



MAX WESTHEIMER AIRPORT
The UNIVERSITY of OKLAHOMA
Master Plan Update

Implementation



KSA

05 IMPLEMENTATION

5.1 OVERVIEW

This chapter presents a summary of the airport improvements identified in the development plan Capital Improvement Program (CIP), its anticipated phasing, and funding sources. The analysis provides estimates of the local share of project costs and the total capital investment required from the airport sponsor over the planning period. These costs and associated funding sources are for planning purposes and may change at the time of implementation based on current construction costs, bidding, and project scope.

Additionally, the phasing and timing for future projects are important and will be subject to funding availability, sponsor contributions, and the needs of the airport users. Projects may be chosen from this plan and implemented accordingly based on dynamic market conditions and needs. The chapter is intended to be a guide for implementing the recommended development and may be flexible based on real-world factors and conditions.

5.2 CAPITAL IMPROVEMENT PROGRAM

The Capital Improvement Program (CIP) identifies improvement projects recommended for an airport over a specific period, estimates the order in which the projects are to take place, and calculates the projects' total costs and funding sources. As the CIP progresses from projects planned in the current year to those scheduled in future years, it becomes less detailed and more flexible. Additionally, the CIP is typically modified annually as new projects are identified or as projects and priorities change. **Table 5.1** summarizes projects for this plan.

TABLE 5.1 – AIRPORT DEVELOPMENT SUMMARY

Runways	Extend Runway 18/36 by 1,722'; Extend Runway 3/21 by 873' and reclassify RDC to B-II
Taxiway	Construct a parallel taxiway on the west side of Runway 18/36; Rehabilitate taxiways and add/upgrade LED MITL
Apron	Expand apron toward south development area; Reconstruct portions
Terminal Building	Construct new terminal building
Hangars	Promote construction of additional hangars in north and south development areas
Miscellaneous	Purchase or obtain aviation easements for land underlying ultimate RPZs

5.3 COST ESTIMATES

Projects presented in the Recommended Development Plan may involve many variables and phases. Costs associated with these projects usually include preliminary engineering, design, construction, and administration oversight. The lifecycle of each project will be determined by the type and associated complexity of each project. For instance, runway projects may involve many phases, and detailed engineering plans will be scoped and estimated at the time of project implementation. Due to these variables, most estimates of costs are on a scale comparable to airports with similar types of projects and requirements. However, these estimates are usually conservative for planning purposes to allow for adequate budgeting in future years.

In addition to raw materials, other factors are usually rolled into each project to give a total estimated cost that includes the following:

- Preliminary Engineering Reports
- Design (usually estimated at 10% of construction costs)
- Construction including mobilization costs for contractors
- Construction Administration (usually estimated at 10% of construction costs)

Given the uncertainty of future material costs and other variables, most estimates also include a 10% contingency buffer. When planning for projects as far as 20 years in the future, this will help offset any errors or changes in pricing. **Table 5.2** describes estimated total costs for projects included in the CIP while **Table 5.3** provides a breakout detail of projects anticipated to require private partner funding.

Traditionally, hangars are not typically considered high priority projects and are often constructed with private or third-party funds; however, they are an integral component for attracting operators and/or businesses to the field and one of the few primary revenue sources generated at the field. While there are federally assisted funding programs in place for hangars, other priority items at an airport usually preclude these from being constructed in the short-, and intermediate-time frames. Additionally, hangars are constructed based on market demands. Costs for hangars are provided for information purposes and are variable depending on the potential tenant's needs and lease agreement with the airport.

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TABLE 5.2 – COST ESTIMATES

Project Description	Engineering Services	Construction	Total Project
New Air Traffic Control Tower (ATCT) Siting Study	\$350,000	N/A	\$350,000
Construct new access to South Hangar Development area (including fence relocation)	\$821,372	\$3,285,488	\$4,106,860
New Air Traffic Control Tower (ATCT) Design and Construction	\$1,940,000	\$7,760,000	\$9,700,000
Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Total Cost (individual phases below)	\$648,000	\$2,592,000	\$3,240,000
• Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 1	\$264,000	\$1,056,000	\$1,320,000
• Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 2	\$176,000	\$704,000	\$880,000
• Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 3	\$208,000	\$832,000	\$1,040,000
Reconstruct R/W 3/21 Parallel T/W system (T/W "A") - Phase 2 - Design and Construction	\$800,000	\$3,200,000	\$4,000,000
Reconstruct R/W 3/21 Parallel T/W system (T/W "B") - Phase 3 - Design and Construction	\$400,000	\$1,600,000	\$2,000,000
Rehabilitate / Crack-Seal and Sealcoat Runway 3/21 (100' x 4,748') (Including new LED MIRL)	\$232,000	\$928,000	\$1,160,000
Construct South Hangar Development Taxilane	\$84,000	\$336,000	\$420,000
Rehabilitate Runway 18/36 - 100' x 5,199' (including pavement strength increase)	\$1,460,000	\$5,840,000	\$7,300,000
Upgrade MIRL to HIRL LED type / new threshold lights - Runway 18/36 (existing portion)	\$100,000	\$400,000	\$500,000
Runway 36 extension - 1,772' south - Total Cost (individual projects below)	\$1,482,000	\$3,368,000	\$4,850,000
• Conduct Obstruction Evaluation for new approach to Runway 36	\$225,000	N/A	\$225,000
• Conduct Environmental Assessment and PER for Runway 18/36 extension	\$275,000	N/A	\$275,000
• Acquire approximately 10 acres to control Runway 36 RPZ	\$140,000	N/A	\$140,000
• Runway 36 extension - 1,772' south - with Twy A Partial Demo and Extension - Design and Construction	\$780,000	\$3,120,000	\$3,900,000
• Upgrade MIRL to HIRL LED type / new threshold lights - Runway 18/36 (ALL NEW)	\$28,000	\$112,000	\$140,000
• Relocate Runway 36 PAPI-4L and LED Upgrade to coincide with extension	\$34,000	\$136,000	\$170,000
Crack Seal / Seal Coat Taxiway "C"	\$108,000	\$432,000	\$540,000
Crack Seal / Seal Coat Taxiway "C1"	\$12,000	\$48,000	\$60,000
Upgrade and install MITL Taxiway "C" and "C1"	\$182,000	\$728,000	\$910,000
Crack Seal / Seal Coat Taxiway "D"	\$12,000	\$48,000	\$60,000

Crack Seal / Seal Coat Taxiway "E"	\$16,000	\$64,000	\$80,000
Acquire Avigation Easement for Runway 3 RPZ - Approx. 16 acres	\$80,000	N/A	\$80,000
Install 2 new above ground fuel tanks (12,500 Gallons) - one Jet-A and one 100LL (Total Cost)	\$185,000	\$740,000	\$925,000
Extend Utility / Infrastructure along Highway 77 to North 71 Development Area	\$350,000	\$1,400,000	\$1,750,000
Construct new Terminal Building	\$600,000	\$2,400,000	\$3,000,000
Acquire Avigation Easement for Runway 18 RPZ - Approx. 25 acres	\$125,000	N/A	\$125,000
Conduct Environmental Assessment Runway 3/21 extension	\$325,000	N/A	\$325,000
Runway 3/21 extension / Coinciding parallel taxiway - 873' north - Design and Construction	\$380,000	\$1,520,000	\$1,900,000
Relocate PAPI-4L for Runway 21 to coincide with extension	\$34,000	\$136,000	\$170,000
Acquire approx. 8 acres for Runway 21 RPZ	\$36,000	N/A	\$36,000
Crack Seal / Seal Coat Taxiway "A"	\$80,000	\$320,000	\$400,000
Crack Seal / Seal Coat Taxiway "B"	\$48,000	\$192,000	\$240,000
Upgrade and install MITL Taxiway "A" and "B"	\$192,000	\$768,000	\$960,000
Crack Seal / Seal Coat Taxiway "F"	\$10,000	\$40,000	\$50,000
Update Airport Master Plan	\$350,000	N/A	\$350,000
Conduct Airport Marketing and Business Development Plan	\$75,000	N/A	\$75,000
Runway 18/36 west side parallel taxiway - Design and Construction	\$1,600,000	\$6,400,000	\$8,000,000
Total	\$13,117,372	\$44,545,488	\$57,662,860

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TABLE 5.3 – PRIVATE DEVELOPMENT COST ESTIMATES

Project Description	Engineering Services	Construction	Total Project
Construct FBO / MRO and associated apron parking	\$1,120,000	\$4,480,000	\$5,600,000
Construct 125' x 125' hangar	\$539,000	\$2,156,000	\$2,695,000
Construct 150' x 150' hangar	\$776,250	\$3,105,000	\$3,881,250
Construct 60' x 60' hangar	\$124,200	\$496,800	\$621,000
Construct 75' x 75' hangar	\$194,062	\$776,250	\$970,312
Construct 100' x 100' hangar	\$344,000	\$1,376,000	\$1,720,000
Construct 10-unit T-hangar	\$199,237	\$796,950	\$996,187

5.4 PROJECT SCHEDULE

As detailed in the cost estimates, the anticipated funding needed to enact the Airport Action Plan will be substantial. This is not expected to be completed in a singular time frame and is included in a schedule and phased implementation. With a total of over \$57 million in improvements, projects must be completed incrementally to be financially feasible. Projects are broken into phases below to help Airport and municipal staff prioritize projects and plan accordingly. Certain projects may be shifted into other phases as needed depending on funding priority and user needs over the duration of the planning period.

5.4.1 SHORT-TERM (CURRENT TO 5 YEARS)

Projects listed in this phase are considered high priority and will need to be addressed soon after the adoption of the plan. As previously mentioned, this is dependent on funding levels. This planning period primarily focuses on maintaining current airport infrastructure.

The following projects are expected to occur in this short-term planning period.

1. New Air Traffic Control Tower (ATCT) Siting Study
2. Construct new access to South Hangar Development area (including fence relocation)
3. New Air Traffic Control Tower (ATCT) Design and Construction
4. Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction
 - a. Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 1
 - b. Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 2
 - c. Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 3
5. Reconstruct R/W 3/21 Parallel T/W system (T/W "A") - Phase 2 - Design and Construction
6. Reconstruct R/W 3/21 Parallel T/W system (T/W "B") - Phase 3 - Design and Construction
7. Rehabilitate / Crack-Seal and Sealcoat Runway 3/21 (100' x 4,748') (Including new LED MIRL)
8. Construct South Hangar Development Taxilane

5.4.2 MID-TERM (6 TO 10 YEARS)

This phase of the plan is usually the most difficult to project. Improvements not funded as planned in the short term can frequently fall into this range. However, it is important to keep these in mind as development progresses on the Airport to ensure proper sequential development. In this planning period, most of the projects are focused on airfield improvement, including the extension of Runway 18/36.

The following projects are expected to occur in this mid-term planning period.

1. Improvements to existing Runway 18/36
 - a. Rehabilitate Runway 18/36 - 100' x 5,199' (including pavement strength increase)
 - b. Upgrade MIRL to HIRL LED type / new threshold lights - Runway 18/36 (existing portion)
2. Runway 36 extension - 1,772' south
 - a. Conduct Obstruction Evaluation for new approach to Runway 36
 - b. Conduct Environmental Assessment and PER for Runway 18/36 extension
 - c. Acquire approximately 10 acres to control Runway 36 RPZ
 - d. Runway 36 extension - 1,772' south - with Twy A Partial Demo and Extension - Design and Construction
 - e. Install HIRL LED type / new threshold lights - Runway 18/36 extension (ALL NEW)
 - f. Relocate Runway 36 PAPI-4L and LED Upgrade to coincide with extension
3. Crack Seal / Seal Coat Taxiway "C"
4. Crack Seal / Seal Coat Taxiway "C1"
5. Upgrade and install MITL Taxiway "C" and "C1"
6. Crack Seal / Seal Coat Taxiway "D"
7. Crack Seal / Seal Coat Taxiway "E"
8. Acquire Avigation Easement for Runway 3 RPZ – Approx. 16 acres
9. Install 2 new above ground fuel tanks (12,500 Gallons) - one Jet-A and one 100LL

5.4.3 LONG-TERM (11 TO 20 YEARS)

These projects are combined into ten years in the last phase of the planning horizon. These large-scale improvements will include more development, given the expected timeline. However, inherently, these projects also provide the most flexibility as they are far into the future of the Airport.

The following projects are expected to occur in this long-term planning period.

1. Extend Utility / Infrastructure along Highway 77 to North 71 Development Area
2. Construct new Terminal Building
3. Acquire Avigation Easement for Runway 18 RPZ - Approx. 25 acres
4. Conduct Environmental Assessment Runway 3/21 extension
5. Runway 3/21 extension / Coinciding parallel taxiway - 873' north - Design and Construction
6. Relocate PAPI-4L for Runway 21 to coincide with extension
7. Acquire approx. 8 acres for Runway 21 RPZ
8. Crack Seal / Seal Coat Taxiway "A"
9. Crack Seal / Seal Coat Taxiway "B"
10. Upgrade and install MITL Taxiway "A" and "B"

11. Crack Seal / Seal Coat Taxiway "F"
12. Update Airport Master Plan
13. Conduct Airport Marketing and Business Development Plan
14. Runway 18/36 west side parallel taxiway - Design and Construction

5.4.4 ROUTINE MAINTENANCE PROJECTS

As airport infrastructure ages, routine maintenance will be required throughout the 20-year planning period, including ongoing pavement and lighting maintenance. For runway, taxiway, and apron areas, this includes pavement crack and seal or rehabilitation projects necessary to maintain a safe environment for aircraft operations. The Airport will need to routinely assess the condition of the pavement and airside operational requirements such as marking and lighting to ensure sound operational condition. The Airport should take advantage of state grants in order to gain as much funding assistance for routine airport pavement maintenance as well as minor capital improvement projects.

5.4.5 BEYOND THE ACTION PLAN HORIZON

Certain development has been identified and shown on the Recommended Plan that may be included in subsequent planning efforts. These projects are not expected to be completed in the 20-year planning horizon; however, have been shown to examine the ultimate build-out of potential hangar/apron facilities on the airfield.

As previously mentioned, it is important to keep this long-range development shown on the plan as it may influence how development is expanded in the near term. Space will need to be preserved to allow for access taxiways/apron that lead to the proposed development. Hangar development previously identified in the alternatives chapter and labeled on the Recommended Development Plan will include T-hangars and box hangars with subsequent apron space.

5.5 FUNDING SOURCES

This section describes sources and eligibility criteria for funding programs the Airport may take advantage of to aid in the funding of future development projects. It is not guaranteed all funding sources will be available and used on airport projects; however, it lists the general options and funding criteria. During the financial implementation of projects at the Airport, all funding sources should be evaluated and coordinated with the appropriate funding source for eligibility.

5.5.1 FEDERAL FUNDING

To promote the development of airports to meet the nation's needs, the Federal Government embarked on a Grants-In-Aid Program to units of State and local government after the end of World War II. This early program, the Federal Aid Airport Program (FAAP), was authorized by the Federal Treasury Act of 1946 and provided its funding from the Treasury.

In 1970, a comprehensive program was established with the Airport and Airway Development Act of 1970. This Act provided grants for airport planning under the Planning Grant Program (PGP) and development under the Airport Development Aid Program (ADAP). These programs were funded from a newly established Airport and Airway Trust Fund, which received funds from taxes on airline tickets, air freight, and aviation fuel. The authority to issue grants under these two programs expired on September 30, 1981. During this 11-year period (1970-1981), a total of 8,809 grants were awarded for a total of \$4.5 billion for airport planning and development.

The Airport Improvement Program (AIP) was established by the Airport and Airway Improvement Act of 1982. The initial AIP provided funding legislation through fiscal year 1992. Since then, the AIP has been authorized and appropriated on a yearly basis. Funding for this program is generated from a tax on airline tickets, freight waybills, international departure fees, and a tax on aviation fuel.

The FAA issues and administers AIP grants through its regional offices and airport district offices. The AIP provides up to 90 percent funding for AIP eligible project costs, with the sponsor and/or the OAC funding the remaining 10 percent share.

AIP funding must be spent on FAA eligible projects as defined in FAA Order 5100.38D “Airport Improvement Program (AIP) Handbook.” In general, the handbook states:

- An airport must be in the currently approved National Plan of Integrated Airport Systems (NPIAS),
- AIP provides up to 90 percent federal funding for most eligible public-use airport improvements, and
- General aviation terminal buildings, T-hangars, and corporate hangars and other private-use facilities are not eligible for federal funding.

In addition, revenue-producing items typically are not eligible for federal funding, and all eligible projects must be depicted on an FAA-approved Airport Layout Plan. Other sources of FAA funding include Facilities and Equipment (F&E) funding for facilities such as air traffic control towers and some runway instrumentation. This funding is separate from the AIP program and typically requires no local match. Federal noise funds (Part 150 funds) may also be available for noise mitigation with an 80 percent Federal and a 20 percent State and/or local share.

5.5.2 BIPARTISAN INFRASTRUCTURE LAW

At the end of 2021, the Federal Government passed the Bipartisan Infrastructure Law, which includes funding for airports to use funds over the course of the next five years. Airports can use funds for runways, taxiways, safety, terminal, airport-transit connections and roadway projects. The funding will be provided annually, and each year, Max Westheimer Airport will be entitled to \$295,000. These funds will be provided with a 90/10 cost share, similar to the federal funding outlined above.

5.5.3 STATE FUNDING

Max Westheimer Airport is included in the Oklahoma Airport System Plan (OASP) and is classified as a National Business Airport serving the State of Oklahoma. The Oklahoma Aeronautics Commission (OAC) aids with the development of Max Westheimer Airport. The OAC coordinates these funding opportunities with the Federal Aviation Administration (FAA). Originally approved in 1999, the OASP was approved by the commission and is used as the long-term planning document to identify the network of airports needed to serve the state.

The Airport Construction Program (ACP) programs federal and state funds regarding airport development that are consistent with the goals of the OASP. The ACP allows the OAC, FAA, and airport sponsors to anticipate airport funding needs and accommodate changes in project scope, cost, and schedule based on multi-year planning. Including a project in the ACP indicates to the sponsor that the project is under consideration for future funding; however, it is not a commitment for future funding.

Justification is required for projects in the ACP and must be consistent with FAA and Commission Regulations, Policies, and Procedures. Some projects listed in this document may not be implemented due to funding restrictions or lack of justification.

The ACP is based on anticipated funding levels determined from historic state and federal allocations for airport development in the State of Oklahoma. Once the actual funding levels are established, project implementation and funding

will be adjusted. The Oklahoma Aeronautics Commission also offers additional programs aimed specifically at terminal building construction and hangar development grants/loans.

5.6 CAPITAL IMPROVEMENT PROGRAM SUMMARY

This program will not be solely funded by the airport sponsor. The cost estimates previously presented are broken down by phase and give an estimated cost-share based on eligibility. Subject to approval and funding, the following cost estimates by project type are listed in **Table 5.4**.

TABLE 5.4 – PROJECT COST SUMMARY

	Project Description	Total	Federal Share	State Share	Local / Private Share
2023	New Air Traffic Control Tower (ATCT) Siting Study	\$350,000	\$315,000	\$17,500	\$17,500
2023	Construct new access to South Hangar Development area (including fence relocation)	\$4,106,860	\$0	\$0	\$4,106,860
2024	New Air Traffic Control Tower (ATCT) Design and Construction	\$9,700,000	\$8,730,000	\$485,000	\$485,000
2024	Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction – Total Cost (individual phases below)	\$3,240,000	\$2,916,000	\$0	\$324,000
2024	• Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction – Phase 1	\$1,320,000	\$1,188,000	\$0	\$132,000
2024	• Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction – Phase 2	\$880,000	\$792,000	\$0	\$88,000
2024	• Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction – Phase 3	\$1,040,000	\$936,000	\$0	\$104,000
2025	Reconstruct R/W 3/21 Parallel T/W system (T/W "A") – Phase 2 – Design and Construction	\$4,000,000	\$3,600,000	\$0	\$400,000
2025	Reconstruct R/W 3/21 Parallel T/W system (T/W "B") – Phase 3 – Design and Construction	\$2,000,000	\$1,800,000	\$0	\$200,000
2026	Rehabilitate / Crack-Seal and Sealcoat Runway 3/21 (100' x 4,748') (Including new LED MRL)	\$1,160,000	\$1,044,000	\$0	\$116,000
2026	Construct South Hangar Development Taxilane	\$420,000	\$378,000	\$0	\$42,000
	Short-term Subtotal	\$24,976,860	\$18,783,000	\$502,500	\$5,691,360
1a	Rehabilitate Runway 18/36 – 100' x 5,199' (including pavement strength increase)	\$7,300,000	\$6,570,000	\$365,000	\$365,000
1b	Upgrade MRL to HIRL LED type / new threshold lights – Runway 18/36 (existing portion)	\$500,000	\$450,000	\$25,000	\$25,000
2	Runway 36 extension – 1,772' south – Total Cost (individual projects below)	\$4,850,000	\$4,365,000	\$195,000	\$290,000

2a	• Conduct Obstruction Evaluation for new approach to Runway 36	\$225,000	\$202,500	\$0	\$22,500
2b	• Conduct Environmental Assessment and PER for Runway 18/36 extension	\$275,000	\$247,500	\$0	\$27,500
2c	• Acquire approximately 10 acres to control Runway 36 RPZ	\$140,000	\$126,000	\$0	\$14,000
2d	• Runway 36 extension - 1,772' south - with Twy A Partial Demo and Extension - Design and Construction	\$3,900,000	\$3,510,000	\$195,000	\$195,000
2e	• Upgrade MIRL to HIRL LED type / new threshold lights - Runway 18/36 (ALL NEW)	\$140,000	\$126,000	\$0	\$14,000
2f	• Relocate Runway 36 PAPI-4L and LED Upgrade to coincide with extension	\$170,000	\$153,000	\$0	\$17,000
3	Crack Seal / Seal Coat Taxiway "C"	\$540,000	\$486,000	\$0	\$54,000
4	Crack Seal / Seal Coat Taxiway "C1"	\$60,000	\$54,000	\$0	\$6,000
5	Upgrade and install MITL Taxiway "C" and "C1"	\$910,000	\$819,000	\$0	\$91,000
6	Crack Seal / Seal Coat Taxiway "D"	\$60,000	\$54,000	\$0	\$6,000
7	Crack Seal / Seal Coat Taxiway "E"	\$80,000	\$72,000	\$0	\$8,000
8	Acquire Avigation Easement for Runway 3 RPZ - Approx. 16 acres	\$80,000	\$72,000	\$0	\$8,000
9	Install 2 new above ground fuel tanks (12,500 Gallons) - one Jet-A and one 100LL (Total Cost)	\$925,000	\$832,500	\$0	\$92,500
	Mid-term Subtotal	\$15,305,000	\$13,774,500	\$585,000	\$945,500
1	Extend Utility / Infrastructure along Highway 77 to North 71 Development Area	\$1,750,000	\$0	\$0	\$1,750,000
2	Construct new Terminal Building	\$3,000,000	\$0	\$0	\$3,000,000
3	Acquire Avigation Easement for Runway 18 RPZ - Approx. 25 acres	\$125,000	\$112,500	\$0	\$12,500
4	Conduct Environmental Assessment Runway 3/21 extension	\$325,000	\$292,500	\$0	\$32,500
5	Runway 3/21 extension / Coinciding parallel taxiway - 873' north - Design and Construction	\$1,900,000	\$1,710,000	\$95,000	\$95,000
6	Relocate PAPI-4L for Runway 21 to coincide with extension	\$170,000	\$153,000	\$0	\$17,000
7	Acquire approx. 8 acres for Runway 21 RPZ	\$36,000	\$32,400	\$0	\$3,600
8	Crack Seal / Seal Coat Taxiway "A"	\$400,000	\$360,000	\$0	\$40,000
9	Crack Seal / Seal Coat Taxiway "B"	\$240,000	\$216,000	\$0	\$24,000
10	Upgrade and install MITL Taxiway "A" and "B"	\$960,000	\$864,000	\$0	\$96,000
11	Crack Seal / Seal Coat Taxiway "F"	\$50,000	\$45,000	\$0	\$5,000
12	Update Airport Master Plan	\$350,000	\$315,000	\$0	\$35,000

13	Conduct Airport Marketing and Business Development Plan	\$75,000	\$0	\$0	\$75,000
14	Runway 18/36 west side parallel taxiway - Design and Construction	\$8,000,000	\$0	\$0	\$8,000,000
	Long-term Subtotal	\$17,381,000	\$4,100,400	\$95,000	\$13,185,600
	TOTALS	\$57,662,860	\$36,657,900	\$1,182,500	\$19,822,460

Source: KSA

5.7 PHASING PLAN

The cost estimates indicate the suggested phasing for projects during the short, intermediate, and long-range planning periods. The proposed improvements for each phase are illustrated graphically by time period. These are suggested schedules, and variance from them will almost certainly be likely, particularly during the later periods. Attention has been given to the first five years as being the most critical, and the scheduled projects outlined in this time frame should be adhered to as much as possible. The demand for certain facilities and the economic feasibility of their development are the prime factors influencing the timing of individual project implementation. Care must be taken to provide adequate lead-time for detailed planning and construction of facilities to meet aviation demands. **Table 5.5** presents the phasing plan phases.

TABLE 5.5 – PHASING PLAN SUMMARY

Project Description	Justification	Total Cost
Short-Term (0-5 Years)		
New Air Traffic Control Tower (ATCT) Siting Study	Safety/Security	\$350,000
Construct new access to South Hangar Development area (including fence relocation)	Capacity	\$4,106,860
New Air Traffic Control Tower (ATCT) Design and Construction	Safety/Security	\$9,700,000
Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Total Cost (individual phases below)	Safety	\$3,240,000
• Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 1	Safety	\$1,320,000
• Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 2	Safety	\$880,000
• Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 3	Safety	\$1,040,000
Reconstruct R/W 3/21 Parallel T/W system (T/W "A") - Phase 2 - Design and Construction	Safety	\$4,000,000
Reconstruct R/W 3/21 Parallel T/W system (T/W "B") - Phase 3 - Design and Construction	Safety	\$2,000,000
Rehabilitate / Crack-Seal and Sealcoat Runway 3/21 (100' x 4,748') (Including new LED MRL)	Safety	\$1,160,000
Construct South Hangar Development Taxilane	Capacity	\$420,000

Mid-Term (6-10 Years)		
Rehabilitate Runway 18/36 - 100' x 5,199' (including pavement strength increase)	Safety/Capacity	\$7,300,000
Upgrade MIRL to HIRL LED type / new threshold lights - Runway 18/36 (existing portion)	Safety	\$500,000
Runway 36 extension - 1,772' south - Total Cost (individual projects below)	Capacity	\$4,850,000
• Conduct Obstruction Evaluation for new approach to Runway 36	Capacity	\$225,000
• Conduct Environmental Assessment and PER for Runway 18/36 extension	Capacity	\$275,000
• Acquire approximately 10 acres to control Runway 36 RPZ	Capacity/Standards	\$140,000
• Runway 36 extension - 1,772' south - with Twy A Partial Demo and Extension - Design and Construction	Capacity	\$3,900,000
• Upgrade MIRL to HIRL LED type / new threshold lights - Runway 18/36 (ALL NEW)	Capacity/Safety	\$140,000
• Relocate Runway 36 PAPI-4L and LED Upgrade to coincide with extension	Capacity	\$170,000
Crack Seal / Seal Coat Taxiway "C"	Safety	\$540,000
Crack Seal / Seal Coat Taxiway "C1"	Safety	\$60,000
Upgrade and install MITL Taxiway "C" and "C1"	Safety	\$910,000
Crack Seal / Seal Coat Taxiway "D"	Safety	\$60,000
Crack Seal / Seal Coat Taxiway "E"	Safety	\$80,000
Acquire Avigation Easement for Runway 3 RPZ - Approx. 16 acres	Safety/Standards	\$80,000
Install 2 new above ground fuel tanks (12,500 Gallons) - one Jet-A and one 100LL (Total Cost)	Capacity	\$925,000
Long-Term (11-20 Years)		
Extend Utility / Infrastructure along Highway 77 to North 71 Development Area	Capacity	\$1,750,000
Construct new Terminal Building	Capacity	\$3,000,000
Acquire Avigation Easement for Runway 18 RPZ - Approx. 25 acres	Standards	\$125,000
Conduct Environmental Assessment Runway 3/21 extension	Capacity	\$325,000
Runway 3/21 extension / Coinciding parallel taxiway - 873' north - Design and Construction	Capacity	\$1,900,000
Relocate PAPI-4L for Runway 21 to coincide with extension	Capacity	\$170,000
Acquire approx. 8 acres for Runway 21 RPZ	Standards	\$36,000
Crack Seal / Seal Coat Taxiway "A"	Safety	\$400,000
Crack Seal / Seal Coat Taxiway "B"	Safety	\$240,000
Upgrade and install MITL Taxiway "A" and "B"	Safety	\$960,000
Crack Seal / Seal Coat Taxiway "F"	Safety	\$50,000

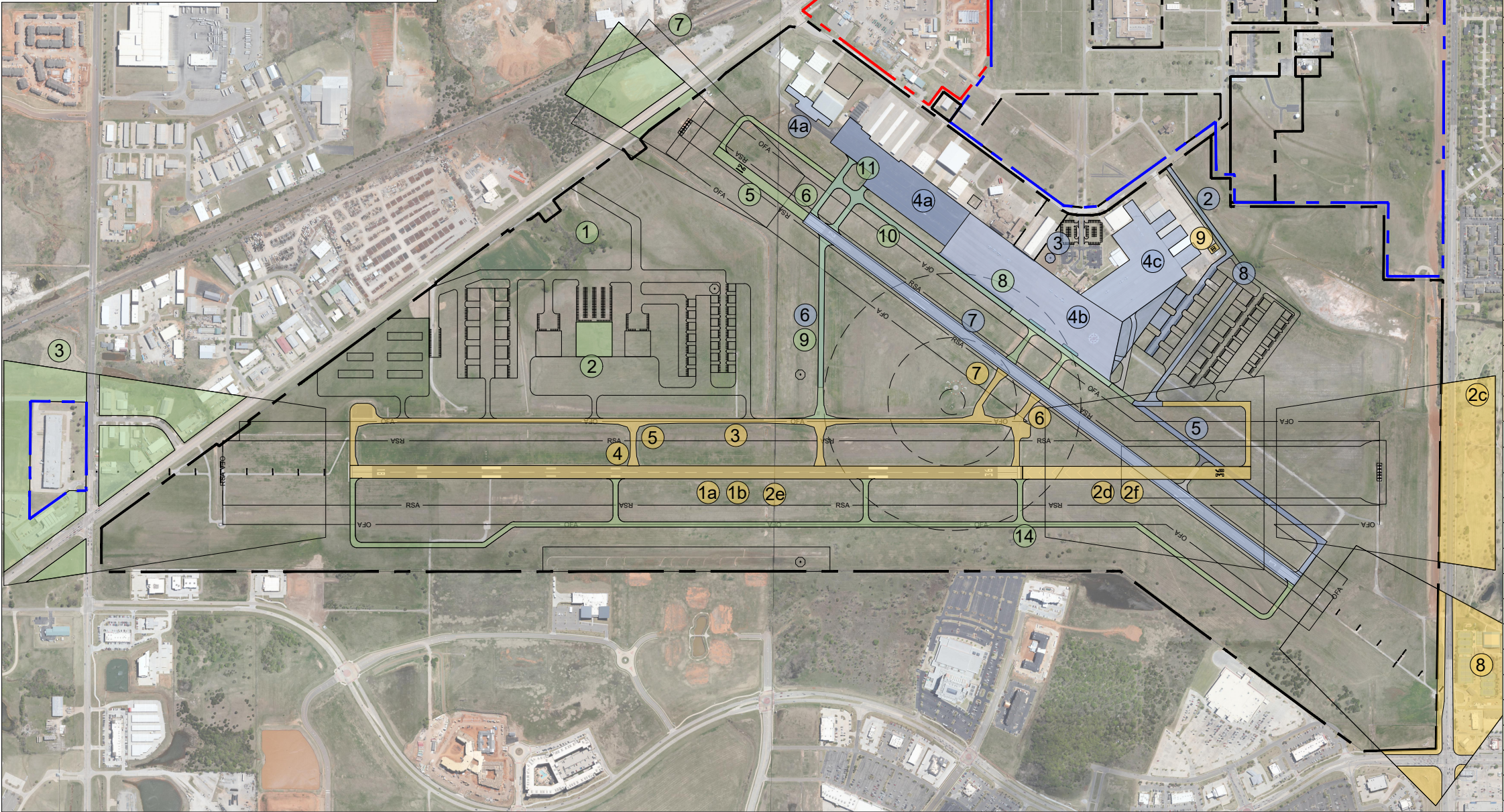
Update Airport Master Plan	Standards	\$350,000
Conduct Airport Marketing and Business Development Plan	Capacity	\$75,000
Runway 18/36 west side parallel taxiway - Design and Construction	Capacity	\$8,000,000

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LEGEND

- EXISTING AIRPORT PROPERTY
- UNIVERSITY PROPERTY LINE
- CITY OF NORMAN PROPERTY LINE



SHORT-TERM (0-5 YEARS) - REFER TO TABLE 5.4 FOR SCHEDULE	
1	New Air Traffic Control Tower (ATCT) Siting Study
2	Construct new access to South Hangar Development area (including fence relocation)
3	New Air Traffic Control Tower (ATCT) Design and Construction
4	Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Total Cost (individual phases below)
4a	Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 1
4b	Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 2
4c	Apron Joint / Crack Seal Rehabilitation and Taxilane Reconstruction - Phase 3
5	Reconstruct R/W 3/21 Parallel T/W system (T/W "A") - Phase 2 - Design and Construction
6	Reconstruct R/W 3/21 Parallel T/W system (T/W "B") - Phase 3 - Design and Construction
7	Rehabilitate / Crack-Seal and Sealcoat Runway 3/21 (100' x 4,748') (Including new LED MIRL)
8	Construct South Hangar Development Taxilane
INTERMEDIATE-TERM (6-10 YEARS)	
1a	Rehabilitate Runway 18/36 - 100' x 5,199' (including pavement strength increase)
1b	Upgrade MIRL to HIRL LED type / new threshold lights - Runway 18/36 (existing portion)
2	Runway 36 extension - 1,772' south Total Cost (individual projects below)
2a	Conduct Obstruction Evaluation for new approach to Runway 36
2b	Conduct Environmental Assessment and PER for Runway 18/36 extension
2c	Acquire approximately 10 acres to control Runway 36 RPZ
2d	Runway 36 extension - 1,772' south - with Twy A Partial Extension - Design and Construction
2e	Install HIRL LED type / new threshold lights - Runway 18/36 extension (ALL NEW)
2f	Relocate Runway 36 PAPI-4L and LED Upgrade to coincide with extension
3	Crack Seal / Seal Coat Taxiway "C"
4	Crack Seal / Seal Coat Taxiway "C1"
5	Upgrade and install MITL Taxiway "C" and "C1"
6	Crack Seal / Seal Coat Taxiway "D"
7	Crack Seal / Seal Coat Taxiway "E"
8	Acquire Avigation Easement for Runway 3 RPZ - Approx. 16 acres
9	Install 2 new above ground fuel tanks (12,500 Gallons) - one Jet-A and one 100LL (Total Cost)
LONG-TERM (11-20 YEARS)	
1	Extend Utility / Infrastructure along Highway 77 to North 71 Development Area
2	Construct new Terminal Building
3	Acquire Avigation Easement for Runway 18 RPZ - Approx. 25 acres
4	Conduct Environmental Assessment Runway 3/21 extension
5	Runway 3/21 extension / Coinciding parallel taxiway - 873' north - Design and Construction
6	Relocate PAPI-4L for Runway 21 to coincide with extension
7	Acquire approx. 8 acres for Runway 21 RPZ
8	Crack Seal / Seal Coat Taxiway "A"
9	Crack Seal / Seal Coat Taxiway "B"
10	Upgrade and install MITL Taxiway "A" and "B"
11	Crack Seal / Seal Coat Taxiway "F"
12	Update Airport Master Plan
13	Conduct Airport Marketing and Business Development Plan
14	Runway 18/36 west side parallel taxiway - Design and Construction

EXHIBIT 5.1 - PHASING PLAN