.01*	*-0.01*

Note: Numbers may not appear to sum as reported due to rounding
Source: Landrum & Brown analysis, 2018.

[20] Email from Marc Galeski, FAA Air Traffic Management to Scott Tener, FAA Subject: Air Traffic Comments Runway Utilization Assumptions for Noise and AQ Analysis – Terminal Project, Kansas City International Airport, June 26, 2018.

The comparison of the emission inventories were used for the evaluation of General Conformity as required under the CAA and also to assess the potential impacts of the Proposed Action under NEPA. Because the new replacement terminal would be located closer to Runway 01L/19R, this shift would actually cause a minimal decrease of potential taxi times from the terminal to the primary runway and therefore cause a minimal decrease in emissions as compared to the No Action Alternative after the project is completed. The analysis shows that none of the relevant federal thresholds were equaled or exceeded for the Proposed Action. Emissions from potential construction activities are discussed in Section 3.17.1 Construction-Air Quality.

While not quantified, the Proposed Action would also be expected to cause a decrease in diesel bus trips within the terminal core. Currently, bus trips are needed to transport passengers between 11 bus stops at Terminals B and C and the consolidated rental car facilities. However, with the Proposed Action, bus trips would only be needed to transport passengers between the new terminal and the consolidated rental car facilities thereby reducing emissions from vehicle trips. Additionally, there would be fewer bus trips for employees because employees would be able to park at the Terminal B or Terminal C garages instead of being bussed from remote parking lots.

The air quality assessment demonstrates that the Proposed Action would not cause an increase in air emissions above the applicable federal *de minimis* thresholds. The Proposed Action would actually result in a decrease of emissions as compared to the No Action Alternative of the same year. Therefore, the Proposed Action conforms to the SIP and the CAA and would not create any new violation of the NAAQS, delay the attainment of any NAAQS, nor increase the frequency or severity of any existing violations of the NAAQS. As a result, no adverse impact on local or regional air quality is expected due to the Proposed Action. No further analysis or reporting is required under the CAA or NEPA.

3.6 Biological Resources

Biological resources are valued for their intrinsic, aesthetic, economic, and recreational qualities and include fish, wildlife, plants, and their respective habitats. Typical categories of biological resources include:

- Terrestrial and aquatic plant and animal species
- Game and non-game species
- Special status species (state or Federally-listed threatened or endangered species, marine mammals, or species of concern, such as species proposed for listing or migratory birds)
- Environmentally-sensitive or critical habitats

A significant impact to federally-listed threatened and endangered species would occur when the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service determines that the Proposed Action would be likely to jeopardize the continued existence of the species in question, or would result in the destruction or adverse modification of Federally-designated critical habitat in the affected area.

3.6.1 Affected Environment Existing Conditions

The Detailed Study Area consists primarily of developed/industrial area currently used for airport operations. Information from the USFWS Information, Planning, and Conservation (IPaC) system and the Missouri Department of Conservation was obtained to determine the species list that could be affected by the Proposed Action. The USFWS and the Missouri Department of Conservation reported that the Airport is within the range of a number of threatened or endangered species shown in **Table 3-2**.

Table 3-2 State and Federal Threatened and Endangered Species

Common Name	Scientific Name	Federal Status	Missouri Status
Gray Bat	*Myotis grisescens*		Endangered
Indiana Bat	*Myotis sodalist*		Endangered
Northern Long-Eared Bat	*Myotis septentrionalis*		Threatened
Pallid Sturgeon	*Scaphirhynchus albus*	Endangered	Endangered
American Bittern	*Botaurus lentiginosus*	Endangered	
Flathead Chub	*Platygobio gracilis*	Endangered	
King Rail	*Rallus elegans*	Endangered	
Lake Sturgeon	*Acipenser fulvescens*	Endangered	
Piping Plover	*Charadrius melodus*	Threatened	
Least tern	*Sterna antillarum*	Endangered	
Rufa Red knot	*Calidris canutus rufa*	Threatened	

Source: US Fish & Wildlife Website: http://www.fws.gov/midwest/Endangered/lists/missouri-cty.html Accessed May 2018 and Missouri Department of Conservation records, https://mdc.mo.gov/property/greener-communities/heritage-program/results/county/Platte, Accessed May 2018.

Bald eagles are no longer protected under the federal Endangered Species Act. However, the bald eagle remains protected under the Bald and Golden Eagle Protection Act. There is no known bald eagle habitat in the Detailed Study Area.

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

No physical development would occur for the No Action Alternative in 2022 and in 2027. Therefore, no impacts to federally listed species, migratory birds, or state listed species would occur.

3.6.2.2 Proposed Action

The Detailed Study Area consists primarily of developed/industrial area currently used for airport operations. Scoping letters were sent to the Missouri Department of Conservation, Missouri Federal Assistance Clearinghouse, and the USFWS. No response was received from the Missouri Department of Conservation. The Clearinghouse responded that “[n]one of the agencies involved in the review had

comments or recommendations to offer". The USFWS responded that there would not be any impacts to federally listed species based on the Proposed Action's footprint. A copy of the coordination is provided in **Appendix A**. Therefore, due to the Detailed Study Area already being used for airport operations and the lack of potential habitat, the Proposed Action is not expected to impact any federal or state species, any non-listed species, or any potential habitat for these species.

3.7 Climate

3.7.1 Affected Environment Existing Conditions

Per 1050.1F Desk Reference[21]:

> "The Intergovernmental Panel on Climate Change (IPCC) estimates that aviation accounted for 4.1% of global transportation greenhouse gas (GHG) emissions. In the United States, EPA data indicate that commercial aviation contributed 6.6% of total CO_2 emissions in 2013, compared with other sources, including the remainder of the transportation sector (20.7%), industry (28.8%), commercial (16.9%), residential (16.9%), agricultural (9.7%), and U.S. territories (0.05%)[22].
>
> Scientific research is ongoing to better understand climate change, including any incremental atmospheric impacts that may be caused by aviation. Uncertainties are too large to accurately predict the timing, magnitude, and location of aviation's climate impacts; however, it is clear that minimizing GHG emissions and identifying potential future impacts of climate change are important for a sustainable national airspace system.
>
> Increasing concentrations of GHGs in the atmosphere affect global climate.[23] GHG emissions result from anthropogenic sources, including the combustion of fossil fuels. GHGs are defined as including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).[24] CO_2 is the most important anthropogenic GHG because it is a long-lived gas that remains in the atmosphere for up to 100 years."

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases by converting each gas amount to a carbon dioxide equivalent (CO_2E). GWPs provide a common unit of measure, which allows for one emissions estimate of these different gases. CO_2 has a GWP of one because it is the gas used as the reference point. Methane does not last as long in the atmosphere as CO_2; however, it absorbs much more energy. Therefore, one ton of methane has 28 times more heat capturing potential than one ton of carbon dioxide. The amount of methane emissions would

---

21 FAA, 2015, 1050.1F Desk Reference, Environmental Impacts: Policies and Procedures, 3. Climate.

22 GHG allocation by economic sector. Environmental Protection Agency (2015). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013. Available at: http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html#fullreport

23 IPCC (2014). Fifth Assessment Report. Available at: https://www.ipcc.ch/report/ar5/syr/ United States Global Change Research Program (2009). Global Climate Change Impacts in the United States. Available at: http://www.globalchange.gov/what-we-do/assessment/previous-assessments/global-climate-change-impacts-in-the-us-2009.

24 Executive Order 13693, Planning for Federal Sustainability in the Next Decade. Available at: https://www.whitehouse.gov/the-press-office/2015/03/19/executive-order-planning-federal-sustainability-next-decade

be multiplied by 28 to determine its CO_2E value. Nitrous oxides lasts in the atmosphere far longer than CO_2. The amount of nitrous oxides emissions would be multiplied by 298 to determine its CO_2E value.

Climate change is a global phenomenon that can have local impacts. Scientific measurements show that Earth's climate is warming, with concurrent impacts including warmer air temperatures, increased sea level rise, increased storm activity, and an increased intensity in precipitation events. Research has shown there is a direct correlation between fuel combustion and GHG emissions. The FAA has not identified significant thresholds for climate (FAA Order 1050.1F, Exhibit 4-1).

3.7.2 Environmental Consequences

3.7.2.1 No Action Alternative

The AEDT computer program was used to determine CO_2 from aircraft operating in the landing and take-off cycles (LTOs) below 3,000 feet in altitude. GHG emissions from aircraft operating during cruise operations were not included in this analysis. Due to the nature of the Proposed Action, neither the No Action nor the Proposed Action alternatives would affect ground support equipment, ground access vehicles, or auxiliary power units (See Section 3.5.1.1). The specific number and type of aircraft modeled in AEDT are provided in **Appendix B**.

3.7.2.2 Proposed Action

No change to the number of aircraft operations or fleet mix would occur as a result of implementing the Proposed Action. Therefore, the number of operations and fleet mix for the 2022 No Action Alternative would remain the same for the 2022 Proposed Action. Similarly, the number of operations and fleet mix for the 2027 No Action Alternative would remain the same for the 2027 Proposed Action.

According to the airlines operating at the airport and FAA Air Traffic Management, the Proposed Action would cause aircraft operations to shift from the existing Terminals B and C to the proposed replacement Terminal A. This in turn would be expected to cause a shift in runway use patterns at KCI. It is expected that there would be a decrease in aircraft operations on Runway 01R/19L and a subsequent increase in aircraft operations on Runway 01L/19R.

The results of the GHG emission inventory prepared for the Proposed Action were compared to the results of the No Action Alternative of the same future year to disclose the potential increase in GHG emissions caused by the Proposed Action. Because the new replacement terminal would be located closer to Runway 01L/19R this shift would actually cause a minimal decrease of potential taxi times from the terminal to the primary runway and therefore cause a minimal decrease in GHG emissions as compared to the No Action Alternative after the project is completed. **Table 3-3** provides the annual GHG emissions summary in metric tons per year. This estimate is provided for information only, as the FAA has not identified specific factors to consider in making a significance determination for GHG emissions. There are currently no accepted methods for determining significance applicable to aviation or commercial space launch projects given the small amount of emissions they contribute.

The Proposed Action after implementation would result in a minimal decrease in GHG emissions. The FAA has not identified specific factors to consider in making a significance determination for GHG emissions; therefore, no mitigation measures are required to mitigate the GHGs attributed to the

Proposed Action. KCAD will continue to ensure that the Airport and its tenants are operating in an environmentally responsible and sustainable way.

Based on the analysis, the Proposed Action would not result in an increase of GHG emissions. Accordingly, the Proposed Action would not have an adverse impact to climate change as compared to the No Action Alternative.

Table 3-3 GHG Emissions Inventory Summary

Scenario	Metric Tons Per Year
	CO_2E
Existing Conditions	112,857.99
2022 No Action Alternative	119,657.80
2022 Proposed Action	119,514.21
Net GHG Emissions	*-143.59*
2027 No Action Alternative	129,649.39
2027 Proposed Action	129,490.56
Net GHG Emissions	*-158.83*

Note: Numbers may not appear to sum as reported due to rounding
Source: Landrum & Brown analysis, 2018.

3.8 Department of Transportation Act, Section 4(f)

This section presents the analysis of potential impacts to Section 4(f) resources as a result of the No Action Alternative and the Proposed Action. Section 4(f) protects significant publicly owned parks, recreational areas, wildlife and waterfowl refuges, and public and private historic sites.[25] Section 4(f) provides that the Secretary of Transportation (Secretary) may approve a transportation project requiring the use of publicly owned land off a public park, recreation area, or wildlife and waterfowl refuge, or land of an historic site of national, state, or local significance, only if there is no feasible and prudent alternative to using that land and the project includes all possible planning to minimize harm resulting from the use.

Parks may also be protected under Section 6(f) of the National Park Service Land and Water Conservation Fund (LWCF) Act, which contains provisions for the protection of federal investments in land and water resources. The LWCF Act discourages the conversion of parks or recreational facilities to other uses.

Impacts to a Section 4(f) resource from a Proposed Action or alternative can result in two types of use: physical or constructive.[26]

[25] Section 4(f) of the Department of Transportation Act of 1966 is currently codified as 49 USC Section 303. This section will refer to 49 USC Section 303 as Section 4(f).
[26] FAA, 2015, Order 1050.1F, Environmental Impacts: Policies and Procedures, Appendix B.

A physical use would occur if the Proposed Action or alternative(s) would involve an actual physical taking of Section 4(f) property through purchase of land or a permanent easement, physical occupation of a portion or all of the property, or alteration of structures or facilities on the property. A constructive use would occur when the impacts of a project on a Section 4(f) property are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. The concept of constructive use is that a project that does not physically use the resource, may still, by means of noise, air pollution, water pollution, or other impacts, dissipate its aesthetic value, harm its wildlife, restrict its access, and take it in every practical sense. [27]

Exhibit 4-1 of FAA Order 1050.1F and Paragraph 5.3.7 of the 1050.1F Desk Reference provides the FAA's significance threshold for Section 4(f) properties under NEPA. A significant impact would occur when: *The action involves more than a minimal physical use of a Section 4(f) resource or constitutes a "constructive use" based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource*. A significant impact under NEPA would not occur if mitigation measures eliminate or reduce the effects of the use below the threshold of significance

3.8.1 Affected Environment Existing Conditions

The FAA has determined and the State of Missouri Department of Natural Resources State Historic Preservation Office (SHPO) concurred that the Kansas City International Airport is eligible for inclusion in the National Register of Historic Places (NRHP) and therefore would be considered a Section 4(f) resource. The boundaries of a potential KCI Historic District would encompass the airfield, the terminals, the Airport Police Station and Central Chilling Plant located in the center of the terminal complex, along with the associated access and circulation roadways, the earthen dam, and drainage control reservoir. See **Appendix C** for FAA and SHPO correspondence. Under Section 106, the FAA also considered the existence of additional historic properties in a larger area potentially subject to impacts that could result in constructive use. This "Indirect Area of Potential Effects (APE) is described in Section 3.10.1.1.There are no public parks, recreation facilities, or wildlife or waterfowl refuges that are protected under Section 4(f) located within the Detailed Study Area or the Indirect APE. In addition, there are no resources protected under Section 6(f) of the LWCF Act located within the Detailed Study Area or APE.

3.8.2 Environmental Consequences

3.8.2.1 No Action Alternative

Under the No Action alternative, there would be no development that would cause physical or constructive use to a Section 4(f) resource or to LWCF Act Section 6(f) resources.

3.8.2.2 Proposed Action

Physical Use

The Proposed Action does not include the conversion of lands purchased or developed in association with the Section 6(f) Land and Water Conservation Fund Act to non-recreational uses.

[27] FAA, 2015, Order 1050.1F, Environmental Impacts: Policies and Procedures, B-2.

The demolition of Terminals A, B, and C, under the Proposed Action would constitute a physical "use" of part of the National Register-eligible Kansas City International Airport Historic District, which is a Section 4(f) resource. See EA Section 3.10 for discussion concerning the eligibility of the KCI Airport and **Appendix C** for the correspondence with SHPO concerning the eligibility of KCI Airport.

Where an action would involve the use of a Section 4(f) property, Section 4(f) requires that prior to approving the action, the FAA must determine that there is no feasible or prudent alternative that would avoid the use of the Section 4(f) property and that the project includes all possible planning to minimize harm resulting from the use. As defined in 23 CFR § 774.17, "all possible planning" means that all reasonable measures to minimize harm or mitigate adverse impacts must be included in the project.[28] With regard to historic sites, this means the measures as agreed by the FAA and the SHPO in accordance with the consultation process under the regulations implementing Section 106 of the National Historic Preservation Act (Section 106). As the Proposed Action would involve a use, a separate Section 4(f) evaluation was prepared. A separate 4(f) statement was posted for notice and comment. No comments were received regarding the 4(f) Statement. See **Appendix G** for the final Section 4(f) Statement.

There are no alternatives that address the purpose and need of the project and are both prudent and feasible. The FAA has consulted with KCAD, the SHPO, the Kaw Nation, the Osage Nation, the Pawnee Nation, and the Ponca Tribe of Oklahoma under Section 106 to develop a Programmatic Agreement (PA). The PA outlines the mitigation measures needed to resolve adverse effects of the Proposed Action on the National Register-eligible Kansas City International Airport Historic District. The mitigation measures are a requirement of the Proposed Action and would address the Section 4(f) requirement that the project include all possible planning to minimize harm when there is a use of a Section 4(f) resource. See **Appendix G** for U.S. Department of Interior's concurrence letter with the FAA's determination.

As described above, the only physical use of a Section 4(f) resource is of part of the National Register-eligible Kansas City International Airport Historic District. The Programmatic Agreement outlines the mitigation measures needed to resolve the adverse effects under Section 106 of the Proposed Action on the Kansas City International Airport Historic District. Execution of the Programmatic Agreement and implementation of its terms also would fulfill the Section 4(f) requirement that the project include all possible planning to minimize harm and reduce the effects of the use of the Section 4(f) resource below the threshold of significance. Execution of the Programmatic Agreement and implementation of its terms is a requirement of the Proposed Action. Therefore, the Proposed Action will not result in a significant impact.

Constructive Use

The land use compatibility guidelines in 14 CFR part 150 may be relied upon by the FAA to determine whether there is a constructive use under Section 4(f) where the land uses specified in the part 150 guidelines are relevant to the value, significance, and enjoyment of the Section 4(f) lands in question. The Proposed Action would not result in new incompatible land uses due to noise associated with the operation of the new replacement terminal. See Section 3.13 for potential Noise and Noise-Compatible Land Use impacts. The FAA also considered impacts on resources for which the land uses in the Part 150 guidelines may not be relevant, including certain kinds of historic properties. As described in

[28] These regulations, issued by the Federal Highway Administration, Federal Transit Administration and Federal Railroad Administration, are not binding on the FAA but may be used as guidance to the extent relevant.

Section 3.10.1.3, although the FAA could not rule out the existence of an eligible National Register district in the Indirect APE, it was possible to conclude that there would be no effects on such a district. In addition, a review of impact categories, including air quality, water resources, compatible land use, light emissions and visual impacts, and socioeconomic impacts, was conducted to determine if any constructive uses would occur. According to the applicable sections in this EA, there are no significant impacts to any of the impact categories listed above. Therefore, it can be concluded that the Proposed Action would not result in a constructive use of any Section 4(f) resource.

3.9 Hazardous Materials, Solid Waste, and Pollution Prevention

A waste is considered hazardous if it exhibits hazardous characteristics, such as corrosivity, reactivity, ignitibility, or is specifically listed as such by the EPA. Wastes excluded from regulation as hazardous waste include household wastes, animal wastes, fly ash, oil, petroleum, slag, and wastes from ore processing. There are several federal acts that regulate the handling of hazardous materials.

FAA Order 1050.1F does not provide a specific threshold of significance for hazardous material and solid waste impacts and pollution prevention. However, the Order does offer that actions involving property listed (or potentially listed) on the National Priorities List (NPL) would be considered significant.

3.9.1 Affected Environment Existing Conditions

3.9.1.1 Hazardous Materials

Per the EPA's database, there are no properties listed (or potentially listed) on the NPL in the Direct Study Area. In addition, the Missouri Department of Natural Resources environmental site tracking and research tool was accessed at http://dnr.mo.gov/gis/ to identity hazardous substance investigation and cleanup sites, operating underground storage tank (UST) facilities, former UST facilities, and other known petroleum facilities in the Detailed Study Area. From the database, there were no hazardous substance investigation and cleanup sites and no ongoing corrective actions being conducted at ongoing or former UST facilities. While the areas around Terminals A, B, and C are used for fueling activities, there are no known unresolved issues regarding hazardous materials and/or fuel spills.

3.9.1.2 Solid Waste

Solid waste in the Detailed Study Area is generated by various activities associated with the operations of the Airport and the existing terminals. The Airport collects this solid waste and evaluates it to determine where it is to be disposed. Solid and semi-solid waste, such as garbage and other rubbish is transported to a permitted landfill. KCAD also has a recycling program and provides recycling containers in the terminals.

3.9.1.3 Pollution Prevention

The Airport and its tenants implement pollution prevention measures specific to their operations and material storage areas in accordance with the requirements of their respective Storm Water Pollution Prevention Plans (SWPPPs) and Spill Prevention, Control, and Countermeasure (SPCC) Plans. The SWPPP requires routine inspections and monitoring/reporting of storm water discharges from the airport in accordance with the National Pollutant Discharge Elimination System (NPDES) permit No. MO-0114812 issued by Missouri Department of Natural Resources (MDNR).

Currently, tenants at the Airport perform aircraft deicing activities on the terminal apron within the Detailed Study Area. Aircraft are pushed back from the gate and are deiced using deicing fluid (glycol). The glycol contaminated runoff is collected in drains along the perimeter of each terminal apron. Collecting such a large area dilutes the concentration of the glycol contaminated runoff and also increases the capacity need of the retention basins used for initial storage of glycol contaminated runoff. A separate glycol collection system is used for the cargo and general aviation aprons located along Taxiway B north of the terminal area. In an effort to collect glycol impacted storm water, KCAD has installed an underground drainage system that directs glycol contaminated runoff from the existing terminal aprons to a 2.4 -million gallon, concrete lined retention basin at the corner of Paris Street and Brasilla Avenue. At this basin the glycol concentrations are measured to determine how the runoff should be discharged off airport property. Low concentrations of glycol are discharged into a pond east of the retention basins and ultimately into the Berlin Reservoir. At the north end of the reservoir, the overflow discharges into a tributary of Todd Creek. A monitoring station is located on the north end of the reservoir to measure compliance in relation to KCI's MDNR permit. Medium concentrations are gravity fed through a series of pipes to the Todd Creek wastewater treatment facility. Highly concentrated runoff is pumped from the retention basins into trucks and hauled directly to the Todd Creek wastewater treatment facility.

3.9.2 Environmental Consequences

3.9.2.1 No Action Alternative

With the No Action Alternative, the existing conditions at KCI would remain in place. Therefore, there would be no hazardous materials or solid waste impacts not already occurring or expected to occur.

3.9.2.2 Proposed Action

Hazardous Materials

Past reports indicate the potential for asbestos-containing materials in concrete masonry block walls, and within insulation in certain stairwells and elevator shafts within the existing Terminals A, B, and C. In addition, design of the Proposed Action may require the removal and/or the relocation of existing fuel tanks and underground fuel lines. During the removal or relocation, it is possible that unknown fuel spills and hazardous soils may be encountered. These materials are not considered to be uncommon and disposal practices exist to handle and dispose of the materials safely; therefore, no impact is anticipated. It would be the responsibility of the KCAD to ensure that the contractor would arrange for the transportation and disposal of all hazardous materials that would be created as a result of the demolition in accordance with all applicable regulations. Additional surveying and testing would occur prior to demolition to ensure all hazardous materials are identified and properly disposed of to prevent contamination. Sites of potential soil contamination would be tested to determine if contaminated soils exist. Any contaminated soil would be properly disposed of and/or remediated per all applicable regulations.

During the demolition phase, workers may also come into contact with electrical components that contain mercury, such as switches or thermostats, and polychlorinated biphenyls or lead paint coatings. All demolition activities will be conducted with regard to worker safety and according to all applicable federal, state, and local regulations including the Resource Conservation and Recovery Act. Therefore, no significant impacts related to hazardous waste would occur as a result of the Proposed Action.

Solid Waste

The Proposed Action would create a temporary increase in solid waste generated during operation and construction of the Proposed Action. However, the Proposed Action would neither generate an unmanageable volume of solid waste nor affect the Airport's existing solid waste management program. The City is strongly committed to sustainability practices and would seek to recycle as much material as practicable, including the concrete generated from the demolition of the terminals and apron area. Material that is not suitable for recycling would be disposed of using existing disposal measures, including sending solid and semi-solid waste to a permitted landfill or stockpiled on Airport property. The increase in solid waste produced by the Proposed Action would not exceed the capability of the waste management system currently in place.

Pollution Prevention

Best Management Practices (BMPs) would be employed during construction to limit runoff and erosion to ensure there would be no direct significant impacts due to the Proposed Action. Additional impervious surface may result from the Proposed Action. However, the storm water collection system improvements

included in the Proposed Action, including improved glycol recovery system and facilities, are being developed to increase the collection of deicing fluid. The runoff collected by the improved system and facilities will still need to be discharged in accordance with the requirements of the NPDES permit issued by MDNR. KCAD would update its SWPPP and SPCC plan to reflect facility changes and maintain compliance with applicable regulatory requirements. Therefore, significant impacts to surface waters due to the Proposed Action are not anticipated.

3.10 Historical, Architectural, Archaeological, and Cultural Resources

The FAA evaluates direct and indirect impacts from federal actions on historic, architectural, archaeological, and other cultural resources under Section 106 of the National Historic Preservation Act of 1966 (NHPA) (54 USC § 300101 et seq.) the principal statute concerning such resources. Section 106 requires federal agencies to take into account the effects of their undertakings on properties that are listed in or determined eligible for inclusion in the National Register of Historic Places (NRHP) and to consult with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officers (THPO), and other parties to develop and evaluate alternatives or modifications to the undertaking where necessary to avoid, minimize, or mitigate adverse effects on historic properties. The independent federal agency overseeing federal historic preservation and tribal programs, the Advisory Council on Historic Preservation (ACHP), must be afforded a reasonable opportunity to comment on such undertakings subject to Section 106. The ACHP limits its involvement in individual Section 106 reviews to situations that meet the criteria in Appendix A of the regulations at 36 CFR part 800.

The scale of the undertaking and the extent of FAA involvement define the scope of the Section 106 review, including FAA's obligation to identify historic properties, assess effects, and develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties. In this case, FAA's role is limited to approval or disapproval of an Airport Layout Plan depicting the project sponsor's proposal, as it may be modified through consultation, and potential approval or disapproval of Federal funding.

The FAA, KCAD, SHPO, the Kaw Nation, the Osage Nation, the Pawnee Nation, and the Ponca Tribe of Oklahoma engaged in the Section 106 consultation process for this project. See **Appendix C** for the Section 106 consultation documentation. Appendix C includes information about the Section 106 process and FAA's efforts to consult regarding effects of the Proposed Action.

FAA Order 1050.1F, Exhibit 4-1 provides that the FAA has not established a significance threshold for Historical, Architectural, and Cultural Resources. A factor to consider is whether the action would result in a finding of Adverse Effect through the Section 106 process; however, an adverse effect finding is not automatically a significant impact triggering preparation of an EIS.

3.10.1 Affected Environment Existing Conditions

FAA is obligated under 36 CFR 800.4(b)(1) to make a "reasonable and good faith effort" to identify historic properties potentially affected by the undertaking. Because the nature of this action involves replacement of an existing terminal with a proposed terminal of approximately the same footprint, primary impacts of this undertaking are limited to that site and the FAA focused its identification efforts in that area. The FAA also considered historic resources in a broader area potentially affected indirectly, as described below.

That identification effort relied primarily on previous research, input from the SHPO, and comments received from individuals with knowledge of the history of the area.

3.10.1.1 Area of Potential Effects

The Area of Potential Effects (APE) is "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties" (36 CFR § 800.16(d)). For purposes of Section 106, the term "historic properties" can include architectural, archeological, or cultural resources. The determination of the APE considers the character of a project area and the potential for resources to be found.

The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR § 800.16(d)). The APE must include all direct and reasonably foreseeable indirect effects. Although the NHPA regulations do not define the term "indirect effect," the FAA typically uses the term to refer to noise and visual impacts that do not physically alter historic resources. Because this type of impact often covers a much larger area, but does not have the potential to affect below-ground resources, the FAA frequently defines separate APEs for direct and indirect effects.

For this analysis, the FAA established both a Direct APE and an Indirect APE. The Direct APE and Indirect APE for the undertaking, which respectively take into account potential for direct and indirect impacts, are shown on **Exhibit 3-2**. See **Appendix C** for coordination of the APEs with the SHPO.

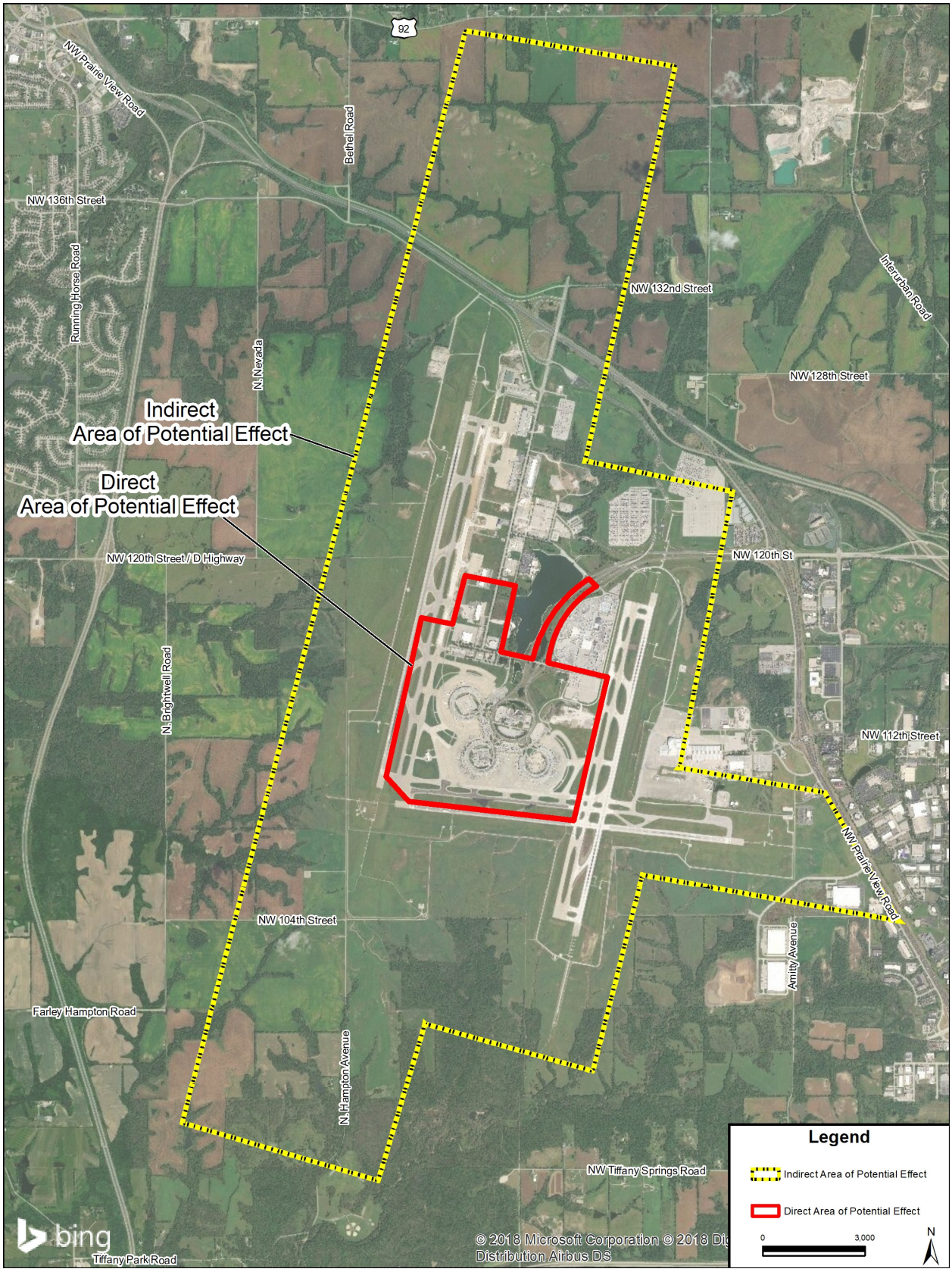
Direct APE

The undertaking would include ground disturbance and construction activities within the existing terminal complex, an area which has been extensively developed and used for Airport operations. The Direct APE was defined as the area within which physical disturbance of the site or demolition of existing structures may occur.

Indirect APE

An Indirect APE was identified to capture potential effects of noise and visual intrusions on historic properties in the vicinity of the undertaking. First, the most recent Airport Part 150 noise study completed in 2008 was used as the best available prediction of future noise levels. An Indirect APE was drawn based on the future 65 Yearly Day-Night Average Sound Level (DNL) from that noise study, but enlarged to take into account the potential increase in the area exposed to 65 DNL that could occur as a result of this undertaking. Second, a reconnaissance of the airport perimeter was conducted to identify potential areas that may experience a change in view from the Proposed Action. See Section 3.15.1 for additional information on how the view shed for the Proposed Action was established. In order to be conservative, the larger of the two areas was used to define the Indirect APE for both noise impacts and changes in view.

Exhibit 3-2 Areas of Potential Effects



3.10.1.2 Identification of Historic Properties

Direct APE

In June 2018, an archeological and cultural resource survey was conducted of the Direct APE in compliance with Section 106 of the NHPA. See **Appendix C** for the survey report prepared by Golder Associates. The survey was conducted to determine whether there was a potential for below-ground historic properties within the Direct APE. The survey included an archaeological background records review and an intensive pedestrian survey with shovel testing and mechanical trenching. No archeological or cultural resources were discovered during the survey and ground testing.

In October 2018, an architectural and historical property evaluation of the Direct APE was prepared by Architectural & Historical Research, LLC. See **Appendix C** for the evaluation. Based on this evaluation and on input received from the SHPO, the FAA has determined that the KCI Airport is eligible for the NRHP as a historic district significant under Criterion A in the area of Transportation for its association with the Jet Age and with Kansas City's efforts to retain TWA as a major employer in the region and under Criterion C in the area of architecture as a work of the prominent Kansas City architectural firm of Kivett and Myers embodying distinctive characteristics of the Brutalist architectural style and for its innovative "Drive-to-the-Gate" configuration, with a period of significance of 1957-1972. See **Appendix C** for the FAA's determination. The boundaries of a potential KCI Historic District encompass the airfield, the terminals, the Airport Police Station and Central Chilling Plant located in the center of the terminal complex, along with the associated access and circulation roadways, the earthen dam, and drainage control reservoir. These buildings and structures form a significant and cohesive linkage that collectively convey the historic and architectural significance of KCI[29]. See **Appendix C** for the correspondence with SHPO concerning the eligibility of KCI.

Indirect APE

Consistent with the "Reasonable and Good Faith" identification standard under 36 CFR 800.4(b)(1) and in light of the absence of any ground disturbing activities in this area, the FAA did not undertake archeological investigations in the Indirect APE. The FAA relied primarily on a review of existing information, including records of previous historic and cultural resource surveys and Phase 1 archeological surveys, as well as input from the SHPO and comments received from individuals with knowledge of the history of the area to identify historic properties in the Indirect APE.

There are a number of known cemetery sites located on and immediately adjacent to Airport property. The Miller Cemetery and the Hampton Hughes Cemetery are located within the Indirect APE while the Brightwell Cemetery, the Samuel Hoy Cemetery, and the William Hoy Cemetery are located just outside of the Indirect APE. In 2008, the SHPO evaluated these cemeteries and found that they do not meet NRHP eligibility criteria. [30]

---

29 Terminals A, B, and C were previously found to be individually eligible for listing in the NRHP, however, the interrelationship of the terminals with the airside facilities (runways, taxiways, aprons), landside circulation features, and airport support facilities is best understood within the framework of a historic district.

30 Environmental Research Center of Missouri, Inc., Cultural Resource Investigations: Phase I Survey, Kansas City International Airport Platte County Missouri, April 2008, and SHPO letter June 2, 2008 RE: Phase I Survey, Kansas City International Airport (FAA) Platte County, Missouri (letter provided in Appendix C).

The following cultural resource investigations that have been conducted at the Airport were reviewed as part of this process:

- Cultural Resource Investigation, National Register Evaluation of Selected Structures, Kansas City International Airport, Platte County, Missouri (July 1987). Five structures were identified in this Phase I Survey conducted by the Environmental Research Center of Missouri that may be eligible for listing on the NRHP:

    - Lewis and Clark House-Nevada Street 4000 feet south of Northwest 136th Street
    - P. Shepard House-Hampton Road 500 feet south of Northwest 104th Street
    - Hon House-Northwest 120th Street 500 feet west of Brightwell Road
    - Fox House-Northwest 120th Street 2000 feet west of Nevada Street
    - Elm Grove Church-Northwest 104th Street 350 feet east of Brightwell Road

  None of these buildings are extant. KCAD records indicate that arsonists destroyed the uninhabited Lewis and Clark House and the P. Shepard House in 1995. Criminal charges were filed in the incident. Therefore, no action from FAA or SHPO was warranted or required.

  By letter dated April 9, 2001, the SHPO concurred that the Hon House is not eligible for inclusion in the NRHP. Further evaluation of the Hon House found environmental hazards such as asbestos and lead. The Hon House was subsequently demolished following federal guidelines to dispose of all hazardous materials.

  The Fox House was determined to have the same toxins such as asbestos and lead. The Fox House was demolished for the same reasons and in the same manner as the Hon House. The FAA was satisfied with the explanation and no further action was required at the time or currently.

  The Elm Grove Church structure was demolished prior to KCI's acquisition of the property on October 5, 1989. Archaeologists visited the site of the church in June 2009. A series of shovel tests were excavated throughout the general church location. It was apparent that the structure had been razed with heavy equipment in that stone, concrete, and other building materials were scattered over an area larger than one acre. The structure did not have a basement and the site retains no subsurface integrity. In 2008, the Environmental Research Center of Missouri recommended the Elm Grove Church site not be considered a significant cultural resource and not be considered eligible for NRHP status. The SHPO concurred on June 2, 2008.

- Historic Structure Report, Environmental Research Center of Missouri, Fox Cabin (2006). Analysis conducted on the Fox Cabin concluded that it was not eligible for the National Register. The SHPO concurred on August 14, 2006. What could be salvaged was disassembled and reassembled at the Shoal Creek Living History Museum owned by the City's Park's Department. It is currently on display on the museum's main street and was officially transferred to the Parks Department and included in Resolution 27996 under "Gifts and Contributions" Park Minutes on March 13, 2007. The SHPO agreed that no historic properties were affected by this project.

- Cultural Resource Investigation, Old Stone House (June 2006). It was determined the Old Stone house was not eligible for inclusion in the NRHP. The SHPO concurred with the findings on June 27, 2006.

- Cultural Resource Investigation, Unknown Slave Cemetery (June 2006). An archeological field investigation was undertaken to explore an area suggested by local residents as the location of an unmarked slave cemetery. The entire area was investigated and no evidence of the presence of human remains was found. The SHPO concurred with the findings on June 27, 2006.

- Cultural Resource Investigation, Fast Track development (March 2007). The study area included approximately 320 acres near the southwest corner of the Airport proposed as the site of the Fast Track development. No significant cultural resources were found within the proposed project boundaries. The SHPO concurred that there will be no historic properties affected on March 14, 2007. The project was never built.

- Cultural Resource Investigation, Trammel Crow Tract (June 2007). The study area included approximately 700 acres near the southeast corner of the Airport. No potential historic properties were found within the proposed project boundaries. The SHPO concurred with this finding on June 16, 2007

- Cultural Resource Investigation, Phase I Survey of approximately 8,000 acres of Airport property (April 2008). This report recommended that two historic archaeology sites be considered potentially eligible for NRHP status: 23PL1470 (1840-1850 stone foundation) and 23PL1504 (Davis House – pre 1840 stone foundations) and that 23PL1507 (Miller Farm – 1840+ stone foundations) be considered eligible for NRHP status. The remainder of the sites were not considered to meet NRHP eligibility criteria. The SHPO concurred that the cemeteries within the study area, which included Brightwell, Miller/Rixey, Samuel Hoy, William Hoy, and Kimsey were not eligible for NRHP status. The Hampton Hughes Cemetery is still in operation and is not anticipated to be threatened by future airport projects. The Airport does not own the Hampton Hughes Cemetery. There is no official record (validated by archeologist) that there ever was a “Kimsey Cemetery” on what is now airport property. There was a single headstone found placed against a tree on property that the City bought in the early 2000’s. To date – no additional headstones have been located on or near the single headstone.

- Cultural Resource Investigation, 23PL1470, 23PL1504 & 23PL1507 (October 2009). Site 23PL1470 and Site 23PL1504 were determined not eligible per SHPO letter dated November 20, 2009. In 2008, KCAD proposed the removal of a stone chimney, a portion of a wall, and to fill a well and cistern at Site 23PL1507, because the area was visited by collectors and these features were considered a safety issue. Because the site had been considered eligible for listing on the NRHP and an adverse effect would occur, a NEPA and Section 106 process was initiated. Public comments were solicited by KCI through the Kansas City Star on July 13 and 16, 2008. A memorandum of agreement (MOA) among KCI, SHPO, and the FAA was developed and approved in late 2008. An extensive cultural resource investigation of the site was conducted in 2009. Both the FAA and SHPO approved the archaeological data recovery project at Site 23PL1507. The NEPA process was concluded with the FAA decisions that the action qualified for a categorical exclusion on December 5, 2008. On January 9, 2009, the Advisory

Council on Historic Preservation acknowledged the filing of the MOA, the execution of its terms, and that the requirements of the Section 106 regulations in regard to Site 23PL1507 had been completed. Several flats of the bricks from the chimney were donated to the Shoal Creek Living History Museum and are used on other donated structures as decorative foundation pieces.

Of the historic properties previously identified in the Indirect APE, none are extant. A portion of the overhaul base used by TWA in the 1960s and 1970s is located in the Indirect APE. The original plant opened in 1957 and was renovated/expanded in 1973. The structure is currently used as a manufacturing and maintenance plant. No other known historical buildings or structures are located within the Indirect APE.

3.10.1.3 Traditional Cultural Properties

In response to comments on the Draft EA, the FAA again considered the National Register eligibility of property within the Direct and Indirect APE as a Traditional Cultural Property (TCP). TCPs are historic properties which, in addition to meeting one or more of the National Register eligibility criteria, are directly associated with cultural practices or beliefs of a living community that are rooted in that community's history and important in maintaining the continuing cultural identity of the community. The TCP must be a tangible property, defined as a district, site, building, structure, or object, and must also retain integrity – the ability to convey that significance through location, design, setting, materials, workmanship, feeling, and association. The TCP's significance "is derived from the role the property plays in a community's historically rooted beliefs, customs and practices." [31]

The commenters advocate recognition of a historic district encompassing farms associated with the expansion of slavery into western territories, the Missouri-Kansas Border War and the American Civil War.[32] This property includes documented archaeological sites linked to known slave-owning farmers and their slaves, private family cemeteries, and potential unmarked burial sites,[33] sites of numerous houses and structures associated with 19th century farms, and elements of a rural vernacular landscape.[34]

According to the commenters, this district would qualify as a TCP based on the continuing importance of the district to descendants of the 19th century inhabitants of this area – enslaved African Americans and Euro-American slave owners – who form a traditional community united in their efforts to preserve cultural history. [35]

---

31 National Register of Historic Places, Guidelines for Evaluating and Documenting Traditional Cultural Properties (1998), at 1.

32 The commenters note that this area is within the Freedom's Frontier National Heritage Area, which comprises 29 eastern Kansas and 12 western Missouri counties. http://www.freedomsfrontier.org/

33 Local families reportedly continue to visit these cemeteries. In 2008-2009, descendants of people known to be buried in these cemeteries, along with descendants of slaves who may have been buried in unmarked graves in and around these cemeteries, successfully opposed a petition by the City of Kansas City to disinter and move human remains to another site on airport property. The Court noted that the cemeteries are maintained by distant family members of the decedents buried in the cemeteries. In Re: The Matter of The Removal of Human Remains from Cemeteries in Kansas City, No. WD 70006 (Mo. Ct. App. WD Nov. 10, 2009) available at https://caselaw.findlaw.com/mo-court-of-appeals/1496223.html

34 According to archival research undertaken at the request of the Watkins Foundation by Dr. Dawn Stricklin, Columbia College, at one time least 30 slave-owning farms existed on what is now airport property.

35 Among the descendants who may be significant in their own right are Bruce R. Watkins, first black City Council Member and civil rights leader, who traced his family to slaves of Matthew Hughes; and Dr. Jimmy Johnson III, an African

The FAA conclude that the level of effort required to delineate boundaries and fully evaluate such a potential district would far exceed the reasonable and good faith identification effort required for Section 106 review of the terminal project.

However, the FAA considered the potential effects of the undertaking assuming the existence of such a district, and was able to conclude that there would be no effects. Based on this analysis, there is no need to evaluate the eligibility of such a district as a TCP. See **Appendix C** for FAA's evaluation.

3.10.1.4 Archeological Resources

One of the commonly expressed public concerns about the Proposed Action includes the potential disturbances of buried archeological or cultural resources that could be encountered during the demolition of the existing terminals and the construction of the new replacement terminal. In accordance with 36 CFR 800.4, KCAD and the FAA has made a reasonable and good faith effort to identify archaeological resources within the Direct APE. Based on the results of the most recent archeological survey found in Appendix C, development within the Direct APE will have no effect on known archeological or cultural resources. As there is always the potential for post-review discoveries of previously unknown below-ground resources, the FAA has developed a Programmatic Agreement to govern actions to be taken in the event such resources are discovered during project implementation, as provided in 36 CFR § 800.13(a)(1).

3.10.2 Environmental Consequences

3.10.2.1 No Action Alternative

With the No Action Alternative, no changes would be made from the existing conditions and the terminals would remain as they are today. Therefore, no impacts to historical, architectural, archeological, or cultural resources would occur.

3.10.2.2 Proposed Action

Direct Impacts

With the proposed demolition of Terminals A, B, and C, construction of a new terminal building and reconfiguration of apron, construction of new parking structure, and reconfiguration of circulation roadways, in accordance with 36 CFR 800.4 and 36 CFR 800.5, the Proposed Action would constitute an adverse effect to the historic district which is eligible for inclusion on the NRHP. The SHPO has concurred with this adverse effect determination. Aside from the proposed demolition of Terminals A, B, and C, there would be no direct impacts to any other buildings or structures individually eligible or potentially eligible to the NRHP. The Terminal A parking garage, which is not individually eligible for the NRHP, since it was built well after the terminals themselves, would be demolished to make way for a new parking structure. The Terminal B and C parking garages, which are also not individually eligible for the NRHP, would remain after implementation of the Proposed Action. Additionally, the three secondary circulation access roads, providing access to the three terminals, would be demolished. This change would result in the circulation access roads no longer displaying the pattern of interlocking rings

American archaeologist who originally excavated the Miller Plantation, and who was the great-great grandson of George Washington, a slave who ran away from the Miller Farm and joined the Kansas Colored First Infantry Regiment.

characteristic of the original layout and thus would potentially no longer function as a contributing resource to the Historic District. The circulation access roads are a contributing resource to the Historic District but not individually eligible for listing on the NRHP.

A Programmatic Agreement under Section 106 of the National Historic Preservation Act was developed, which includes an unanticipated discovery plan to assist with any inadvertent archeological or cultural resource discoveries that may occur during routine subsurface disturbances of the Proposed Action. Furthermore, the Programmatic Agreement includes a stipulation that an archaeological monitor be present during certain construction activities. Therefore, with the Programmatic Agreement, there would be continued consultation that will result in monitoring and continued investigation into the possibility of unknown buried resources.

Indirect Impacts

Indirect impacts may include noise, vibration, or visual intrusions. In order to determine potential indirect impacts, a noise assessment was conducted and that analysis indicates that there would be no changes in noise exposure that would exceed the significant noise threshold. The Proposed Action would not result in significant increases of noise on site 23PL1507. Furthermore, the view from the historic site to the project area would remain what it is today- airport terminals, see Section 3.15 Visual Effects. The Proposed Action would not affect site 23PL1507's ability to yield information important in history or prehistory. The undertaking would not introduce an atmospheric, auditory, vibration, or visual feature to the area that would diminish the integrity of any property's setting or through transfer, sale, or lease, diminishes the long-term preservation of any property's historic significance that Federal ownership or control would otherwise ensure. Therefore, there would be no indirect impacts due to the Proposed Action. The FAA determined, and the SHPO concurred, that there would be "no adverse effect" on any historical, architectural, archaeological, or cultural resources in the Indirect APE.

Conclusion and Proposed Mitigation Measures

The FAA consulted with KCAD, the SHPO, the Kaw Nation, the Osage Nation, the Pawnee Nation, and the Ponca Tribe of Oklahoma to develop a Programmatic Agreement under Section 106 of the National Historic Preservation Act (Section 106). The Programmatic Agreement, found in Appendix C, outlines the measures needed to mitigate the adverse effect for the direct taking of existing Terminals A, B, and C due to the Proposed Action. The mitigation measures (stipulations) of the Programmatic Agreement are a requirement of the Proposed Action.

The mitigation measures (stipulations) in the Programmatic Agreement include:

1. Construction Monitoring: KCAD will have a professional archaeologist who meets the Secretary of Interior's Professional Qualification Standards present to conduct construction monitoring during certain ground disturbing activities associated with the Proposed Action. Monitoring is defined as active observation of earth-moving or other work that could adversely affect unknown cultural resources within the Direct APE.

2. Unanticipated Discoveries of Cultural Resources and Artifacts: In the event that previously unreported and unanticipated cultural resource sites or artifacts are encountered during construction of the Proposed Action, KCAD will ensure that the Proposed Action is in compliance with all applicable Federal and state laws and regulations, including Section 106 of the NHPA.

3. Inadvertent Discoveries of Human Remains, Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony: In the event of an inadvertent discovery of human remains during construction of the Proposed Action, KCAD will ensure that the Proposed Action is in compliance with all applicable Federal and state laws and in consultation with Native American tribes.

4. Photographic Record of Terminal A: Prior to the demolition of Terminal A, KCAD will create a photographic record of Terminal A in accordance with the National Register Photo Policy Standards. The views of the photographs would include general environment, front facade, front and rear perspective views, typical windows, and exterior and interior views. The photographs would provide a permanent record of Terminal A.

5. Additional Mitigation Measures: In recognition of the loss of integrity that would render the historic district ineligible for the NRHP as a consequence of the demolition of the terminal complex, additional mitigation measures will be developed to fully resolve the adverse effects of the Proposed Action. Once selected, the mitigation measures must be complete before the City may implement the remainder of the Proposed Action, specifically the demolition of Terminal B and Terminal C (anticipated by 2022).

Past, present, and reasonably foreseeable future actions relevant to cumulative impacts on historical and archeological resources are to be considered. The analysis of cumulative impacts recognizes that while the impacts of individual actions may be small, when combined with the impacts of past, present, and reasonably foreseeable future actions on resources could be significant. Please refer to Section 3.18 Cumulative Impacts for discussion of cumulative effects on Historic, Architectural, Archeological, and Cultural Resources. Any potential development on Airport property in the future would be subject to Section 106, the National Environmental Policy Act, and other related federal requirements.

Although the Proposed Action will result in an adverse effect, mitigation measures in the Programmatic Agreement are intended to resolve adverse effects. Through implementation of these measures, impacts will be mitigated below the level of significance and therefore the Proposed Action would not result in a significant impact to this category of resources under NEPA.

3.11 Land Use

Special guidance relevant to land use is given in the NEPA implementing regulations, which require consideration of "[p]ossible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned." The impacts on land use may include indirect impacts such as the disruption of communities, relocation, induced socioeconomic impacts, and impacts to land uses protected under Department of Transportation Act Section 4(f). The CEQ regulations (40 CFR 1506.2(c)) recognize that certain inconsistencies may exist between the proposed federal action and any approved state or local plan or law, however where an inconsistency exists, the NEPA document should reconcile its action with the plan or law.

3.11.1 Affected Environment Existing Conditions

The existing land uses within the Detailed Study Area are made up of developed land used for Airport operations. There are several residences in the General Study Area not on Airport property. The nearest residential area is located at least 10,000 feet south of the proposed construction site. There are no schools, churches, or hospitals in the Detailed Study Area or the General Study Area. There are no publicly owned parks, recreational areas, or wildlife or waterfowl refuges within the Detailed Study Area. The existing land uses within the General Study Area are primarily made up of Airport property consisting of vacant/open land. KCAD and the FAA are aware that a developer is proposing to develop 1,058 acres of privately owned property (not Airport owned property) just north of KCI for retail and/or industrial use and is not part of this Proposed Action. No specific plans or timeline have been provided for this private development. Potential land use changes to private land use within the General Study Area, not on Airport property and not under the control of KCAD, may occur and are under the jurisdiction of the local municipalities.

3.11.2 Environmental Consequences

3.11.2.1 No Action Alternative

With the No Action Alternative, the existing conditions at KCI would remain in place. Therefore, there would be no impacts to land use not already occurring or expected to occur.

3.11.2.2 Proposed Action

The Proposed Action would occur entirely on KCAD property and would not change the current land use designation of the Airport. Therefore, the Proposed Action would be compatible with existing and expected zoning and surrounding area land use plans.

KCAD provided assurance by letter found in **Appendix D** that appropriate action, including the adoption of zoning laws, has been or will be taken to the extent reasonable to restrict the use of land adjacent to, or in the immediate vicinity of the Airport to activities and purposes compatible with normal Airport operations. In addition, they would encourage and support other jurisdictions in the area in their efforts to do the same.

3.12 Natural Resources and Energy Supply

This section presents the analysis of potential impacts to natural resources and energy supplies as a result of the No Action Alternative and the Proposed Action. Natural resources may be impacted by a construction project and may require dirt, rock, or gravel that could diminish or deplete a supply of those and other natural resources. In addition, the operation of an airport requires energy supplies in the form of electricity, natural gas, aviation fuel, diesel fuel, and gasoline. There are two primary sources of energy consumption at an airport – stationary facilities and aircraft operations. Stationary facilities use utility energy (electricity and natural gas) to provide lighting, cooling, heat, and hot water to buildings, the airfield, and parking areas. Aircraft operations and ground support equipment (GSE) consume fuel energy including jet fuel (Jet A), low-lead aviation gasoline (AvGas), unleaded gasoline, and diesel fuel to operate the aircraft and power GSE.

3.12.1 Affected Environment Existing Conditions

Current forecasts project growth in aircraft operations at KCI and additional aircraft movements would likely increase fuel consumption with or without the Proposed Action. In addition, as aircraft operations are projected to increase in the future so is fuel usage for GSE.

The primary sources of electrical and natural gas energy consumption at KCI include the terminal building, airfield lighting, and lighting in the parking lots and garage. Electrical power is provided to KCI by Kansas City Power and Light (KCP&L) and natural gas service is provided by Continuum using Spire utility lines. Kansas City Water Services (KCWater) maintains and operates the water and wastewater collection and treatments systems provided to KCI.

3.12.2 Environmental Consequences

3.12.2.1 No Action Alternative

Electricity

There would be no increase in demand for electricity under the No Action Alternative. No new terminal facilities or lighting would be constructed due to this alternative. Electricity usage would continue to power the existing facilities and accommodate the forecast demand for travelers and aircraft operations.

Natural Gas

There would be no increase in demand for natural gas under the No Action Alternative. No new terminal facilities would be constructed that would require natural gas due to this alternative. Natural gas consumption would continue to power the existing facilities and accommodate the forecast demand for travelers and aircraft operations.

Water and Wastewater

There would be no increase in demand for water or wastewater services under the No Action Alternative. No new terminal facilities would be constructed due to this alternative. Water usage and wastewater services would continue to be utilized at the existing facilities and accommodate the forecast demand for travelers and aircraft operations.

3.12.2.2 Proposed Action

The objective of the assessment is to determine whether the Proposed Action would have the potential to exceed the local resources or energy supply as compared to the No Action Alternative. The FAA has not established a significance threshold for natural resources and energy supply; however, per FAA Order 1050.1F, the analysis should consider situations in which the proposed action or alternative(s) would have the potential to cause demand to exceed available or future supplies of these resources.

Operation of the proposed new replacement terminal would require electricity and natural gas for heating, cooling, and interior and exterior lighting of the new facilities. In addition, the Proposed Action may require new water and wastewater utility lines. Many of the proposed new facilities and utilities would replace older, less efficient facilities, which would achieve a reduction in energy use and potentially even water usage. The Proposed Action would not consume a notable quantity of natural resources, nor would it exceed local supplies for fuel and energy. Therefore, no significant impacts to natural resources or the local energy supply would occur as a result of the Proposed Action.

3.13 Noise and Noise-Compatible Land Use

This section presents the analysis of aircraft noise exposure to surrounding communities as a result of the No Action Alternative and the Proposed Action. The impact of airport-related noise levels upon the surrounding area is presented in terms of the number and type of noise-sensitive land uses located within the noise contours for the No Action Alternative and the Proposed Action for both 2022 and 2027. This is in accordance with FAA Order 1050.1F guidance, which specifies that an operational impact analysis should be prepared for the year of anticipated project implementation and five to ten years after implementation.[36]

For aviation noise analyses, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of DNL, the FAA's primary noise metric. To evaluate aircraft noise, the FAA has an approved computer model, the AEDT that simulates aircraft activity at an airport. AEDT replaced the Integrated Noise Model, and the Emissions and Dispersion Modeling System as the tool for environmental modeling of FAA actions to determine if significant noise impacts would result. AEDT 2d is the latest version.[37]

The FAA uses the 14 CFR Part 150, Airport Noise Compatibility Planning, land use compatibility guidelines to determine compatibility with most land uses. These guidelines are consistent with land use compatibility guidelines developed by other federal agencies such as EPA and the Department of Housing and Urban Development.[38, 39] The DNL 65 decibels (dB) is the noise level where noise-sensitive

---

36 FAA, 2015, 1050.1F Desk Reference, Environmental Impacts: Policies and Procedures, 11. Noise and Noise-Compatible Land Use, 11.3 Environmental Consequences.

37 FAA, 2017, Aviation Environmental Design Tool, Version 2d. Available online at: https://aedt.faa.gov/2d_information.aspx Accessed 2018.

38 Federal Interagency Committee on Urban Noise (FICUN), 1980, Guidelines for Considering Noise in Land Use Planning and Control.

39 Federal Interagency Committee on Noise (FICON), August 1992, Federal Agency Review of Selected Airport Noise Analysis Issues.

land uses (residences, churches, schools, libraries, and nursing homes) become non-compatible land uses. Below 65 DNL, all land uses are generally determined to be compatible with airport noise.

3.13.1 Affected Environment Existing Conditions

3.13.1.1 Noise Model

The noise pattern calculated by the AEDT for an airport is a function of several factors, including: the number of aircraft operations during the period evaluated, the types of aircraft flown, the time of day when they are flown, the way they are flown, how frequently each runway is used for landing and takeoff, and the routes of flight used to and from the runways. Substantial variations in any one of these factors may, when extended over a long period of time, cause marked changes to the noise pattern. The specific assumptions used in the AEDT model for this analysis are provided in **Appendix B**.

3.13.1.2 Aircraft Activity Levels and Fleet Mix

In order to calculate DNL noise exposure levels for the Airport, the average number of daily arrivals and departures by specific aircraft types was prepared for input into the AEDT. Information concerning aircraft operations was collected from Sector Design Analysis Tool (SDAT) radar data, Airline Landing Fee reports, and Air Traffic Activity System (ATADS) counts for the calendar year 2017. During the existing conditions period, 123,357 annual operations occurred at KCI. No changes to standard aircraft were made in the modeling.

The average daily number of aircraft arrivals and departures for the Existing Conditions Noise Contour were calculated by determining the total annual operations and dividing by 365 (days in a year). The 2017 annual average day included 337.78 total operations, 15.4% of which occurred during the nighttime hours of 10:00 p.m. to 6:59 a.m. The specific number and type of aircraft modeled are provided in **Appendix B**.

3.13.1.3 Runway Definition

KCI has three runways, two north/south parallel runways (01L/19R and 01R/19L) and Runway 09/27, is an east/west crosswind runway. Runway 01L/19R is the longest runway on the airfield at 10,801 feet.

3.13.1.4 Runway End Utilization

Runway end utilization refers to the percent of time that a particular runway end is used for departures or arrivals. It is a principal element in the definition of the noise exposure pattern. Proportional use of a runway is based largely on conditions of wind direction and velocity and the length of the runway.

Based on data collected for the existing conditions, the Airport is operated primarily in one of two operating configurations -- north flow (50.7% of the time) or south flow (36.8% of the time). Runway 01L/19R is the predominant runway due to the additional runway length, weather conditions, and preferential runway use programs in place. Runway use percentages modeled for the Existing Conditions Noise Contour are provided in **Appendix B**.

3.13.1.5 Flight Tracks

A flight track is the path over the ground as aircraft fly to or from the airport. Departure corridors are defined by a series of individual flight tracks located across the width of the corridor. Generally, aircraft on approach to a runway end are located within a smaller corridor due to the use of navigational instruments.

For this EA, the existing flight tracks from the 2008 Part 150 Noise Compatibility Study were evaluated to ensure that the flight tracks used in the modeling of aircraft noise are representative of where aircraft fly at KCI currently. Radar data gathered for sample periods in 2017 was compared to the previous Part 150 study flight tracks to determine if arrival and departure operations at KCI continue to utilize the previously modeled flight corridors. In instances where flight corridors where no longer utilized those flight tracks were not assigned operations. The radar data was also analyzed to verify the percentage of operations on each flight track.

3.13.1.6 Aircraft Trip Length and Operational Profiles

Aircraft weight during departure is a factor in the dispersion of noise because it impacts the rate at which an aircraft is able to climb. Generally, the heavier an aircraft is, the slower the rate of climb and the wider the dispersion of noise along its route of flight.

The AEDT includes standard flight procedure data for each aircraft that represents each phase of flight to or from the airport. Information related to aircraft speed, altitude, thrust settings, flap settings, and distance are used by AEDT to calculate noise levels on the ground.

Standard aircraft departure profiles are supplied from the runway (field elevation) up to 10,000 feet above field elevation (AFE). Aircraft arrival profiles are supplied from 6,000 feet AFE down to the runway including the application of reverse thrust and rollout. The FAA requires that these standard arrival and departure profiles be used unless there is evidence that they are not applicable.

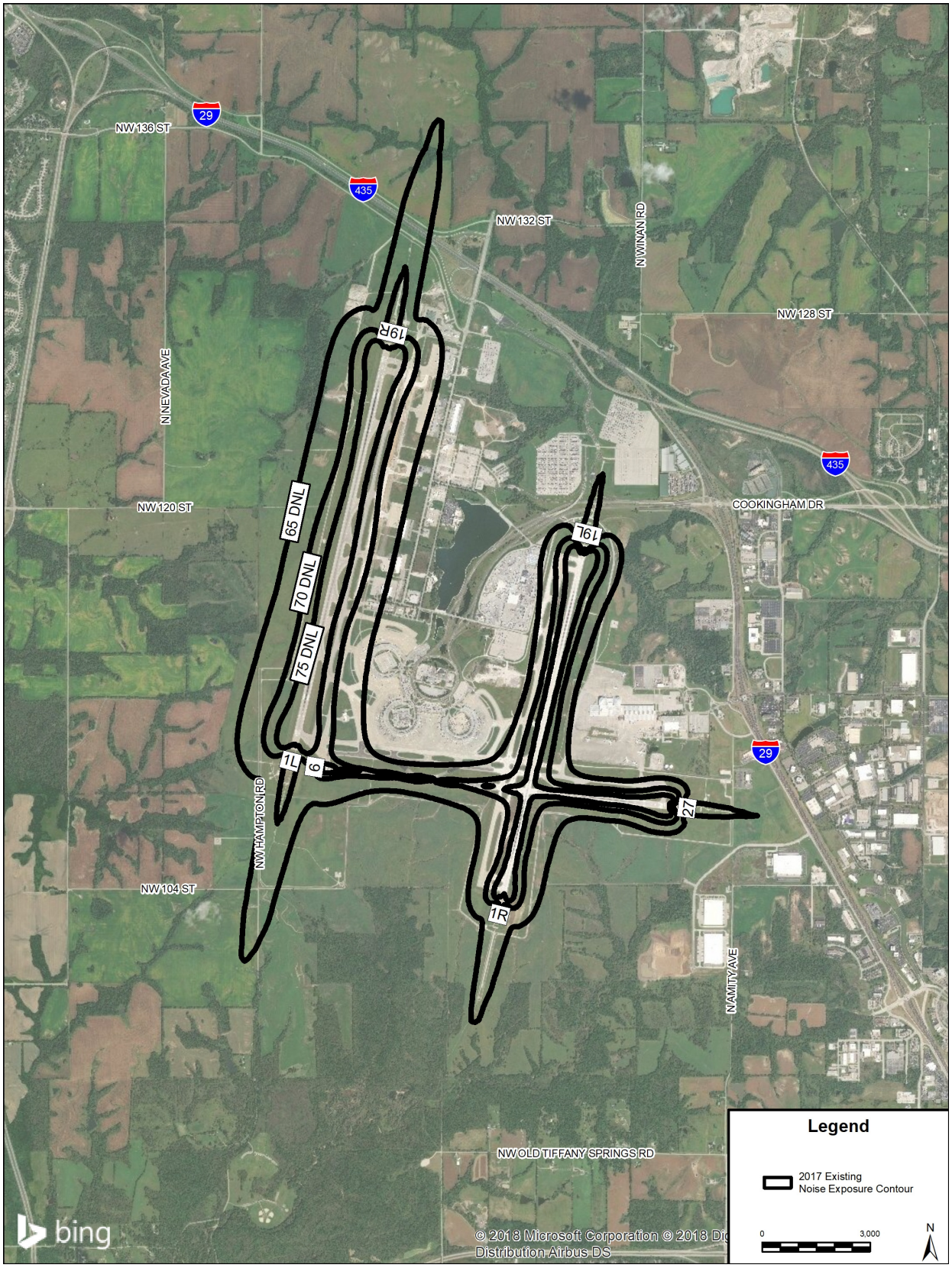
3.13.1.7 Existing Conditions Noise Exposure Contour

Noise contours are presented for the 65, 70, and 75 DNL. DNL contours are a graphic representation of how the noise from KCI's annual average daily aircraft operations is distributed over the surrounding area. **Exhibit 3-3** reflects the average-annual noise exposure pattern at KCI during 2017.

3.13.1.8 Noise and Noise-Compatible Land Use

The FAA has created guidelines regarding the compatibility of land uses with various aircraft noise levels measured using the DNL metric. These guidelines are defined in Appendix A to 14 CFR Part 150. These guidelines show the compatibility parameters for residential, public (schools, churches, nursing homes, hospitals, and libraries), commercial, institutional, and recreational land uses. All land uses exposed to noise levels below the DNL 65 dB noise contour are generally considered compatible. There are no residences, public schools, nursing homes, hospitals, libraries, or religious institutions within any of the Existing Conditions contours.

Exhibit 3-3 Existing Conditions Noise Exposure Contour



3.13.2 Environmental Consequences

This section discusses the methodology and the potential noise impacts for the 2022 and 2027 No Action Alternative.

3.13.2.1 No Action Alternative

Aircraft Activity Levels and Fleet Mix

The total number of annual aircraft operations for the 2022 and 2027 No Action Alternative are presented in **Appendix B**. The average daily number of aircraft arrivals and departures for the 2022 and 2027 No Action Alternative noise contours were calculated by determining the total annual operations and dividing by 365 (days in a year).

Runway Definition

Under the Future 2022 No Action Alternative and the Future 2027 No Action Alternative, no runway relocation or other airfield changes would occur. Therefore, the runway definition discussed for the existing conditions would remain the same for the 2022 and the 2027 No Action Alternative.

Runway End Utilization

Under the Future 2022 No Action Alternative and the Future 2027 No Action Alternative, no replacement terminal would be constructed. Therefore, the runway utilization discussed for the existing conditions would remain the same for the 2022 and the 2027 No Action Alternative.

Flight Tracks

Flight track locations for the 2022 No Action Alternative and the Future 2027 No Action Alternative are expected to be the same as the existing conditions.

3.13.2.2 Future 2022 and 2027 No Action Alternative Noise Exposure Contour

Noise contours are presented for the 65, 70, and 75 DNL. DNL contours are a graphic representation of how the noise from KCI's annual average daily aircraft operations is distributed over the surrounding area. **Exhibit 3-4** and **Exhibit 3-5** reflects the potential average-annual noise exposure pattern at KCI for the Future 2022 and 2027 No Action Alternative.

3.13.2.3 Noise and Noise-Compatible Land Use

There are no residences, public schools, nursing homes, hospitals, libraries, or religious institutions within any of the Future 2022 and 2027 No Action Alternative contours.

Exhibit 3-4 2022 No Action Alternative Noise Exposure Contour

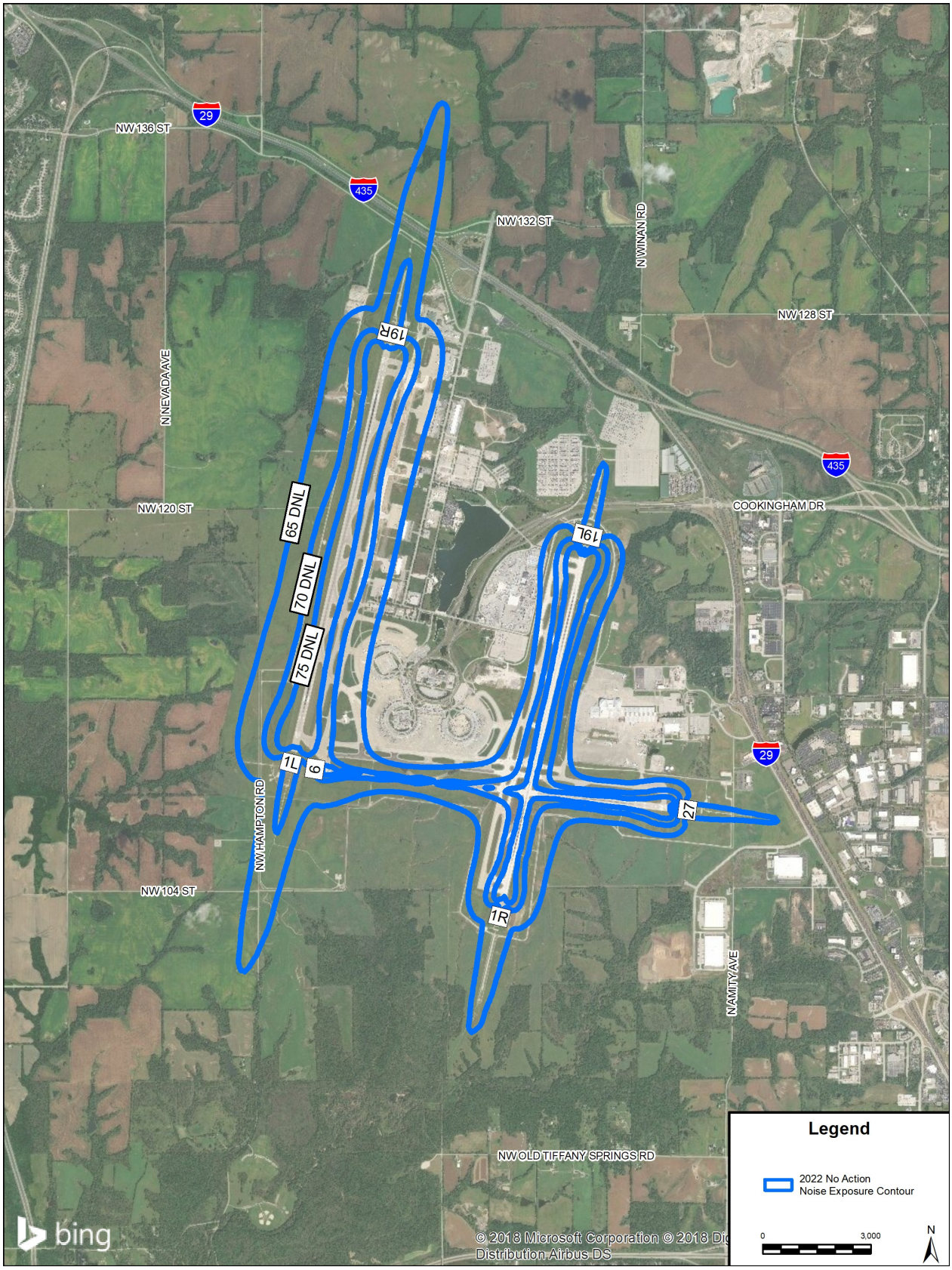
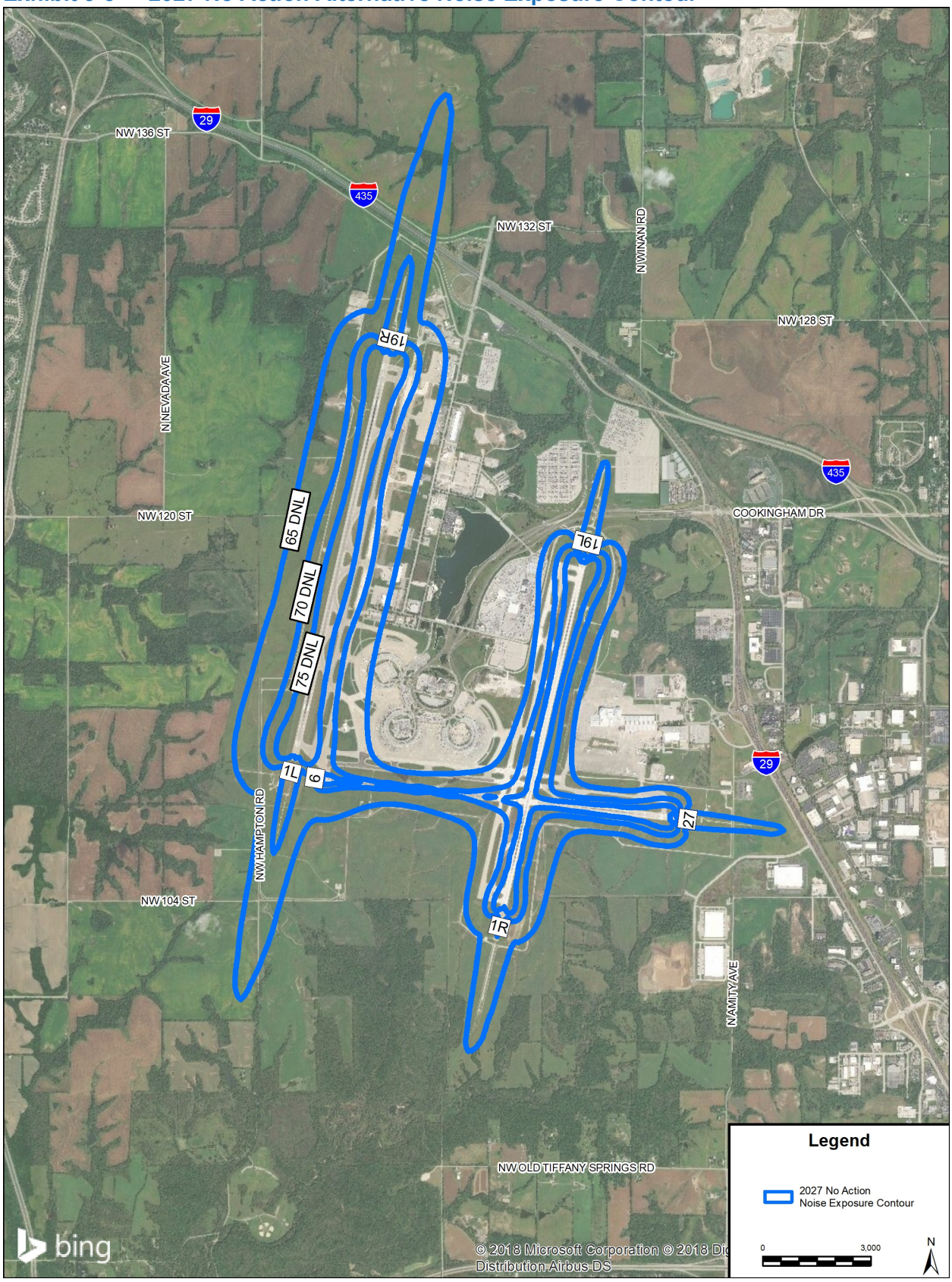


Exhibit 3-5 2027 No Action Alternative Noise Exposure Contour



3.13.2.4 Proposed Action

Aircraft Activity Levels and Fleet Mix

As explained in Section 1.4 Purpose and Need, the Proposed Action would not induce or cause unforecasted growth in aircraft operations. No additional airlines are expected to start services at the Airport as a result of implementation of the Proposed Action. The replacement terminal will be designed consistent with the 2017 FAA Terminal Area Forecast, which would reduce the number of potential gates from what currently exists. The number of gates will be less in the Proposed Action than in the No Action. Additionally, the number and type of aircraft would be the same for the No Action Alternative as the Proposed Action for the same future year. The total number of annual aircraft operations for the 2022 and 2027 are presented in **Appendix B**. The average daily number of aircraft arrivals and departures for the 2022 and 2027 noise contours are calculated by determining the total annual operations and dividing by 365 (days in a year).

Runway Definition

Under the Future 2022 Proposed Action and the Future 2027 Proposed Action, no runway relocation or other airfield changes would occur. Therefore, the runway definition discussed for the existing conditions would remain the same for the 2022 and the 2027 Proposed Action.

Runway End Utilization

According to the airlines operating at the airport and FAA Air Traffic Management, the Proposed Action would cause aircraft operations to shift from the existing Terminals B and C to the proposed replacement terminal at the existing Terminal A site. This in turn would be expected to cause a shift in runway use patterns at KCI. It is expected that there would be a decrease in aircraft operations on Runway 01R/19L and a subsequent increase in aircraft operations on Runway 01L/19R. From FAA Air Traffic Management, the Proposed Action would be anticipated to include a shift of up to 15% of the total air carrier traffic from Runway 01R/19L to Runway 01L/19R.[40] Runway 01L/19R would still remain the predominant runway due to the additional runway length, weather conditions, and preferential runway use programs in place. Runway use percentages modeled for the Proposed Action Noise Contours are shown in **Appendix B**.

Flight Tracks

Flight track locations for the 2022 Proposed Action and the Future 2027 Proposed Action are expected to be the same as the 2022 No Action Alternative and the Future 2027 No Action Alternative.

3.13.2.5 Future 2022 and 2027 Proposed Action Noise Exposure Contour

Noise contours are presented for the 65, 70, and 75 DNL. DNL contours are a graphic representation of how the noise from KCI's annual average daily aircraft operations is distributed over the surrounding area. **Exhibit 3-6** and **Exhibit 3-7** reflects the potential average-annual noise exposure pattern at KCI for the Future 2022 and 2027 Proposed Action. **Exhibit 3-8** provides a comparison of the 2022 No Action Alternative and the 2022 Proposed Action. **Exhibit 3-9** provides a comparison of the 2027 No Action Alternative and the 2027 Proposed Action.

[40] Email from Marc Galeski, FAA Air Traffic Management to Scott Tener, FAA Subject: Air Traffic Comments Runway Utilization Assumptions for Noise and AQ Analysis – Terminal Project, Kansas City International Airport, June 26, 2018.

Exhibit 3-6 2022 Proposed Action Noise Exposure Contour

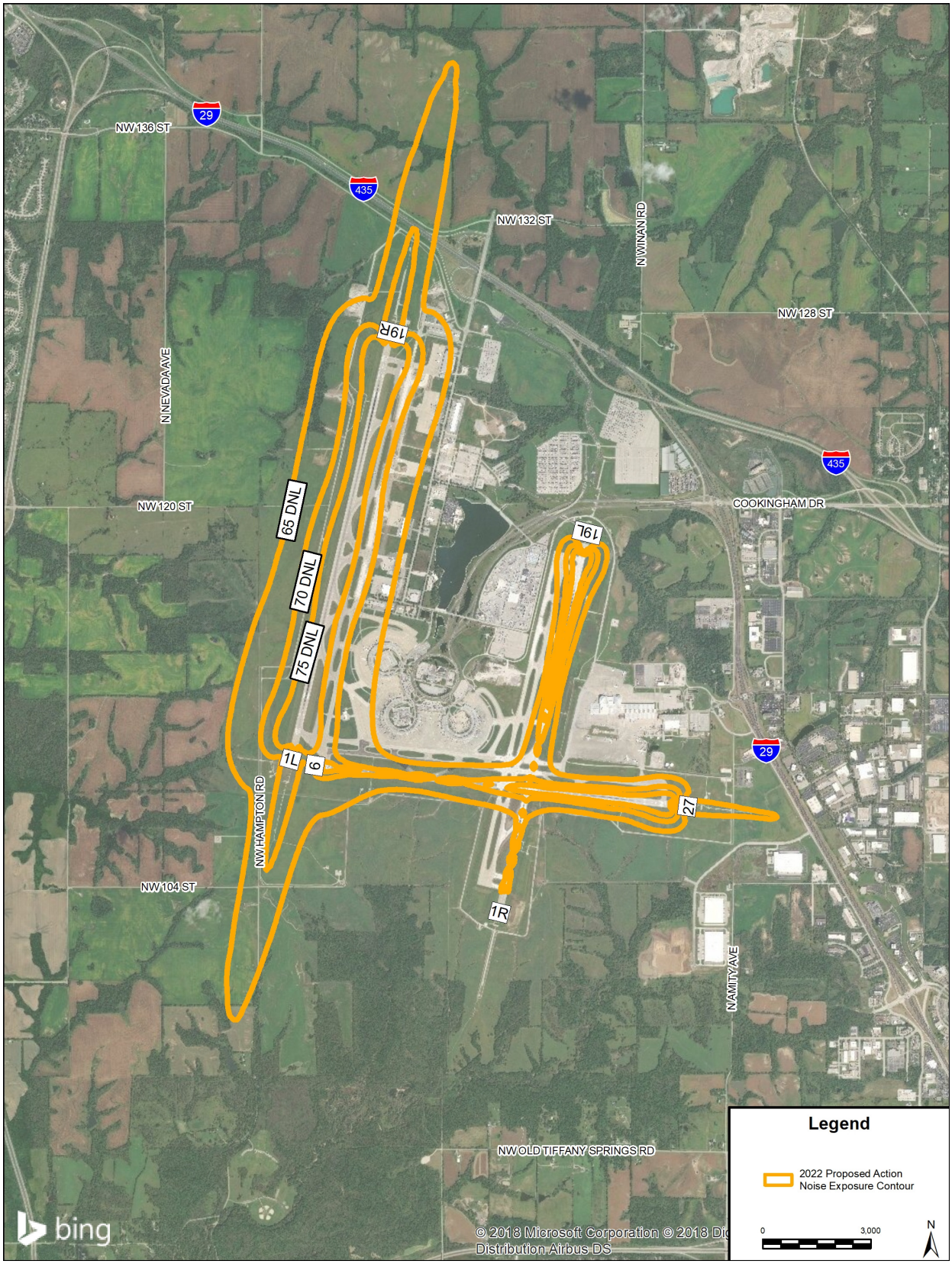


Exhibit 3-7 2027 Proposed Action Noise Exposure Contour

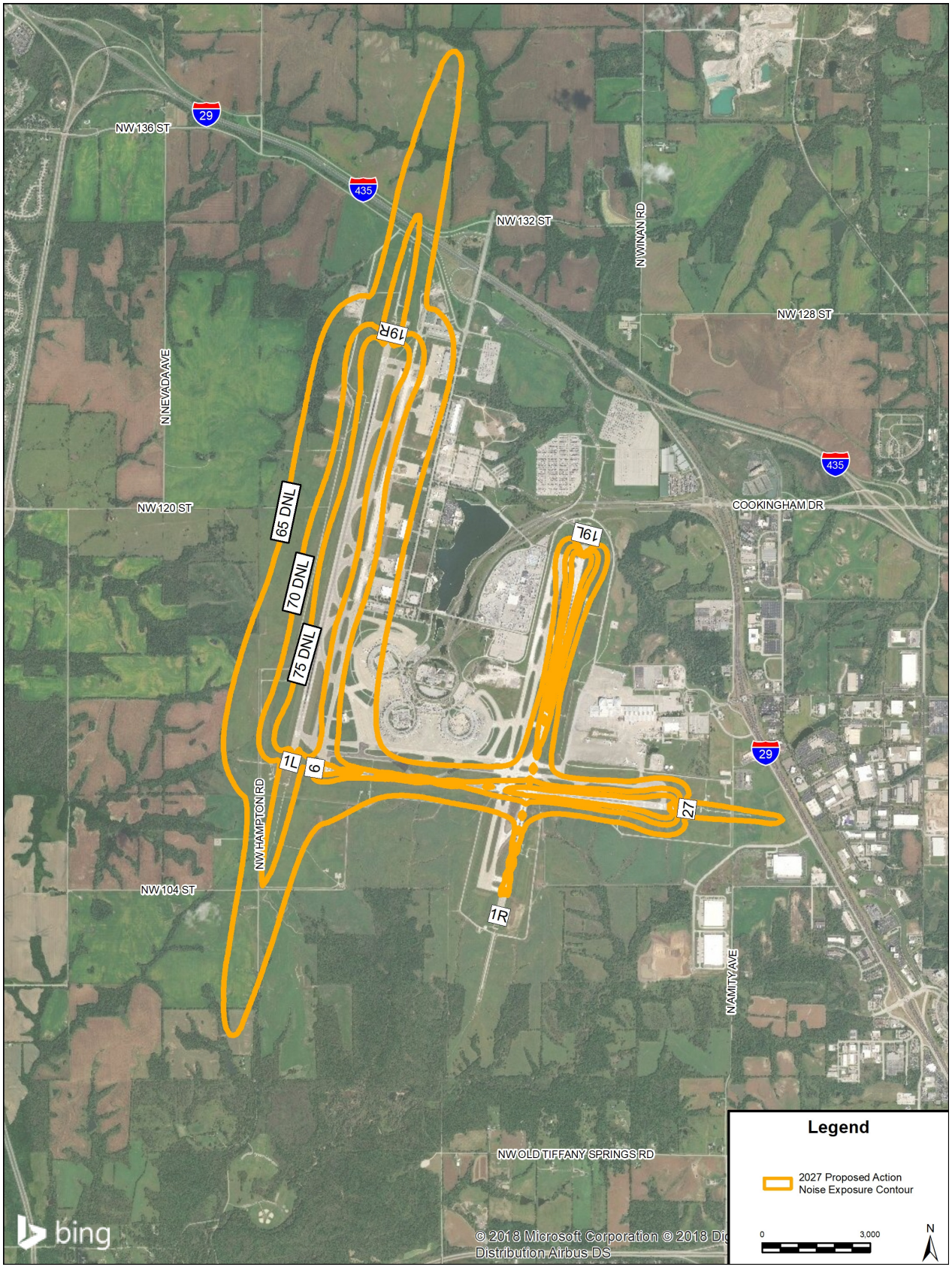


Exhibit 3-8 Comparison of 2022 Proposed Action and 2022 No Action Alternative

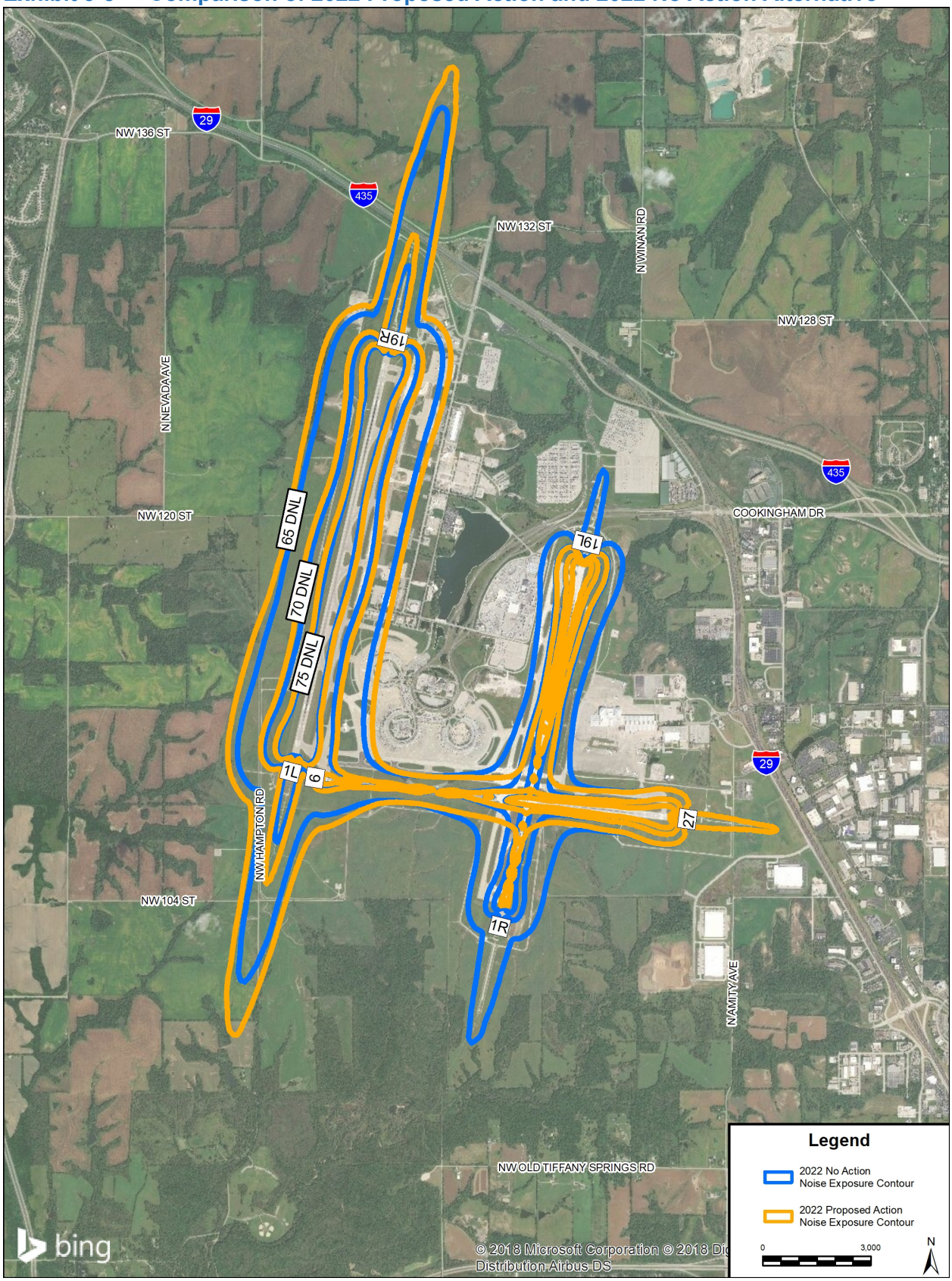
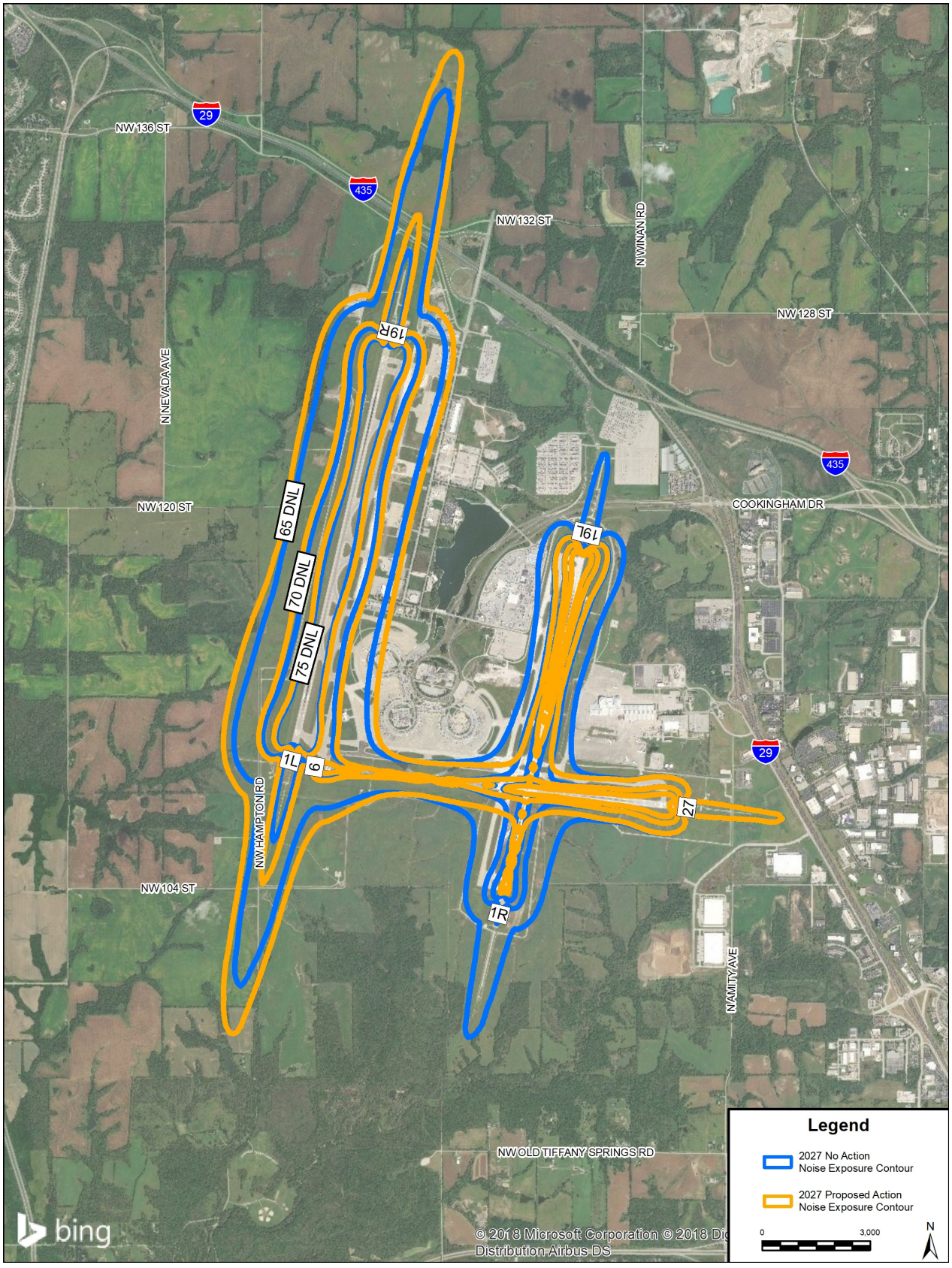


Exhibit 3-9 Comparison of 2027 Proposed Action and 2027 No Action Alternative



3.13.2.6 Noise and Noise-Compatible Land Use

There are no residential, public schools, nursing homes, hospitals, libraries, religious institutions, or other noise sensitive land uses within any of the Future 2022 and 2027 Proposed Action contours. Therefore, there are no new non-compatible land uses due to the Proposed Action.

A significant noise impact would occur if the analysis shows that the Proposed Action would result in noise-sensitive areas experiencing an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase when compared to the No Action alternative for the same timeframe. No new noise sensitive land uses would be subject to noise levels of DNL 65 dB or greater due to an increase in noise of DNL 1.5dB or greater. Further, no existing noise sensitive land uses within the DNL 65 dB would be subject to an increase in noise of DNL 1.5 dB or greater. Therefore, no significant aircraft noise impacts would occur as a result of the Proposed Action.

3.14 Socioeconomics, Environmental Justice, and Children's Environmental Health & Safety Risks

3.14.1 Socioeconomics

Socioeconomic impacts are assessed to determine the effect that the proposed airport development would have on the social and economic fabric of the surrounding communities. The types of socioeconomic impacts that typically arise from airport development are:

- Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area);
- Disrupt or divide the physical arrangement of an established community;
- Cause extensive relocation when sufficient replacement housing is unavailable;
- Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities;
- Disrupt local traffic patterns and substantially reduce the levels of service of roads and serving an airport and its surrounding communities; or
- Produce a substantial change in the community tax base.

3.14.1.1 Affected Environment Existing Conditions

KCI is located in Platte County, Missouri, which is currently one of the fastest growing counties in the state.[41] According to the US Census Bureau, Platte County currently has a population of 89,322. The City owns KCI and operates KCI through KCAD. KCAD's mission is to provide outstanding airport services in a safe and cost-effective manner for the benefit of citizens, visitors, airlines and customers. KCAD is an enterprise fund department of the City and is supported wholly by airport user charges and other airport revenues. No general tax fund revenues are used for the administration, promotion, operation or maintenance of KCI.[42]

41 Platte County remains #1 in population growth in Missouri, Platte County Economic Development Council, June 6, 2018.
42 http://www.flykci.com/AviationDepartment/ADOverview/Index.htm

3.14.1.2 Environmental Consequences

No Action Alternative

With the No Action Alternative, the existing conditions at KCI would remain in place. Therefore, there would be no socioeconomic impacts not already occurring or expected to occur. Terminal A would continue to be de-activated and KCAD would continue to incur costs to maintain and secure three separate terminals.

Proposed Action

Relocation of Residences

The Proposed Action would not result in the acquisition or the conversion of residential properties to Airport property. Therefore, no impacts to socioeconomic resources would occur as a result of relocation of residences.

Relocation of Businesses

The construction and operation of the Proposed Action would not result in significant adverse impacts to businesses located on or off-Airport. The new terminal design anticipates making room for additional business concessions amenities. Food/beverage and retail space is proposed to provide better customer selection and satisfaction. The Proposed Action has the potential to benefit the local economy in the short-term with local jobs through temporary construction-based employment, which would provide an increase in local employment taxes, and induced local spending in the surrounding communities. Therefore, no adverse impacts to socioeconomic resources would occur as a result of relocation of businesses.

Disruptions of Local Traffic Patterns

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, states that an EA should consider whether disruptions of local traffic patterns that would substantially reduce the levels of service of the roads serving the Airport and its surrounding communities would occur as a result of implementing the Proposed Action. For the projects being assessed in this EA, there are no proposed modifications to off Airport roadways and there is no anticipated increase in surface traffic other than a temporary increase during construction. It is assumed construction vehicles and construction workers would use local roads to access the Airport and the proposed construction site. In addition, there would be no reduction in the level of service for the roads serving the Airport and surrounding communities. Therefore, there would be no significant disruption of local traffic patterns as a result of the Proposed Action.

Community Tax Base

KCAD is supported wholly by airport user charges and other airport revenues. There would be no substantial change in the community tax base as a result of the Proposed Action.

3.14.2 Environmental Justice

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, Section 1-101 requires all federal agencies to the greatest extent practicable and permitted by law, to make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

The USDOT Order 5610.2(a) defines minority as "individuals who are Black; Hispanic or Latino; Asian American; American Indian and Alaskan Native; Native Hawaiian and other Pacific Islander." The CEQ's Environmental Justice Guidance under NEPA[43] indicates that for populations to be considered as a minority, the minority composition should either exceed 50% or be meaningfully greater than the minority population percentage in the general population of the geographic area under analysis. The appropriate unit of geographic analysis may be a governing body's jurisdiction, a neighborhood, a census tract, or other similar unit.

FAA Order 1050.1F provides guidance for the preparation of environmental justice analysis in support of an EA. Although FAA has not established a significance threshold for environmental justice, Section 4-3.3, Exhibit 4-1 of the Order indicates that FAA should consider whether the action would have the potential to lead to a disproportionately high and adverse impact, i.e., a low-income or minority population, due to: significant impacts in other environmental impact categories; or impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population. If a significant impact would affect low income or minority populations at a disproportionately higher level than it would other population segments, an environmental justice issue is likely.

3.14.2.1 Affected Environment Existing Conditions

The FAA considered the composition of the affected area to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the Proposed Action. The U.S. Census's American Community Survey (ACS) data and AEDT Version 2d[44] was used to identify census block groups within the General Study Area. Then, AEDT determined which census block groups are composed of 50% or more minority populations and/or 50% or more low income populations based on the census data. According to the data, there were no environmental justice populations identified within the General Study Area. Further, there is nothing to indicate that there is a minority population present that is meaningfully greater than the minority population percentage in the general population of the geographic area under analysis.

---

43 Available online at: https://www.epa.gov/environmentaljustice/ceq-environmental-justice-guidance-under-national-environmental-policy-act

44 FAA, 2016, Guidance on Using the Aviation Environmental Design Tool (AEDT) to Screen for Potential Environmental Justice Populations. Available online at: https://aedt.faa.gov/Documents/AEDT_Environmental_Justice_Guidance.pdf.

3.14.2.2 Environmental Consequences

No Action Alternative

With the No Action Alternative, the existing conditions at KCI would remain in place. Therefore, there would be no environmental justice impacts not already occurring or expected to occur.

Proposed Action

A review of those impact categories that relate to the Airport's neighboring communities was conducted. These impact categories include, air quality, noise, compatible land use, light emissions and visual impacts, and socioeconomic impacts. According to the applicable sections in this EA, there are no significant impacts to any of the impact categories listed above. In addition, there are no environmental justice populations living in the General Study Area. Therefore, it can be concluded that the Proposed Action would not disproportionately impact any minority or low income populations within the General Study Area nor would it result in a disproportionate high and adverse impact to these populations.

3.14.3 Children's Environmental Health & Safety Risks

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires all federal agencies as appropriate and consistent with the agency's mission, (a) to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Environmental health risks and safety risks include risks to health or to safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products to which they might be exposed. FAA has not established a significance threshold for this category of impacts, but factors to consider include whether the action would have the potential to lead to a disproportionate health or safety risk to children.

No Action Alternative

With the No Action Alternative, the existing conditions at KCI would remain in place. Therefore, there would be no children's environmental health and safety risks not already occurring or expected to occur.

Proposed Action

Based on a review of available data conducted as part of this EA, the Proposed Action would not result in an elevated risk related to health or safety concerns for children. Typically, the primary children's health concern is asthma and related lung disorders. In order to determine whether the Proposed Action would increase the likelihood of children contracting these health problems, the air quality analysis conducted in this chapter was examined. According to the analysis, the Proposed Action would not create air quality conditions that would worsen breathing conditions for children. In addition, the Proposed Action would not result in the release of harmful agents into surface or groundwater resources above levels permitted by the State of Missouri and federal regulations.

Based on the analyses conducted in this EA, the Proposed Action would not result in the release of or exposure to significant levels of harmful agents in the water, air, or soil that would affect children's health or safety.

3.15 Visual Effects (Including Light Emissions)

FAA Order 1050.1F states that the visual effects environmental impacts category, including light emissions, deals with the extent to which the proposed action would have the potential to: 1) produce light emissions that create annoyance or interfere with normal activities; 2) affect the visual character of the area due to light emissions, including the importance, uniqueness and aesthetic value of the affected visual resources; 3) affect the nature of the visual resources or visual character of the area, including the importance, uniqueness and aesthetic value of the affected visual resources; 4) contrast with the visual resources and/or the visual character of the existing environment; or 5) block or obstruct the views of visual resources, including whether those resources would still be viewable from other locations.[45] Although there are no federal special purpose laws or requirements specific to light emissions and visual effects, there are special purpose laws and requirements that may be relevant. In addition to NEPA, laws protecting resources that may be affected by visual effects include sensitive wildlife species, Section 106 of the NHPA, Section 4(f) of the DOT Act, and Section 6(f) of the Land and Water Conservation Fund Act. The FAA has not established a significance threshold for Light Emissions or for Visual Character per FAA Order 1050.1F, Exhibit 4-1.

3.15.1 Affected Environment Existing Conditions

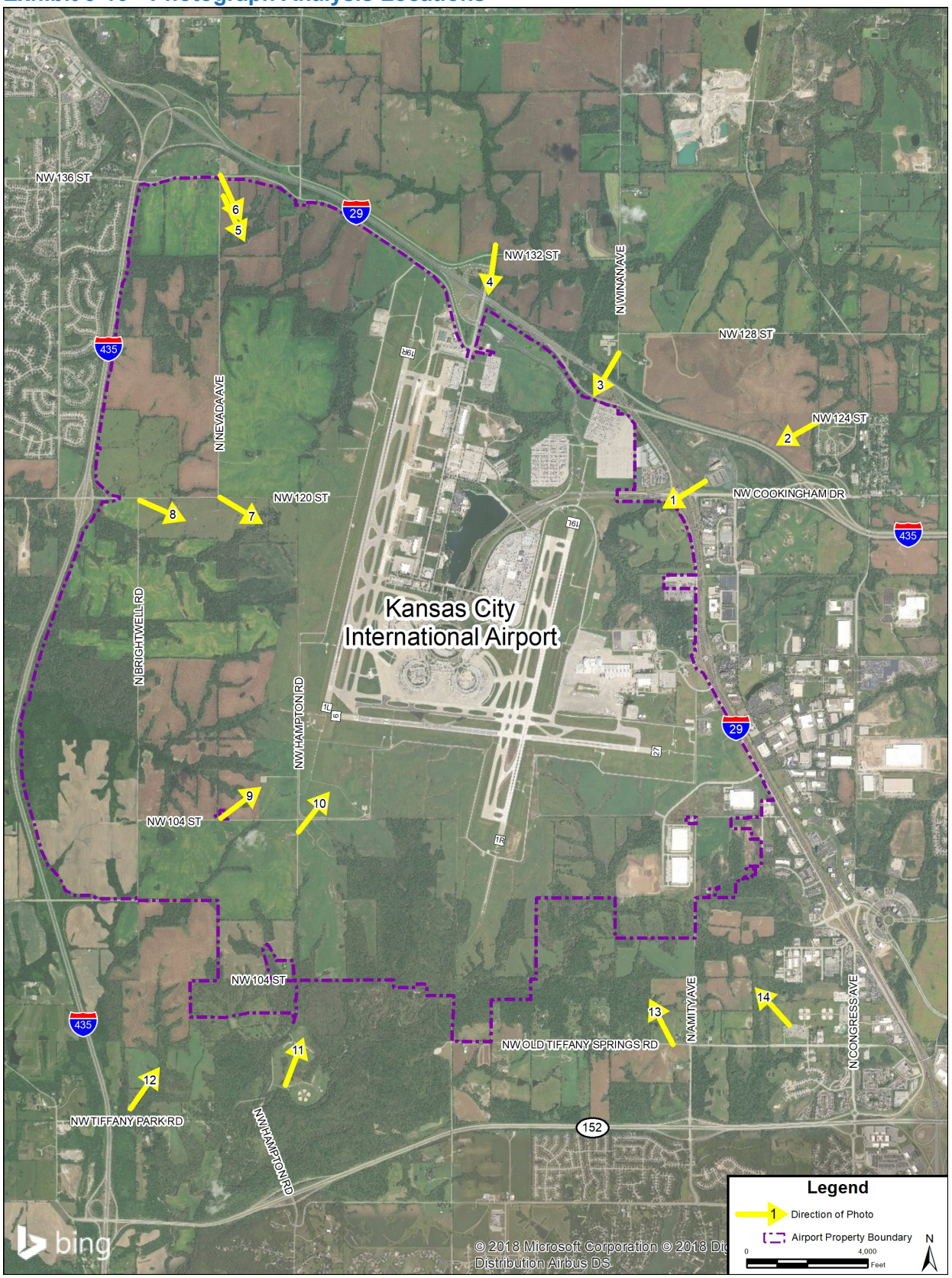
Light Emissions: The existing terminals are illuminated by various types of lighting. Some of those lights are critical to safe airport operation, while others provide light for nighttime use of the airport facilities. Most light fixtures are shielded to direct light within the designated area on KCAD property. Roadway lighting and parking lot lights consist of lower intensity white light. Such lighting, similar to building light, is directed downward and does not typically spill more than 30 to 50 feet away from the light source.

Visual Character: The existing visual character of the General Study Area would be considered an airport setting. The existing land uses within the Detailed Study are made up of developed land used for Airport operations. The nearest residential area is located at least 10,000 feet south of the proposed construction site.

A reconnaissance of the airport perimeter was performed to identify potential areas that may be affected by the Proposed Action. Photographs were taken at various locations as shown on **Exhibit 3-10**. These photographs formed the baseline condition and was the basis for determining the existing visual character of the area. See **Appendix E** for the photographs taken at each location. Due to the size and shape of the existing terminals, the topography and the vegetation/obstacles in the way, the existing terminals are not visible from these locations.

[45] FAA, 2015, Order 1050.1F, Environmental Impacts: Policies and Procedures, Exhibit 4-1, page 4-10.

Exhibit 3-10 Photograph Analysis Locations



3.15.2 Environmental Consequences

3.15.2.1 No Action Alternative

There would be no change from the existing conditions to light emissions or visual character for the No Action Alternative.

3.15.2.2 Proposed Action

Light Emissions: It is anticipated that the proposed replacement terminal would be illuminated by the same basic types of lighting currently used on the existing terminals. Therefore, lighting from the Proposed Action when compared to the No Action Alternative would not significantly increase the overall light emissions due to their type, intensity, and distance from residential areas.

Visual Character: A visual impact analysis was conducted for this EA. The proposed new terminal building must not interfere with the line of sight between the Airport Traffic Control Tower (ATCT) and aircraft movement areas. Therefore, due to the location of the existing ATCT and existing runways and taxiways, the design of the proposed new terminal building is anticipated to be relatively low profile as to not obstruct the view from the ATCT. As shown on **Exhibit 3-11**, the Proposed Terminal rendering would not include any significant vertical development as compared to the No Action Alternative and would not obstruct any views.

Since the proposed terminal building would have a relatively low profile, the Proposed Action would not include any significant vertical development compared to the No Action Alternative that would significantly alter, contrast, or obstruct the existing views from residential areas due to the distance and the obstacles in the way. Therefore, no noticeable change to the visual resources and visual character would occur to nearby residents.

Exhibit 3-11 Proposed Terminal Rendering

Source: Edgemoor and Skidmore, Owings & Merrill, 2019.

3.16 Water Resources

Water resources are surface waters and groundwater that are vital to society; they are important in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. Surface water, groundwater, floodplains, and wetlands do not function as separate and isolated components of the watershed, but rather as a single, integrated natural system.

3.16.1 Wetlands and Waters of the U.S.

According to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, a significant impact occurs if the proposed action would:

- Adversely affect the function of a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other potable water aquifers;
- Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;
- Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (this includes cultural, recreational, and scientific resources or property important to the public);
- Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands;
- Promote development of secondary activities or services that would cause the circumstances listed above to recur; or
- Be inconsistent with applicable state wetland strategies.

3.16.1.1 Affected Environment Existing Conditions

Wetlands identified on the National Wetland Inventory Map have been identified within the Detailed Study Area as shown on **Exhibit 3-12**.

3.16.1.2 Environmental Consequences

No Action Alternative

With the No Action Alternative, the existing conditions at KCI would remain in place. Therefore, there would be no impacts to wetlands or streams not already occurring or expected to occur.

Proposed Action

The FAA follows the "avoid, minimize, mitigate" policy regarding wetland impacts. Information from the National Wetland Inventory Map was obtained to determine the location of jurisdictional waters of the U.S. These waters were originally natural water features but were expanded for manmade stormwater drainage areas to service the existing terminal areas. These manmade stormwater drainage areas would be avoided with the implementation of the Proposed Action. During construction, these areas would also be avoided to the extent practicable and any potential impact would be minimized through the use of best management practices (BMPs). Because the Proposed Action will avoid the wetland areas there would be no significant impact to wetland areas.

Exhibit 3-12 Wetlands and Surface Waters

A scoping letter was sent to the USACE. The USACE attended the scoping meeting on March 15, 2018 and requested clarification on the difference between the baseline and future no action cases to be analyzed in the EA. No further letters were received from the USACE. A copy of the coordination is provided in **Appendix A**.

3.16.2 Floodplains

The 100-year flood has been adopted by the Federal Emergency Management Agency (FEMA) as the base flood for floodplain management purposes. Floodplains are valued for their natural flood and erosion control, enhancement of biological productivity, and socioeconomic benefits and functions.

3.16.2.1 Affected Environment Existing Conditions

The FEMA flood insurance rate map (FIRM) 29095C0040G depicting the 100-year and 500-year floodplains was reviewed for KCI and the surrounding area. As shown on **Exhibit 3-13**, there are areas of the 100-year flood zone (Zone A) within the Detailed Study Area.

3.16.2.2 Environmental Consequences

No Action Alternative

With the No Action Alternative, the existing conditions at KCI would remain in place. Therefore, there would be no impacts to floodplains not already occurring or expected to occur.

Proposed Action

While a 100-year floodplain is located within the Detailed Study Area, there would not be any development within the floodplain. Furthermore, the floodplain would be avoided during construction and BMPs would be employed to limit runoff and erosion to ensure there would be no direct impacts to the floodplain due to the Proposed Action. Additional impervious surface may result from the Proposed Action. However, the storm water collection system improvements included in the Proposed Action, including improved glycol recovery system and facilities, would be implemented to offset the increase in impervious surfaces. Therefore, it is anticipated that there would be no significant impact to floodplains due to the Proposed Action.

Exhibit 3-13 FEMA Floodplain Map

3.16.3 Surface Waters

Surface waters include streams, rivers, lakes, ponds, estuaries, and oceans.

3.16.3.1 Affected Environment Existing Conditions

Hayes Creek is located within the Detailed Study Area as shown on Exhibit 3-13.

3.16.3.2 Environmental Consequences

No Action Alternative

With the No Action Alternative, the existing conditions at KCI would remain in place. Therefore, there would be no impacts to surface waters not already occurring or expected to occur.

Proposed Action

Hayes Creek would be avoided during construction and BMPs would be employed to limit runoff and erosion to ensure there would be no direct significant impacts to surface waters due to the Proposed Action. Additional impervious surface may result from the Proposed Action. However, the storm water collection system improvements included in the Proposed Action, including improved glycol recovery system and facilities, are being developed to increase the collection of deicing fluid and ensure the Airport operates in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) permit number MO-0114812 issued by the Missouri Department of Natural Resources (MDNR). Therefore, significant impacts to surface waters due to the Proposed Action are not anticipated.

3.16.4 Groundwater

3.16.4.1 Affected Environment Existing Conditions

The geology of the proposed project site is predominantly thick alluvial deposits underlying the floodplains of the major rivers, which are a significant source of water for agriculture and public water supply.[46] Yields of 2,000 gallons of water per minute or more are possible from properly constructed wells in favorable areas of the Missouri River alluvium. There are no public or private drinking water wells or wells used for agricultural purposes within a 1.5-mile radius of the Detailed Study Area. According to EPA's website, there are no sole source aquifers in the Detailed Study Area.[47]

3.16.4.2 Environmental Consequences

No Action Alternative

With the No Action Alternative, the existing conditions at KCI would remain in place. Therefore, there would be no impacts to groundwater not already occurring or expected to occur.

---

46 Missouri Department of Natural Resources Northwest Missouri Groundwater Province available online at https://dnr.mo.gov/geology/wrc/groundwater/education/provinces/nwmissouriprovince.htm

47 Available online at: https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b

Proposed Action

The project site is in a well-developed area with public water available. There are no drinking water wells or agricultural wells within a 1.5-mile radius of the project site. Construction and operation of the proposed development would abide by all applicable regulations related to spill prevention and control regulations to prevent spills from causing significant adverse impacts to groundwater. Therefore, no significant impacts to groundwater are anticipated.

3.17 Construction Impacts

FAA Order 1050.1F removed construction impacts as a separate impact category; instead, these impacts were to be analyzed within each applicable environmental impact category. However, for this EA, potential construction impacts are all summarized in the following section at the request of the FAA. Construction impacts were determined for the Detailed Study Area. The Detailed Study Area covers approximately 700 acres and is defined as the area where direct impacts may result from the Proposed Action. This area includes borrow/fill sites, staging and stockpile areas, utility corridors, and haul routes for the Proposed Action. At this time, the amount of fill has not been determined but it is anticipated that any fill material needed would not come from outside the Direct APE on Airport property but from other sources in the Kansas City metropolitan region that have been previously disturbed.

Project design specifications will incorporate recommendations established in FAA Advisory Circular 150/5370-10H, *Standards for Specifying Construction of Airports*, Item C-102, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control, to help minimize construction impacts using Best Management Practices (BMPs).

3.17.1 Construction—Air Quality

Air quality construction impacts are commonly short-term and temporary in nature. Potential impacts to air quality would occur due to the use of mostly diesel-powered construction equipment and fugitive dust. The construction emissions inventory for the Proposed Action is shown in **Table 3-4**. The construction emissions inventory includes both potential direct and indirect emissions including potential emissions from construction workers vehicles coming to and from the construction site.

Table 3-4 Construction Emission Inventory

Construction Year	Tons of Pollutants per Year					
	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
***de minimis* Threshold**	**Not Applicable**	**100**	**100**	**Not Applicable**	**Not Applicable**	**Not Applicable**
2019	56.91	25.99	55.12	0.22	2.60	16.73
2020	67.64	25.78	46.77	0.23	2.29	16.83
2021	55.63	35.91	42.32	0.24	2.04	16.64
2022	4.07	2.00	7.34	0.03	0.38	0.41

Note: Numbers may not appear to sum as reported due to rounding
Source: Landrum & Brown analysis, 2019.

Emissions from construction vehicles would temporarily impact local air quality; however, annual emissions from construction equipment would not equal or exceed the *de minimis* thresholds defining insignificant and negligible emissions. Therefore, no significant adverse construction impacts would occur relative to air quality.

The demolition of the terminals and the construction of the Proposed Action would result in a short-term increase of airborne fugitive dust emissions from vehicle movement and soil excavation in and around the construction site. KCAD would ensure that all possible best management practices would be taken to reduce fugitive dust emissions by adhering to guidelines included in FAA Advisory Circular (AC), *Standards for Specifying Construction of Airports*.[48]

Methods of controlling dust and other airborne particles will be implemented to the maximum possible extent and may include, but not limited to, the following:

- Exposing the minimum area of erodible earth;
- Applying temporary mulch with or without seeding;
- Using water sprinkler trucks;
- Using covered haul trucks;
- Using dust palliatives or penetration asphalt on haul roads; and,
- Using plastic sheet coverings.

3.17.2 Construction—Climate

Table 3-5 provides an estimate of GHG emissions due to construction and demolition activities of the Proposed Action. These estimates are provided for information only as no federal NEPA standard for the significance of GHG emissions from individual projects on the environment has been established.

Table 3-5 Construction GHG Emissions Inventory Summary

Annual Emissions Summary	
Construction Year	Greenhouse Gas Pollutants (Metric Tons per Year)
	CO_2E
2019	34,408.76
2020	33,090.50
2021	34,574.89
2022	6,255.95

Source: Landrum & Brown Analysis, 2019.

[48] FAA AC, 2018, Standards for Specifying Construction of Airports, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control, AC 150/5370-10H.

3.17.3 Construction—Noise and Noise-Compatible Land Use

There would be a temporary increase in noise levels due to construction activity and construction vehicles in use during the construction process. The nearest residential area is located approximately 10,000 feet south of the proposed construction site. Additional residential areas are located to the north and west of KCI, north and west of I-435. Due to the existing noise in the airport environs and to the location of the proposed construction site in relation to the nearest residential areas, it is very unlikely that noise from construction would be noticeable at these locations. Therefore, no significant construction noise impacts from construction equipment would occur.

Preliminary construction phasing plans are currently being developed by KCAD with the intent to minimize impacts to airport operations. At this time, it is expected that all three runways would remain operational throughout the entire construction period. The potential for noise impacts due to construction are not anticipated to be long-term or introduce a significant change to noise sensitive facilities. If however, during construction, the primary runway, Runway 1L/19R would need to be closed it could introduce aircraft overflights and potential noise impacts to areas around the Airport. A construction noise exposure contour as shown on **Exhibit 3-14** was developed to show a worst-case scenario. The construction noise exposure contour is an average over an entire year. Noise contours are presented for the 65, 70, and 75 DNL. For the construction contour, it was assumed that Runway 1L/19R was closed and that 70% of the total aircraft operations operated on Runway1R/19L and 30% of the total aircraft operations operated on Runway 9/27 due to the proximity to existing Terminals B and C. In this worst-case scenario one church, the Rock of KC, located north of I-435 would experience a DNL 1.5 dB change, which would make it within the DNL 65 dB. Again, it is expected that all three runways would remain operational throughout the entire construction period and any potential impacts are temporary in nature, so no mitigation is required.

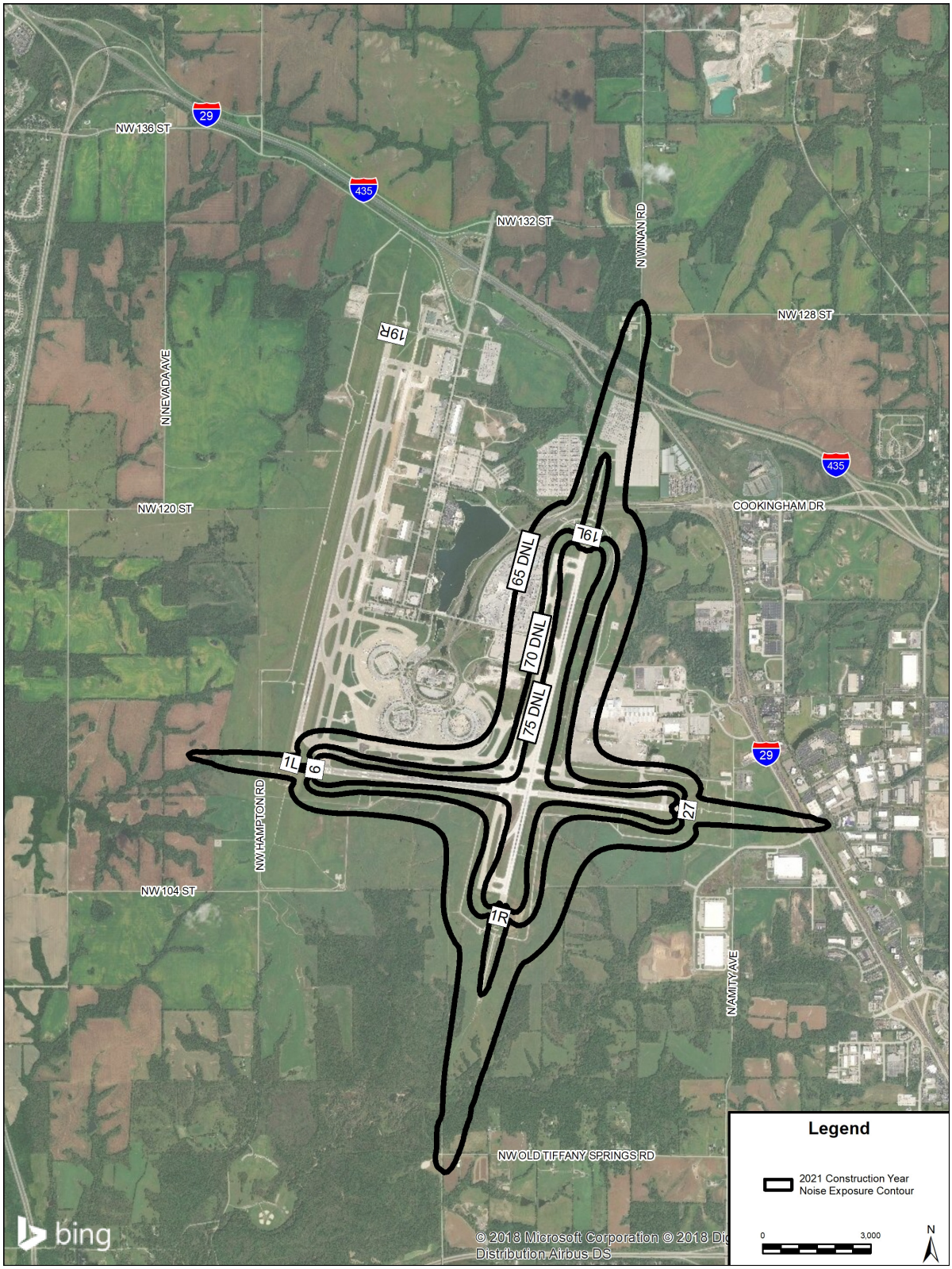
KCAD will be responsible to submit a formal Construction Safety and Phasing Plan to the FAA to maintain aviation and airfield safety during construction pursuant to FAA AC 150/5370 2G, *Operational Safety on Airports During Construction*.

3.17.4 Construction—Hazardous and Solid Waste

Construction activities associated with the Proposed Action are expected to include the short-term use or generation of hazardous and non-hazardous materials and waste common to construction including petroleum hydrocarbon-based fuels, lubricants, oils, paints, and cleaning solvents for the construction equipment. In addition, the areas around existing Terminals A, B, and C are used for fueling activities. While there are no unresolved issues regarding hazardous materials or fuel spills, if any materials or contaminated soils are encountered during construction KCAD would follow appropriate materials management measures to manage and dispose of hazardous and non-hazardous substances.

Asbestos is known to be located within the existing Terminals A, B, and C. All demolition activities will be conducted with regard to worker safety and according to all applicable regulations including the Resource Conservation and Recovery Act. Therefore, no significant adverse construction impacts would occur relative to hazardous or solid wastes.

Exhibit 3-14 Construction Noise Exposure Contour



3.17.5 Construction—Historical, Architectural, Archaeological, and Cultural Resources

The FAA consulted with the KCAD, the SHPO, the Kaw Nation, the Osage Nation, the Pawnee Nation, and the Ponca Tribe of Oklahoma to develop a Programmatic Agreement under Section 106 of the National Historic Preservation Act (Section 106). The Programmatic Agreement provided in **Appendix C** outlined the measures needed to mitigate the adverse effect on the potential historic district and the existing Terminals A, B, and C due to the Proposed Action. The mitigation measures are a requirement of the Proposed Action. See Section 3.10 for mitigation measures to be carried out during construction activities. Therefore, no significant adverse construction impacts would occur relative to historical, architectural, archaeological or cultural resources.

3.17.6 Construction—Natural Resources

As a result of implementing the Proposed Action, proposed construction activities would require the use of typical construction materials such as wood, metal, sand, gravel, concrete, dirt for fill material, glass, water, and asphalt. These materials are not in short supply in the Kansas City area and construction of the Proposed Action would not exceed the available supply of these materials.

3.17.7 Construction—Water Resources

Temporary impacts to surface water quality could result from erosion and siltation born from site disturbance activities. Cut and fill operations in the areas of potential disturbance may contribute to siltation during construction activities. Sediment transport would be temporary during the construction process. This risk of impact to water quality would be minimized to the fullest extent possible through the use of Storm Water Pollution Prevention Plans and BMPs, including adherence to any “Clean Water Permit” conditions. The use of silt fences and/or vegetative filter strips to buffer streams and drainages would also be used to the extent practicable. Areas of disturbance would be revegetated to minimize erosion using native plant species compatible with the local landscape and wildlife needs. In addition, monitoring will be conducted after rain events and until a well-rooted ground cover is reestablished. Therefore, no significant adverse construction impacts would occur relative to surface waters. All necessary construction and water quality permits would be obtained as appropriate.

3.18 Cumulative Impacts

Past, present, and reasonably foreseeable future actions must be considered in determining whether there are potential cumulative impacts. Actions can be initiated by any entity (i.e. other Federal agencies, state, tribal, local governments, or private entities). This section describes the past, present, and reasonably foreseeable future actions relevant to cumulative impacts. The analysis of cumulative impacts recognizes that while the impacts of individual actions may be small, when combined with the impacts of past, present, and reasonably foreseeable future actions on populations or resources in and around KCI, the impacts could be potentially significant.

Cumulative impacts are defined by the CEQ in 40 CFR § 1508.7 as: "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." Additionally, the CEQ further explained in Considering Cumulative Effects under the National Environmental Policy Act (page 8) that "each affected resource, ecosystem, and human community must be analyzed in terms of its ability to accommodate effects, based on its own time and space parameters." Therefore, a cumulative effects analysis normally will encompass geographic boundaries beyond the immediate area of the Proposed Action, and a timeframe, including past actions and foreseeable future actions, in order to capture these additional effects.

3.18.1 Defining the Cumulative Impact Study Area and Timeframes

The FAA 1050.1F Desk Reference Section 15.2 states "The study area for cumulative impacts analysis is the same area defined for a project's direct and indirect impact analysis. Thus, the study area will be different for each impact category." The development of the Cumulative Impact Study Area(s) for this evaluation is consistent with the FAA 1050.1F Desk Reference using the Detailed Study Area and the specific study areas identified for each resource category.

The projects to be included in the cumulative impact analysis were identified through coordination with KCAD. The past actions are defined as those that were completed within the last five years from 2013 to 2017. Present actions for this EA are defined as those completed in 2018 or where construction is ongoing. Reasonably foreseeable future actions are actions that may affect projected impacts of a proposal and are not remote or speculative. Reasonably foreseeable future actions are defined as those planned to be completed between 2019 and 2024. This window of time represents a timeframe that is long enough to identify potential follow on impacts yet near enough that realistic predictions of projects and impacts can be made. Potential projects beyond 2024, such as a potential third parallel runway shown on the current KCI Airport Layout Plan would be considered speculative and too far out into the future to realistically predict potential impacts. These post 20-year projects at KCI were shown on the Airport Layout Plan in order to preserve the land for future aviation development and consideration during the FAA airspace review process. When these projects are ripe for approval by FAA, the appropriate documentation under NEPA will be required. The KCI future ALP is provided in **Appendix F**. The Past, Present, and Reasonably Foreseeable Future Actions included for the EA are listed in **Table 3-6**.

Table 3-6 Past, Present, And Foreseeable Future Actions

Past Actions 2013-2017	Present Actions 2018	Future Actions 2019-2024
Various building renovations	Southwest airlines Terminal B air ramp addition	Intermodal Business Center Phase II[1]
KCI Marriott hotel renovations	Terminal C departure lounge expansion phase 2	Private development of 1,058 acres of privately owned property planned for retail, industrial just north of KCI. No development plans or specific timeline have been provided. This property is not owned or controlled by the Airport and the development is not being initiated by the Airport or the City.
New manufacturing company added to overhaul base	$19 million restoration of airport taxiway, lighting, and markings	
American and United airlines relocation	Runway rehabilitation Phase 2	
Signature flight support foundation repair		
Delta apron renovation		
Airfield lighting vault HVAC maintenance		
Various renovations within the terminals		

Note: [1] The Intermodal Business Center was environmentally assessed in the Environmental Assessment for the Proposed Intermodal BusinessCentre Final September 2008. FAA's Finding of No Significant Impact/ Record of Decision determination was September 9, 2008. Environmental Research Center of Missouri, Inc. Cultural Resource Investigations Phase I Survey; Trammel Crow Tract – KCI Airport Platte County, Missouri, June 2007. SHPO concurrence that "no historic properties affected" by the Intermodal BusinessCentre dated February 6, 2008.

Source: Kansas City Aviation Department, 2018.

An EA for the Intermodal Business Center was completed in 2008. The Business Center development includes a group of manufacturing, commercial, and industrial buildings used for final assembly, warehousing, and transportation of freight using multiple modes of transportation. The development is being constructed in phases as tenants and their individual needs are determined. The overall boundary of the Business Center development contains approximately 700 acres and will not change as the project site is developed. A cultural resources study of the Trammel Crow Tract, which encompasses the Business Center boundaries, was completed in 2007. As noted in Section 3.10.1.4, above, no significant cultural resources eligible for the NRHP were found in the project area. Since 2008, four buildings have been constructed. Phase II includes construction of additional buildings within the same Project Site.

3.18.2 Cumulative Impact Comparison

Cumulative impacts must be evaluated relative to the direct and indirect effects of the Proposed Action for each environmental category. Significant cumulative impacts are determined according to the same thresholds of significance used in the evaluation of each environmental category in the environmental consequences discussion. For environmental resources where construction and implementation of Proposed Action would have no environmental impact, there is no potential for an adverse cumulative environmental impact to occur. Therefore, the following discussion of cumulative impacts discusses only those environmental categories where environmental impacts could result from implementation of the Proposed Action.

3.18.3 Air Quality

The increase in emissions due to construction and implementation of the Proposed Action would not exceed the applicable thresholds and are therefore not significant. Construction activities associated with the Proposed Action would result in temporary emissions from construction equipment, trucks, and fugitive dust emissions from site demolition and earthwork. The impacts would occur only within the immediate vicinity of the construction site and would be mitigated through best management practices to reduce emissions, particularly fugitive particle emissions, during construction. While the Proposed Action would contribute to the cumulative emissions of air pollutants in Platte County, the emissions would be less than those under the No Action Alternative. Accordingly, the cumulative effect of the net air emissions would not cause or contribute to any new violation of the NAAQS, would not increase the frequency or severity of an existing violation, and would not delay timely attainment of any standard. Therefore, the cumulative impact on air quality is not significant.

3.18.4 Historic, Architectural, Archeological, and Cultural Resources

Implementation of the Proposed Action includes the demolition of Terminals A, B, and C. In accordance with 36 CFR 800.4 and 36 CFR 800.5, the Proposed Action would have an adverse effect on a resource eligible for inclusion on the National Register of Historic Places. The FAA consulted with the KCAD, the SHPO, the Kaw Nation, the Osage Nation, the Pawnee Nation, and the Ponca Tribe of Oklahoma to develop a Programmatic Agreement under Section 106 of the National Historic Preservation Act (Section 106). The Programmatic Agreement outlined the measures needed to mitigate the adverse effect due to the Proposed Action. Proposed mitigation measures are provided in Section 3.10. The mitigation measures are a requirement of the Proposed Action.

Impacts to historic resources are generally site specific and will not combine with impacts from other projects to cause significant impacts. For present and foreseeable future actions, independent of the Proposed Action, an analysis of historic, architectural, archeological, and cultural resources would be required if there is an undertaking by a federal agency. For present and foreseeable future actions that do not involve an undertaking by a federal agency such as private development off Airport property that is not being done under the direct or indirect jurisdiction of a Federal agency or does not require federal financial assistance or a federal permit, license, or approval, the private developer (not the Airport or FAA) would be responsible to meet any local or state requirements. Therefore, implementation of the Proposed Action, when combined with other past, present, or reasonably foreseeable future projects,

would not result in significant adverse impacts to historic, architectural, archeological, and cultural resources.

3.18.5 Noise and Noise-Compatible Land Use

No new noise sensitive land uses would be subject to noise levels of DNL 65 dB or greater due to an increase in noise of DNL 1.5 dB or greater due to the Proposed Action. Further, no existing noise sensitive land uses within the DNL 65 dB would be subject to an increase in noise of DNL 1.5 dB or greater. There are no residences, public schools, nursing homes, hospitals, libraries, religious institutions or other noise sensitive land uses within any of the Future 2022 and 2027 Proposed Action contours. Therefore, no significant aircraft noise impacts would occur nor would there be new non-compatible land uses as a result of the Proposed Action. The development and operation of one or more of the past, present, and reasonably foreseeable future actions identified in Table 3-7 would not be expected to result in changes to the noise contours or result in non-compatible land uses. Therefore, it is reasonable to expect implementation of the Proposed Action, when combined with other past, present, or reasonably foreseeable future projects would not result in significant adverse impacts to noise and noise-compatible land uses because there were no noise impacts associated with the Proposed Action.

3.18.6 Water Resources

There would be no significant impacts to water resources with implementation of the Proposed Action. The other past, present, or reasonably foreseeable future projects in combination with the Proposed Action could impact water quality and water resources in the vicinity of the Airport. However, it is reasonable that each past, present, or reasonably foreseeable future project required or will require its own protective measures and permits to avoid and minimize impacts during implementation of the project. Therefore, no significant cumulative impacts to water resources would be expected.

3.18.7 Cumulative Impact Conclusion

Under the No Action Alternative, KCAD would not implement the proposed replacement terminal project. KCAD would continue to operate the Airport and serve forecast aviation demands. Airport development would be subject to review and approval under NEPA and is not assumed under this alternative. Therefore, the No Action Alternative would not cause cumulative impacts when considered with past, present, and reasonably foreseeable future projects.

The level of cumulative impacts anticipated to occur within these environmental resource categories is not significant due to the types of past, present, and reasonably foreseeable future projects, the extent of the built environment in which they would occur, the lack of certain environmental resources in the area, and the mitigation measures identified for the Proposed Action. Therefore, implementation of the Proposed Action would not result in significant cumulative environmental impacts.

3.19 Summary

This section summarizes the environmental impacts and/or benefits associated with the implementation of the Proposed Action and the No Action alternative. **Table 3-7** summarizes the potential direct and indirect impacts.

Table 3-7 Environmental Impact Summary Matrix

Environmental Consequences Impact Category	Proposed Action		No Action Alternative	
	Impacts	Mitigation	Impacts	Mitigation
Air Quality	No significant impact. Would Not Exceed National Ambient Air Quality Standards or cause in increase in emissions above applicable federal *de minimis* thresholds as demonstrated in the General Conformity evaluation.	Implement Best Management Practices during Construction Activities to reduce fugitive dust emissions	No significant impact. Would Not Exceed National Ambient Air Quality Standards	None
Biological Resources	No Impact	None required	None	None
Climate	No Adverse Impact	None required	No Adverse Impact	None
Coastal Resources	None	None required	None	None
Section 4(f)	Physical Use impact to potential historic district	Implement the stipulations of the Programmatic Agreement to resolve adverse effects	None	None
Farmlands	None	None required	None	None
Hazardous Materials, Solid Waste, & Pollution Prevention	No significant impact	Arrange for the transportation and disposal of all hazardous materials including asbestos associated with the demolition of the Terminals in accordance with Federal, state, and other applicable regulations	None	None
Historical, Architectural, Archeological, and Cultural Resources	Adverse effect to potential historic district	Implement the stipulations of the Programmatic Agreement to resolve adverse effects	None	None
Land Use	None	None required	None	None

Environmental Consequences Impact Category	Proposed Action		No Action Alternative	
	Impacts	Mitigation	Impacts	Mitigation
Natural Resources and Energy Supply	No Adverse Impact	Recycle and reuse existing materials and implement sustainable construction, building, and operational measures where reasonable and practicable	None	None
Noise and Noise-Compatible Land Use	No Noise Sensitive Facilities within DNL 65+ dB	None required	No Noise Sensitive Facilities within DNL 65+ dB	None
Socioeconomic, Environmental Justice, & Children's Health	Not significant. Would result in a socioeconomic benefit from construction jobs	None required	None	None
Visual Effects	None	None required	None	None
Water Resources				
Wetlands	No Impact	Implement Best Management Practices during Construction Activities to avoid wetland resources	None	None
Floodplains	Not Significant	Implement Best Management Practices during Construction Activities to limit runoff and erosion	None	None
Surface Water	Not Significant	Implement Best Management Practices during Construction Activities to limit runoff and erosion. Ensure the Airport operates in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) permit number MO-0114812 issued by the Missouri Department of Natural Resources (MDNR)	None	None
Ground Water	No Impact	None required	None	None
Wild and Scenic Rivers	None	None required	None	None
Cumulative Impacts	Not Significant	None required	None	None

Source: Landrum & Brown, 2018.

Kansas City International Airport
Environmental Assessment, Section 106 Evaluation, and
Section 4(f) Statement

Chapter 4

4

4 Coordination and Public Involvement

This chapter discusses coordination and public involvement associated with this EA, Department of Transportation 4(f) evaluation, and the Section 106 of the National Historic Preservation Act evaluation process. As discussed in Section 2.2, beginning in 1995, KCAD initiated a variety of planning efforts to address the planning of terminal facilities such as development of an airport master plan and terminal improvement program. These efforts included numerous public involvement opportunities as described on KCI's website.[49]

4.1 Agency and Public Scoping

For this EA, 4(f) analysis, and the Section 106 evaluation, KCAD and the FAA completed several governmental agency and public scoping activities to determine the range of issues to be analyzed and to what magnitude they were to be treated.

Key governmental agencies were invited to attend an Agency Scoping Meeting in Kansas City and to provide any information they wished to be considered in the EA. KCAD conducted the Agency Scoping Meeting at 2:00 p.m. on March 15, 2018, at the Ambassador building 12200 N Ambassador Drive, Kansas City, Missouri.

At this meeting, KCAD made a presentation about the Proposed Action and the preliminary scope of environmental analysis to be included in the EA. A list of the key governmental agencies invited and a copy of the scoping materials presented at the meeting are provided in **Appendix A**. Members of the KCAD, FAA, and the EA consultant team were available to respond to questions and discuss issues.

In addition to the Agency Scoping Meeting, a Public Scoping Meeting was held at 6:00 p.m. on March 15, 2018, at the Ambassador building 12200 N. Ambassador Drive, Kansas City, Missouri.

The public scoping meeting was conducted in an open house format designed to inform the public about the Proposed Action and NEPA process, and allow the public to speak with KCAD and FAA representatives on issues and concerns they would like to see addressed in the EA. The public was notified of the public scoping meeting at least 30 days before the scheduled public meeting date in the February 14, 2018 edition of the Kansas City Star newspaper. Both a legal ad and display ad were published. In addition, the public was also notified of the public scoping meeting online at http://www.kci-edgemoor.com. Anyone who had signed up to receive notification through this website was also sent an email notification. A copy of the public scoping meeting newspaper notices, as well as the materials presented at the meeting are provided in **Appendix A**.

The agencies and public had the following four ways to provide comments about the scope of the EA during the scoping period (March 15, 2018 to April 16, 2018):

- Submit written comments during the public scoping meeting;
- Provide comments orally to a stenographer at the scoping meeting;

[49] Available online at http://www.flykci.com/newsroom/terminal-master-plan/

- Submit comments electronically to KCIEAcomments@landrum-brown.com; or
- Mail written comments to Chris Babb, 11279 Cornell Park Drive, Cincinnati, OH, 45242.

During the scoping comment period (February 14, 2018 to April 16, 2018), five public agencies submitted comments about the project. These agencies included the Missouri Federal Assistance Clearinghouse, the Department of Agriculture Natural Resources Conservation Service, the U.S. Fish and Wildlife Service, the Mid-America Regional Council, and the Missouri Department of Natural Resources. In addition to the agency comments, eight public comments were received. **Table 4-1** provides a summary list of the topics commented on, as well as the location within this document where these issues are addressed. A copy of the full comment is provided in **Appendix A**.

Table 4-1 Comments Received During Scoping

Commenter	General Comment	EA Section Where Comment Addressed
NRCS	No impacts to farmlands	Chapter 3, Section 3.3
USFWS	No impacts to federally listed species based on the project footprint	Chapter 3, Section 3.6
MDNR	Consideration of erosion control	Chapter 3, Section 3.16
Public and Mid-America Regional Council	Consideration of sustainability measures including energy and water conservation, landscaping techniques, infrastructure, and transportation in the construction and operation of the new replacement terminal	Chapter 3, Section 3.12
MDNR	Notice that if the project results in discharge of fill into a jurisdictional water of the U.S. the action may require a Section 404 and 401 permit and that an alternatives analysis would need to be submitted prior to any impacts to jurisdictional waters	Chapter 3, Section 3.16
MDNR	Notice that work disturbing an area of one acre or more requires issuance of a land disturbance permit	Chapter 3, Section 3.16
MDNR	Notice that mitigation for wetlands should be in conformance with the State of Missouri guidelines	Chapter 3, Section 3.16
Public	Identification and protection of archeological and cultural resources at the Airport	Chapter 3, Section 3.10
Public	Consideration and concern for unmarked burial sites on the Airport and request that no cemeteries are destroyed	Chapter 3, Section 3.10
Public	Request to include archeological construction monitoring and mitigation	Chapter 3, Section 3.10
Public	Request to utilize local vendors for services at the new replacement terminal	Not Applicable
Public	Request to consider long-term, indirect, and cumulative impacts on historical and archaeological resources	Chapter 3, Section 3.10 Chapter 3, Section 3.18

4.2 Availability of the Draft EA, Section 106 Evaluation, and Section 4(f) Statement

A Notice of Availability (NOA) announcing the availability of the Draft EA and Section 106 Evaluation and Public Hearing was published on August 23, 2018 in the Kansas City Star (**See Appendix A**). A NOA announcing the availability of the Draft Section 4(f) Statement was published on September 10, 2018 in the Kansas City Star (**See Appendix A** and **G**). Notice of the draft documents availability for review was sent to all stakeholders who submitted comments during the scoping process. The draft documents were also available to the public online at http://FLYKCI.com and at http://www.kci-edgemoor.com. Paper copies of the Draft EA and Section 106 Evaluation, and the Draft Section 4(f) Statement were available for public review at each of the following locations identified in **Table 4-2** during normal business hours.

Table 4-2 Locations for Review

Locations for Review	
Mid-Continent Library Boardwalk Branch 8656 N. Ambassador Drive Kansas City, MO 64154	Mid-Continent Library Parkville Branch 8815 Tom Watson Parkway Parkville, MO 64152
Mid-Continent Library Platte City Branch 2702 Prairie View Road Platte City, MO 64079	City of Kansas City, Aviation Department 601 Brasilia Ave. Kansas City, MO 64153
Federal Aviation Administration Central Region Airports Division 901 Locust St., Room 364 Kansas City, MO 64106-2325	

The comment period for the Draft EA and Section 106 Evaluation was open from August 23, 2018 to October 2, 2018. The comment period for the Draft Section 4(f) Statement was open from September 10, 2018 to October 10, 2018. No comments were received on the Draft Section 4(f) Statement. All comments received and the responses to the comments are found in **Appendix H**.

4.3 Public Workshop and Hearing

A public workshop and hearing was conducted on September 24, 2018 to offer the public the opportunity to provide comments on the information contained in the Draft. The public workshop and hearing was held at 6:00 p.m. on September 24, 2018, at the Ambassador building 12200 N. Ambassador Drive, Kansas City, Missouri.

The agencies and public had the following four ways to provide comments about the scope of the EA:

- Submit written comments during the comment period and at the public workshop and hearing;
- Provide comments orally to a stenographer at the public workshop and hearing;
- Submit comments electronically to KCIEAcomments@landrum-brown.com; or
- Mail written comments to Chris Babb, 11279 Cornell Park Drive, Cincinnati, OH, 45242.

No comments were received on the Draft Section 4(f) Statement. All comments received and the responses to the comments for the Draft EA are found in **Appendix H**.

Kansas City International Airport
Environmental Assessment, Section 106 Evaluation, and
Section 4(f) Statement

Chapter 5

5

5 List of Preparers

The following section provides a list of individuals that were primarily responsible for preparing the EA.

5.1 Federal Aviation Administration Principal Reviewer

Scott Tener, P.E. Environmental Protection Specialist, Central Region Airports Division. Mr. Tener is the Environmental Protection Specialist responsible for detailed review of this Environmental Assessment as well as coordination of comments from various federal and state agencies.

Katherine Andrus, Federal Preservation Officer, FAA Office of Environment and Energy. Ms. Andrus participated in the Section 106 evaluation.

5.2 City of Kansas City, Missouri, Aviation Department

J. Jade Liska, PLA, Deputy Director – Planning and Engineering Division. Mr. Liska is responsible for the EA project oversight for KCAD.

5.3 Landrum & Brown, Incorporated

Rob Adams, Principal, Environmental Planning Services, (B. Urban Planning). Mr. Adams has over 20 years of experience. He is the L&B Officer in Charge responsible for project oversight.

Chris Babb, Managing Consultant, Environmental Planning Services, (B.S. Aerospace; M.S. Aeronautical Science). Mr. Babb has over 17 years of experience. He is the Project Manager responsible for management and technical documentation of the EA.

Jesse Baker, Managing Consultant, Environmental Planning Services, (B.S. Geography). Mr. Baker has over 15 years of experience. He is responsible for the noise analysis and conducting modeling using the Aviation Environmental Design Tool.

Chuck Lang, Senior Consultant, Environmental Planning Services, (B.S. Geography). Mr. Lang has over 20 years of experience. He is responsible for the preparation of GIS mapping and land use analysis. Additionally, he is responsible for the preparation of exhibits for the EA.

Gabriela Elizondo, Analyst, Environmental Planning Services, (B.S. Civil Engineering; M. Community Planning). Ms. Elizondo has two years of experience. She is responsible for supporting the preparation of NEPA analyses for the EA.

5.4 Architectural & Historical Research, LLC

Cydney Millstein. (B.A. Art History; M.A. Art History) Ms. Millstein is a preservation consultant, architectural historian, and principal/owner of Architectural & Historical Research, LLC, in Kansas City, Missouri. She has over 25 years of experience. She assisted with the Section 106 process and preparation of the Programmatic Agreement.

5.5 Golder Associates, Inc.

David Wilcox, (B.A. Anthropology/Geography; M.A. Archaeology/Geoarchaeology). Mr. Wilcox is a Registered Professional Archaeologist. He has over 23 years of experience conducting cultural resource investigations throughout the United States. His responsibilities at Golder include managing and directing survey projects, recording excavation, monitoring, editing reports, lithic analysis, and supervising field personnel.

Chris Tinti, (B.S. Anthropology; M.A. Anthropology). Mr. Tintin has 10 years of experience in cultural resource management conducting and supervising pedestrian surveys, recording archaeological sites, intensive data recovery excavations, and managing projects. He has participated in numerous Native American consultation projects with the Mandan, Hidatsa, Arikara, Assiniboine, Chippewa, and Sioux Tribes.