

CRATER LAKE
KLAMATH
REGIONAL AIRPORT

Master Plan

February 2021



Chapter 5

Capital Improvement Plan



CRATER LAKE

**KLAMATH REGIONAL
AIRPORT**

Capital Improvement Plan

INTRODUCTION

This chapter documents the strategy to implement, fund, and finance the recommended 20-year project improvements for Crater Lake – Klamath Regional Airport (LMT). The Airport Capital Improvement Plan (CIP) provides guidance for continued maintenance, upgrade, and expansion of LMT facilities in a fiscally responsible manner and within realistic Airport financial capabilities. This analysis also supports the LMT's local budgeting process and federal and state airport-in-aid programming. This chapter is prepared per FAA Order 5100.38D, *AIP Handbook*, and FAA Order 5100.39A, *Airports Improvement Plan*, other FAA guidance and procedural requirements. This chapter is arranged in the following order:

- ▶ Capital Improvement Plan
- ▶ Funding Sources
- ▶ Financial Plan
- ▶ Summary.

CAPITAL IMPROVEMENT PLAN

The CIP identifies and prioritizes financial needs for planning and development at the Airport. Projects included in this CIP were identified using FAA criteria. Some are immediately justified and eligible, while others may become justified as activity changes in the future. The CIP is intended to provide a framework for phasing of CIP projects while providing flexibility to move projects based on new priorities and financial considerations. Projects that receive Federal Aviation Administration (FAA) funding will need to meet FAA design standards, be justified based on FAA criteria, and undergo an environmental review pursuant to the requirements of the National Environmental Policy Act (NEPA), as amended.

CAPITAL IMPROVEMENT PLAN APPROACH

The CIP identifies the overall airport development objectives, individual project costs, and anticipated funding by planning period: short-term (1-5 years), intermediate-term (6-10 years), long-term (11-20 years), and ultimate (20+ years). The CIP projects are based on the needs identified in **Chapter 3 – Facility Requirements**, the most recently approved FAA 5-year CIP, and planning and pavement maintenance projects. The following considerations influenced project priority:

- ▶ Ability to meet user demand and desired level of service
- ▶ Ability to enhance efficiency and meet FAA design standards
- ▶ Ability to repair and upgrade facilities reaching the end of useful life.

Projects also consider LMT preference and ability to facilitate an orderly sequence of improvements while taking into consideration economic and environmental factors. Projects are sequenced with regard to strategic vision, forecast demand triggers, and funding considerations. Short-term projects are sequenced in a year-by-year format; mid-term, long-term, and ultimate projects are identified in priority order without year distinction. The LMT project lists are identified by potential funding source and are arranged in the following order:

- ▶ LMT Overall Projects
- ▶ Oregon Air National Guard (Oregon ANG) Funded Projects.

Projects identified in the LMT Overall Projects List (**Table 5-1**) as potentially funded by the FAA are eligible projects according to the AIP Handbook and LMT will pursue funding through the FAA AIP grant-in-aid program. It is anticipated that these projects will be funded mainly through AIP funds with a match from LMT.

Projects identified as *Other* are not eligible for AIP funding. However, these projects are a necessary contribution to the quality and overall development potential of the Airport. They could be funded through multiple sources such as the City, Oregon Department of Aviation (ODA), other governmental agencies, or private funding. LMT will participate in projects that are eligible and non-eligible for AIP funding.

Table 5-1 provides LMT with an overview of all projects potentially needed in the planning period regardless of AIP eligibility.

The Oregon ANG projects have been identified as projects that the Air National Guard will develop through a 20-year period and beyond (**Table 5-2**). The Oregon ANG has established a priority list of projects similar to the LMT CIP that is also divided into four terms: short, mid, long, and ultimate. Since the Oregon ANG projects are not eligible under the FAA AIP grant program, the funding for the projects would come from the Oregon ANG and Department of Defense (DoD). LMT, and possibly the FAA, will coordinate with the DoD with respect to design standards for shared-use facilities.

Table 5-1 : LMT Overall Projects

Project	Potential Funding Source ¹
Short-Term	
Runway 7/25 and Reconstruction, Runway Lighting, and Taxiway F Reconstruction (Phase I - Design)	FAA/LMT
Runway 7/25 Reconstruction and Runway Lighting (Phase II - Construction)	FAA/LMT
Taxiway F Reconstruction (Phase II - Construction)	FAA ²
Wildlife Hazard Assessment (WHA)	LMT/ODA
Pavement Condition Index Update (PCI)	ODA
Mid-Term	
Taxiway C (new D1), G, and E (new G1) Reconfiguration - Environmental Assessment/Design	FAA/LMT
Taxiway C Reconfiguration (Twy A, C closures and new Twy D1)	FAA/LMT
Taxiway G Extension (to north)	FAA/LMT
Taxiway E Reconfiguration (Twy E closure and new Twy G1)	FAA/LMT
Runway 14/32 Sealing and Remarking	FAA/LMT
Taxiway B Sealing and Remarking	FAA/LMT
Westside GA Apron Rehabilitation- Environmental	FAA/LMT
Westside GA Apron Rehabilitation	FAA/LMT
Long-Term	
Airport Beacon Replacement -Environmental	FAA/LMT
Airport Beacon Replacement	FAA/LMT
Obstruction Removal Maintenance (existing approaches)	FAA/LMT ²
Runway 8/26 and Taxiway F Sealing and Remarking	FAA/LMT
Taxiway K Rehabilitation -Environmental	FAA/LMT
Taxiway K Rehabilitation/Overlay	FAA/LMT
Taxiway G Sealing and Remarking	FAA/LMT
Taxiway B and Northeast Apron Rehabilitation -Environmental	FAA/LMT
Taxiway B Rehabilitation/Overlay	FAA/LMT
Runway 14/32 Rehabilitation /Overlay	FAA/LMT ²
Runway 14 ROFA Improvements -Environmental	FAA/LMT
Runway 14 ROFA Improvements - Design	FAA/LMT
Runway 14 ROFA Improvements - Construction	FAA/LMT
Master Plan Update	FAA/LMT
Perimeter Road Resurfacing	FAA/LMT
Westside GA Apron Sealing and Terminal Apron Remarking	FAA/LMT
Northeast US Forest Service Apron Rehabilitation/ Overlay	Other
Northeast Aviation Taxilane Extension	FAA/LMT
Taxiway D1 and G Sealing and Remarking	FAA/LMT
Taxiway G Rehabilitation/Overlay	FAA/LMT
Security Fence Upgraded	FAA/LMT
Northeast Ramp Rehabilitation and Expansion	FAA/LMT
Main Apron Rehabilitation and Designated Parking Area Markings	FAA/LMT
Airline Terminal Apron Remarking	FAA/LMT
Airline Terminal Auto Parking -Pavement Maintenance	LMT
Airline Terminal Building Renovation	LMT
SASO/FBO Pilot Lounge Expansion	Other

Project	Potential Funding Source ¹
Ultimate	
Future Land Acquisition	FAA/LMT ²
SASO/FBO Large Hangar Building Expansion	Other
Westside GA Hangar Area Structure Removal	LMT
Westside GA Hangar Expansion (contingent)	Other
Westside Airport Operations Building (AOB/SRE) Relocation	LMT
Snow Removal Equipment	FAA/LMT
Airport Entrance Reconfiguration	LMT
Northwest Airport Development (Bldg. 400 Area)	Other
¹ Distinguishes projects that are eligible for FAA funding from those that may be funded by other sources including city, state, and other government or private entities. ² Oregon ANG contributes towards the local match for the maintenance of shared use facilities per the Airport Joint Use Agreement (AJUA).	

Table 5-2 : Oregon Air National Guard Funded Projects

Projects	
Short Term	
<ul style="list-style-type: none"> • Building 127 Addition • Running Track • Building 210 Addition • Building 243 Operations Patio 	<ul style="list-style-type: none"> • Delta Barns • Defense Logistics Agency (DLA) Compound • Runway 14 ILS Obstruction Removal and Land Acquisition/Avigation Easement • Shasta Shelter Removal
Mid-Term	
<ul style="list-style-type: none"> • Corrosion Control/NDI/Structural Hangar Construction • Installation of HEF in Building 325 • New CATM/21- Lane Indoor Range Construction 	<ul style="list-style-type: none"> • Buildings 585 and 4086 Demolition • De-Icing Pad and Access Twy Construction • EOR Pad expansion and Twy A Closure Construction
Long-Term	
<ul style="list-style-type: none"> • Joint Squad Ops/MX Hangar /DPC Construction • Building 219 Demolition • Building 243 Demolition 	<ul style="list-style-type: none"> • Airfield Pavement Repairs • Building 211 Reconfiguration
Ultimate	
<ul style="list-style-type: none"> • Building 220 Renovation • Non-Compliant Parking Closure, New Parking Construction • Maintenance Relocation into new MXG/Squad Ops • Building 216 Alteration for American Military University (AMU) • Building 535 Addition • New Munitions Storage Igloo Construction • Buildings 539,540,541,4067,4068,4069 • Building 210 Addition/Alteration • Crosswalk Installation • Sidewalk Installation 	<ul style="list-style-type: none"> • Upgrade Mechanical Systems (KJQA1 42004) • Upgrade HVAC Systems (KJQA142068) • Water Distribution System Study • Water System Distribution Repair/Replacement • Facility Maintenance Plan Development • Stormwater Study • Stormwater System Repair • Renewable Energy Study • Renewable Energy System Installation • Vehicle Operations Parking Shed Construction

COST ESTIMATES

Cost estimates help LMT and the FAA understand potential cost obligations. The cost estimates are developed only for FAA-eligible projects. Cost estimates were not calculated for ultimate projects, non-AIP eligible projects, or Oregon ANG projects.

Professional engineers and architects have developed cost estimates for each project contained in the 20-year CIP based on 2020 dollars. For projects occurring beyond 2020, the estimators adjusted costs with an inflation rate of three percent per year. Project costs have contingencies added to account for unknowns at the planning level of design. The contingency amount varies by project but is generally set between 15 and 35 percent depending on the term in which the projects are located. Costs for planning, environmental review, design, and construction management are included as appropriate. **Table 5-3** shows each project and estimated costs.

Table 5-3 : Summary of Project Cost Estimates

Projects Improvements	Estimated Cost (2020 Dollars)
Short-Term	
Runway 7/25 (Future 8/26) Reconstruct, Runway Lighting, and Taxiway F (Phase I - Design)	\$ 771,200
Runway 7/25 (Future 8/26) Reconstruct and Runway Lighting (Phase II - Construction)	\$ 9,926,700
Taxiway F Reconstruct (Phase II - Construction)	\$ 7,607,800
(2021-2025) Short-Term Subtotal	\$ 18,305,700
Mid-Term	
Runway 14/32 Sealing and Remarking	\$ 1,665,700
Taxiway B Sealing and Remarking	\$ 253,700
Taxiway C,G,E-Environmental	\$ 600,000
Westside GA Apron Rehabilitation-Environmental	\$ 35,000
Taxiway C Reconfiguration (Twy A and C Closures, New Twy D1)	\$ 3,169,300
Taxiway G North Extension	\$ 4,715,000
Taxiway E Reconfiguration (Twy E Closure and New Twy G1)	\$ 4,268,600
Westside GA Apron Rehabilitation	\$ 4,382,400
(2026-2030) Mid-Term Subtotal	\$ 19,089,700
Long-Term	
Airport Beacon Replacement-Environmental	\$ 25,000
Airport Beacon Replacement	\$ 85,400
Obstruction Removal Maintenance (existing approaches)	\$ 166,050
Runway 8/26 and Taxiway F Sealing and Remarking	\$ 711,700
Taxiway K Rehabilitation-Environmental	\$ 40,000
Taxiway K Rehabilitation/Overlay	\$ 752,700
Taxiway G Sealing and Remarking	\$ 816,900
Taxiway B and Northeast Apron Rehabilitation-Environmental	\$ 45,000
Taxiway B Rehabilitation/ Overlay	\$ 2,231,700
Runway 14/32 Rehabilitation/Overlay	\$ 12,943,300
Runway 14 ROFA Improvements-Environmental	\$ 700,000
Runway 14 ROFA Improvements-Design	\$ 256,600
Runway 14 ROFA Improvements-Construction	\$ 2,950,700
Master Plan Update	\$ 1,073,300
Perimeter Road Resurfacing	\$ 2,216,000

Projects Improvements	Estimated Cost (2020 Dollars)
Westside GA Apron Sealing and Terminal Apron Remarking	\$ 480,300
Northeast Ramp Rehabilitation and Expansion	\$ 3,846,700
Northeast Aviation Taxilane Extension	\$ 799,600
Taxiway D1 and G1 Sealing and Remarking	\$ 609,900
Taxiway G Rehabilitation/Overlay	\$ 1,935,400
Security Fence Upgrades	\$ 114,000
(2031-2040) Long-Term Subtotal	\$ 32,800,250
Total	\$ 70,195,650
Note: A three percent annual inflation rate is added to 2020 dollars for projects beyond year 2020	

The LMT CIP includes project cost estimates for projects that may require pavement maintenance in later years. Pavement maintenance projects generally occur in increments of ten to twenty years. This may vary depending on the pavement condition when it is evaluated. This LMT Master Plan CIP is predominately a capital facilities plan and is not intended to capture cost estimates for all the routine operating and preventative maintenance projects.

PROJECT PHASING

Project phasing is a prioritization of projects that are identified with a priority ranking system based on development needs. The FAA’s priorities in administering the ACIP give highest priority to projects that currently do not meet FAA standards and must be constructed in order meet standards to maintain safety, security, and efficiency of the airport. Projects in the higher priority categories are considered to have more urgency and are placed in the beginning term. Those projects with lower priorities are placed in latter terms. Several projects identified in this CIP can be phased over multiple years. This approach helps distribute capital costs more evenly and allows LMT to implement improvements as demand materializes. Project phasing supports accelerating or delaying project implementation in response to economic conditions and changing airport user needs.

Future demand for airport facilities is difficult to predict accurately, especially during the latter stages of the 20-year planning period. Therefore, emphasis is placed on the initial portion of the planning period. In this phase, projections are more definable, and the magnitude of program accomplishment is more pronounced.

The CIP project phasing is comprised of projects identified as eligible for AIP funding. Ineligible projects will be paid for with local money or through other non-AIP sources. The components of each period of the CIP are described in the following sections:

- ▶ Short-Term Projects (2021-2025)
- ▶ Mid-Term Projects (2026-2030)
- ▶ Long-Term Projects (2031-2040)
- ▶ Ultimate-Term Projects (2041 and beyond).

Short-Term Projects

Table 5-4 provides a sequencing and cost for each project. Short-term projects include reducing the length and width of the crosswind runway (Runway 7/25) to reflect a change in the existing Runway Design Code (RDC) from B-III to B-II. After the completion of Runway 7/25 improvements, the runway will be numbered Runway 8/26 due to the change in magnetic variation. The existing Taxiway F segment between Taxiway D and Runway 14/32 will be increased from 50 feet to 75 feet to accommodate the military standard. This RDC change also requires reducing the width of the parallel taxiway (Taxiway F) east of the primary runway from 50 feet to 35 feet. **Figure 5-1** illustrates the location of these projects on the airfield.

Table 5-4 : Short Term Project Cost Estimates

Projects Improvements	Estimated Cost (2020 Dollars)	Estimated Cost (Current Cost) 3% Inflation	AIP Non-Primary Entitlements	AIP Discretionary Funds ¹	Local Funding
Project 1 – FY 2021 Runway 7/25 Reconstruct, Runway Lighting, and Taxiway F (Phase I - Design)	\$155,340 ²	\$160,000	\$150,000	\$ -	\$10,000
Project 2 – FY 2022 Runway 7/25 Reconstruct and Runway Lighting (Phase II – Design and Construction)	\$10,542,560 ³	\$11,184,600	\$150,000	\$10,353,700	\$700,300
Project 3 – FY 2024 Taxiway F Reconstruct (Phase II - Construction)	\$7,607,800	\$8,562,600	\$300,000	\$7,727,400	\$535,200
Short-Term Totals	\$18,305,700	\$19,907,200	\$600,000	\$18,663,000	\$1,244,200

Note:

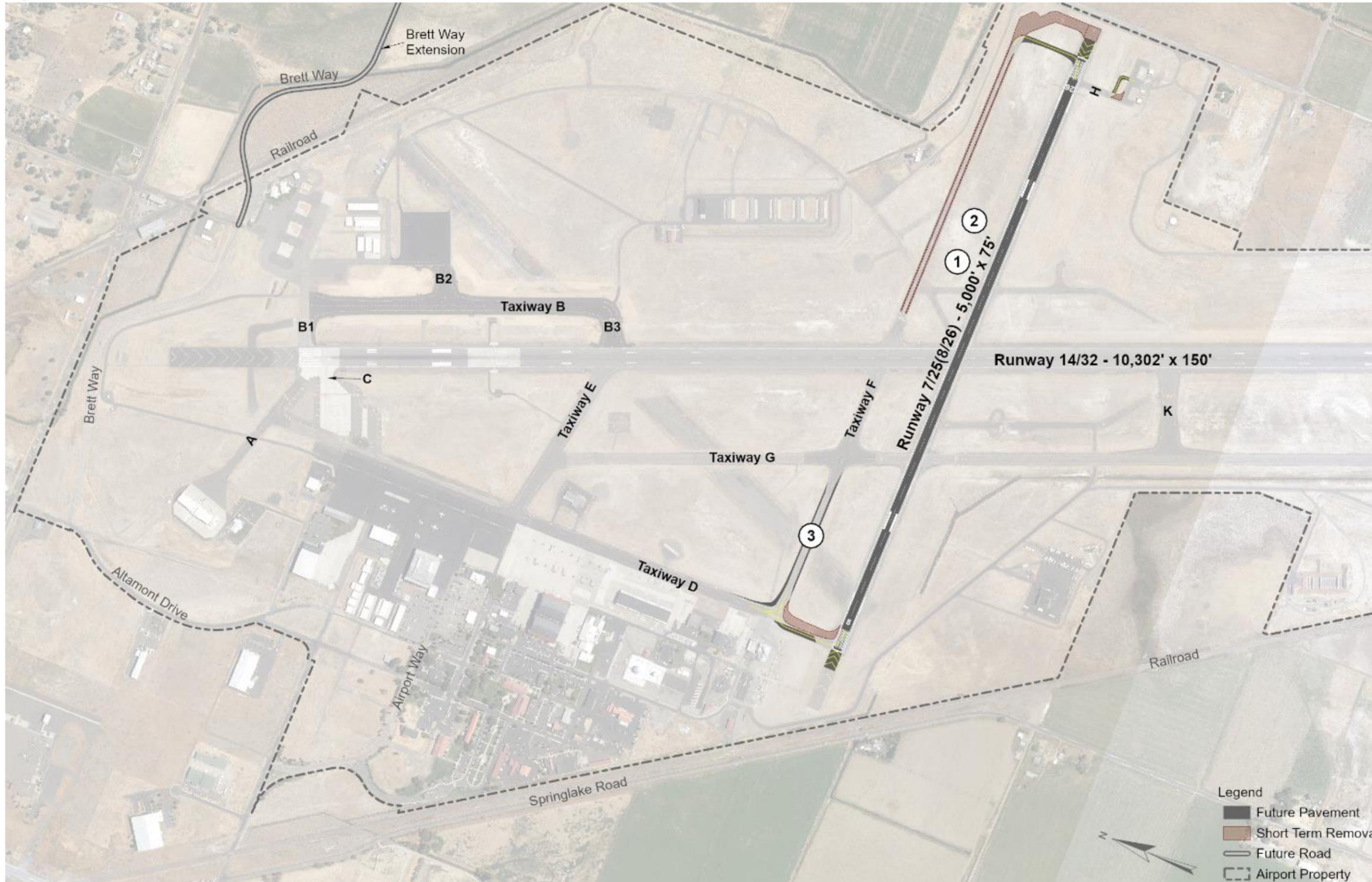
¹Discretionary funds are not guaranteed, and their approval is established through a project priority ranking methodology used by the FAA to award grants.

²Estimated 2020 cost for Project 1 includes \$155,340 of the total Phase I design cost (\$771,200).

³Estimated 2020 cost for Project 2 includes \$615,860 of the total Phase I design cost (\$771,200).

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Figure 5-1 : Short -Term: 5 Year CIP (2021-2025)



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Mid-Term Projects

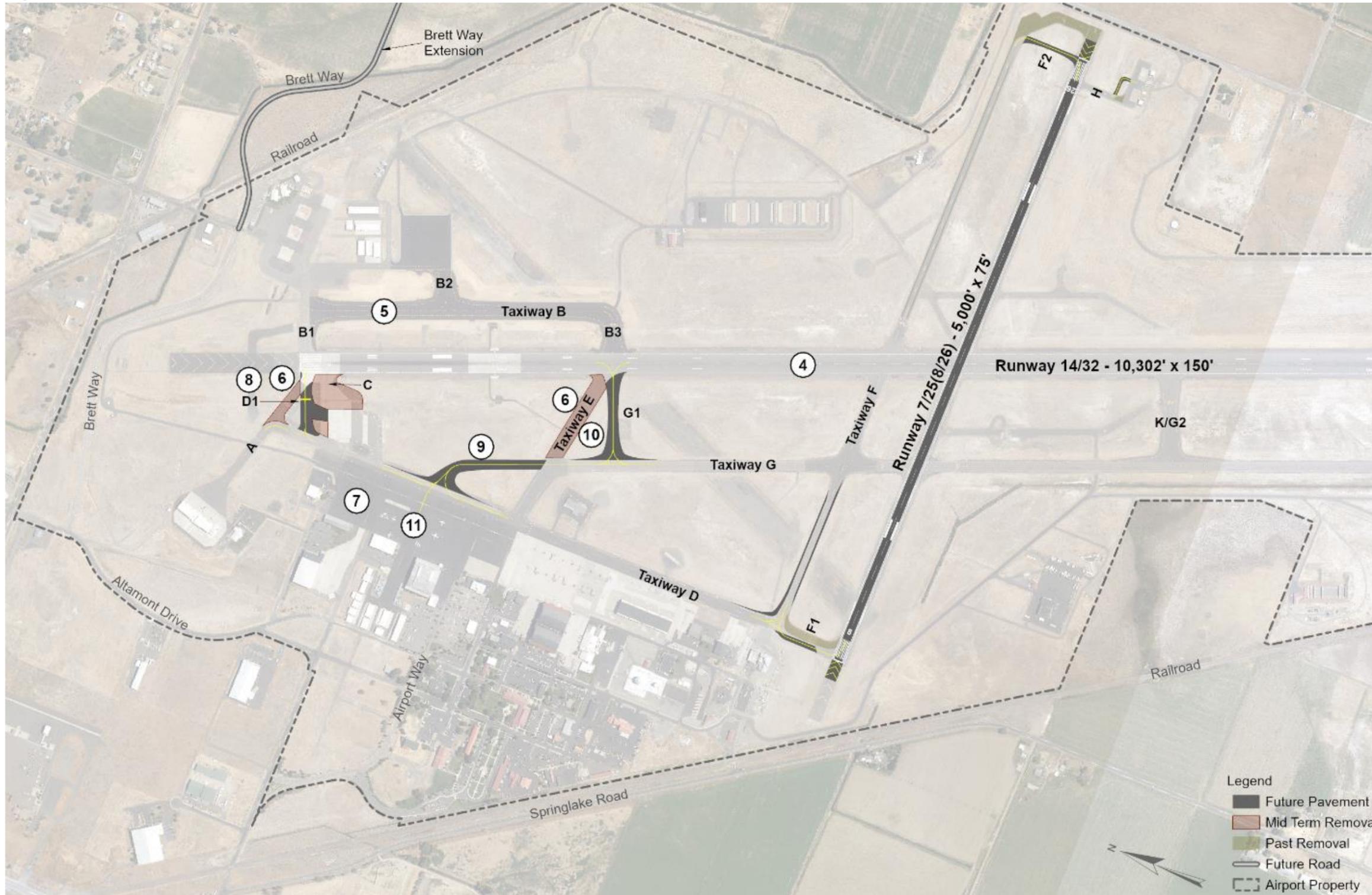
The mid-term CIP projects are anticipated to be implemented following the completion of the reconstruction of Taxiway F. Some projects include pavement sealing and re-marking for routine maintenance of the runways and taxiways. Taxiway C Reconfiguration will include closure of Taxiway A and C, with the development of a new Taxiway D. The geometry configuration for each Taxiway project is done to meet FAA standards. This term includes environmental processing for projects that will be implemented later in the term or in the long-term. **Table 5-5** identifies the mid-term projects with cost estimates, and **Figure 5-2** illustrates the location of the projects.

Table 5-5 : Mid-Term Project Cost Estimates

Projects Improvements	Estimated Cost (2020 Dollars)	Estimated Cost (Current Cost) 3% Inflation	AIP Funding	Local Funding
Project 4 Runway 14/32 Sealing and Remarking	\$1,665,700	\$1,988,900	\$1,864,600	\$124,300
Project 5 Taxiway B Sealing and Remarking	\$253,700	\$302,900	\$284,000	\$18,900
Project 6 Taxiway C,G,E-Environmental	\$600,000	\$737,900	\$691,800	\$46,100
Project 7 Westside GA Apron Rehabilitation-Environmental	\$35,000	\$43,000	\$40,300	\$2,700
Project 8 Taxiway C Reconfiguration (Twy A and C Closures, New Twy D1)	\$3,169,300	\$4,014,800	\$3,763,900	\$250,900
Project 9 Taxiway G North Extension	\$4,715,000	\$6,152,000	\$5,767,500	\$384,500
Project 10 Taxiway E Reconfiguration (Twy E Closure and New Twy G1)	\$4,268,600	\$5,736,600	\$5,378,100	\$358,500
Project 11 Westside GA Apron Rehabilitation	\$4,382,400	\$5,889,600	\$5,521,500	\$368,100
Mid-Term Totals	\$19,089,700	\$24,865,700	\$23,311,700	\$1,554,000
Note: AIP discretionary funds are not guaranteed, and their approval is established through a project priority ranking methodology used by the FAA to award grants. AIP funding is calculated at 93.75 percent of cost estimated with the inflated rate.				

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Figure 5-2 : Mid-Term: 6-10 Year CIP (2026-2031)



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Long-Term Projects

Long-term projects are difficult to predict accurately, but like all CIP projects, they are depicted on the Airport Layout Plan (ALP). Some of the major projects recognized in this term are the rehabilitation of Runway 14/32, Runway 14 ROFA improvements, and maintenance on Taxiways K, G, and B. Runway 14 ROFA improvements include relocating the perimeter road and fence, Brett Way, and a possible relocation of the northerly ditch. **Table 5-6** identifies the long-term projects with cost estimates, and **Figure 5-3** illustrates the location of the projects.

Table 5-6 : Long-Term Cost Estimates

Projects Improvements	Estimated Cost (2020 Dollars)	Estimated Cost (Current Cost) 3% Inflation	AIP Funding	Local Funding
Project 12 Airport Beacon Replacement-Environmental	\$25,000	\$34,600	\$32,400	\$2,200
Project 13 Airport Beacon Replacement	\$85,400	\$121,800	\$114,200	\$7,600
Project 14 Obstruction Removal Maintenance (existing approaches)	\$166,050	\$236,700	\$221,900	\$14,800
Project 15 Runway 8/26 and Taxiway F Sealing and Marking	\$711,700	\$1,014,700	\$951,300	\$63,400
Project 16 Taxiway K Rehabilitation-Environmental	\$40,000	\$57,000	\$53,400	\$3,600
Project 17 Taxiway K Rehabilitation/Overlay	\$752,700	\$1,105,400	\$1,036,300	\$69,100
Project 18 Taxiway G Sealing and Marking	\$816,900	\$1,199,600	\$1,124,600	\$75,000
Project 19 Taxiway B and Northeast Apron Rehabilitation-Environmental	\$45,000	\$66,100	\$62,000	\$4,100
Project 20 Taxiway B Rehabilitation/ Overlay	\$2,231,700	\$3,375,600	\$3,164,600	\$211,000
Project 21 Runway 14/32 Rehabilitation/Overlay	\$12,943,300	\$19,577,900	\$18,354,300	\$1,223,600
Project 22 Runway 14 ROFA Improvements-Environmental	\$700,000	\$1,058,800	\$992,600	\$66,200
Project 23 Runway 14 ROFA Improvements-Design	\$256,600	\$399,800	\$374,800	\$25,000
Project 24 Runway 14 ROFA Improvements-Construction	\$2,950,700	\$4,735,000	\$4,439,100	\$295,900

Projects Improvements	Estimated Cost (2020 Dollars)	Estimated Cost (Current Cost) 3% Inflation	AIP Funding	Local Funding
Project 25 Master Plan Update	\$1,073,300	\$1,774,000	\$1,663,100	\$110,900
Project 26 Perimeter Road Resurfacing	\$2,216,000	\$3,662,700	\$3,433,800	\$228,900
Project 27 Westside GA Apron Sealing and Terminal Apron Remarking	\$480,300	\$817,700	\$766,600	\$51,100
Project 28 Northeast Ramp Rehabilitation and Expansion	\$3,846,700	\$6,548,700	\$6,139,400	\$409,300
Project 29 Northeast Aviation Taxilane Extension	\$799,600	\$1,361,300	\$1,276,200	\$85,100
Project 30 Taxiway D1 and G1 Sealing and Remarking	\$609,900	\$1,069,500	\$1,002,700	\$66,800
Project 31 Taxiway G Rehabilitation/Overlay	\$1,935,400	\$3,495,500	\$3,277,000	\$218,500
Project 32 Security Fence Upgrades	\$114,000	\$205,900	\$193,000	\$12,900
Long-Term Totals	\$32,800,250	\$51,918,300	\$48,673,300	\$3,245,000

Note: AIP funding is calculated at 93.75 percent of cost estimated with the inflated rate.

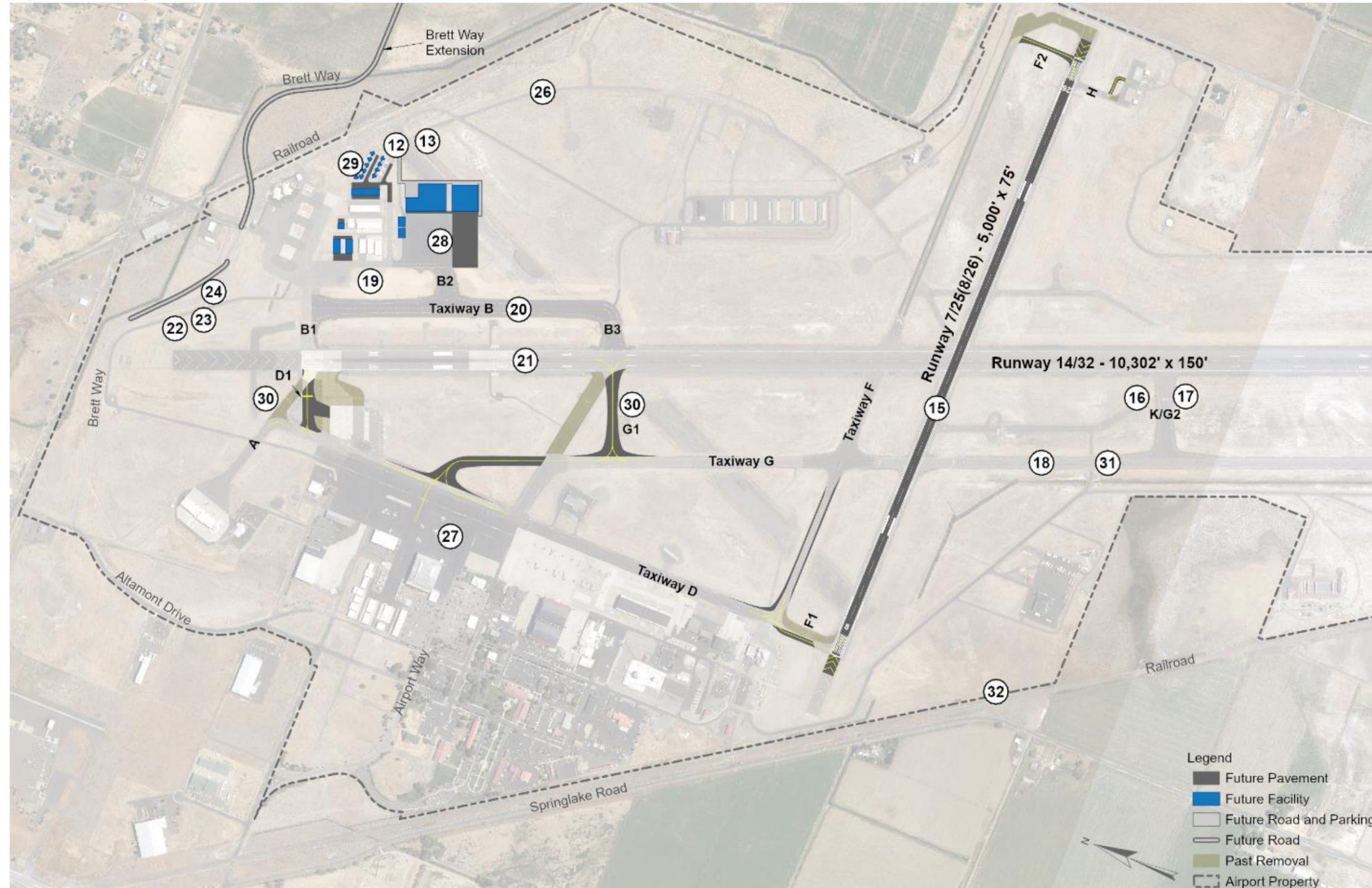
Ultimate-Term Projects

The ultimate-term projects are identified as contingent projects that are anticipated for implementation beyond the 20-year planning period. Most of these projects include building or hangar expansion that will most likely be funded by LMT or through private funding. As such, no cost estimates are provided for contingent development in the ultimate phase. **Figure 5-4** illustrates the ultimate development plan for LMT, including the Oregon ANG capital projects.

CIP Summary

The CIP aids LMT with budgeting and programming processes. The short-term typically constitutes the FAA and the Oregon Department of Aviation (ODA) Airport Capital Improvement Program (ACIP) to assist LMT in providing justification and funding strategies for projects under the FAA and ODA grant-in-aid programs. This will assist LMT in implementing CIP projects as necessary to meet federal and state grant assurances.

Figure 5-3 : Long-Term- 11-15 Year CIP (2031-2040)



Note: CIP Project #14, not shown in figure, will be tree removal obstructions off Runway 14/32 ends.
 Note: CIP Project #25, not shown in figure, will be the Master Plan Update which is updated every ten years.

Figure 5-4 : LMT Ultimate Development Plan

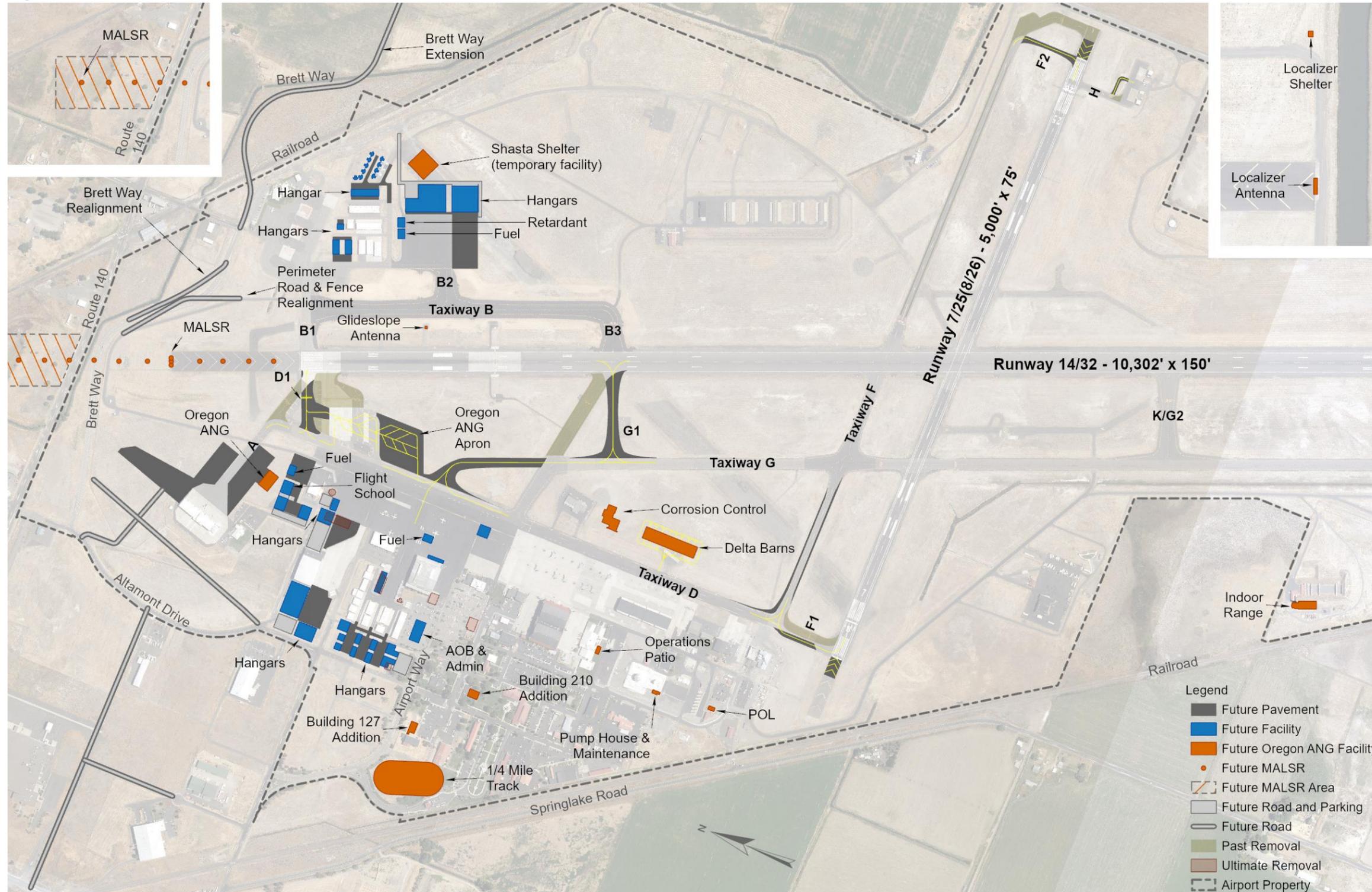
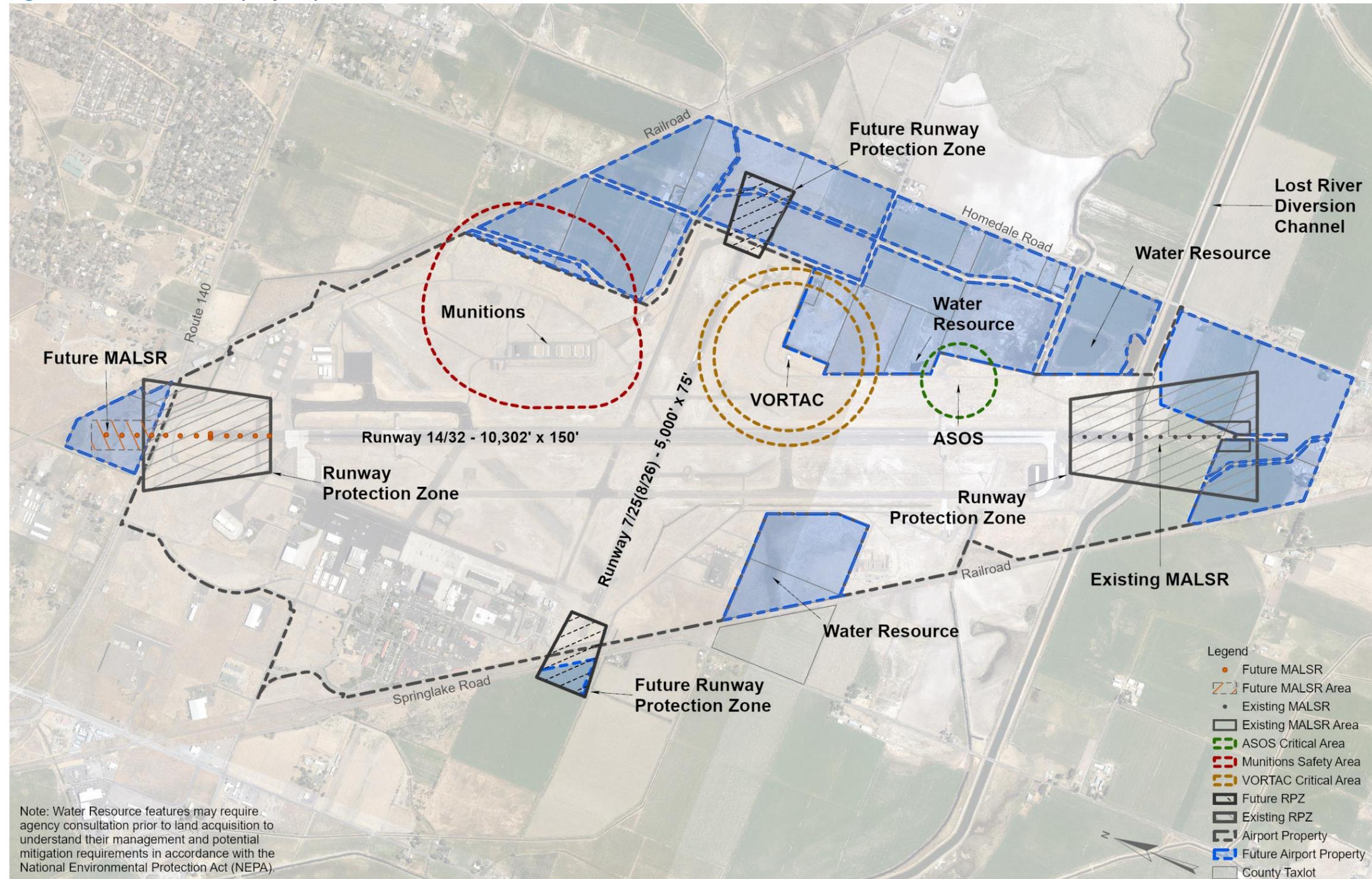


Figure 5-5 : LMT Ultimate Property Acquisition



Note: Figure 5-6 shows ultimate land acquisition interest based on civilian and military aviation facilities and associated restriction zones that extend beyond LMT property. Many of these areas are currently controlled through aviation easements held by LMT.

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FUNDING SOURCES

Funding sources for future development projects depend on a variety of factors that include AIP eligibility, the ultimate type and use of facilities to be developed, debt capacity of LMT, the availability of other financing sources, and the priorities for scheduling project completion. For planning purposes, assumptions have been made related to the funding sources of each project. The following funding sources provide background and context when reviewing the financial feasibility of proposed improvements.

- ▶ Federal
- ▶ State
- ▶ Local
- ▶ Other

FEDERAL

The FAA provides funding for airport improvements through the Aviation Trust Fund (ATF), which is financed by aviation system user fees and taxes (e.g., airline passenger tax, aircraft parts taxes, fuel taxes, and aircraft registration fees). The AIP provides the mechanism to reinvest the ATF at FAA-eligible airports. FAA Order 5100.38D, *Airport Improvement Program Handbook* (AIP Handbook), describes AIP funding eligibility. Because Oregon has more than five percent of its geographic acreage comprised of unappropriated and unreserved public lands and nontaxable Indian lands, the AIP program allows a higher than normal federal percentage match for AIP-eligible projects. The adjusted formula provides for an FAA contribution of 93.75 percent compared to a normal contribution of 90 percent. The AIP grants require LMT to contribute a local match of 6.25 percent.

The FAA's most recent version (2020) of the National Plan of Integrated Systems (NPIAS) classifies LMT as a commercial service (nonprimary) facility. However, no scheduled air carrier service has been provided since 2017 and LMT is operated as a general aviation airport. The NPIAS identifies airports eligible for AIP funding and estimates the amount of AIP funds needed for projects that will update airports to current FAA standards and increase capacity as needed. FAA AIP funds are classified as non-primary entitlement and discretionary.

Entitlements

General aviation airports are eligible for annual non-primary entitlement funding under the AIP. The total amount of non-primary entitlement funding is governed by congressional appropriations to the AIP. The AIP Handbook defines how the FAA calculates non-primary entitlement for general aviation airports to receive lesser of the following:

- ▶ \$150,000 or
- ▶ One-fifth of the estimated five-year costs for airport development for each of the airports as listed in the most recent NPIAS.

The FAA makes the project decisions on the use of the funds in consultation with the state of Oregon. LMT is assumed to receive \$150,000 in non-primary entitlements when evaluating project organization and coordination during this planning process. The FAA distributes AIP entitlement funding annually, and LMT can save the entitlement funds for up to three years.

Discretionary

Projects eligible for AIP funding may receive discretionary funding if the total cost exceeds costs covered by entitlement funds. Discretionary funds are not guaranteed, and their approval is established through a project priority ranking methodology used by the FAA to award grants, at their prerogative, based upon a project's importance to the National Airport System (NAS). Discretionary funds are generally provided for projects that have placed high in priority towards enhancing safety, security, and capacity and would be difficult to fund otherwise. Dollar amounts vary and can be significant compared to non-primary entitlement funds. The amount dedicated to any one airport is determined by its demonstrated and documented need compared to the needs at other airports within the NPIAS.

STATE

The ODA administers all state aviation grant programs. The Statewide Capital Improvement Plan (SCIP) is a partnership with the FAA and LMT to assist with the following funding options:

- ▶ Maintaining the five-year ACIP
- ▶ Capturing yearly and projected needs
- ▶ Coordinating Joint Planning Conferences (JPC)
- ▶ Managing the software to track FAA funding for state aviation needs.

ODA also provides grants to assist capital improvement projects such as the Critical Oregon Airport Relief (COAR). LMT is eligible to apply for the COAR grant, and the maximum amount that can be requested is \$150,000. The grants are determined by category that is associated with the Oregon Aviation Plan, similar to the FAA's categorization with the NPIAS.

LOCAL

Local funds include, but are not limited to, airport revenues from leases, fuel surcharges, landing fees, property taxes, percentage of transient room tax, and grant funding. Local funds can also include bonds issued by the City of Klamath Falls and property taxes collected by the City. LMT uses local funds to provide the 6.25 percent match on AIP-eligible projects and to pay for projects that are not eligible for or do not compete well for AIP funding.

OTHER

The Oregon ANG 173d Fighter Wing is located on LMT and has significant tenant facilities and operations. The military conducts planning for Oregon ANG facility and land use needs. The Airport Joint Use Agreement (AJUA) specifies the conditions and amount that Oregon ANG contributes for shared use of LMT property and services. The AJUA provides the mechanism for the Oregon ANG to provide funding support of major repair projects and/or new construction projects for shared facilities on a project-by-project basis through Military Construction Cooperative Agreements (MCCA).

FINANCIAL PLAN

The financial plan is developed for the preferred five-year capital improvement plan to demonstrate LMT's ability to fund project improvements. LMT financial governance, structure, and fiscal authority will be described by the existing financial policy and rates and charges used for assessing funding assumptions, strategies, and suitability. An analysis based on financial statements, budgets, and audit reports has been reviewed and historical data tabulated to identify LMT budget trends, income patterns, operating influence, and debt retirement schedules. A pro forma escalation of LMT operating revenues and expenses has been conducted to identify LMT net income, carryovers, cash flow balances, and capital cost recovery amounts reasonably available to fund future LMT projects.

The financial plan focuses on:

- ▶ Historical Review (revenues and expenses)
- ▶ Pro Forma Analysis (future financial projections)
- ▶ Forecasted Operations and Based Aircraft (cargo, general aviation, military)
- ▶ Budget Summary (impact on future finances).

HISTORICAL REVIEW

The City of Klamath Falls owns LMT. The Airport Fund, established by the City, is used to operate and maintain LMT. The Airport Fund accounts for operations of LMT. Revenues consist of FAA funding, property taxes, portion of transient room tax, rental revenue, landing fees, other grant funding, and miscellaneous sources. LMT files annual financial reports with the FAA using the Certification Activity Tracking System (CATS). This system provides public access to the financial reports of commercial airports. LMT currently has no scheduled air carrier service; it has been operating as a general aviation airport since 2017, but maintains a Part 139 certificate and has been providing financial information to the FAA through CATS. Historically, LMT received passenger airline aeronautical revenues for 2017 and 2018 but has received no passenger airline aeronautical revenues after 2018. **Table 5-7** provides LMT's historical operating budget based on CATS data.

Airport revenue includes rates and charges collected from airport tenants, rental cars (excluding customer facility charges (CFC)), proceeds from property taxes, and grants such as those issued by the FAA. Revenues generated and expenses incurred through the operation of LMT are referred to as *operating* and activities not directly related to the running of the Airport are referred to as *non-operating*.

Table 5-7 : LMT Historical Operating Budget Summary

	2015	2016	2017	2018	2019
Cash Flow from Operating Activities					
Total Aeronautical Revenue	\$438,352	\$401,405	\$440,589	\$466,898	\$452,083
Total Non-Aeronautical Revenue	\$1,018,330	\$971,632	\$1,430,721	\$1,453,210	\$1,257,755
Total Operating Expenses (1)	\$(1,055,989)	\$(1,159,526)	\$(1,646,198)	\$(1,307,019)	\$(1,415,660)
Subtotal	\$400,693	\$213,511	\$225,112	\$613,089	\$294,178
Cash Flow from Non-Operating Activities					
Total Non-Operating Revenue (Expenses) (2)	\$154,362	\$658,303	\$2,625,339	\$4,792,164	\$2,046,045
Total Capital Expenditures and Construction In Progress (3)	\$(294,464)	\$(670,989)	\$(2,714,340)	\$(6,240,782)	\$(1,081,640)
Subtotal	\$(140,102)	\$ (12,686)	\$ (89,001)	\$(1,448,618)	\$964,405
Cash at End of Year					
Net Increase (Decrease) in Cash	\$260,591	\$200,825	\$136,111	\$(835,529)	\$1,258,583
Cash at Beginning of Year (4)	\$40,608	\$301,199	\$502,024	\$638,135	\$ (197,394)
Total	\$301,199	\$502,024	\$638,135	\$(197,394)	\$1,061,189
(1) Depreciation expense (CATS line 6.8) is not a cash transaction, so it has been removed. Depreciation averaged \$1.6 million per year from 2015-2019.					
(2) Includes FAA and state grants.					
(3) These are capital projects reported on the capital improvement plan. Funding for these projects, including FAA and State grants, is included in Total Non-Operating Revenue					
(4) 2015 Cash at Beginning of Year comes from 2014 CATS form					

Pro Forma Analysis

Pro forma is a scenario-based planning tool that can be used to estimate future revenues and expenses. This pro forma analysis is prepared using the operations and based aircraft projections determined in **Chapter 2 - Forecasts**. The LMT Master Plan forecasts cover a 20-year planning period (2018 to 2038) with 2018 as the existing baseline year. The compound annual growth rate (CAGR) is calculated by determining the rate of change over the planning period, for LMT this is the baseline year (2018) to the ending year (2038). The CAGR for each forecast activity is then used to calculate the projections for aeronautical revenue, non-aeronautical revenue, operating and non-operating expenses.

Forecast activity and CAGR, provided in **Table 5-8** determine the rate of change for each category. For the revenues and expenses that are not driven by aircraft operations or based aircraft category, they are escalated with the CIP inflation rate. The Master Plan CIP cost estimates are normally escalated with a three percent inflation; however, the CIP inflation rate used for the pro forma analysis is the average CAGR for all forecast activities and is listed in **Table 5-8**.

Table 5-8 : Forecasted Compound Annual Growth Rate

Forecast Activity	Compound Annual Growth Rate
Airline Passengers	0%
Air Cargo (Total Pounds)	1.4%
Based Aircraft (Civilian)	0.9%
Annual Operations (Civilian and Military)	0.6%
Annual Operations (Civilian Only)	0.9%
USFS	0.7%
Aircraft Operations (Military)	6.0%
Based Aircraft (Military)	0.0%
CIP Inflation Rate	1.0%

The financial feasibility and project potential cash flows are evaluated in this pro forma analysis. The pro forma projections consider a five-year window beginning in 2021 and continuing through 2025. The budget for 2020 is assumed to have been determined already since this analysis is completed mid-year 2020 and was not considered. A more detailed version of the accounts historical data and projections is provided in **Appendix A**.

Aeronautical Revenue

This pro forma analysis assumes that commercial passenger service will not return to LMT within the five-year period. The City of Klamath Falls 2019-2021 Adopted Biennial Budget 2019-2021 goal is to find a replacement airline to provide scheduled passenger air carrier service. If this occurs, adjustments will need to be made to the pro forma analysis that will reflect the new airline activity.

Non-passenger aeronautical revenues are generated from aeronautical activity. These include landing fees, hangar rentals, fuel tax and sales, and FBO revenues. These revenues have been escalated at the appropriate rate based on the forecast activity. For example, landing fees for cargo aircraft are escalated at a rate of 1.4 percent to reflect the forecast annual percent for air cargo operation landing weight (total pounds). Landing fees from general aviation and military operations are escalated at 0.6 percent to reflect forecast activity for annual operations (civilian and military).

The non-aeronautical revenues include revenues generated by terminal services, rental cars, taxes (hotel, motel, other), and utilities. Revenue from terminal services and retail has decreased because of the cessation of commercial air service at LMT; therefore, the projections remain constant from the 2019 revenue recorded. Other items, such as taxes and utilities, increase each year using the CIP inflation rate of one percent.

Operating Expenses

Operating expenses include items such as compensation, benefits, supplies, insurance, maintenance, and contractual services. These expenses are not driven by the forecast operations activities and have been escalated at the CIP pro forma analysis rate of one percent.

The non-operating revenue expenses and capital include interest income, grants, sales of surplus equipment, and customer facility charges. Interest income is escalated at the CIP inflation of one percent. All other non-operating revenue expenses except for grants receipts have been kept at a consistent amount based on the 2019 historical data. If commercial service returns, these will need to be re-evaluated to escalate at a designated rate. The grants projections are calculated using the CIP and the anticipated AIP funding participation for each year for the five-year planning period. Each year varies depending on the grant needs for each specific year. Escalation after the year 2020 has already been included in the cost estimates.

Capital Expenditures and Construction in Progress

The capital expenditures and construction-in-progress CATS category in the pro forma analysis is based on the programmed five-year CIP. These account for airfield capital projects for each year for LMT. Carryover years are years in which LMT will not be funding projects with AIP funds but is carrying over their non-primary entitlements into the next year that has a programmed project. As stated previously, LMT has the option to carry over non-primary entitlements for up to three years for use in the fourth year. For years 2023 and 2025, no amount is shown for construction-in-progress and capital expenditures due to LMT carrying over non-primary entitlements.

Using the data provided and the forecast activity escalations, a summary of the pro forma projected operating budget has been formed. The analysis of the cash flow provides insight into ways to reduce operating costs or steps to accelerate revenues. End of year cash values are calculated using the cash at the beginning of the year plus the net increase or decrease in cash experienced throughout each year. **Table 5-9** provides a summary of the cash flow balances. LMT year-end cash is trending positive, averaging approximately one million dollars each year for the five-year period. This allows LMT to contribute its match for any AIP non-primary entitlement grants and favorably positions them to maximize discretionary grants or contribute to non-AIP eligible projects.

Table 5-9 : LMT Forecasted Operating Budget Summary

Budget	Forecast				
	2021	2022	2023	2024	2025
Cash Flow from Operating Activities					
Total Aeronautical Revenue	\$459,300	\$462,700	\$466,100	\$469,500	\$472,900
Total Non-Aeronautical Revenue	\$1,115,200	\$1,126,200	\$1,136,200	\$1,146,200	\$1,159,200
Total Operating Expenses ¹	\$(1,424,000)	\$(1,437,900)	\$(1,453,900)	\$(1,468,000)	\$(1,482,200)
Subtotal	\$150,500	\$151,000	\$148,400	\$147,700	\$149,900
Cash Flow from Non-Operating Activities					
Total Non-Operating Revenue (Expenses) ²	\$187,916	\$10,523,748	\$38,381	\$8,066,017	\$38,855
Total Capital Expenditures and Construction-in-Progress ³	\$(160,000)	\$(11,184,600)	\$ -	\$(8,562,600)	\$ -
Local Match ⁴	\$10,000	\$699,000	\$ -	\$535,200	\$ -
AIP Non-Primary Entitlement Funds ⁵	\$150,000	\$150,000	\$ -	\$300,000	\$ -
AIP Discretionary Funds ⁶	\$ -	\$10,335,600	\$ -	\$7,727,400	\$ -
Subtotal	\$ 27,916	\$ (660,852)	\$38,381	\$ (496,583)	\$38,855
Cash at End of Year					
Net Increase (Decrease) in Cash	\$178,416	\$(509,852)	\$186,781	\$(348,883)	\$188,755
Cash at Beginning of Year ⁷	\$1,252,877	\$1,431,293	\$921,441	\$1,108,222	\$759,339
Total	\$1,431,293	\$921,441	\$1,108,222	\$759,339	\$948,094
<p>¹ Depreciation expense (CATS line 6.8) is not a cash transaction, so it has been removed. Depreciation averaged \$1.6 million per year from 2015-2019.</p> <p>² Includes FAA and state grants.</p> <p>³ These are capital projects reported on the capital improvement plan. Funding for these projects, including FAA and State grants, is included in Total Non-Operating Revenue.</p> <p>⁴ 2021 local match includes 6.25 percent of \$160,000 of the total design cost (Project 1). 2022 local match includes the 6.25 percent of the remaining \$615,860 of design cost (Project 1) and the total construction cost (Project 2).</p> <p>⁵ AIP NPE of \$150,000 is granted to LMT yearly. Year 2023 and 2025 show a zero-balance due to the funds being rolled over to the next year.</p> <p>⁶ AIP Discretionary are not guaranteed, and their approval is established through a project priority ranking methodology used by the FAA to award grants</p> <p>⁷ 2015 Cash at Beginning of Year comes from 2014 CATS form.</p>					

SUMMARY

The 20-year CIP project costs, including inflation, are expected to total approximately \$97 million. The pro forma analysis projects that LMT can generate additional revenue by escalating non-passenger operating revenues with the associated rates that have been forecasted through the planning period of 2038. This analysis indicates that LMT can maintain a consistent positive cash flow balance at the end of each year. LMT may choose to adjust rates as demand changes. It is a worthy and feasible goal that LMT become as financially self-sufficient as possible. In fact, FAA Grant Assurance #24 indicates that airport sponsors should maintain fee and rental structures for facilities and services that make airports as self-sustaining as possible given local circumstances.

The development plan for LMT is aggressive; the monetary commitments are significant. However, it is a solid plan that represents LMT's best opportunity for meeting its current and future obligations. The plan also represents a series of choices and alternatives for the City of Klamath Falls. The ultimate success of LMT does not rely upon the completion of every single project contained in the development plan. To meet realistic funding expectations, it may be necessary to weigh the projects in a thoughtful and economical manner. In other words, to keep from being short-sighted in its choices, the City may be required to selectively implement the projects. Knowing the full scope of development possibilities enables the City to capitalize on opportunities, respond to financial realities, and select projects that are in harmony with the Airport's overall development plan and strategic vision. The project improvements are depicted on the ALP so that LMT can respond to changing demand quickly and illustrate to the FAA that should the need for a particular facility arise earlier than expected, its size and location have been considered in relation to the rest of the Airport.

If aviation demand continues to indicate that improvements are required, and if the proposed improvements prove to be environmentally acceptable, the financial implications presented here are likely to be acceptable for the FAA, ODA, and the City of Klamath Falls. However, this is a programming analysis and not a financial commitment on the part of any entity (i.e., the FAA, ODA, or the City). If the cost of an improvement project is not considered financially feasible at the time, it should not be pursued



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