

KANSAS CITY
Aviation

Airport Master Plan

KANSAS CITY DOWNTOWN AIRPORT – WHEELER FIELD

Chapter 6

Proposed Capital Improvement Program



The analyses completed in previous chapters evaluated development needs at Kansas City Downtown Airport – Wheeler Field (MKC) over the next 20 years and beyond, based on forecast activity and operational efficiency. Basic economic, financial, and management rationales will be applied to each development item so the feasibility of each item in the plan can be assessed.

The presentation of the capital improvement program (CIP) has been organized into two sections. First, the airport development schedule and CIP cost estimate are presented in narrative form accompanied by color exhibits. Second, capital improvement funding sources on the federal, state, and local levels are identified and discussed.

AIRPORT DEVELOPMENT SCHEDULES AND COST SUMMARIES

The preferred development plan has been presented and specific needs and improvements for the airport have been established. The next step is to determine a realistic implementation schedule and associated cost estimates for the plan. The recommended improvements are grouped by planning horizon: short term, intermediate term, and long term. The short-term planning horizon is further subdivided into yearly increments.

Because a master plan is a conceptual document, implementation of the capital projects should only be undertaken after further refinement of their designs and costs through engineering analyses. Moreover, some projects may require additional infrastructure improvements (e.g., drainage improvements, extension of utilities, etc.) that may take more than one year to complete. In addition, the airport's CIP is updated on an annual basis in coordination with the FAA.

It is difficult to know the precise costs of proposed individual projects; however, preparing order-of-magnitude cost estimates is an effective way to become familiar with the potential costs. Once the list of recommended projects was identified and refined, project-specific cost estimates were developed.

The project cost estimates include environmental documentation, design, engineering, construction administration, and contingencies that may arise. Capital costs presented here should be viewed only as estimates that are subject to further refinement during design; nevertheless, these estimates are considered sufficient for planning purposes. Cost estimates were developed based on recent airport construction costs in the region. Cost estimates for each development project in the CIP are in current (2024) dollars. **Exhibit 6A** presents the proposed CIP for Kansas City Downtown Airport – Wheeler Field.

The FAA utilizes a priority ranking system to help objectively evaluate potential airport projects. Projects are weighted toward safety, infrastructure preservation, standards, and capacity enhancement. The FAA will participate in the highest priority projects before considering lower priority projects, even if a lower priority project is considered a more urgent need by the sponsor; however, such a project should remain a priority for the airport and funding support should continue to be requested in subsequent years.

An important goal of the CIP is that future projects for which the airport may request FAA funding are included on the list. On an annual basis, the CIP is updated and reviewed with the FAA and the Missouri Department of Transportation (MoDOT) Multimodal Operations Division – Aviation Section. Projects on the CIP will be moved up and down, based on priority and funding availability. Periodically, new projects will arise that can then be added to the annual CIP presented to the FAA.

Hangar construction is often left to the private sector. It is typical for private hangar development to include a portion of the ramp area in front of the hangar. Taxilanes that provide access to/from hangar areas are generally eligible for FAA grant funding, unless they are exclusive-use taxilanes.

The following sections will describe the projects identified for the airport over the next 20 years in greater detail. The short-term projects cover the first five years and are presented in yearly increments. The intermediate term covers years 6-10 and long-term projects cover years 11-20. Each project is ranked according to its priority at the time the list was developed.

LEASED LAND AND PRIVATE DEVELOPMENT

Much of the land at the airport is under long-term lease. The preferred development plan (previously shown on Exhibit 5A) shows potential hangar development on both leased and unleased parcels. The hangars shown on the leased land are situated to maximize development land at the airport; however, because the land is already under lease, only the leaseholder has the opportunity to develop hangars. When the leases expire, airport management may wish to modify the leaseholds to reclaim undeveloped land and make it available to other developers. Common airport leases include the hangar footprint, vehicle parking areas, and no more than a 50-foot perimeter, including on the apron side. Organizing leaseholds in this manner would bring apron areas back into public usage, which would also make them eligible for FAA grant funding for rehabilitation.

All future hangar development at the airport is anticipated to be undertaken by the private sector; therefore, the CIP does not include hangar development. At an airport where there is demand for hangars, it is common for the airport to provide a land lease with a stipulation that a hangar must be built within a certain timeframe. Furthermore, the airport will receive monthly revenue for the land lease.

Project No.	Timeframe	PROJECT DESCRIPTION	NPR	Federal Share	Local Share	Total
		SHORT TERM (Years 1-5)				
1	2026	Reconstruct Taxiway B East of Runway 4-22	72	$5,936,550	$312,450	$6,249,000
2	2026	Construct Taxiway B West of Runway 4-22 to Taxiway L	72	$2,270,500*	$119,500	$2,390,000
3	2027	Replace Runway 1-19 Electrical System, Vault Regulators, and Upgrade Runway Guard Lighting	72	$3,562,500	$187,500	$3,750,000
4	2027	Taxiway L Hangar Development Area (Private Construction)	NA	$0	$0	$70,000,000**
5	2027	Runway 1-19 EMAS Seam Seal Rehabilitation	76	$1,620,000	$180,000	$1,800,000
6	2028	Reconstruct Taxiways H & K and Complete Taxiway G Geometric Improvements	72	$5,670,000	$630,000	$6,300,000
7	2029	Taxiway D Geometric Improvements	72	$2,295,000	$255,000	$2,550,000
8	2030	Construct Taxiway A Holding Bay	56	$3,105,000	$345,000	$3,450,000
		SHORT TERM TOTAL		**$24,459,550**	**$2,029,450**	**$26,489,000**
		INTERMEDIATE TERM (Years 6-20)				
9	IT	Reconstruct Air Carrier Apron	66	$11,295,000	$1,255,000	$12,550,000
10	IT	Improve Airport Drainage	70	$10,260,000	$1,140,000	$11,400,000
11	IT	Reconstruct Taxiway M and Portions of Taxiway G	72	$8,964,000	$996,000	$9,960,000
12	IT	Reconstruct Portion of Taxiway G	72	$4,338,000	$482,000	$4,820,000
13	IT	Construct Vertiport	54	$648,000	$72,000	$720,000
14	IT	Construct Wash Rack	30	$1,035,000	$115,000	$1,150,000
		INTERMEDIATE TERM TOTAL		**$36,540,000**	**$4,060,000**	**$40,600,000**
		LONG TERM (Years 11-20)				
15	LT	Rehabilitate Runway 1-19	76	$7,740,000	$860,000	$8,600,000
16	LT	Rehabilitate East Taxiway System (Portions of Twy G, J, K, and A)	72	$3,150,000	$350,000	$3,500,000
17	LT	Rehabilitate West Taxiway System (Portions of Twy K, E, L, L1, L2, and L3)	72	$2,160,000	$240,000	$2,400,000
18	LT	Rehabilitate T-Hangar Taxilanes/Apron	66	$1,080,000	$120,000	$1,200,000
19	LT	Rehabilitate Taxiways A and B	72	$594,000	$66,000	$660,000
20	LT	Rehabilitate Runway 4-22	76	$6,174,000	$686,000	$6,860,000
21	LT	Rehabilitate Taxiway L South of Taxiway D	72	$405,000	$45,000	$450,000
22	LT	EMAS Replacement	76	$18,558,000	$2,062,000	$20,620,000
23	LT	ASOS Replacement	68	$1,800,000	$200,000	$2,000,000
24	LT	Hangar 5A/5B Removal	56	$534,600	$59,400	$594,000
25	LT	Master Plan Update	68	$1,800,000	$200,000	$2,000,000
		LONG TERM TOTAL		**$43,995,600**	**$4,888,400**	**$48,884,000**
		GRAND TOTAL		**$104,995,150**	**$10,977,850**	**$115,973,000**

*Includes MODOT Funding
**Not included in totals

KEY

EMAS: Engineered Materials Arresting System
ASOS: Automated Surface Observation System

This page intentionally left blank

NATIONAL PRIORITY RATING (NPR)

The FAA evaluates each project an airport identifies on its CIP through a combination of quantitative and qualitative methods to establish and justify AIP expenditures. The FAA utilizes a National Priority Rating (NPR) formula to generate a value based on an equation that takes the project and the airport type into consideration. The NPR formula generally categorizes airport development in accordance with FAA goals and objectives. The value returned provides insight regarding the likely eligibility for the project to receive FAA discretionary funding. The ranking system value ranges from 0-100. The threshold for eligibility fluctuates from year to year but values above 55 have generally been eligible for funding. Each project identified in the CIP has an associated NPR value, as developed by the consultant; however, only the FAA can definitively make an eligibility determination.

SHORT-TERM IMPROVEMENTS (YEARS 1-5)

The projects identified for the short-term planning period have been prioritized based on airport need and their potential to be funded. If any of these projects cannot be funded in the timeframe indicated, the airport sponsor should move the project to a more appropriate timeframe. **Exhibit 6B** presents the CIP phasing plan. References to FAA eligibility mean the share of the total cost that is eligible for federal funds, as administered by the MoDOT Aviation Section. **Table 6A** details the short-term projects intended for fiscal years 1-5.

TABLE 6A | Capital Improvement Program Detail - Short Term (Years 1-5)

Project #1: Reconstruct Taxiway B East of Runway 4-22	
Cost Estimate: $6,249,000 *Funding Eligibility*: FAA – 95% / Airport Sponsor – 5%. This project is programmed for 2025 when the FAA funding level is 95 percent.	This project involves reconstructing Taxiway B between Runway 1-19 and Runway 4-22 and between Runway 1-19 and Taxiway G. the ultimate geometry is considered a potential solution to Hot Spot # (HS3) due to the integration of specific turning movements that are not present in the existing geometry that may allow for the elimination of HS3, in accordance with the Comparative Safety Assessment panel discussion in December 2019 and 2020 ALP update. This project is programmed to be completed in concert with the construction of Taxiway B between Runway 4-22 and Taxiway L to be funded with MoDOT participation.
Project #2: Construct Taxiway B West of Runway 4-22 to Taxiway L	
Cost Estimate: $2,390,000 *Funding Eligibility*: FAA/MoDOT – 95% / Airport Sponsor – 5%. This project is planned for 2025 when the FAA funding level is 95 percent. Funding this project through a MoDOT grant is also under consideration.	To complete this safety enhancement project, Taxiway B will be extended from Runway 4-22 to Taxiway L. This project is part of a multi-phase improvement to Taxiway B that may lead to the elimination of Hot Spot #3, due to the integration of standard turning movements that are not present in the current geometry. This project is part of the desired solution discussed in a comparative safety assessment panel conducted in December 2019. This project is considered for a MoDOT state grant.

Continues on next page

TABLE 6A | Capital Improvement Program Detail - Short Term (Years 1-5) (continued)

Project #3: Replace Runway 1-19 Electrical System, Vault Regulators, and Upgrade Runway Guard Lighting	
Cost Estimate: $3,750,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%. This project is planned for 2027 when the FAA funding level is 95 percent.	The Runway 1-19 electrical system was constructed in 2008 and is nearing the end of its expected useful life. The project would fully replace the runway's circuit and electrical components, including runway edge and threshold lights, runway distance remaining signs, taxiway guidance signs, new duct banks, sign panel modifications, and splice cans. New elevated and in-pavement runway guard lights (ERGL/IRGL) would be installed across the adjacent connector taxiways (A, B, E, G, K). Also included: Runway 1-19 regulator replacement; Runway 1, Runway 4 and Runway 22 VASI removal and PAPI installation; and airfield lighting generator replacement. The VASIs are owned by the FAA; therefore, a reimbursable agreement will be needed.
Project #4: Taxiway L Hangar Development Area (Private Construction)	
Cost Estimate: $70,000,000 *Funding Eligibility:* Private development. No planned FAA funding.	The KCAD solicited proposals through an RFP process for aeronautical development of the 21-acre undeveloped parcel to the west of the newly constructed Taxiway L. It is anticipated that any development will be the responsibility of the private sector under a long-term ground lease from the airport. The development plan considered in this master plan is only one possibility and it is likely that a private developer will have a different plan; however, the airport desires for any development to address the current demand for larger FBO type hangars and businesses. This project is listed not as an investment on the part of the airport but as a reminder that in the short term, it is anticipated that the parcel will be developed for aeronautical purposes to address current needs of the aviation industry, including local and transient aircraft demand. **Appendix G** presents an independent analysis of the cost of construction and the potential return-on-investment for the concept shown in this plan.
Project #5: Runway 1-19 EMAS Seam Seal Rehabilitation	
Cost Estimate: $1,800,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	The Engineered Materials Arresting System (EMAS) beds for Runway 1-19 were installed in 2010. No major rehabilitation projects on the EMAS blocks have been completed since a joint resealing project in 2015. In 2023, Runway Safe, Inc. completed a study on the EMAS bed strength and found them to be within acceptable limits. The study also showed that the EMAS beds would require seam seal rehabilitation in the near term. There are also 10 EMAS blocks that need to be replaced as part of the project. The EMAS condition is included in **Appendix D**.
Project #6: Reconstruct Taxiways H & K and Complete Taxiway G Geometric Improvements	
Cost Estimate: $6,300,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	The master plan has noted that Taxiway H, the high-speed exit available to pilots landing on Runway 19, needs reconstruction due to regular deterioration. This project plans to reconstruct this taxiway at a 30-degree angle, which is the standard, replacing the existing 20-degree angle of the taxiway. This project includes the construction of a no-taxi island on the apron to eliminate the possibility of direct access from the apron to the runway. Taxiway K from the east side of the runway to the hold line has a PCI of 33 which indicates that the pavement has failed and needs to be reconstructed. A no-taxi island at Taxiway M is also part of this project.

Continues on next page

SHORT TERM (Years 1-5)		
Project No.	Year	Project Description
1	2026	Reconstruct Taxiway B East of Runway 4-22
2	2026	Construct Taxiway B West of Runway 4-22 to Taxiway L
3	2027	Replace Runway 1-19 Electrical System, Vault Regulators, and Upgrade Runway Guard Lighting
4	2027	Taxiway L Hangar Development Area (Private Construction)
5	2027	Runway 1-19 EMAS Seam Seal Rehabilitation
6	2028	Reconstruct Taxiways H & K and Complete Taxiway G Geometric Improvements
7	2029	Taxiway D Geometric Improvements
8	2030	Construct Taxiway A Holding Bay

INTERMEDIATE TERM (Years 6-10)	
Project No.	Project Description
9	Reconstruct Air Carrier Apron
10	Improve Airport Drainage
11	Reconstruct Taxiway M and Portions of Taxiway G
12	Reconstruct Portion of Taxiway G
13	Construct Vertiport
14	Construct Wash Rack

LONG TERM (Years 11-20)	
Project No.	Project Description
15	Rehabilitate Runway 1-19
16	Rehabilitate East Taxiway System (Portions of Twy G, J, K, and A)
17	Rehabilitate West Taxiway System (Portions of Twy K, E, L, L1, L2, and L3)
18	Rehabilitate T-Hangar Taxilanes/Apron
19	Rehabilitate Taxiways A and B
20	Rehabilitate Runway 4-22
21	Rehabilitate Taxiway L South of Taxiway D
22	EMAS Replacement
23	ASOS Replacement
24	Hangar 5A/5B Removal
25	Master Plan Update

LEGEND

- Airport Property Line
- A — Taxiway Designation
- Short Term Project
- Intermediate Term Project
- Long Term Project

KEY

EMAS: Engineered Materials Arresting System

ASOS: Automated Surface Observation System

N

0 600

SCALE IN FEET

Photo Source: Google Earth 04/12/2024

U.S. 169

Richards Rd

NE Levee

Runway 4-22 (5,050' x 100')

Runway 1-19 (6,827' x 150')

NW Lou Holland Dr

NE Levee Rd

Missouri River

This page intentionally left blank

TABLE 6A | Capital Improvement Program Detail - Short Term (Years 1-5) (continued)

Project #7: Taxiway D Geometric Improvements	
Cost Estimate: $2,550,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	The intersection of Taxiway D and Taxiway L has been determined to be a Hot Spot (HS2). To alleviate potential pilot loss of situational awareness and direct access from a hangar apron to runway 1-19, Taxiway D will be reconstructed and realigned to create an offsetting taxiway intersection. The geometry of Taxiway D between Taxiway L and Runway 1-19 is non-standard. It has non-standard flared fillets, which create a wide expanse of pavement. This reconstruction project will standardize the taxiway at a 90-degree angle to the runway. Due to the periodic passage of large transport type aircraft (e.g., B-737s and B-757s), the taxiway is planned at a width of 75 feet.
Project #8: Construct Taxiway A Holding Bay	
Cost Estimate: $3,450,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	Operational activity at MKC is at a level that causes capacity issues, meaning levels of delay have a negative impact on capacity. Construction of a hold apron adjacent Taxiway A between the runways is a capacity improvement project that will provide additional options for tower controllers to hold aircraft in proximity to the departure ends of both runways.

Short Term Summary

The short-term CIP addresses the highest priority projects for the airport. These projects primarily relate to safety and include several taxiway projects intended to address FAA-designated hot spots, as well as the runway incursion mitigation (RIM) location.

The short-term projects total approximately $26.49 million. The share eligible for FAA funding is estimated at $24.46 million. One project is identified for potential MoDOT funding. Development of the 21-acre area adjacent Taxiway L is estimated at $70.0 million and is assumed to be private investment. The total local share is $2.03 million.

INTERMEDIATE-TERM PROJECTS (YEARS 6-10)

The intermediate-term projects are those anticipated to be needed within years six through 10 of the 20-year study timeframe. Many of these projects are priorities for the airport and could reasonably fall within the short-term timeframe; however, the current short-term projects are higher priorities at this time. Positioning the intermediate-term projects in this timeframe indicates recognition that grant funds are not limitless and it is necessary to spread capital projects over a reasonable period of time. **Table 6B** details the projects planned for years 6-10.

TABLE 6B | Capital Improvement Program Detail - Intermediate Term (Years 6-10)

Project #9: Reconstruct Air Carrier Apron	
Cost Estimate: $12,500,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	The east terminal apron is under the control of airport management and is included in an existing leasehold. The PCI value shows this pavement is in failed condition and needs reconstruction. This apron is used for overflow transient aircraft parking for commercial service and charter aircraft including dignitary and VIP flights.

Continues on next page

TABLE 6B | Capital Improvement Program Detail - Intermediate Term (Years 6-10) (continued)

Project #10: Improve Airport Drainage	
Cost Estimate: $11,400,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	The airport is currently addressing various drainage issues on the airfield and self-funding those efforts. This project is listed in anticipation that some of the drainage improvements may require significant investment; therefore, FAA funding would be requested. The drainage improvements are critical to efficiently allowing stormwater (and, potentially, flood water) to drain from the airport. This project will also enhance the airport's efforts to comply with the *Federal Water Pollution Control Act* and/or the *Clean Water Act*.
Project #11: Reconstruct Taxiway M and Portions of Taxiway G	
Cost Estimate: $9,960,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	According to the pavement condition index (PCI), the pavement at this location is in near failed condition. This project will reconstruct Taxiway M and a portion of Taxiway G. It includes the construction of a no-taxi island to eliminate direct access to the runway from an apron via Taxiway M.
Project #12: Reconstruct Portion of Taxiway G	
Cost Estimate: $4,820,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	This portion of Taxiway G has a moderate PCI value of 70; however, it will likely need reconstruction by the intermediate term.
Project #13: Construct Vertiport	
Cost Estimate: $720,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	As discussed, the airport accommodates a significant number of helicopter operations. New technologies, such as advanced air mobility (AAM) with electric vertical takeoff and landing (eVTOL) aircraft, are also anticipated to soon. If there is a need to enhance safety for these types of aircraft, a dedicated vertiport may be considered. The location identified is on the airport-owned east terminal apron. Vertiports require various imaginary surfaces to be clear of obstructions and are typically outfitted with various lighting systems. An ALP update will be required, and the FAA will have to airspace the vertiport.
Project #14: Construct Aircraft Wash Rack	
Cost Estimate: $1,150,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	An airport with a significant level of based aircraft (typically 100 or more) will often provide an aircraft wash rack facility. A location has been identified for a wash rack within the general aviation hangar area. A wash rack often includes systems to separate cleaning fluids from water. A more advanced system may include an oil separator to allow aircraft owners and maintenance personnel to change aircraft oil at the same location.

Intermediate Term Summary

The intermediate-term projects include continuing to make improvements to the airfield drainage system, reconstructing the air carrier apron, reconstruction of several taxiways and construction of a vertiport and an aircraft wash rack.

The intermediate-term projects total approximately $40.60 million. The share eligible for FAA funding is estimated at $36.54 million. The total local share is $4.06 million.

LONG-TERM PROJECTS (YEARS 11-20)

The long-term projects are considered for implementation in years 11 through 20. These projects are not listed in order of priority. Instead, airport management should continually monitor the potential need for these projects and elevate them to the short-term CIP, as needed. The long-term projects are primarily related to ongoing maintenance and rehabilitation of all pavement surfaces. **Table 6C** details the long-term projects for years 11-20.

TABLE 6C | Capital Improvement Program Detail - Long Term (Years 11-20)

Project #15: Rehabilitate Runway 1-19	
Cost Estimate: $8,600,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	Runway 1-19 is currently in good condition, with PCI values in the 90s. By the long-term planning period, it is anticipated that the runway will need a significant rehabilitation project.
Project #16: Rehabilitate East Side Taxiways (Portions of Taxiways G, J, K, and A)	
Cost Estimate: $3,500,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	This project is a placeholder to remind airport staff that pavements will deteriorate over time and will need to be rehabilitated and/or reconstructed. The pavements identified in this project are currently in very good condition but will likely need some investment to maintain their condition 10 to 20 years from now.
Project #17: Rehabilitate West Side Taxiway System (Portions of Taxiways K, E, L, L1, L2, and L3)	
Cost Estimate: $2,400,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	Similar to the east side taxiway system rehabilitation, this project is a placeholder to remind airport management that pavements will deteriorate over time and will need some level of rehabilitation in the future.
Project #18: Rehabilitate T-Hangar Taxilanes and Apron Areas	
Cost Estimate: $1,200,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	The T-hangar and general aviation apron areas were constructed in 2009. The pavements are currently in good condition, but there may be a need for various repairs and rehabilitation in the future. This project is a placeholder for those projects.
Project #19: Rehabilitate Taxiways A and B	
Cost Estimate: $660,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	Taxiway A between the runways was reconstructed in 2022 and is in excellent condition. Taxiway B is planned to be reconstructed in 2025. In the later years of this study, isolated panel replacement as well as cleaning and sealing joints will be needed. This project is a placeholder for those repairs.
Project #20: Rehabilitate Runway 4-22	
Cost Estimate: $6,860,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	Runway 4-22 underwent a major rehabilitation in 2023 and is currently in excellent condition. Within the 20-year timeframe of this study, Runway 4-22 will likely need additional maintenance and repair. This project is a placeholder for those repairs. A complete reconstruction is not anticipated to be needed within the next 20 years.
Project #21: Rehabilitate Taxiway L South of Taxiway D	
Cost Estimate: $450,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	Taxiway L south of Taxiway D was constructed in 2024. This project is a placeholder for various repairs that may be needed within the long-term timeframe including isolated panel replacement as well as cleaning and sealing joints.

Continues on next page

TABLE 6C | Capital Improvement Program Detail - Long Term (Years 11-20) (continued)

Project #22: EMAS Replacement	
Cost Estimate: $20,620,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	A short-term project was identified to repair the EMAS beds. The EMAS beds will be 30 years old 15 to 20 years from now. It is anticipated that the EMAS will degrade over time and will ultimately need to be replaced.
Project #23: ASOS Replacement	
Cost Estimate: $2,000,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	Replacement weather equipment is eligible for FAA grant funding. This is a project to replace the existing automated surface observing system (ASOS) when it is needed.
Project #24: Hangar 5A/5B Removal	
Cost Estimate: $594,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	These hangars located near the approach to Runway 22 penetrate the Runway 4-22 Part 77 primary surface. Objects should not be located within the primary surface. In consultation with the FAA Central Regional Airports Division, it is understood that replacement hangars will not be built in this location in the future. When these hangars reach the end of their useful life, the airport should have the hangars demolished.
Project #25: Master Plan Update	
Cost Estimate: $2,000,000 *Funding Eligibility:* FAA – 90% / Airport Sponsor – 10%.	FAA indicates that airports should follow a continuous planning process and that their primary planning documents, such as master plans and airport layout plans (ALPs), should be updated periodically. For national general aviation airports, like MKC, a master plan should be updated approximately every seven to 10 years. In that timeframe, aviation demand and FAA design standards can change significantly, and revised planning efforts are necessary to address those changes.

Long Term Summary

The long-term projects are largely placeholders for pavement rehabilitation and reconstruction, as well as EMAS and ASOS replacements. Each project will need to be reevaluated over time to further define its scope, schedule and cost.

The long-term projects total approximately $48.88 million. The share eligible for FAA funding is estimated at $43.99 million. The local share is estimated at $4.88 million.

CAPITAL IMPROVEMENT PROGRAM SUMMARY

The CIP is intended as a guide for airport improvements to help educate the airport sponsor, the FAA, and state aviation officials regarding needed projects. The plan presented in this chapter will meet the forecast demand over the next 20 years and beyond. The first five years of the CIP represent the highest priority projects for the airport. The sequence of projects will likely change due to availability of funds or changing priorities in the years to come; nevertheless, is the CIP provides a comprehensive list of capital improvement projects the airport should consider in the next 20 years.

The total CIP is estimated at approximately $115.97 million. The share eligible for FAA funding is estimated at $104.99 million, which includes state funding of a portion of the Taxiway B project. The local share is estimated at $10.97 million. An additional $70.0 million is included as a placeholder for the development of the 21-acre parcel adjacent Taxiway L, which is assumed to be privately financed.

CAPITAL IMPROVEMENT FUNDING SOURCES

Financing capital improvements at MKC will not rely solely on the financial resources of the Aviation Department. Capital improvement funding is available through various grant-in-aid programs on both the federal and state levels. Historically, the airport has received both federal and state funding. While more funds could be available in some years, the CIP was developed with project phasing to remain realistic and within the range of anticipated grant assistance. The following discussion outlines key sources of funding potentially available for planned capital improvements.

Access to these sources of financing varies widely among airports. Some large airports, and airport systems, maintain substantial cash reserves, while smaller commercial service and general aviation airports often require subsidies from local governments to fund operating expenses and finance modest improvements.

FEDERAL GRANTS

Through federal legislation over the years, various grant-in-aid programs have been established to develop and maintain a system of public-use airports across the United States. The purposes of this system and its federally based funding programs are to maintain national defense and to promote interstate commerce. The most recent legislation that affects federal funding is the *FAA Reauthorization Act of 2024*, which expires after four years (September 30, 2028), and U.S. Congress must pass appropriations annually. The FAA's Airport Improvement Program (AIP) expires periodically, and federal reauthorization is required for it to continue to provide financial assistance to airports.

When an airport accepts an FAA grant, the airport sponsor must agree to comply with 39 grant assurances. Grant assurances require the recipient to maintain and operate its airport safely and efficiently and in accordance with specified conditions. The duration of the grant assurances obligation depends on the type of recipient (i.e., airport sponsor, planning agency, noise compatibility project, block grant state, etc.), the useful life of the facility being developed, and other conditions stipulated in the assurances.

Airport Improvement Program

The *FAA Reauthorization Act of 2024* authorizes the AIP at $4.0 billion for fiscal years 2025 through 2028. Eligible airports, which include those in the *National Plan of Integrated Airport Systems* (NPIAS), such as MKC, can apply for airport improvement grants. Nonprimary general aviation airports, such as MKC, are eligible for $150,000 annually through AIP.

Funding for AIP-eligible projects is undertaken through a cost-sharing arrangement in which the FAA provides up to 90 percent of the cost and the airport sponsor invests the remaining 10 percent. In exchange for this level of funding, the airport sponsor is required to meet various grant assurances, including maintaining the grant-funded improvement for its useful life (usually 20 years). The new bill increases the federal share to 95 percent for fiscal years 2025 and 2026 for nonprimary airports, such as MKC.

The source for AIP funds is the Aviation Trust Fund, which was established in 1970 to provide funding for aviation capital investment programs (aviation development, facilities and equipment, and research and

development). The Aviation Trust Fund also finances the operation of the FAA. It is funded by user fees, including taxes on airline tickets, aviation fuel, and various aircraft parts.

Missouri is one of 10 states that participate in the AIP State Block Grant Program (SBGP). As such, MoDOT administers the AIP for airports that are classified as other than primary, meaning those airports with fewer than 10,000 annual passenger enplanements, including all general aviation airports in the NPIAS. However, AIP grants for MKC are administered by the FAA Central Region Airports Division rather than MoDOT due to MKC being part of a Medium Hub (with MCI) airport system.

Infrastructure Investment and Jobs Act (IIAJ)

In 2021, the federal *Infrastructure Investment and Jobs Act* was passed. This act provides approximately $20 billion in grants for infrastructure development at U.S. airports for 2022 through 2026. This funding is comprised of three elements:

- $15 billion has been allotted for airport infrastructure via the Airport Infrastructure Grants (AIG).
- $5 billion has been allotted for airport terminal development via the Airport Terminal Program (ATP).
- $5 billion has been allotted for air traffic facilities, including sponsor-owned control towers participating in the FAA Contract Tower program, via competitive infrastructure funds (FCT Competitive program).

MKC is eligible for funding through the IIJA program in the AIG and ATP categories. MKC is not eligible for funding through the FTC Competitive program because its airport traffic control tower is owned and staffed by the FAA. An additional $5 billion was made available to the FAA's Air Traffic Organization (ATO) for improvements to FAA-owned facilities and equipment, including the MKC ATCT.

The federal share for AIG is the same as an AIP grant (90 percent with a 10 percent local match), while the federal share for ATP grants is 95 percent for nonprimary airports. The same grant assurances that apply to AIP grants also apply to BIL grants. IIJA and AIP grants cannot be combined into a single grant. **Table 6D** outlines the funding availability for IIJA grants, the deadlines associated with these grants, and the amounts allocated to MKC for use on eligible infrastructure projects.

TABLE 6D | AIG Funding Availability

Fiscal year (FY) funds are first made available:	AIG funds available to MKC:	Funds must be obligated (under grant) by:*	Any unobligated funds must be obligated (under grant) in FY:
2022	$763,000	September 30, 2025	2026
2023	$844,000	September 30, 2026	2027
2024	$851,000	September 30, 2027	2028
2025	$687,000	September 30, 2028	2029
2026	$687,000	September 30, 2029	2030

*Applications for grants should be submitted by June to meet the September 30 obligation date.

STATE AID TO AIRPORTS

In addition to administering federal grants, the MoDOT Aviation Section sponsors state-level grant programs for capital improvements at public-use airports across the state. Airport sponsors that want to be considered for state funding must submit their CIP plans through the AirportIQ System Manager (ASM) for review by MoDOT. While this program is available to all public airports in the state, it is primarily intended to help non-NPIAS airports. Funding for projects is reviewed on a case-by-case basis and MKC should submit its ACIP to MoDOT for any and all projects for which it may desire additional funding.

LOCAL FUNDING

After consideration has been given to grants, the balance of project costs must be funded through local resources. A goal of any airport is to generate enough revenue to cover all operating and capital expenditures. For many general aviation airports, this goal is not always possible and other financing methods are needed.

There are several alternatives for local financing options for future development at the airport, including airport revenues, direct funding from the airport sponsor, bonds, and leasehold financing. These strategies could be used to fund the local matching share or complete a project if grant funding cannot be arranged.

Airport Revenues

An airport's daily operations are funded through the collection of various rates and charges generated by airport operations. Airports that serve both the commercial service sector and the general aviation sector have more potential revenue streams available to them. Potential revenue streams may include landing fees, fuel flowage fees, aircraft parking and remain-overnight fees, terminal building space, hangar space, and land leases.

Bonds

Bonding is a common method to finance large capital projects at airports. A bond is an instrument of indebtedness of the bond issuer to the bond holders; a bond is a form of loan or IOU. While bond terms are negotiable, the bond issuer is typically obligated to pay the bond holder interest at regular intervals and/or repay the principal at a later date.

Leasehold Financing

Leasehold financing refers to a developer or tenant financing improvements under a long-term ground lease. The obvious advantage of such an arrangement is that it relieves an airport sponsor of all responsibility for raising the capital funds for the improvement; however, the private development of facilities on a ground lease, particularly on property owned by an airport, produces a unique set of concerns. It may be more difficult for the tenant or developer to obtain private financing, as only the

improvements and the right to continue the lease can be utilized as collateral. A ground lease at a public airport typically provides for reversion of improvements to the airport sponsor at the end of the lease term, which reduces the potential value to a lender taking possession in a default situation. Also, companies that want to own their property as a matter of financial policy may not locate where land is only available for lease.

Public/Private Partnerships

In addition to leasehold financing, it is acceptable for an airport to enter some form of public/private partnership for various airport projects. Typically, these projects would be limited to hangar construction, but a private developer might construct a project (e.g., a taxilane) and deed it to the airport for ongoing maintenance. When entering into any such arrangement, the airport must ensure the private developer does not gain an economic advantage over other airport tenants.

MASTER PLAN IMPLEMENTATION

To implement the master plan recommendations, it is key to recognize that planning is a continuous process and does not end with acceptance of the master plan study. The airport should implement measures that allow it to track various demand indicators, passenger enplanements, based aircraft, hangar demand, and operations. The issues on which this master plan is based will remain valid for several years. A primary goal is for the airport to best serve the air transportation needs of the region while striving to be economically self-sufficient.

The actual need for facilities is best established by airport activity levels, rather than a specified date. For example, projections have been made regarding when additional hangars may be needed at the airport. In reality, the timeframe in which the development is needed may be substantially different from the projections. Actual demand may be slower to develop than expected, or high levels of demand may establish the need to accelerate development. Although every effort has been made during the planning process to conservatively estimate when facility development may be needed, aviation demand will dictate timing of facility improvements.

The value of a master plan lies in keeping the issues and objectives at the forefront of the minds of managers and decision-makers. In addition to adjustments in aviation demand, the timing of undertaking the improvements recommended in this master plan will impact how long the plan remains valid. The format of this plan reduces the need for formal and costly updates by simply adjusting the timing of project implementation. Updates can be made by airport management, thereby improving the plan's effectiveness.

In summary, the planning process requires airport staff to consistently monitor operations and based aircraft, as well as the conditions of airfield pavements. Analysis of aviation demand is critical to the timing and need for new airport facilities.