CHAPTER 6

FACILITIES IMPLEMENTATION PLAN

6.1 Introduction

The previous chapters of the Master Plan evaluated existing facilities at Sioux Falls Regional Airport (FSD), projected future activity levels, identified potential facility needs, and provided alternatives and recommendations for addressing those facility needs throughout the 20-year planning period. This chapter provides guidance on implementing proposed Master Plan improvements. It is intended to be a concise summary document that is flexible to changing conditions and easily updated after the Master Plan is completed.

This chapter includes a summary of environmental considerations for future projects and a schematic capital improvement plan (CIP). The Airport CIP is a planning recommendation; it does not obligate local Airport funds, nor does it represent a commitment of federal or state funding participation. In addition, Airport projects may require further federal and state programming coordination to satisfy project justification and environmental clearances prior to receiving funding commitments or implementing project developments.

6.2 Environmental Considerations

The FAA cannot proceed with programming and funding any Airport Improvement Program (AIP) project until an environmental review is complete. An environmental review is the process of evaluating a project and its potential impacts to determine whether it complies with the National Environmental Policy Act (NEPA) and related laws and authorities. Different actions require different levels of review depending upon their scope and potential impacts. Section 102(2)(C) of NEPA requires detailed analysis in the form of Environmental Impact Statements (EISs) for proposed major federal actions that would significantly affect the environment. Regulations also require Environmental Assessments (EAs) for some projects to determine whether potential environmental impacts are significant, or Categorical Exclusions (CATEXs) for projects unlikely to have significant impacts. CATEXs are short form environmental review documents applying to categories of actions that the FAA has determined do not have significant impacts except in extraordinary circumstances. A CATEX may be the appropriate level of review for all projects listed in this chapter. Projects in this category may still require completion of a documented CATEX Form (and supporting studies, in some cases) that verifies if a CATEX is appropriate. It also considers any “extraordinary circumstances in which a normally categorically excluded action may have a significant environmental effect,” as defined by FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*.

Ultimately, the required level of documentation will be determined by the FAA Airports District Office (ADO) based on individual project factors at the time of review. Consensus on the level of review should be coordinated with the FAA ADO two to three years in advance of project implementation.

Background is provided below on some of the more relevant environmental impact categories considered when determining the level of environmental review required for projects.

6.2.1 Water Resources

Projects impacting wetlands and surface waters may need more detailed environmental analysis prior to construction, depending upon the expected extent of the impacts. A review of the National Wetland Inventory (NWI) showed two wetlands on airport property, depicted in **Figure 6-1**. One is a small emergent wetland west of the runway intersection. The other is a previous alignment of the Big Sioux River that was rerouted in the late 1990s prior to the northern extension of Runway 15/33. A new wetland survey may be required for development in some areas of the airport as part of NEPA review, especially in areas outside the extents of airfield grading and where wetland boundaries have changed since the NWI data was collected.

6.2.2 Department of Transportation Act of 1966, Section 4(f) Lands

Section 4(f) of the Department of Transportation Act of 1966 protects public parklands, historic sites, and other special resources of national, state, or local significance from transportation project impacts. These types of properties are referred to as Section 4(f) lands. Airport development alternatives should consider impacts to Section 4(f) lands in the planning phase. Impacts can result from direct use of the land or through indirect uses, such as noise or vibrations affecting the accessibility and livability of a site. When it is not possible to avoid impacts, Section 4(f) regulations require "all possible planning to minimize harm."

Elmwood Golf Course is a publicly owned golf course located south and west of the Runway 3 end. If Airport projects have the potential to impact this resource, or any other 4(f) resource, further study would occur as part of the NEPA review. Projects impacting 4(f) resources often undergo a process including participation from the entity with ownership of the resource as well as an opportunity for public comment.

6.2.3 Hazardous Materials

Hazardous materials are substances determined by the U.S. Environmental Protection Agency (EPA) to be capable of posing unreasonable risks to health, safety, and property. The storage, generation, transport, and cleanup of these materials are regulated at the federal and state levels, and the unexpected discovery of hazardous materials during construction can introduce additional costs. Identifying known hazardous material storage sites or previously contaminated sites allows development to avoid known issues and implement practical mitigation measures where avoidance of the site is not feasible.

The US EPA's Resource Conservation and Recovery Act (RCRA) information database shows several small active quantity generators of hazardous waste at the Airport including the Air National Guard, the TSA, and UPS. Other sites reporting to the EPA were found on and adjacent to the airport using the same tool. These included Air National Guard activities until 2020, which are covered by the Toxic Release Inventory, and the brownfield associated with the adjacent Elmwood Golf Course, which was built over an area used historically as an informal landfill. It is unlikely that airport development would impact these sites and activities; however, further study may be required during the NEPA process for individual projects.

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NATIONAL WETLAND
INVENTORY

FIGURE 6-1

The EPA's Underground Storage Tank Tracker shows several underground tanks, both active and closed, on and around the Airport. These locations should be confirmed prior to construction, and actions must be taken to avoid or appropriately handle storage tanks.

In February 2024, new proposed regulations under RCRA were introduced in the Federal Register that would add several per- and polyfluoroalkyl substances (PFAS) to the EPA list of hazardous materials, thereby bringing these chemicals under the umbrella of regulations regarding cleanup and other corrective action. The FAA requires Part 139 airports have firefighting capabilities using aqueous film-forming foams (AFFFs), which include PFAS as part of their composition. Furthermore, airports must comply with FAA requirements related to equipment certification and emergency response capabilities that have historically required the discharge of AFFF at the Airport. It should be noted that historical AFFF discharge may have occurred during equipment certification, emergency response capability demonstration, or emergency response activity on Airport property. Sioux Falls officials filed federal lawsuits in 2019 against several companies for PFAS discovered in the city's groundwater. Further study may be required as part of a NEPA process for future projects.

6.2.4 Historical, Architectural, Archaeological, and Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 requires federally funded projects be evaluated for their effects on historic and cultural properties included in, or eligible for listing in, the National Register of Historic Places (NRHP). The Archaeological and Historic Preservation Act of 1974 requires preservation of historic and archeological objects and materials that would otherwise be lost or destroyed because of federal projects. Proposed projects that affect undeveloped areas will likely require archaeological field work to verify that no artifacts or sites of significance are present. Proposed projects that affect undeveloped areas will likely require archaeological field work to verify that no artifacts or sites of significance are present. There are Airport structures over 50 years old which would be of age for review for the NRHP. Further review may be required at the environmental documentation phase, particularly east general aviation hangar development projects.

6.3 Funding Sources

In the past, FSD used a combination of FAA Airport Improvement Program (AIP) grants, Passenger Facility Charges (PFCs), State grants, and cash reserves/net operating revenues to fund capital improvements. These funding sources, as well as additional sources of capital funding, are anticipated to fund projects over the 20-year planning period.

Assumptions on funding source allocations for 2024-2032 projects were made. Actual allocations will be determined at the time of implementing the program. Third party financing is assumed for private projects like general aviation hangars, corporate hangars, and cargo buildings.

6.3.1 Federal Funding

Airport Improvement Program (AIP) Grants – Entitlement, Cargo, and Discretionary

FSD receives grants from the FAA to finance the eligible costs of certain capital improvements. These federal grants are allocated to commercial passenger service airports through the AIP. AIP grants include passenger entitlement grants, which are allocated among airports by a formula that is based on passenger enplanements, and discretionary grants, which are awarded in accordance with FAA guidelines. FSD currently receives approximately $3.5 million in annual AIP passenger entitlements.

Under current AIP authorization legislation, the federal share of allowable project costs is up to 90 percent for AIP grants. In addition to AIP passenger entitlement grants, airports with more than one million pounds of landed all-cargo weight annually are also eligible to receive AIP cargo entitlements, based on the airport's pro rata share of total U.S. landed cargo weight. FSD was apportioned approximately $207,178 in AIP cargo entitlements for 2022.

The approval of AIP discretionary funding is based on a project eligibility ranking method used by the FAA to award grants, at their discretion, based on a project's priority and importance to the national air transportation system. FSD has received discretionary funds to support runway, taxiway, and apron projects. It is reasonable to assume that the Airport will receive additional discretionary funding during the planning period for higher priority, eligible projects.

Bipartisan Infrastructure Law

The Infrastructure Investment and Jobs Act of 2021, known as the Bipartisan Infrastructure Law (BIL), was signed into law on November 15, 2021. The legislation included $25 billion in funding for the FAA to invest in airport terminals, airport infrastructure, and air traffic facilities over the next five years. The BIL includes two programs that may provide capital funding to FSD.

The first is the Airport Infrastructure Grants (AIG) program. This program is similar to AIP entitlements as funds are allocated to airports based on passenger enplanements. AIG funds are non-competitive and may be used for projects based on Passenger Facility Charge (PFC) project eligibility requirements.

The second program, the Airport Terminals Program (ATP), is a discretionary grant program providing $1 billion per year to replace aging terminals and airport-owned towers, increase terminal energy efficiency and accessibility, and other terminal projects. These grants are awarded through a competitive process based on an annual Notice of Funding Opportunity (NOFO). No more than $200 million per year may be allocated to Small Hub airports such as FSD.

6.3.2 State Funding

Aeronautics Fund

The South Dakota State Aeronautics Trust Fund, administered by the Aeronautics Commission of South Dakota, receives its revenues from aircraft registration fees and aircraft fuel taxes and is used to support airport grants, ongoing aviation related services, and special projects. The funds deposited into the Aeronautics fund are allocated into two distinct uses, one for state aeronautics use and the other for individual airport sponsor use. State funding for FSD projects has historically been used to provide a match for federal AIP funding. In 2020 and 2021, matches for most projects were not provided because the FAA was covering 100 percent of project costs in COVID-19 response grant programs. In 2022, the Aeronautics Commission changed the cap to 3.5 percent, but it has since returned to 5 percent of projects receiving federal funding. South Dakota airports are allocated a portion of the aviation fuel taxes collected from fuel sales on their airport and can request those funds for airport development projects.

Other State Sources of Funding

Senate Bill 144 was signed by Governor Kristi Noem on March 15th, 2024. The bill appropriates $10 million to the Aeronautics Commission for grants to support airport terminal infrastructure projects.

6.3.3 Local Funding

Passenger Facility Charges

The Aviation Safety and Capacity Expansion Act of 1990 established the authority for commercial service airports to apply to the FAA for imposing and using a PFC of up to $3.00 per eligible enplaned passenger. With the passage of AIR-21 in June 2000, airports could apply for an increase in the PFC collection amount from $3.00 per eligible enplaned passenger to $4.50. The proceeds from PFCs can be used for AIP-eligible projects and for certain additional projects that:

- **Preserve or enhance capacity, safety, or security.**
- **Mitigate the effects of aircraft noise.**
- **Enhance airline competition.**

PFCs may also be used to pay debt service on bonds (including principal, interest, and issue costs) and other indebtedness incurred to carry out eligible projects. In addition to funding future planned projects, the legislation permits airports to collect PFCs to reimburse the eligible costs of projects that began on or after November 5, 1990.

Rental Car Customer Facility Charge (CFC)

Customer facility charges (CFC) are fees paid by airport customers for the use of certain non-aeronautical services at the Airport. FSD recently began assessing a customer facility charge (CFC) to rental car concessionaires. Charges are $3.00 per day with a limit of 14 days. The use of CFC proceeds are restricted to rental car facility construction projects.

Revenue Sources

Other revenue sources for the Sioux Falls Regional Airport include the following.

- **Parking Revenue**
- **Rental Car Fees**
- **Leases**
- **Tenant Rents**
- **Landing Fees**
- **Air Flight Tax**
- **Deicing Fluid Sales**
- **Fuel Flowage Fees**

These revenues are generally used to fund Airport administrative, operational, and maintenance costs in addition to CIP projects.

6.4 Capital Improvement Plan

The CIP for this Airport Master Plan is divided into three phases:

- **Near-term (2024-2027)**
- **Mid-term (2028-2032)**
- **Long-term (2033-2042)**

Near-term project details include a specific year (or years) the project is anticipated to occur. Mid-term and long-term projects do not provide specific years as there is less certainty regarding demand, project importance, and available funding. For the purpose of the CIP, planned future projects are divided into the following categories:

- **Pavement/Facilities Maintenance**
- **Planning Studies**
- **Airfield**
- **East Cargo**
- **East GA**
- **Terminal**
- **West GA**

Funding availability and FSD prioritization will ultimately determine when projects are implemented. Adjustments to the implementation plan will be required over time to react to changing conditions.

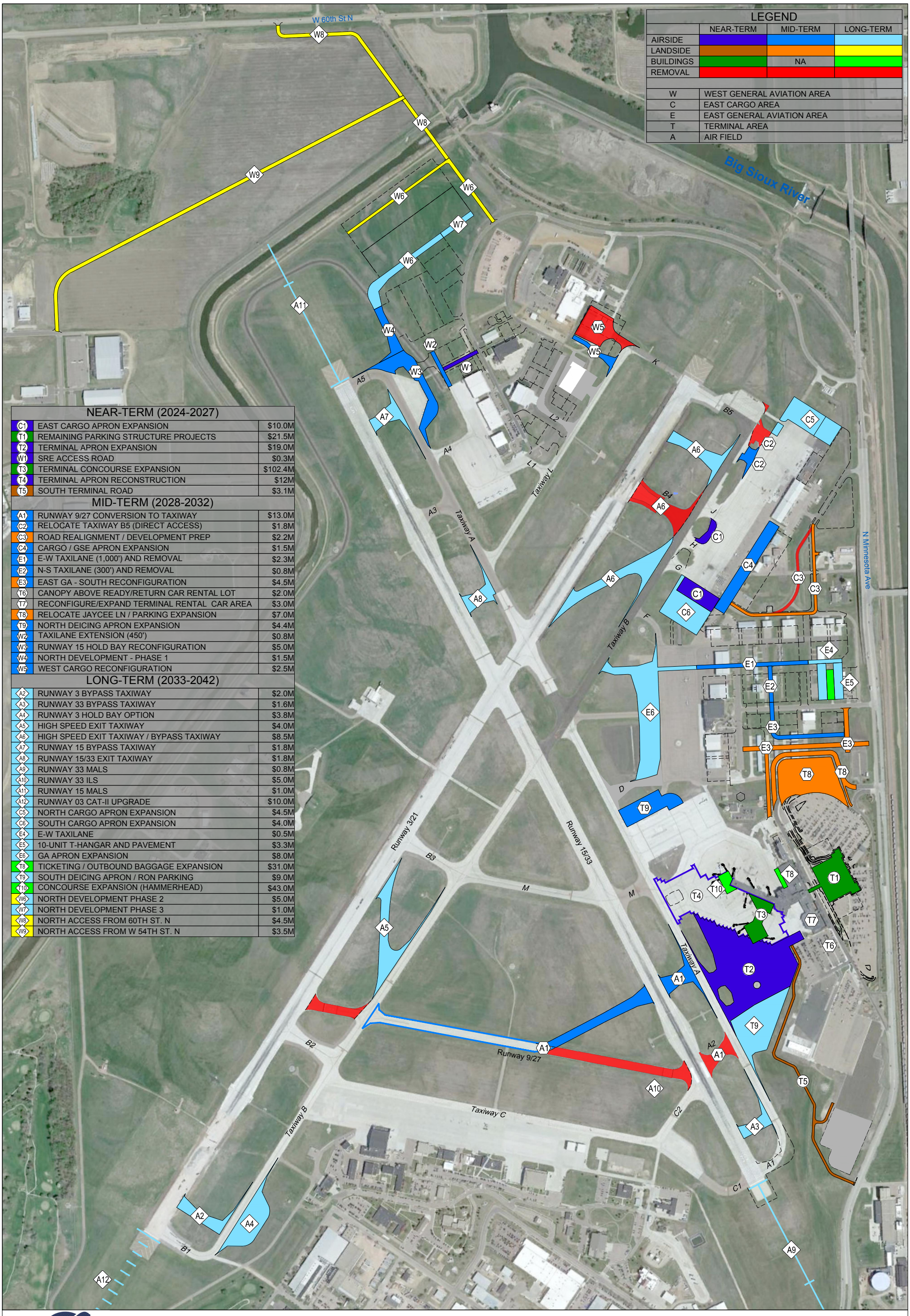
Table 6-1 summarizes projects and estimated costs for the three development phases. Assumed generalized federal, state, and local funding sources through 2032 are also identified for the near-term and mid-term,

but not the long-term. These generalized funding sources may represent a combination of funding from various government funds and programs, as well as airport revenues. Individual projects and associated costs will be further refined and analyzed as each project moves forward into the programming and design phases. **Figure 6-2** provides the location of facility improvement projects identified in Table 6-1 along with generalized cost estimates. Planning-level estimates are based on 2023 dollars with the exception of estimates developed as part of the Terminal Planning Study which are based on 2022 dollars and account for inflation.

Table 6-1 **Implementation Project Summary**

ID	Year(s)	Description	Cost	Federal	State	Airport
Near-Term (2024-2027)						
C1	2024-2025	East Cargo Apron Expansion Projects	$10,068,248	*$7,850,000*	*$503,412*	*$1,714,836*
-	2024	Concourse Expansion Design	$8,721,053	*$7,527,141*	*$0*	*$1,193,912*
T1	2024	Terminal Parking Structure Projects	$21,492,000	*$0*	*$0*	*$21,492,000*
-	2024	Purchase Replacement Snow Plow / Broom Unit	$800,000	*$0*	*$600,000*	*$200,000*
T2	2025	Terminal Apron Expansion Phase 1	$15,000,000	*$13,500,000*	*$750,000*	*$750,000*
T3	2025	Terminal Concourse Expansion Phase 1	$32,989,061	*$28,472,859*	*$0*	*$4,516,202*
W1	2025	SRE Access Road	$300,000	*$0*	*$0*	*$300,000*
-	2025	Purchase ARFF Truck	$900,000	*$0*	*$0*	*$900,000*
T3	2026	Terminal Concourse Expansion Phase 2	$54,392,000	*$34,000,000*	*$15,000,000*	*$5,392,000*
T2	2026	Terminal Apron Expansion Phase 2	$3,888,888	*$3,500,000*	*$194,444*	*$194,444*
T3	2027	Terminal Concourse Expansion Phase 3	$15,000,000	*$3,500,000*	*$0*	*$11,500,000*
T4	2027	Terminal Apron Reconstruction (South)	$12,000,000	*$10,000,000*	*$600,000*	*$1,400,000*
T5	2027	South Terminal Road	$3,100,000	*$0*	*$0*	*$3,100,000*
		Near-Term Total	**$178,651,250**	***$108,350,000***	***$17,647,856***	***$52,653,394***
Mid-Term (2028-2032)						
-	2028-2032	Maintaining Existing Pavements	$35,000,000	*$31,500,000*	*$1,750,000*	*$1,750,000*
-	2028-2032	Facilities Maintenance & Equipment	$5,000,000			*$5,000,000*
A1	2028-2032	Runway 9/27 Conversion to Taxiway	$13,000,000	*$11,700,000*	*$650,000*	*$650,000*
C2	2028-2032	Relocate Bravo 5 (direct access)	$1,800,000	*$1,620,000*	*$90,000*	*$90,000*
C3	2028-2032	Road Realignment, Demo, Prep	$2,200,000	*$1,980,000*	*$110,000*	*$110,000*
C4	2028-2032	GSE Apron Construction	$1,500,000	*$1,350,000*	*$75,000*	*$75,000*
E1	2028-2032	E-W Taxilane (1,000') & Removal	$2,300,000	*$2,070,000*	*$115,000*	*$115,000*
E2	2028-2032	N-S Taxilane (300') & Removal	$800,000	*$720,000*	*$40,000*	*$40,000*
E3	2028-2032	East GA - South Reconfiguration	$4,500,000	*$0*	*$0*	*$4,500,000*
-	2028-2032	Install sidewalk along Minnesota Ave.	$500,000	*$0*	*$0*	*$500,000*
T6	2028-2032	Canopy Above Ready/Return Car Rental Lot	$2,000,000	*$0*	*$0*	*$2,000,000*
T7	2028-2032	Reconfigure/Expand Terminal Rental Car Area	$3,000,000	*$0*	*$0*	*$3,000,000*
T8	2028-2032	Parking Expansion & Reconfigure Roads	$7,000,000	*$0*	*$0*	*$7,000,000*
T9	2028-2032	North Deicing Apron Expansion	$4,400,000	*$3,960,000*	*$220,000*	*$220,000*
W2	2028-2032	Taxilane Extension (450')	$800,000	*$720,000*	*$40,000*	*$40,000*
W3	2028-2032	Runway 15 Hold Bay Reconfiguration	$5,000,000	*$4,500,000*	*$250,000*	*$250,000*
W4	2028-2032	North Development - Phase 1	$1,500,000	*$1,350,000*	*$75,000*	*$75,000*
W5	2028-2032	West Cargo Reconfiguration	$2,500,000	*$2,250,000*	*$125,000*	*$125,000*
		Mid-Term Total	**$92,800,000**	***$63,720,000***	***$3,540,000***	***$25,540,000***

ID	Year(s)	Description	Cost
Long-Term (2033-2042)			
-	2033-2042	Maintaining Existing Pavements	$90,000,000
-	2033-2042	Facilities Maintenance & Equipment	$10,000,000
-	2033-2042	Airport Master Plan Update	$1,500,000
A2	2033-2042	Runway 3 Bypass Taxiway ("B2" on ALP)	$2,000,000
A3	2033-2042	Runway 33 Bypass Taxiway ("A2" on ALP)	$1,600,000
A4	2033-2042	Runway 3 Hold Bay Option	$3,800,000
A5	2033-2042	High Speed Exit Taxiway ("B4" on ALP)	$4,000,000
A6	2033-2042	RWY 21 Bypass Taxiway/High Speed Exit Taxiway	$8,500,000
A7	2033-2042	Runway 15 Bypass Taxiway ("A7" on ALP)	$1,800,000
A8	2033-2042	15/33 Exit Taxiway ("A4" on ALP)	$1,800,000
A9	2033-2042	Runway 33 MALS	$800,000
A10	2033-2042	Runway 33 ILS	$5,000,000
A11	2033-2042	Runway 15 MALS	$1,000,000
A12	2033-2042	Runway 03 CAT-II Upgrade (ALSF-2 & Other)	$10,000,000
C5	2033-2042	North Cargo Apron Expansion (Ultimate)	$4,500,000
C6	2033-2042	South Cargo Apron Expansion (Ultimate)	$4,000,000
E4	2033-2042	E-W Taxilane (Easternmost 250')	$500,000
E5	2033-2042	10-Unit T-hangar and Supporting Pavement	$3,300,000
E6	2033-2042	GA Apron Expansion (ADG-III, TDG-3 Standards)	$8,000,000
T8	2033-2042	Ticketing/Outbound Baggage Area Expansion	$31,000,000
T11	2033-2042	South Deicing Apron/RON Parking	$9,000,000
T12	2033-2042	Concourse Expansion ("Hammerhead")	$43,000,000
W6	2033-2042	North Development Phase 2	$5,000,000
W7	2033-2042	North Development Phase 3	$1,000,000
W8	2033-2042	North Access From 60th St. N (Bridge Included)	$4,500,000
W9	2033-2042	Alternative North Access from W 54th St. N	$3,500,000
		Long-Term Total	**$259,100,000**



LEGEND			
	NEAR-TERM	MID-TERM	LONG-TERM
AIRSIDE			
LANDSIDE			
BUILDINGS		NA	
REMOVAL			

W	WEST GENERAL AVIATION AREA
C	EAST CARGO AREA
E	EAST GENERAL AVIATION AREA
T	TERMINAL AREA
A	AIR FIELD

NEAR-TERM (2024-2027)		
C1	EAST CARGO APRON EXPANSION	$10.0M
T1	REMAINING PARKING STRUCTURE PROJECTS	$21.5M
T2	TERMINAL APRON EXPANSION	$19.0M
W1	SRE ACCESS ROAD	$0.3M
T3	TERMINAL CONCOURSE EXPANSION	$102.4M
T4	TERMINAL APRON RECONSTRUCTION	$12M
T5	SOUTH TERMINAL ROAD	$3.1M
MID-TERM (2028-2032)		
A1	RUNWAY 9/27 CONVERSION TO TAXIWAY	$13.0M
C2	RELOCATE TAXIWAY B5 (DIRECT ACCESS)	$1.8M
C3	ROAD REALIGNMENT / DEVELOPMENT PREP	$2.2M
C4	CARGO / GSE APRON EXPANSION	$1.5M
E1	E-W TAXILANE (1,000') AND REMOVAL	$2.3M
E2	N-S TAXILANE (300') AND REMOVAL	$0.8M
E3	EAST GA - SOUTH RECONFIGURATION	$4.5M
T6	CANOPY ABOVE READY/RETURN CAR RENTAL LOT	$2.0M
T7	RECONFIGURE/EXPAND TERMINAL RENTAL CAR AREA	$3.0M
T8	RELOCATE JAYCEE LN / PARKING EXPANSION	$7.0M
T9	NORTH DEICING APRON EXPANSION	$4.4M
W2	TAXILANE EXTENSION (450')	$0.8M
W3	RUNWAY 15 HOLD BAY RECONFIGURATION	$5.0M
W4	NORTH DEVELOPMENT - PHASE 1	$1.5M
W5	WEST CARGO RECONFIGURATION	$2.5M
LONG-TERM (2033-2042)		
A2	RUNWAY 3 BYPASS TAXIWAY	$2.0M
A3	RUNWAY 33 BYPASS TAXIWAY	$1.6M
A4	RUNWAY 3 HOLD BAY OPTION	$3.8M
A5	HIGH SPEED EXIT TAXIWAY	$4.0M
A6	HIGH SPEED EXIT TAXIWAY / BYPASS TAXIWAY	$8.5M
A7	RUNWAY 15 BYPASS TAXIWAY	$1.8M
A8	RUNWAY 15/33 EXIT TAXIWAY	$1.8M
A9	RUNWAY 33 MALS	$0.8M
A10	RUNWAY 33 ILS	$5.0M
A11	RUNWAY 15 MALS	$1.0M
A12	RUNWAY 03 CAT-II UPGRADE	$10.0M
C5	NORTH CARGO APRON EXPANSION	$4.5M
C6	SOUTH CARGO APRON EXPANSION	$4.0M
E4	E-W TAXILANE	$0.5M
E5	10-UNIT T-HANGAR AND PAVEMENT	$3.3M
E6	GA APRON EXPANSION	$8.0M
T8	TICKETING / OUTBOUND BAGGAGE EXPANSION	$31.0M
T9	SOUTH DEICING APRON / RON PARKING	$9.0M
T10	CONCOURSE EXPANSION (HAMMERHEAD)	$43.0M
W6	NORTH DEVELOPMENT PHASE 2	$5.0M
W7	NORTH DEVELOPMENT PHASE 3	$1.0M
W8	NORTH ACCESS FROM 60TH ST. N	$4.5M
W9	NORTH ACCESS FROM W 54TH ST. N	$3.5M

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JOE FOSS FIELD

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PROJECT LOCATIONS

Mead & Hunt

FIGURE 6-2

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6.4.1 Near-Term (2024-2027)

Except for the East Cargo expansion projects anticipated in 2024 and 2025, near-term projects at FSD primarily involve terminal area development. Projects supporting the new concourse (Projects 3, 6, 9, 11, and 12) comprise the majority of upcoming projects driving funding needs. Acquisition of a snow plow and ARFF truck are planned to occur in the next two years along with paving a section of gravel road to better accommodate SRE equipment movements in the West GA area.

Table 6-2 Near-Term (2024-2027)

Project	ID	Year(s)	Description	Cost
1	**C1**	2024-2025	East Cargo Apron Expansion Projects	$10,068,248
2	**-**	2024	Concourse Expansion Design	$8,721,053
3	**T1**	2024	Terminal Parking Structure Projects	$21,492,000
4	**-**	2024	Purchase Replacement Snow Plow / Broom Unit	$800,000
5	**T2**	2025	Terminal Apron Expansion Phase 1	$15,000,000
6	**T3**	2025	Terminal Concourse Expansion Phase 1	$32,989,061
7	**W1**	2025	SRE Access Road	$300,000
8	**-**	2025	Purchase ARFF Truck	$900,000
9	**T3**	2026	Terminal Concourse Expansion Phase 2	$54,392,000
10	**T2**	2026	Terminal Apron Expansion Phase 2	$3,888,888
11	**T3**	2027	Terminal Concourse Expansion Phase 3	$15,000,000
12	**T4**	2027	Terminal Apron Reconstruction (South)	$12,000,000
13	**T5**	2027	South Terminal Road	$3,100,000
			Near-Term Total	**$178,651,250**

East Cargo Apron Expansion (2024-2025)

The proposed project includes:

- Approximately 53,000 square feet of new apron pavement along the southern edge of the East Cargo apron to support parking of feeder aircraft.
- Approximately 15,000 square feet of new pavement between Taxiway H and Taxiway J to accommodate movement by Group IV, TDG-5 aircraft to accommodate nose-in parking of mainline aircraft on an east-west alignment.
- Reconstruction of approximately 86,500 square feet of pavement to accommodate parking of Group IV mainline cargo aircraft such as the Boeing 767 and Airbus A300.

Terminal Parking Ramp (2024)

Remaining elements of the parking ramp project are anticipated to be completed in October 2024. The ramp provides a four-level parking structure with a total of approximately 975 spaces located east of the

passenger terminal where short-term parking previously existed. The ramp also includes a skyway connection from the second level to the main terminal.

Terminal Concourse Expansion & Associated Projects (2024-2027)

Terminal building expansion projects occur in phases with corresponding terminal apron improvement projects. Design is underway for the southern concourse leg expansion depicted as T2 on Figure 6-2.

The preferred Master Plan terminal alternative has a concourse expansion footprint of approximately 50,000 square feet. Adjustments to the concourse geometry and size are anticipated during project design as phasing and funding of the project are further defined. For planning purposes, costs associated with the concourse expansion listed in Table 6-2 align with estimates developed as part of the previously completed Terminal Planning Study (see Appendix C). Total concourse expansion costs (excluding apron expansion) are approximately $111 million. This cost includes project design and renovation of the existing terminal. Project phasing considerations include minimizing disruptive scheduling to avoid rendering a portion of the facility inoperative due to construction and preventing extra costs.

Construction of roughly 50,000 square yards of concrete apron to support concourse expansion is estimated to cost $19 million. The terminal apron layout depicted on Figure 6-2 allows for movement of Group III aircraft around the water well with clear Taxilane Object Free Areas. Coordination with the City of Sioux Falls Water Division staff regarding the water well south of the existing apron is ongoing. Reconstruction of the existing terminal apron on the south side of the concourse is also listed as a near-term project estimated at $12 million.

Construction of a southern access road is planned for 2027 (T5 on Figure 6-1). The road would provide a vehicle access option to the terminal area that avoids the curbfront along the east side of the terminal building.

6.4.2 Mid-Term (2028-2032)

Mid-term projects are listed in **Table 6-3**. The project numbering in the table does not imply chronological order aside from the likely order of projects expected to occur in individual development areas.

Table 6-3 Mid-Term (2028-2032)

Project	ID	Year(s)	Description	Cost
14	-	2028-2032	Maintaining Existing Pavements	$35,000,000
15	-	2028-2032	Facilities Maintenance & Equipment	$5,000,000
16	A1	2028-2032	Runway 9/27 Conversion to Taxiway	$13,000,000
17	C2	2028-2032	Relocate Bravo 5 (direct access)	$1,800,000
18	C3	2028-2032	Road Realignment, Demo, Prep	$2,200,000
19	C4	2028-2032	GSE Apron Construction	$1,500,000
20	E1	2028-2032	E-W Taxilane (1,000') & Removal	$2,300,000
21	E2	2028-2032	N-S Taxilane (300') & Removal	$800,000
22	E3	2028-2032	East GA - South Reconfiguration	$4,500,000
23	-	2028-2032	Install sidewalk along Minnesota Ave.	$500,000
24	T6	2028-2032	Canopy Above Ready/Return Car Rental Lot	$2,000,000
25	T7	2028-2032	Reconfigure/Expand Terminal Rental Car Area	$3,000,000
26	T8	2028-2032	Parking Expansion & Reconfigure Roads	$7,000,000
27	T9	2028-2032	North Deicing Apron Expansion	$4,400,000
28	W2	2028-2032	Taxilane Extension (450')	$800,000
29	W3	2028-2032	Runway 15 Hold Bay Reconfiguration	$5,000,000
30	W4	2028-2032	North Development - Phase 1	$1,500,000
31	W5	2028-2032	West Cargo Reconfiguration	$2,500,000
			Mid-Term Total	**$92,800,000**

Maintaining Existing Pavements & Facilities

This category seeks to capture potential costs associated with maintaining existing pavements and facilities along with acquisition of necessary equipment (SRE, ARFF, etc.). The 2021 South Dakota Airport Pavement Condition Index (PCI) provided a 20-year pavement funding assessment for FSD (see **Appendix A**). The study indicated $159,167,000 in project costs from 2021-2041 to maintain existing pavement PCIs at or above Critical PCI. The planning-level costs are derived primarily from the 2021 PCI study estimates with reductions for projects that have already taken place and adjustments from shuffling of project timing. Approximately $35 million in pavement projects for 2028-2032 are incorporated. An additional $5 million was added for assumed facilities maintenance and equipment acquisition costs over the five-year period for a total mid-term estimate of $40 million for this category. A 90 percent federal / 5 percent state / 5 percent local split is assumed for pavement airside pavement projects while facilities maintenance and equipment acquisition projects are assumed to be locally funded.

A 2024 South Dakota Airport PCI study will be available in the fall/winter of 2024 and provide updated data on pavement condition.

Airfield

Conversion of Runway 9/27 to a taxiway is planned early in the mid-term period. Project A1 on Figure 6-2 depicts pavement additions and removals associated with the $13 million project. Decommissioning of 9/27 is anticipated when pavement condition deteriorates to the point major rehabilitation becomes necessary. FSD could also decommission 9/27 but delay conversion to a taxiway if funding challenges exist or higher priority projects take precedence. Taxiway M currently provides access to Runway 3 from the terminal area and could continue to do so if taxiway conversion occurs later. However, Taxiway M crosses the middle third of Runway 15/33 and the FAA recommends limiting runway crossings to the outer thirds of a runway, keeping the middle third (high-energy area) clear so pilots can maneuver to avoid potential collisions.

East Cargo

Relocation of Taxiway Connector B5 (Project 17, ID C2)

Taxiway B5 current allows direct access from the East Cargo apron to Runway 21. Relocation of the taxiway connector from the East Cargo apron is necessary to eliminate direct access and meet FAA design standards. Project costs associated with the relocation are estimated at $1.8 million.

Realignment of North John Orr Drive / Demolition / Site Preparation (Project 18, ID C3)

This project realigns North John Orr Drive to allow additional space for air cargo buildings and parking. Proposed East Cargo reconfiguration would allow for nose-in parking of four mainline aircraft. Shifting segments of John Orr Drive to the east and demolishing existing airport buildings east of the cargo apron would allow for development of air cargo buildings, parking, and other facilities to support expansion of cargo operations. Costs associated with the project are estimated at $2.2 million.

Cargo/GSE Apron Construction (Project 19, ID C4)

Construction of cargo/GSE apron in front of proposed cargo building locations would support reconfiguration of the East Cargo area. The apron footprint shown on Figure 6-2 is approximately 100 feet deep and 900 feet in length and runs along the east side of the southern cargo apron. Phased construction of this pavement as need arises may be preferable. Construction of cargo buildings is assumed to be funded by air cargo carriers such as UPS or Amazon, or third-party developers. Third-party developers are typically granted a lease of airport property with the right to finance, construct, and offer space for tenants to lease. In most cases, airports have reduced financial exposure with this type of development and typically receive land rental or a share of rental payments over the term of the lease. Airports typically take ownership of property improvements at the expiration of the land lease. Costs associated with the project are estimated at $1.5 million.

East GA

The Master Plan effort identified a need for reconfiguration of the East GA area to accommodate larger aircraft and hangars and maximize use of developable space. To the extent possible, development can be phased minimizing impacts to current tenants while aligning with lease expirations. Redevelopment could be deferred beyond 2032, or indefinitely, if FSD's preferences for area development change. However, realignment of the terminal access road (Jaycee Lane) and terminal parking expansion

discussed in the **Terminal Area** section below would require reconfiguration of the East GA area to maintain airside access to hangars south of West Hangar Street and vehicle access. Put another way, projects E1 and E2 could occur independent of E3, but project E3 and T8 require completion of E1 and E2.

To preserve development flexibility, it is recommended any extensions to expiring East GA leases be short-term extensions.

East GA project costs listed in Table 6-3 include existing hangar demolition costs. It is assumed local funding will be utilized for these projects.

Terminal Area

Mid-term terminal area projects include installing a sidewalk along Minnesota Avenue, constructing a canopy above the rental car ready/return lot, reconfiguring the terminal rental car area, and rerouting the main terminal entrance road (Jaycee Lane) for terminal parking expansion. Local funding is assumed to be the primary funding source for these projects, with CFCs applied toward rental car facility projects. Timing of implementation is dependent on demand, prioritization, and available funding.

Reconfiguration of the passenger terminal rental car area would alleviate congestion in the arrivals hall by separating queues for the rental car counters from the adjacent passenger circulation corridor. Accomplishing this without expanding the terminal facility further south (and impacting rental car parking) requires relocating the existing United States Customs and Border Protection (USCBP) facilities to an available space in the new concourse. The Terminal Planning Study located in **Appendix C** provides a potential rental car reconfiguration layout and space for USCBP in the new concourse.

As discussed in the East GA section, the realignment of Jaycee Lane and terminal parking expansion depicted on Figure 6-2 (T8) requires reconfiguration of the East GA area. The parking expansion project as depicted adds roughly 165,000 square feet of parking space and approximately 500 parking stalls assuming similar efficiency to the northernmost terminal parking lot.

The addition of a third de-icing position north of the existing de-icing apron (T9) is included in the mid-term. Timing of implementation is dependent on demand, prioritization, and available funding.

West GA

West GA development potential includes infill, reconfiguration, and expansion into undeveloped areas. Some projects like the 450-foot taxilane extension (W2) could support hangar development with less upfront costs ($0.8 million).

Runway 15 Hold Bay reconfiguration (W3) would allow Group IV aircraft to hold while allowing other Group IV aircraft to proceed to the Runway 15 end. The $5 million dollar project would also be a steppingstone for further aeronautical development to the north.

Phase 1 of north development (W4) includes approximately 400 feet of taxiway construction to support large hangar development immediately north of existing West GA development. Subsequent north development will build off this segment of taxiway. This project assumes the Runway 15 Hold Bay reconfiguration has already occurred. A variation of this project could be constructed connecting with the existing parallel taxiway at the Runway 15 end if necessary to meet north development needs prior to completion of the hold bay reconfiguration.

Reconfiguration of the West Cargo Area (W5) would eliminate direct access from the West Cargo area to Runway 21, and it would accommodate larger hangar development when complete. However, the project includes an estimated $2.5 million in demolition and taxilane construction. It is recommended reconfiguration occurs in lieu of reconstructing the West Cargo apron in its current location. It's also recommended any extensions to expiring West Cargo leases be short duration extensions to preserve development flexibility.

6.4.3 Long-Term (2033-2042)

Long-term projects are listed in **Table 6-4**. Project numbering in the table does not imply chronological order, aside from the likely order of projects expected to occur in individual development areas.

Table 6-4 Long-Term (2033-2042)

Project	ID	Year(s)	Description	Cost
32	-	2033-2042	Maintaining Existing Pavements	$90,000,000
33	-	2033-2043	Facilities Maintenance & Equipment	$10,000,000
34	-	2033-2042	Airport Master Plan Update	$1,500,000
35	A2	2033-2042	Runway 3 Bypass Taxiway ("B2" on ALP)	$2,000,000
36	A3	2033-2042	Runway 33 Bypass Taxiway ("A2" on ALP)	$1,600,000
37	A4	2033-2042	Runway 3 Hold Bay Option	$3,800,000
38	A5	2033-2042	High Speed Exit Taxiway ("B4" on ALP)	$4,000,000
39	A6	2033-2042	Rwy 21 Bypass Taxiway/High Speed Exit Taxiway	$8,500,000
40	A7	2033-2042	Runway 15 Bypass Taxiway ("A7" on ALP)	$1,800,000
41	A8	2033-2042	15/33 Exit Taxiway ("A4" on ALP)	$1,800,000
42	A9	2033-2042	Runway 33 MALS	$800,000
43	A10	2033-2042	Runway 33 ILS	$5,000,000
44	A11	2033-2042	Runway 15 MALS	$1,000,000
45	A12	2033-2042	Runway 03 CAT-II Upgrade (ALSF-2 & Other)	$10,000,000
46	C5	2033-2042	North Cargo Apron Expansion (Ultimate)	$4,500,000
47	C6	2033-2042	South Cargo Apron Expansion (Ultimate)	$4,000,000
48	E4	2033-2042	E-W Taxilane (Easternmost 250')	$500,000
49	E5	2033-2042	10-Unit T-hangar and Supporting Pavement	$3,300,000
50	E6	2033-2042	GA Apron Expansion (ADG-III, TDG-3 Standards)	$8,000,000
51	T8	2033-2042	Ticketing/Outbound Baggage Area Expansion	$31,000,000
52	T11	2033-2042	South Deicing Apron/RON Parking	$9,000,000
53	T12	2033-2042	Concourse Expansion ("Hammerhead")	$43,000,000
54	W6	2033-2042	North Development Phase 2	$5,000,000
55	W7	2033-2042	North Development Phase 3	$1,000,000
56	W8	2033-2042	North Access From 60th St. N (Bridge Included)	$4,500,000
57	W9	2033-2042	Alternative North Access From W 54th St. N	$3,500,000
			Long-Term Total	**$259,100,000**

Maintaining Existing Pavements & Facilities

As previously mentioned, this category seeks to capture potential costs associated with maintaining existing pavement and facilities along with acquiring necessary equipment. Project costs are derived primarily from the 2021 South Dakota PCI study estimates, with some reductions for projects that have already taken place. An additional $10 million was added for assumed facilities maintenance and equipment acquisition costs over the 10-year period for a total long-term estimate of $100 million.

Airport Master Plan Update

An update to the Airport Master Plan is recommended every 10 years or as airport facility needs and circumstances change. Changing facility needs may require an update to occur during the mid-term period.

Airfield

Bypass Taxiways and Holding Bays

FAA Advisory Circular 150/5300-13B states,

> *At busy airports, ATC routinely needs to re-sequence aircraft near the departure runway end in order to maintain optimum runway capacity. Bypass taxiways located near runway ends provide flexibility of runway operations by permitting necessary ground maneuvering based on clearance sequence.*

Bypass taxiways are recommended at towered airports with regular IFR operations. Constructing holding bays instead of bypass taxiways can further enhance capacity by providing multiple positions for queuing aircraft. However, this enhancement may be limited to smaller aircraft as proposed holding bays would likely only allow queuing of one Group III or Group IV aircraft.

Project costs for bypass taxiways on Runways 3, 21, 33, and 15 are provided along with cost for a Runway 3 holding bay ($3.8 million). The cost for the Runway 3 holding bay is roughly double the cost of the bypass taxiway. Both options provide capacity improvements, but it is assumed only one of the two options would be constructed during the 20-year planning period.

Exit Taxiways

Cost estimates for exit taxiways and high-speed exit taxiways are provided. The trigger for implementing these projects would be the need for airfield capacity improvements. While the Master Plan forecast chapter indicated airfield capacity is not anticipated to be an issue during the planning period, FSD should continue discussions with ATC staff regarding airfield capacity.

Instrument Approach & Lighting System Improvements

Medium-intensity approach lighting systems (MALS) are planned for both ends of Runway 15/33. Estimates for the Runway 15 MALS are higher due to anticipated increases in installation costs when crossing the Big Sioux River.

Installation of an ILS for Runway 33 is estimated at $5 million, but federal participation in funding the system is uncertain. FAA policy according to the FAA AIP Handbook (Order 5100.38D) is “AIP funds must not be used to install a new Instrument Landing System where the FAA has determined that an RNAV approach can provide similar capabilities”. Depending on the type of glideslope system selected for the ILS, reconfiguration of the taxiway system utilized by the South Dakota Air National Guard west of the Runway 33 may also be required.

Upgrading Runway 3 to a Category II ILS (1200 RVR) would allow aircraft to operate with minimums as low as ¼-mile visibility and 100-foot ceilings. Improvements include replacing the MALSR with ALSF-II lighting, installing in-pavement touchdown zone lighting, installing additional RVR equipment, and upgrading the glideslope and localizer equipment. As mentioned in the **Environmental Considerations** section, a publicly owned golf course is located south of the Runway 3 end. Further study may be necessary to determine if upgrading to a Category II ILS has the potential to impact 4(f) resources.

East Cargo

Construction of the ultimate East Cargo configuration is limited to cargo apron expansion to support aircraft movement and GSE needs. The cost of the cargo building expansion will likely be triggered by air cargo carriers or third-party developers. Expansions to the north apron area would likely be driven by increased FedEx facility needs. Expansion to the south would likely be driven either by UPS facility needs (and those of its feeder operators) or new entrants such as Amazon Air.

East GA

Redevelopment of the East GA area could occur earlier in the planning period, or differently than the preferred alternative, should FSD prefer it. There are numerous options for developing this area, but all are built around the central 250-foot extension of the "backbone" taxilane through the East GA area (E4). The preferred development carried forward from the alternatives chapter includes construction of a 10-unit T-hangar and supporting pavement (E5). T-hangar construction is approximately $2 million of the $3.3 million total cost for E5.

Expansion of the East GA apron to the west provides additional space for aircraft parking and includes construction of a Group III, TDG-3 taxilane along the western edge. Increased pavement strength is incorporated into the estimate for these areas as well as a connection to the proposed central taxilane. The timing of this project, like others, is driven by demand and availability of funding.

Terminal

Triggering events for the following terminal area projects are largely dependent on future aviation activity levels, peaking characteristics, and thresholds for acceptable levels of service.

Ticketing/Outbound Baggage Area Expansion (T10)

An expansion is required to provide adequate ticketing area queuing and meet future space needs for outbound baggage screening and baggage make-up. The proposed expansion shown on Figure 6-2 has an estimated cost of $31 million.

South Deicing Apron / Remain Overnight (RON) Parking (T11)

Additional apron space should be constructed south of the proposed concourse apron expansion to accommodate an additional de-icing position. The apron could also be utilized for RON parking. Whether the project is implemented largely depends on the ability of north de-icing positions to meet future operational needs.

North Concourse Expansion (T12)

Completion of the 5-gate "hammerhead" expansion to the north end of the existing concourse would net two additional gates along with additional departure lounge area. The need for this project is largely dependent on future aviation activity levels during peak time periods.

West GA

North Development (W6, W7)

Further expansion north into the undeveloped West GA areas is anticipated in the long-term. The **Alternatives** chapter lists numerous development options for this area, ranging from a heavy focus on larger corporate and cargo uses to a blend of medium and small GA development. If future needs don't align with the preferred alternative depicted on the Airport Layout Plan, adjustments can be made when it becomes apparent FSD would be better served by a different layout.

The second phase of north development extends (W6) north from the north taxiway extension (W4) and then easterly to accommodate hangar development on both sides of the taxiway. Taxiway construction costs are approximately $2 million. Access road construction emanating from National Guard Drive and extending to the western edge of proposed development would be required for development on the northern side of the taxiway. Access road construction is estimated at $3 million. The third and final phase of north development completes the extension of the taxiway to the northeast, accommodating additional hangar development on the north side ($1 million).

North Airport Access

Options for north access to the airport were considered in the Master Plan. A connection from West 60th Street North (W8) is more efficient than a connection from West 54th Street North (W9). However, the City of Sioux Falls plans for a railroad crossing bridge east of the proposed access point, potentially limiting the feasibility of this option. A bridge crossing the Big Sioux River is estimated at $3 million. Road construction for a connection to West 60th Street North is $1.5 million, and a connection from the bridge to West 54th Street North is estimated at $3.5 million. Whether a CATEX or EA is required for the project is dependent on bridge location, design, and potential impacts to the Big Sioux River.