APPENDIX B

PURPOSE AND NEED, AND PROPOSED ACTION

Appendix B: Need for Project Components as a Result of Taxiway B Relocation

The following project components are needed as a result of Taxiway B relocation.

B.1 Need for Taxiway Connector Relocation and Reconfiguration

The lateral shift of Taxiway B 50 to 75 feet to the west, described in **Section 1.3.2.2**, would subsequently require relocating Taxiway Connectors B1, B2, B3, B4, B5, B7, B9, and B10 at approximately the same distance to maintain access between Taxiway B and adjacent landside facilities. During reconstruction, Taxiway Connector B2 would be expanded to accommodate TDG 5 aircraft, and Taxiway Connectors B1, B5, and B10 would be reconfigured to eliminate the expansive pavement detailed in **Section 1.1.4**. As described in FAA AC 150/5300-13B – Change 1, expanses of pavement can obscure critical visual cues for pilots, such as the location of the taxiway threshold, and contribute to loss of situational awareness.[1] Lastly, Taxiway Z needs to be removed because it provides direct access from the adjacent apron to Runway 14R-32L through Taxiway B. As described in FAA AC 150/5300-13B – Change 1, this could cause a pilot to confuse Runway 14R-32L with a parallel taxiway leading to a runway incursion.[2] In its place, an aircraft turnaround capable of serving Boeing 777 series aircraft would need to be constructed at the Runway 14R end, along the blast pad. The taxiway connector relocations and reconfigurations described above are needed to meet current FAA design standards and to enhance operational safety for aircraft taxiing to and from Runway 14R-32L.

B.2 Need for Landside Infrastructure Relocation and Construction

The lateral shift of Taxiway B 50 to 75 feet to the west, described in **Section 1.3.2.2**, would subsequently shift the Taxiway Object Free Area (TOFA). FAA AC 150/5300-13B – Change 1 defines the TOFA as an area centered on the taxiway provided to enhance the safety of aircraft operations by remaining clear of above-ground objects, except those needed for air navigation or aircraft ground maneuvering purposes.[3] For ADG IV aircraft, the TOFA at BFI has a total width of 243 feet, extending 121.5 feet on either side of the taxiway centerline. To maintain a clear TOFA and thereby enhance the

[1] Federal Aviation Administration. (2024, August 16). Advisory Circular 150/5300-13B, *Airport Design - Change 1*. Retrieved January 2026 from https://www.faa.gov/airports/advisory_circulars/150_5300-13
[2] FAA AC 150/5300-13B, Airport Design – Change 1
[3] FAA AC 150/5300-13B, Airport Design – Change 1

safety of aircraft operations, the following landside infrastructure would need to be relocated or reconfigured:

- **Vehicle Service Road (VSR)**. The full length of the existing VSR would need to be demolished and relocated to remain outside the future TOFA. A new VSR would be constructed parallel to and immediately outside of the future TOFA.
- **Aircraft Aprons**. Approximately 2.1 acres of aircraft apron, including aircraft tie-down areas, would need to be demolished to remain outside the future TOFA and VSR. Approximately 7.5 acres of new aircraft apron would be constructed, including the demolition of two existing buildings on Parcel 4 to accommodate a new aircraft apron. **Table B-1** shows the number of proposed aircraft tie-downs and hangar area relative to the existing conditions.

Table B-1: Number of Aircraft Tie-Downs and Hangar Area

	Existing Number of Aircraft Tie-Downs and Hangar Square Footage	Proposed Action Number of Aircraft Tie-Downs and Hangar Square Footage if Project is Approved	Change in Number of Aircraft Tie-Downs if Project is Approved
Midfield Airpark	17 tie-downs 46,000 SF for hangars	11 tie-downs 46,000 SF for hangars	-6 tie-downs
Southwest Airpark	43 tie-downs 65,000 SF for hangars	37 tie-downs 65,000 SF for hangars	-6 tie-downs
Southeast Airpark Tie-Down Expansion	--	12 tie-downs 0 SF for hangars	+12 tie-downs
Total	60 tie-downs 111,000 SF for hangars	60 tie-downs 111,000 SF for hangars	No Net Change

Source: KCIA, 2026; RS&H, 2026.

- **Security Fence**. Approximately 1,389 linear feet (LF) of security fence would need to be demolished to remain outside the future TOFA and VSR. Approximately 4,169 LF of new security fence would be constructed.
- **Blast Fence**. Approximately 3,561 LF of new blast fence would need to be constructed to protect aircraft parked on the Boeing Co. apron, due to the reduced separation from Taxiway B.
- **Airport Traffic Control Tower (ATCT) and Vehicle Access Road**. The existing FAA ATCT would need to be relocated 615 feet south of its current position to remain outside of the future TOFA and VSR. The location of the new ATCT was established through an FAA siting study completed in 2025. The siting of the new ATCT complies with FAA Order 6480.4C, *Siting of Airport Traffic Control Towers*, which states that "visibility from the ATCT cab must allow an unobstructed view of all runways and any other takeoff/landing areas and consider air traffic in the vicinity of the airport."[4] To provide access to the new ATCT, a new vehicle access road would need to be constructed from East Marginal Way South to the ATCT facility.
- **Vehicle Parking Lots**. The future Taxiway B TOFA and VSR would result in the removal of approximately 132 vehicle parking spaces (0.9 acre) (see Land Acquisition Project Q2 in **Exhibit 1-5** in **Chapter 1**) resulting in a total of 268 parking spaces remaining. The portion of the existing Museum of Flight parking lot not within the future Taxiway B TOFA and VSR could be restriped, which would result in a reduction of 67 parking spaces rather than 132 parking spaces for a total of 333 parking spaces. As mitigation for the loss of parking spaces, replacement parking spaces could be provided in Parking Lot 1 across East Marginal Way South (142 spaces) or in Parking Lot 2 on South 96th Place (120 spaces) (see **Exhibit B-1**). As shown in **Table B-2**, the number of parking spaces to be provided is dependent on whether the Museum of Flight parking lot is restriped and whether Parking Lot 1 and/or Parking Lot 2 is used. The total number of parking spaces for the Museum of Flight ranges from 268 (a net decrease of 132 spaces) to 595 (a net increase of 195 spaces).

[4] Federal Aviation Administration. (2025, September 18). Order 6480.4C, *Siting of Airport Traffic Control Towers (ATCT)*. Retrieved October 2025 from https://www.faa.gov/Library/Order_6480.4C.pdf

Exhibit B-1: Proposed Museum of Flight Vehicle Parking Lots

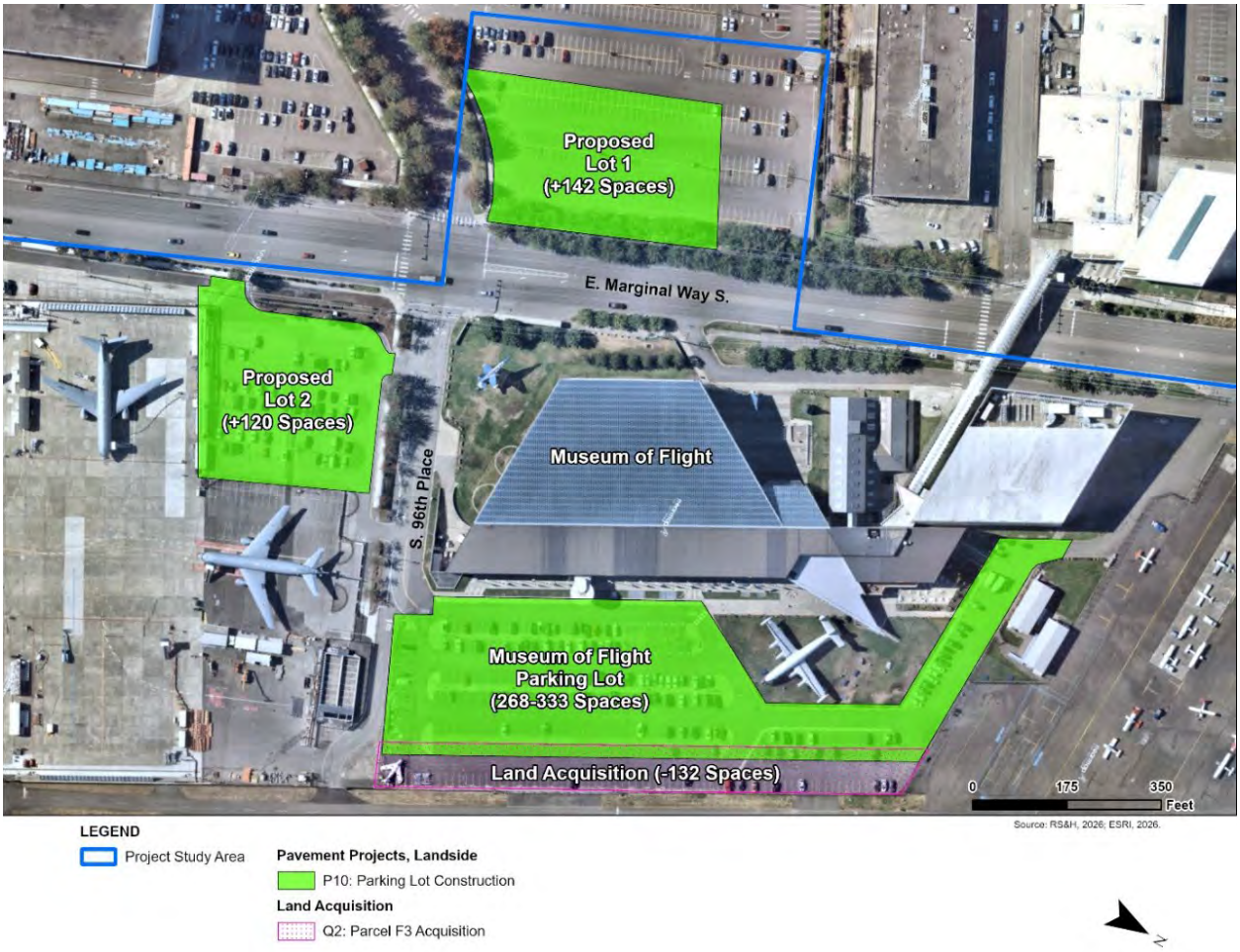

Table B-2: Future Parking Spaces for the Museum of Flight

	Museum of Flight Parking Lot	Parking Lot 1	Parking Lot 2	Total Parking Spaces (Net Change)
No Restriping of Existing Museum of Flight Parking Lot	268	-	-	**268** (-132)
No Restriping of Existing Museum of Flight Parking Lot and Parking Lot 1	268	142	-	**410** (+10)
No Restriping of Existing Museum of Flight Parking Lot and Parking Lot 2	268	-	120	**388** (-12)
No Restriping of Existing Museum of Flight Parking Lot and Parking Lots 1 and 2	268	142	120	**530** (+130)
Restriping of Existing Museum of Flight Parking Lot	333	-	-	**333** (-67)
Restriping of Existing Museum of Flight Parking Lot and Parking Lot 1	333	142	-	**475** (+75)
Restriping of Existing Museum of Flight Parking Lot and Parking Lot 2	333	-	120	**453** (+53)
Restriping of Existing Museum of Flight Parking Lot and Parking Lots 1 and 2	333	142	120	**595** (+195)

Source: KCIA, 2026; RS&H 2026.

– **Aircraft Rescue and Firefighting (ARFF) Stations and Electrical Vault**. A new ARFF station for use by the Boeing Co., would be constructed about 1,000 feet southeast of the existing Boeing Co. ARFF station. A new ARFF station for use by King County would be constructed about 2,000 feet southeast of the existing Boeing Co. ARFF station. The existing electrical vault would remain at its current location.

- **Ground Support Equipment (GSE) storage area**. A 1-acre GSE storage area would need to be constructed due to the reconfiguration of landside facilities.
- **Underground Stormwater Vaults**. In order to manage stormwater runoff from all project components, one (1) existing underground stormwater vault would need to be expanded, and up to three (3) new stormwater vaults would need to be constructed.
- **Underground transformers**. Fourteen (14) underground transformers along the Boeing Co. apron would need to be relocated to remain outside the future TOFA and VSR.
- **Hydrant Fueling Station**. Three (3) hydrant fueling stations would need to be constructed to meet demand for delivering aviation fuel directly from storage tanks to parked aircraft.

B.3 Need for Land Acquisition

The following land acquisitions are needed to accommodate the relocation of Taxiway B and associated changes to landside infrastructure:

- **Parcel F2**. The acquisition of approximately 1.02 acres from the Boeing Co. would be needed to relocate the VSR and security fence.
- **Parcel F3**. The acquisition of approximately 0.87 acres from the Museum of Flight would be needed to relocate the VSR and security fence and construct portions of a new parking lot.
- **Parcel F4**. The acquisition of approximately 3.6 acres from Wood Meadow would be needed to relocate the VSR and construct an aircraft apron, blast fence, and underground stormwater vault.