Chapter One
Purpose and Need

1.1 Introduction

The St. Louis Airport Authority (STLAA), as the Sponsor of the St. Louis Lambert International Airport (STL or the Airport), is proposing to construct terminal, roadway and parking improvements to enhance the passenger experience and ensure continued safe, secure and efficient operations at STL. A complete description of the Proposed Action, referred to as the Consolidated Terminal Program (CTP), is provided in Section 1.5.

The Proposed Action requires approval from the Federal Aviation Administration (FAA) for the changes to the STL Airport Layout Plan (ALP). In addition, to construct eligible portions of the Proposed Action, STLAA plans to apply for federal financial assistance under the Airport Improvement Program. Unconditional approval of the ALP and federal funding approval are both federal actions that require the FAA to comply with the National Environmental Policy Act (NEPA).[1] To comply with NEPA, FAA is, with the assistance of STLAA, preparing this Environmental Assessment (EA) in conformance with the applicable sections of FAA Order 5050.4B[2] and FAA Order 1050.1F.[3]

This EA provides information on the Proposed Action; evaluates reasonable and feasible alternatives; identifies, analyzes, and discloses potential environmental consequences associated with the proposed development; and, if required, identifies mitigation for environmental impacts.

1.2 Airport Location

STL is located approximately 13 air miles northwest of downtown St. Louis as depicted on Figure 1.2-1, Location Map. The proposed CTP project limits are shown on Figure 1.2-2, Vicinity Map.

1.3 Purpose of the Proposed Action

The purpose of the Proposed Action is to:

- Enhance the passenger experience,
- Increase airport revenue,
- Eliminate duplication of services,
- Eliminate aging and redundant building systems, and
- Ensure continued safe, secure and efficient operations at STL.

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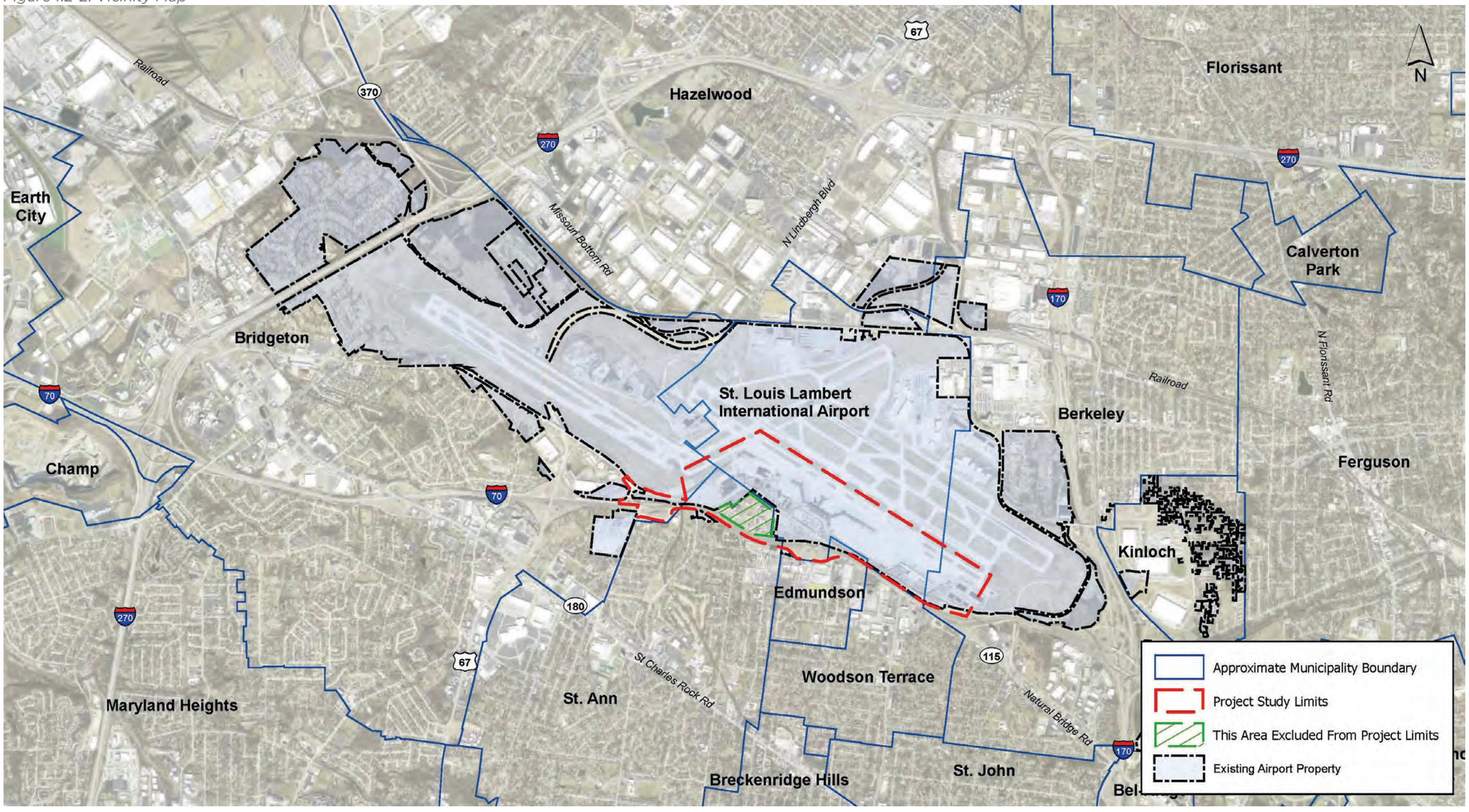
1 42 U.S.C. 4321 *et seq.,* National Environmental Policy Act, as amended.
2 FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions, April 28, 2006.
3 FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, July 16, 2015.

Figure 1.2-1: Location Map

Sources: Background Map, ESRI World Street Map, CMT, 2023.

Figure 1.2-2: Vicinity Map



Sources: Background Image; ESRI World Imagery, CMT, 2024.

1.4 Need for the Proposed Action

STLAA has identified deficiencies within the existing terminals, roadways, and parking facilities that must be improved to meet the Project's Purpose of an enhanced passenger experience, increased airport revenue, and continued safe and efficient operations. These deficiencies are detailed in the 2023 STL Master Plan[4] (Master Plan) and summarized in this section.

- Existing facilities: The size and the operational and functional characteristics of individual facilities (e.g., passenger holdrooms, corridors, restrooms, concessions, security screening facilities, roadways, and parking) are the baseline against which the facility requirements for meeting current and forecast future demand are measured to determine deficiencies.
- Current and forecast demand: The assessment of needed facilities is based on the forecast, which was reviewed and approved by the FAA on August 21, 2020.[5] A subsequent forecast review in 2022 documented that passenger enplanements are forecast to increase from nearly 7.9 million in 2019 to 10.1 million in 2037.[6, 7] Commercial aircraft operations (passenger and cargo) are forecast to increase over the same period from nearly 175,000 operations to 195,000 operations. This growth is anticipated to occur with or without the Proposed Action and therefore, the Proposed Action would not induce or cause growth in the number of passengers or aircraft operations at STL.
- Industry standards for an optimum level of passenger service: STL proposes to provide an "optimum"[8] level of passenger service. Metrics for an "optimum" level of service are detailed in Master Plan.

The Master Plan identified deficiencies in the terminal facilities based on the forecast, where the "optimum" level of service is not currently provided or would not be met in the future. The Master Plan also identified inefficiencies, including duplication of services and excessive operating and maintenance costs associated with operating two terminal facilities, as well as lost revenue opportunities associated with parking and concessions. The detailed data, analysis methodologies, and results of these analyses can be found in the Master Plan as referenced.

1.4.1 Passenger Terminals

Terminal 1 and Terminal 2 provide a sub-optimum level of passenger service when compared to industry standards.

Terminal 1 opened in 1956 and was expanded in 1965 with the addition of a fourth dome. The concourses were rebuilt and expanded over the next two decades to accommodate more and

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[4] The STL Final Draft Master Plan (February 2023) can be viewed at: https://www.flystl.com/about-us/stl-airport-layout-plan/airport-layout-plan-study-highlights, Accessed March 1, 2024.
[5] Aviation Demand Forecast and Critical Design Aircraft Approval Letter, FAA, August 21, 2020.
[6] WSP, Memorandum from John van Woensel of WSP to Jerry Beckman and Dana Ryan of St. Louis Airport Authority: STL Master Plan Aviation Demand Forecast Review and Proposed Interim Adjustments, September 30, 2022.
[7] St. Louis Airport Authority's fiscal year ends each year on June 30th and 2022 passenger and operation numbers are actual from FY 2022.
[8] "Optimum" is discussed on page 4-77 in Chapter 4 – Facilities Requirements of the Master Plan, noted in footnote 4 of this document.

larger aircraft. By 1985, the terminal included four concourses (A though D) with 73 gates, and served as a major connecting hub for Trans World Airlines (TWA).[9] As a result of airline mergers and the closure of the TWA hub, there are currently 26 active gates in Concourses A and C, with only four meeting modern holdroom (gate seating areas) standards.[10] Based on the size of most aircraft and the continuing trend of larger aircraft with more seats, all of the STL concourses are undersized and functionally deficient, including the holdrooms, restrooms, concession space, corridor widths, ticket lobby and security screening. Additionally, airline ticket offices are also undersized and the checked baggage screening systems are often overloaded during peak periods. There are insufficient retail options for passengers after the security screening, and no space to add concessions, which results in low customer experience and lost revenue to the Airport. The mechanical systems throughout Terminal 1 are aged and inefficient, increasing operating and maintenance costs. In addition, the unused space in the terminal is heated, air conditioned, secured, and maintained, adding unnecessary operating costs. At more than 60 years old, Terminal 1 is beyond its useful life.

Terminal 2 (Concourse E) was completed in 1998 to accommodate Southwest Airlines; it has a total of 18 gates, including four that were originally part of Concourse D. While Terminal 2 is not as old as Terminal 1, aircraft sizes serving it have also increased since it was constructed, resulting in undersized terminal areas, many of which are operating beyond capacity (holdrooms, restrooms, concession space, corridor widths, ticket lobby, security screening, baggage claim and baggage make-up area). Additionally, there is no baggage recheck counter for connecting international passengers. The use of Concourse E results in excessive walking for connecting passengers because it has gates on only one side of the concourse and insufficient room to add a moving walkway. Terminal 2 concessions are undersized overall, resulting in low customer experience and lost revenue to the Airport.

Terminal 2 currently needs additional gates, and this need is projected to increase to 22 gates in 2040. While Concourse D gates could be reactivated to meet gate demand, these facilities are undersized for the current size of aircraft, and doing so would continue a sub-optimum passenger level of service, add excessive walking distances for connecting passengers, and increase congestion in the ticketing, baggage and security areas, corridors, and concessions. By the end of the planning period in 2040, Terminal 2 would be 42 years old and will have reached the end of its useful life.

1.4.2 Airport Roadways and Parking

The existing airport access from I-70 provides less than 1 mile from Interstate 70 to Terminal 1 and 2. This results in short decision distances that do not provide enough time for drivers to safely and efficiently move from the highway to either the terminal curbside or parking facilities. In addition, there are limited sight lines to identify and avoid stopped traffic; and the dense roadway infrastructure limits the ability to provide adequate wayfinding signage. Existing airport roadway geometry, intersections, terminal curbsides and parking all display deficiencies and inefficiencies that would be exacerbated by increased traffic associated with the forecast future passenger

[9] STL Website, accessed 11/8/2023, https://www.flystl.com/about-us/history#:~:text=History-,St.,reaching%20the%20rank%20of%20Major

[10] Concourse B is used for special functions and some of its apron level space is used for airport operations. Four Concourse D gates closest to Terminal 2 were reactivated and renamed as E gates.

levels. Intersections and access/egress points immediately in front of each terminal are insufficiently spaced for safe operations. The arriving public vehicle curb length is undersized at Terminal 1 for current levels of activity; at Terminal 2, it would become undersized by 2040 without improvements. At both terminals, there is currently an insufficient number of lanes to allow efficient public and commercial vehicle maneuvering to use the curb length to its full capacity. Additionally, shuttles, for-hire vehicles, and personal vehicles all use the same roads and mostly the same lanes, increasing congestion. Overall, the on-airport roadways at both terminals provide inadequate space to make decisions about turns and weaving and have inadequate curbside access.

Passengers and employees (Airport, TSA, airline, tenant) all use the same parking facilities, which include the Terminal 1 Garage, the Terminal 2 Garage, and several surface parking lots. The Terminal 1 Garage, constructed in 1971, is functionally obsolete and nearing the end of its useful life. The total airport-operated parking demand is anticipated to exceed existing capacity in 2027. Some parking facilities are already operating over capacity, including the Terminal 2 Garage, Lot B, and Lot E, which results in redistribution of this demand to the other on-airport parking facilities, leading to long user walks or shuttle rides. The Terminal 1 Garage and Lot A are forecast to reach capacity by 2029, and Lot C is expected to reach capacity by 2032. By 2040, total airport-operated parking demand is expected to exceed the existing supply by 25 percent. While some of the increase could be addressed by private entities off-airport, the lack of sufficient parking represents a significant lost revenue opportunity for STL.

1.4.3 Summary of Need for the Proposed Action

Nearly all the passenger processing areas of Terminals 1 and 2 are undersized and congested. In addition, mechanical systems, holdrooms, restrooms and concession space in Terminal 1 are in poor condition and functionally obsolete. Additional gates are required in Terminal 2, and while there are unused gates in the adjacent Concourse D, they are undersized, functionally obsolete, and would result in unacceptably long walks for passengers. Post-security concessions are undersized in both terminals, restricting both passenger choices and airport revenue. Therefore, both terminals provide a sub-optimum level of passenger service and do not support increasing airport revenue.

The roadway geometry, intersections, and curbsides have several existing safety deficiencies and inefficiencies that would be made worse with the forecast increase in passengers. There is a need to extend the distance between the interstate and the terminal to provide ample decision-making time/distance, improve sight lines, minimize conflict points and to allow for wayfinding signage. Some on-airport parking facilities are routinely operating over capacity, and total parking demand is anticipated to exceed existing capacity in 2027. By 2040, total on-airport parking demand is expected to exceed the existing supply by 25 percent. Capturing this demand would provide a significant revenue opportunity for STL.

1.5 Description of the Proposed Action and Implementation Timeframe

The Proposed Action includes the following major components and connected actions[11] as summarized in Table 1.5-1 and depicted in Figures 1.5-1, 1.5-2 and 1.5-3. Construction of the Proposed Action is planned to span from 2026 to 2031. Additional information on the anticipated phasing of the individual project components and connected actions is included in Appendix B, Consolidated Terminal Program Phasing.

Table 1.5-1: Proposed Action

Major Project Components and Connected Actions
Enabling Projects: ▪ Demolish various structures to accommodate a new consolidated terminal, including the former Missouri Air National Guard (MoANG) Campus, South Fire House Medical Storage, Credit Union Building, the Terminal 1 Parking Garage, Fuel Consortium Facilities (Swissport), phased demolition of existing Concourses A, B, C and D, and other support facilities as depicted in Figure 1.5-1. ▪ Construct a temporary Consolidated Receiving & Distribution Facility (CRDF), Building Maintenance Facility, and Airport Administration & Police Space.
Consolidated Terminal/Airside Components: ▪ Construct a consolidated terminal (up to 62 gates) to replace Terminals 1 and 2, as depicted in Figures 1.5-2 and 1.5-3, including: o Reconfigure terminal passenger ticketing and baggage claim areas within the existing historic terminal dome area, o Construct new consolidated security screening centered between the check-in lobby and the terminal concourse, o Construct new Federal Inspection Services (FIS)/Customs accessible to all airlines, o Construct new baggage claim area on lower level of the new consolidated terminal, and o Relocate and upgrade utilities (electric, natural gas, telecommunications, water, sanitary and storm sewers, glycol and hydrant fueling, etc.). ▪ Construct replacement airline support facilities to accommodate Ground Support Equipment (GSE), fuel consortium services, triturator,[12] and other airline/airport support services. ▪ Construct Consolidated Receiving and Distribution Facility (CRDF) ▪ Construct various stormwater collection system improvements, including east deicing pad spent aircraft deicing fluid (SADF) collection infrastructure. ▪ Construct terminal apron infill around the west terminal concourse, including proposed Coldwater Creek enclosure.

[11] Connected actions are closely related actions that: (a) automatically trigger other actions; (b) cannot or will not proceed unless other actions are taken previously or simultaneously; or (c) are interdependent parts of a larger action and depend on the larger action for their justification (see 40 CFR § 1508.25 (a) (1), CEQ Regulations).

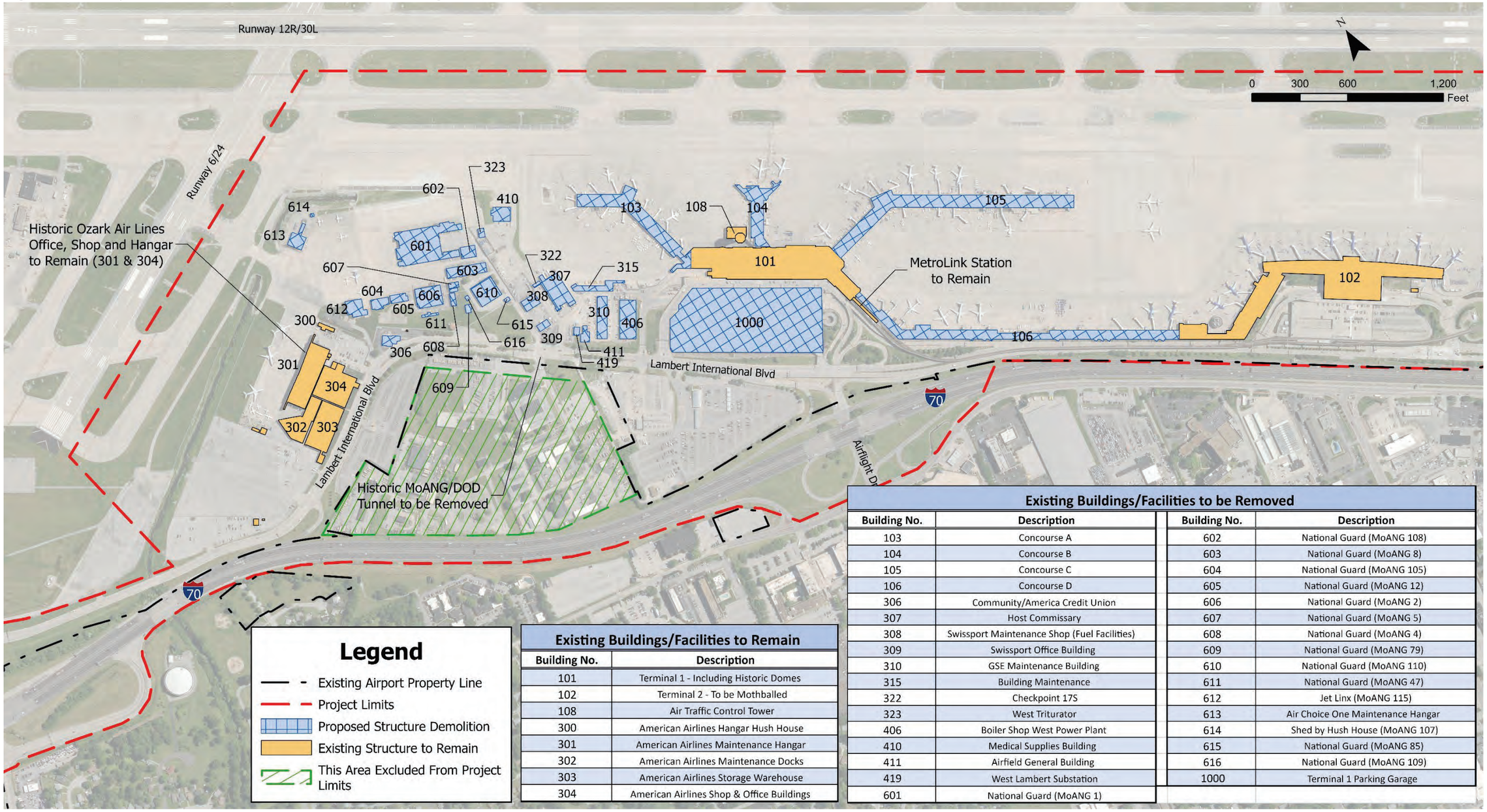
[12] An airport triturator is a specialized system used for waste disposal at airports, particularly for managing waste from aircraft lavatories.

Major Project Components and Connected Actions
▪ Reconstruct the aprons and taxilanes in the vicinity of the new consolidated terminal. ▪ Convert Taxilane C to Taxiway C. ▪ Close Terminal 2 and mothball until a potential reuse is identified.
On-Airport Roadway and Landside Components: ▪ Realign terminal roadway system with improved driver wayfinding. ▪ Construct replacement two-level passenger drop-off and pick-up curb. ▪ Construct Ground Transportation Center (GTC). ▪ Construct replacement terminal parking garage, surface parking and employee parking facilities. ▪ Construct Transportation Network Companies & Taxi Staging Area.
Connected Actions – Other Roadway Access Improvements: ▪ Construct roadway and intersection improvements in coordination with the Federal Highway Administration (FHWA), and the Missouri Department of Transportation (MoDOT),[13] including: o Auxiliary lane and shoulder improvements along westbound I-70 between the Airflight Drive and Natural Bridge Road interchanges, o Airflight Drive intersection improvements, including removing direct access from northbound Airflight to the proposed Consolidated Terminal, o Remove ramp from Lambert International Boulevard onto westbound I-70, and o Intersection improvements at the I-70 and Cypress Road/Natural Bridge Interchange, which may include widening or restriping pavement for additional turning lanes at the various ramp terminal intersections. ▪ Construct potential additional access improvements as identified and refined during the detailed design phase of the project.

Source: CMT, 2024.

[13] During the conceptual design phase of the CTP, it was determined that some off-airport roadway capacity improvements would be needed to better accommodate vehicular traffic demand that currently accesses two terminals at STL but would access a single terminal under the Proposed Action. Therefore, these proposed off-airport roadway improvements have been included as part of the Proposed Action being evaluated in this EA and are being coordinated with MoDOT and FHWA. Further information regarding the proposed off-airport roadway improvements is presented in Appendix K: Surface Transportation Assessment.

Figure 1.5-1: Proposed Action – Consolidated Terminal Program (Structure Removals)



Legend

- Existing Airport Property Line
- Project Limits
- Proposed Structure Demolition
- Existing Structure to Remain
- This Area Excluded From Project Limits

Existing Buildings/Facilities to Remain

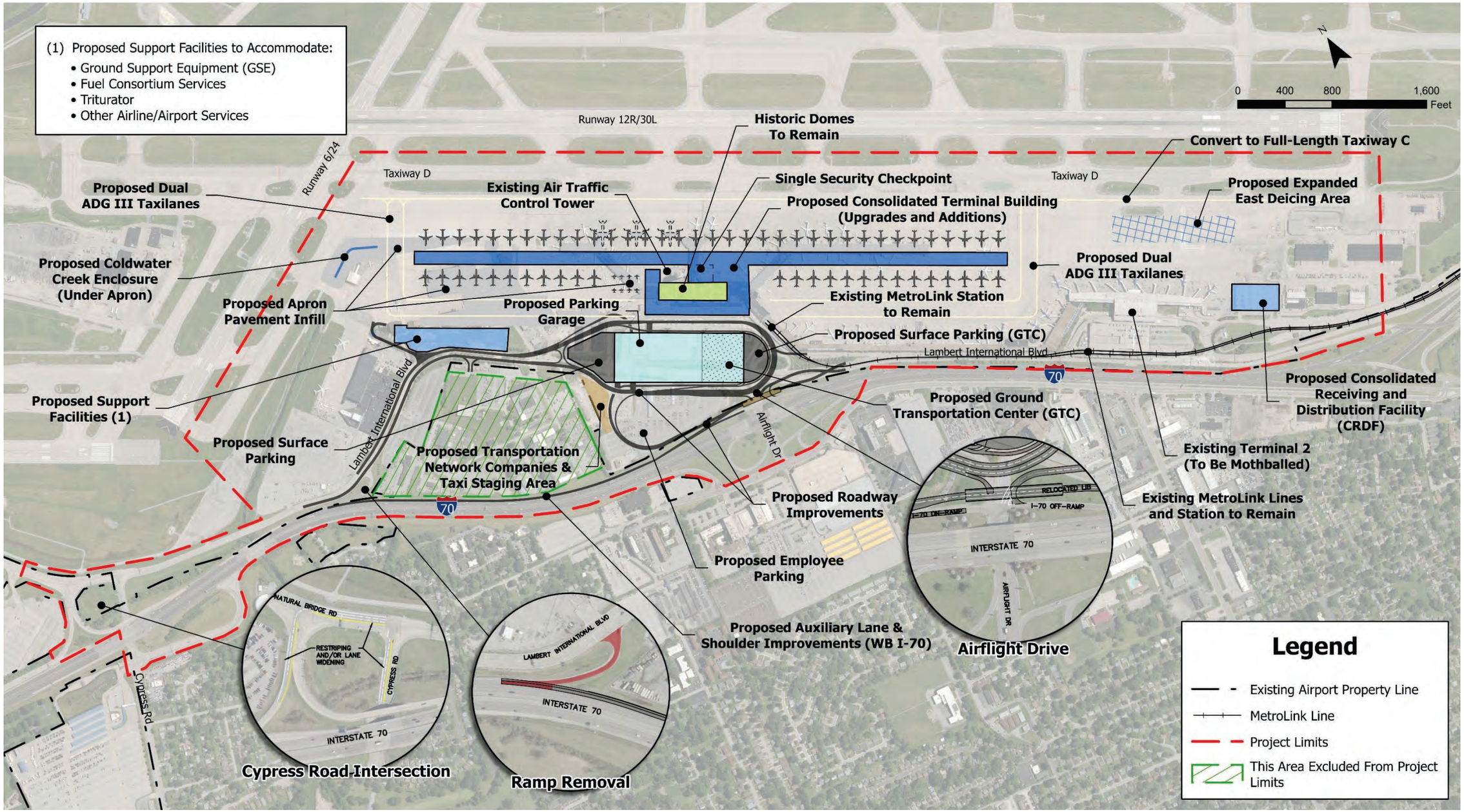
Building No.	Description
101	Terminal 1 - Including Historic Domes
102	Terminal 2 - To be Mothballed
108	Air Traffic Control Tower
300	American Airlines Hangar Hush House
301	American Airlines Maintenance Hangar
302	American Airlines Maintenance Docks
303	American Airlines Storage Warehouse
304	American Airlines Shop & Office Buildings

Existing Buildings/Facilities to be Removed

Building No.	Description	Building No.	Description
103	Concourse A	602	National Guard (MoANG 108)
104	Concourse B	603	National Guard (MoANG 8)
105	Concourse C	604	National Guard (MoANG 105)
106	Concourse D	605	National Guard (MoANG 12)
306	Community/America Credit Union	606	National Guard (MoANG 2)
307	Host Commissary	607	National Guard (MoANG 5)
308	Swissport Maintenance Shop (Fuel Facilities)	608	National Guard (MoANG 4)
309	Swissport Office Building	609	National Guard (MoANG 79)
310	GSE Maintenance Building	610	National Guard (MoANG 110)
315	Building Maintenance	611	National Guard (MoANG 47)
322	Checkpoint 17S	612	Jet Linx (MoANG 115)
323	West Triturator	613	Air Choice One Maintenance Hangar
406	Boiler Shop West Power Plant	614	Shed by Hush House (MoANG 107)
410	Medical Supplies Building	615	National Guard (MoANG 85)
411	Airfield General Building	616	National Guard (MoANG 109)
419	West Lambert Substation	1000	Terminal 1 Parking Garage
601	National Guard (MoANG 1)		

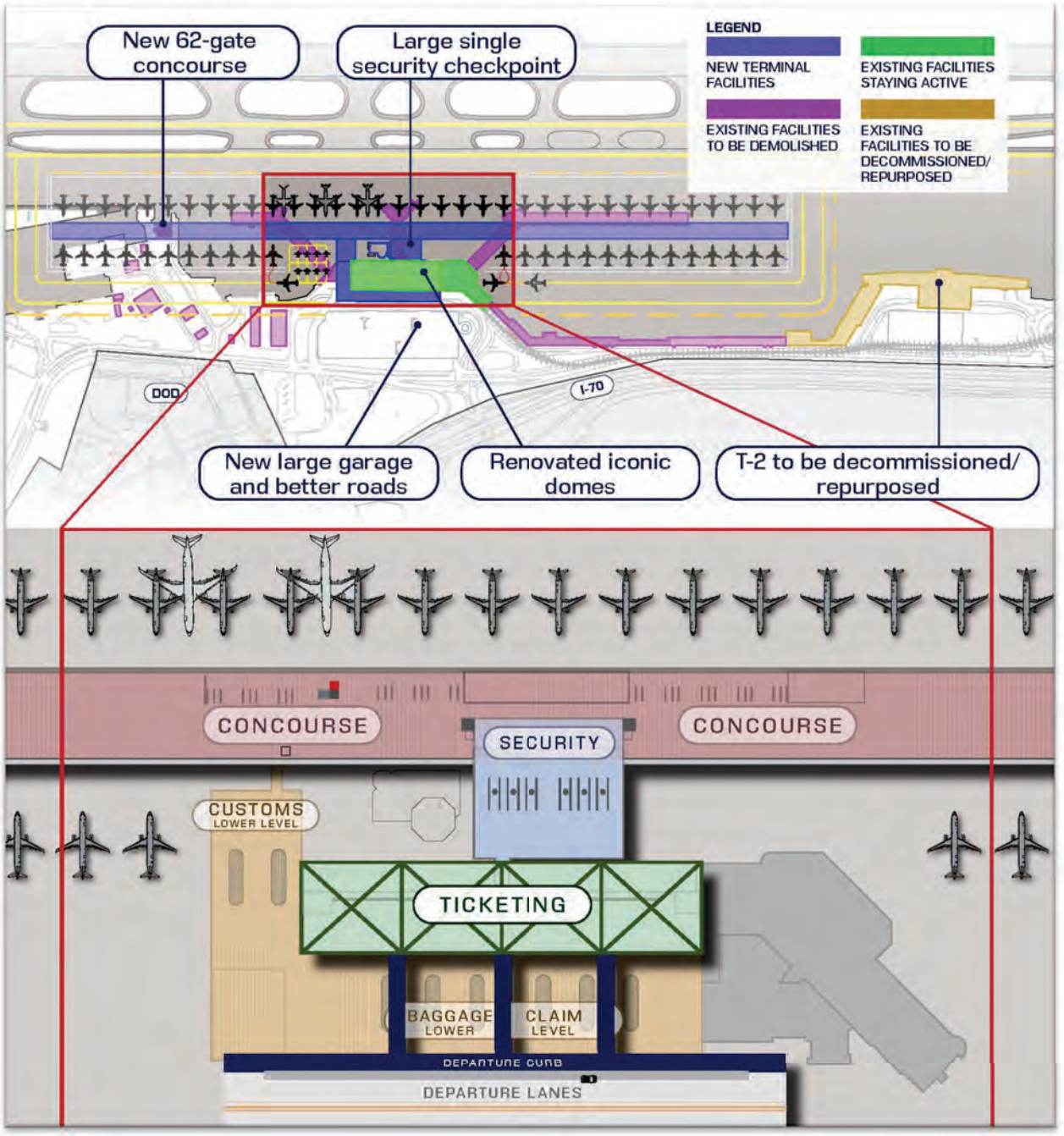
Source: CMT, 2024.

Figure 1.5-2: Proposed Action - Consolidated Terminal Program



Source: CMT, 2024.

Figure 1.5-3: Proposed Action - Consolidated Terminal Conceptual Layout



Source: WSP USA, 2024.

1.6 Requested Federal Actions

FAA is the lead federal agency and is responsible for ensuring compliance under NEPA for the Proposed Action. Listed below are additional actions by FAA necessary to develop the Proposed Action.

- Unconditional approval of the 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 interest of national defense.
- Approval of changes to the airport certification manual pursuant to 14 CFR Part 139 (49 USC §44706).
- Determinations under 49 USC 47106 and 47107 relating to the eligibility of the Proposed Action for federal funding under the Airport Improvement Program (AIP), Bipartisan Infrastructure Law (BIL), Airport Infrastructure Grant Program (AIG), and other FAA administered federal funding programs, 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 consolidated terminal and associated actions that may directly or indirectly impact FAA facilities including but not limited to utility relocations.