



## Division of Finance &amp; Management

Office of Air, Rail & Transit  
700 East Broadway Avenue  
Pierre, SD 57501  
O: 605.773-3574 | dot.sd.gov

**TO:** South Dakota Aeronautics Commission  
**FROM:** Jack Dokken, Office of Aeronautics  
**DATE:** June 20, 2024  
**SUBJECT:** Airport Improvement Program (AIP) /Bi-Partisan Infrastructure Law (BIL)  
Grant Applications

Airport sponsors are requesting funding from the State Aeronautics Fund for the following AIP/BIL projects:

**Belle Fourche 3-46-0072-020-2024****AIP:** Design and bidding for hangar taxilane reconstruction

Federal Share	\$140,400.00
State Share	\$7,800.00
Local Share	\$7,800.00
Total	\$156,000.00

**DeSmet 3-46-0063-020-2024****BIL:** Acquire snow removal equipment

Federal Share	\$288,000.00
State Share	\$16,000.00
Local Share	\$16,000.00
Total	\$320,000.00

**Lincoln County 3-46-0078-022-2024****AIP:** Reconstruction of south apron

Federal Share	\$ 589,500.00
State Share	\$32,750.00
Local Share	\$32,750.00
Total	\$ 655,000.00

**Lincoln County 3-46-0078-023-2024****BIL:** reconstruction of south apron – engineering and testing

Federal Share	\$477,000.00
State Share	\$26,500.00
Local Share	\$26,500.00
Total	\$530,000.00

**Philip 3-46-0043-018-2024****BIL:** Acquire snow removal equipment

Federal Share	\$279,000.00
State Share	\$15,500.00
Local Share	\$15,500.00
Total	\$310,000.00

**Rosebud 3-46-0082-022-2024****BIL:** Design hangar taxilane expansion

Federal Share	\$72,000.00
State Share	\$4000.00
Local Share	\$4000.00
Total	\$80,000.00

**Sioux Falls 3-46-0043-065-2024****BIL:** Terminal expansion construction; concourse design

Federal Share	\$8,012,980.00
State Share	\$ 0
Local Share	\$708,073.00
Total	\$8,721,053.00

**Spearfish 3-46-0065-036-2024****AIP:** GA taxilane reconstruction and extension

Federal Share	\$1,261,000.00
State Share	\$70,056.00
Local Share	\$70,056.00
Total	\$1,401,111.00

**Spearfish 3-46-0065-037-2024****BIL:** GA taxilane reconstruction and extension

Federal Share	\$349,000.00
State Share	\$19,389.00
Local Share	\$19,389.00
Total	\$387,778.00

**Wall 3-46-0069-016-2024****BIL:** Design, engineering and bidding services for apron expansion; extend taxilane 450' to access hangar development area

Federal Share	\$98,000.00
State Share	\$5,444.00
Local Share	\$5,445.00
Total	\$108,889.00

**Watertown 3-46-0058-045-2024****AIP:** Engineering services taxiway D and ag area, bid schedule A

Federal Share	\$1,332,473.00
State Share	\$74,026.00
Local Share	\$74,026.00
Total	\$1,480,526.00

**Watertown 3-46-0058-046-2024****BIL:** Construction bid schedule B and C; engineering services Taxiway D and ag area

Federal Share	\$ 1,095,603.00
State Share	\$60,867.00
Local Share	\$60,867.00
Total	\$1,217,336.00

**Winner 3-46-0061-021-2024****BIL:** Airport pavement maintenance and level III Cultural resource survey

Federal Share	\$238,500.00
State Share	\$13,250.00
Local Share	\$13,250.00
Total	\$265,000.00

**SDDOT 3-46-4600-030-2024****AIP:** Statewide pavement maintenance

Federal Share	\$1,755,000.00
State Share	\$97,500.00
Local Share	\$97,500.00
Total	\$1,950,000.00

## Belle Fourche Municipal Airport, Belle Fourche, South Dakota

### Project Narrative / Justification – Reconstruct Hangar Taxilanes – Design & Bidding

#### AIP Grant

Belle Fourche Municipal Airport had an airfield pavement maintenance project completed during the summer of 2023. The taxilane pavements had crack sealing completed. During the crack sealing process, a light duty pick-up and trailer performing the crack sealing on the taxilanes caused large ruts and deformations of the pavement surface. During conversations with airport staff something similar happened on the hangar taxilanes during the previous crack sealing project several years ago. This pavement has deteriorated and is in need of full reconstruction.



*Exhibit 1 - Taxilane after pavement maintenance. Pavement alligator cracked.*



*Exhibit 2 - Taxilane after pavement maintenance.*



*Exhibit 3 - Depression / rut in surface.*



*Exhibit 4 - Depression / rut in surface.*



*Exhibit 5 - Depression / rut in surface.*





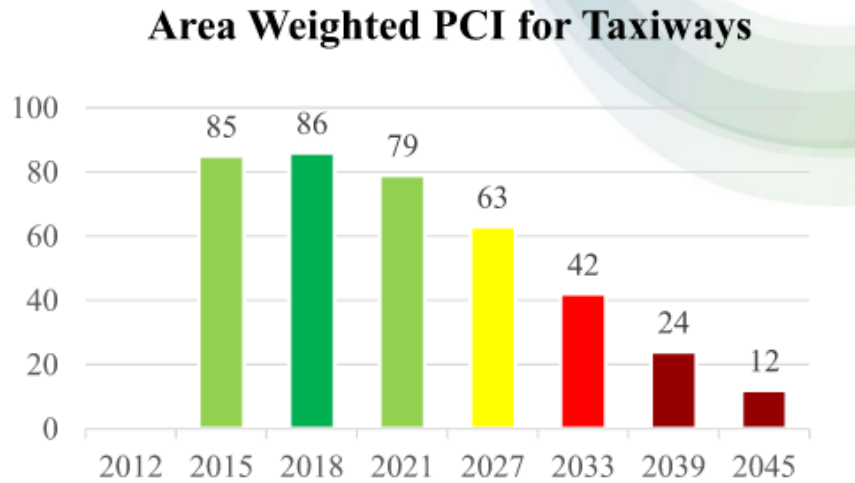
Exhibit 6 - Depression / rut in front of hangar.

The 2021 Pavement Condition Index of the hangar taxilane pavements were and pavement history is:

405	Hangar Taxilanes	Year	PCI = 53
		2001	2" Asphalt (P-401) 10" Aggregate (P-208) 8" Scarify and Recompact Subgrade (P-152)
205	Hangar Taxilanes		PCI = 71
		1991	2" Asphalt (P-401) 4" Aggregate (P-208)
		1985	10" Aggregate (P-208)
415	Hangar Taxilanes		PCI = 75
		2001	2" Asphalt (P-401) 10" Aggregate (P-208) 8" Scarify and Recompact Subgrade (P-152)
410	Hangar Taxilanes		PCI = 69
		2001	2" Asphalt (P-401) 10" Aggregate (P-208) 8" Scarify and Recompact Subgrade (P-152)

The general pavement section is approximately 2 inches of asphalt over aggregate base. This pavement section does not have a long life in the South Dakota region. Additionally, the pavement was installed in 2001 and will be 25 years old at the time of reconstruction.

The Area Weighted PCI for Taxiways at Belle Fourche Municipal Airport was 79 in 2021 and is projected to drop to 63 by 2027. This is a drop of 16 points.



Prorating this 16-point drop between 2021 and 2027 for the year 2026 when reconstruction is anticipated to take place results in a 13-point drop and their projected PCI would be:

405	Hangar Taxilanes	PCI = 40
205	Hangar Taxilanes	PCI = 58
415	Hangar Taxilanes	PCI = 62
410	Hangar Taxilanes	PCI = 56

The AIP Handbook says that pavements with a PCI of 55 (Poor) or less are eligible for reconstruction.

We anticipate that the new rutting and alligator cracking of the pavements will result in a PCI lower than 55 when the pavements are next evaluated in 2024.

This project will be for the design and bidding services for the taxilane reconstruction. This will be a multi-phase multi-year project.

The schedule that we are looking at for this project is:

1. Having an engineering design contract in place the spring of 2024 to obtain a FY 2024 Entitlement grant.
2. Pavement soil borings will be completed during the summer / fall of 2024 and provided to the FAA ADO at that time.
3. Design the project over the summer, fall, and winter of 2024 / 2025.
4. Bid the project in the spring of 2025.
5. Apply for a construction grant in FY 2025 using Entitlement, BIL, and State Apportionment funding.
6. Physical construction would take place in the summer of 2026.

These pavements have only 2 inches of asphalt over an aggregate base and were originally constructed in 1991 (35 years old at reconstruction in 2026) and 2001 (25 years old at reconstruction in 2026).

## Project Narrative (Justification)

### BIL – SRE Acquisition

#### Snow Removal Equipment

Wilder Field (6E5) in De Smet, South Dakota currently operates a 2001 Case IH tractor with loader, snow blower, broom as their Snow Removal Equipment. The Airport is proposing to purchase a loader along with a blade, sweeper, and blower attachments. The existing equipment will be used as a trade-in with the bid package.

In order to justify the use of federal money for the purchase of SRE Equipment, the FAA developed a SRE Calculator spreadsheet that uses different variables to quantify the equipment needed to meet the requirements they set in their advisory circulars. The following justifications of the variables used in completing the spreadsheet. Figure 1 provides the results of the spreadsheet that was prepared using the following variables:

- The average annual snowfall of 34 inches was determined from the historical average monthly data from 1893 to 2022 from the Western Regional Climate Center.
- Wilder Field is a General Aviation facility.
- The Number of Operations was obtained from the most recent Airport Master Record. The total operations for 12 months ending 07/24/2019 was 1,830. However, this value is not considered an accurate representation of the current number of operations at the airport.
- The sizes of the Priority 1 snow removal areas are:
  - Runway 16/34 is 3,700 ft x 60 ft.
  - Connector Taxiway is ± 220' x 30' ft. The total area is approximately 9,100 ft inclusive of applicable taxiway fillets.
  - The GA Apron is approximately 44,000 ft<sup>2</sup>.

Figure 1 is the completed "Airport Snow Removal Equipment" for Wilder Field. The Airport is proposing to purchase a loader with a snow pusher, sweeper, and blower attachments. They will use their existing equipment as a trade-in on the bid. The airport has adequate storage space available to store the currently owned and proposed snow removal equipment indoors. A loader is required as a carrier vehicle for the attachments.

BEFORE the acquisition and replacement of the Snow Removal Equipment, 6E5 will have the following equipment purchased with AIP funds:

1 – Snow Blowers  
 1 – Plows  
 1 – Sweeper  
 0 – Hopper Spreaders  
 1 – Tractor

According to the Snow Removal Equipment Calculations spreadsheet, the maximum number of eligible items for 6E5 is as follows:

1 – Snow Blowers  
 2 – Plows  
 1 – Sweepers  
 1 – Hopper Spreaders  
 0 – Front End Loader

AFTER the acquisition and replacement of the Snow Removal Equipment, 6E5 will have:

1 – Snow Blower  
 1 – Snow Pusher (Blade)  
 1 – Sweeper  
 0 – Hopper Spreaders  
 1 – Front End Loader.

## Project Narrative (Justification)

### Design and Reconstruct South Apron Reconstruction

In 2023, a project was completed that consisted of reconstructing the north half of the GA Apron. The proposed project for 2024 will include the reconstruction of the remaining (south) portion of the G.A. Apron, however, due to the impending GA Terminal project, a portion of the existing apron will be removed. The proposed layout of the G.A. apron is shown in Figure 1.

The apron pavement has exceeded the end of its useful life and is in need of reconstruction. The apron was originally constructed in 2003 and consists of 3 inches of asphalt and 10 inches of base course. The apron was included in the SDDOT Pavement Maintenance project in 2007, 2008 and 2013 at which time crack sealing, patching and crack leveling was completed. The latest results from the 2021 Pavement Condition Index (PCI) surveys indicated a 45 for the apron. According to FAA AC 150/5320-6G, pavement sections with a PCI value of less than 55 are candidates for reconstruction. The table below shows the gradual degradation of the apron since 2012, ultimately reaching a low of 45 in 2021. The aprons score of 45 puts it well below the minimum values set by the FAA for reconstruction and for minimum acceptable levels for aprons.

<b>LINCOLN COUNTY (Y14)</b>										
<b>Branch ID</b>	<b>Pavement</b>		<b>2012</b>		<b>2015</b>		<b>2018</b>		<b>2021</b>	
	<b>Age</b>	<b>Material</b>	<b>PCI</b>	<b>Condition</b>	<b>PCI</b>	<b>Condition</b>	<b>PCI</b>	<b>Condition</b>	<b>PCI</b>	<b>Condition</b>
Apron	2003	Asphalt	78	Satisfactory	73	Satisfactory	54	Poor	45	Poor

It is proposed that the apron will be reconstructed to an adequate depth (up to 65% of frost depth) and include underdrain to reduce the susceptibility to frost heaves and extend the life of the pavement. The existing asphalt and base course will be recycled and reused as subbase material for the new pavement section.

The location of the future terminal and future county hangar will not be reconstructed with this project. However, the existing fuel island owned by the County is in the center of the apron, will be impeding the construction project, and will be relocated to the edge of the pavement as a result.

## Project Narrative (Justification) Snow Removal Equipment

The Philip Municipal Airport (PHP) currently operates a piece of Snow Removal Equipment that consists of 2005 Case IH tractor with loader, blade, broom and snow plow. The Airport is proposing to purchase a loader with a blade, sweeper, and blower as attachments. The existing equipment will be used as a trade-in with the bid package.

In order to justify the use of federal money for the purchase of SRE Equipment, the FAA developed a SRE Calculator spreadsheet that uses different variables to quantify the equipment needed to meet the requirements they set in their advisory circulars. The following justifications of the variables used in completing the spreadsheet. Figure 1 provides the results of the spreadsheet that was prepared using the following variables:

- The average annual snowfall of 35 inches was determined from the historical average monthly data from 1950 to 2022 from the High Plains Regional Climate Center.
- The Philip Municipal Airport is a General Aviation facility.
- The Number of Operations was obtained from the most recent Airport Master Record. The total operations for 12 months ending 6/9/2021 was 1,641. However, that is not an accurate overview of what is occurring at the airport.
- The sizes of the Priority 1 snow removal areas are:
  - Runway 12/30 is 4,000 ft x 75 ft.
  - Connector Taxiway is ± 780' x 30' ft. The total area is approximately 23,400 ft inclusive of applicable taxiway fillets.
  - The GA Apron is approximately 74,000 ft<sup>2</sup>.

Figure 1 is the completed "Airport Snow Removal Equipment" for the Philip Municipal Airport. The Airport is proposing to purchase a loader with blade, sweeper, and blower attachments. The airport has adequate storage to store the currently owned and proposed snow removal equipment indoors. A loader is required as a carrier vehicle for the attachments.

BEFORE the acquisition and replacement of the Snow Removal Equipment, ATY will have the following equipment purchased with AIP funds:

According to the Snow Removal Equipment Calculations spreadsheet, the maximum number of eligible items for ATY is as follows:

AFTER the acquisition and replacement of the Snow Removal Equipment, ATY will have:

0 – Snow Blowers

2 – Plows

1 – Sweeper

0 – Hopper Spreaders

1 – Front End Loader

1 – Snow Blowers

2 – Plows

1 – Sweepers

1 – Hopper Spreaders

0 – Front End Loader

1 – Snow Blowers

1 – Plows

1 – Sweeper

0 – Hopper Spreaders

1 – Front End Loader.

## **Project Narrative (Justification)**

### **BIL – Design Hangar Taxilane Expansion**

The Rosebud Sioux Tribal Airport is in need of additional hangar taxilane space at the airport. Currently, there is only 175' of hangar taxilane on the airfield and that is occupied by a large hangar that is owned by an air ambulance service. According to airport officials, there are a number of local pilots with aircraft who are wanting to store their aircraft at the airport. However, with the lack of existing hangar taxilane pavement, there is not any space for the construction of a hangar with paved access. Extending the hangar taxilane by 200' will provide the space needed to construct a new hangar at the airport. By extending the taxilane and providing additional space for hangar construction, the airport will see an increase in the number of based aircraft and operations at the airport. Additionally, the tribe is looking into the possibility of constructing their own revenue producing hangar that they can rent out to local and transient pilots which will provide an additional income source for the airport.

The proposed taxilane will be constructed with a 39" paving section with perimeter underdrain to help minimize the effects of frost on the pavement. The 39" section is 65% of frost depth and will include subbase, aggregate base course, and concrete surfacing. The perimeter underdrain piping will help to remove water from the subgrade under and around the pavement helping to reduce subgrade swelling during the winter months.

**PART IV – PROGRAM NARRATIVE**  
*(Suggested Format)*

<b>PROJECT:</b>
<b>AIRPORT:</b>
<b>1. Objective:</b>
<b>2. Benefits Anticipated:</b>
<b>3. Approach:</b> (See approved Scope of Work in Final Application)
<b>4. Geographic Location:</b>
<b>5. If Applicable, Provide Additional Information:</b>
<b>6. Sponsor's Representative:</b> (include address & telephone number)

**PART IV – PROGRAM NARRATIVE**  
(Suggested Format)**PROJECT:** General Aviation Taxilanes Reconstruction and Extension**AIRPORT:** Black Hills Airport**1. Objective:**

Reconstruction of three taxilanes each approximately 20' by 250' long which have failed; asphalt pavement repair of three additional taxilanes approximately 20' by 250', and extension of two taxilanes approximately 20' x 160'. Project construction activities to include hot mix asphalt pavement, concrete drain pans to address drainage issues, concrete approach pavement and miscellaneous items.

**2. Benefits Anticipated:**

Replacement of aged and failed taxilane pavement to provide continual access to the aircraft hangars adjacent to each of these taxilanes.

**3. Approach:** (See approved Scope of Work in Final Application)

The project is utilizing a standard form of project delivery to include a design - bid - build approach with a single phase of construction.

**4. Geographic Location:**

Black Hills Airport; City of Spearfish; County of Lawrence; and the State of South Dakota

**5. If Applicable, Provide Additional Information:**

This is not a Letter of Intenet project.

**6. Sponsor's Representative:** (include address & telephone number)

Mr. Adam McMahon, PE	City of Spearfish Public Works Director
625 North 5th Street	
Spearfish, SD 57783-2311	Telephone: 605.642.1333 email: adam.mcmahon@cityofspearfish.com



**PART IV – PROGRAM NARRATIVE**  
(Suggested Format)**PROJECT:** General Aviation Arpon Expansion and Taxilane Extension**AIRPORT:** Wall Municipal Airport**1. Objective:**

Limit space is available today for itinerant users to park and tiedown aircraft along with no available hangar development area. This project will provide additional general aviation apron area approximately 7,200 square yard in size and a taxilane 25 feet wide and approximately 450 feet long to access multiple hangar development sites.

**2. Benefits Anticipated:**

Promote aviation growth through provide additional area for itinerant users along with an area for additional private hangar development, thus assisting in the airport becoming more self sufficient.

**3. Approach:** (See approved Scope of Work in Final Application)

The project will utilize a standard form of project delivery to include a design - bid - build approach with a single phase of construction

**4. Geographic Location:**

Wall Municipal Airport; City of Wall; County of Pennington; and State of South Dakota

**5. If Applicable, Provide Additional Information:**

This is not a letter of intent project.

**6. Sponsor's Representative:** (include address & telephone number)

Ms.Carolynn Anderson	City of Wall Finance Director
501 Main Street - P.O. Box 314	
Wall, SD 57790	Telephone No.: 605.279.2663

## **Project Narrative (Justification)**

### **AIP – Construction of Bid Schedules B and C and Engineering Services of the Taxiway D and Ag Area Project**

The Watertown Regional Airport (ATY) has begun to see a large increase in ag spraying operators using the airport. The airport is experiencing problems finding temporary areas for the ag operators to operate out of. The additional ag operations combined with the increase in the Lake Area Tech flight school operations has led to the GA Apron area to become very congested. By constructing a new ag area separate from the rest of the GA operations will help to relieve some of the congestion in the area. Similar ag operation areas have been constructed at other airports in the region and have been very successful and minimizing the effects that heavy ag traffic has on an airport the size of ATY.

The proposed project will consist of a new 35' wide, lighted, partial parallel taxiway that will run east along Runway 17/35 from the Runway 17 end to Taxiway A ( $\approx 2,100'$ ). This taxiway will provide access to the new ag operations area. An additional 25' wide hangar taxilane loop ( $\approx 825'$ ) will be constructed to provide access to the new ag operation area. The location of the proposed ag area will be east of new proposed parallel taxiway. A project sketch is attached with this preapplication packed to provide a better visual on the proposed location of the project. An environmental review was completed during 2022 to ensure that the project will not have any effects on the 1930's stone hangar that is location near the project location.

To help finance the project, two funding sources will be utilized. The funding sources are the Airport Improvement Program (AIP) and the Bipartisan Infrastructure Law (BIL). In order to differentiate the work that will be financed with these funding sources, the project was broken down into three different bid schedules. AIP funds will be used to finance the construction of Bid Schedules B and C which includes the construction of the hangar taxilane loop, storm sewer and underdrain piping, and taxiway lighting. Additionally, AIP funds will be used for the fees associated with the engineering services provided during the project.

### **Project Narrative (Justification)**

#### **BIL – Airport Pavement Maintenance and Level III Cultural Resource Survey**

The Winner Regional Airport has a need to rehabilitate a select number of concrete slabs on the airfield. There have been a few concrete panels that have cracks on them on the runway, turnarounds and apron that need to be sawed and sealed and/or stitched together to prevent additional separation. Several panels are in need a spall repair and joint sealant replacement. This will all be completed in one project on the airfield.

Future projects will include a new large hangar on the airfield. In preparation for that project and others, the airport is proposing to have a Level III Cultural Resources Inventory and Tribal Cultural Survey completed within the airport boundaries. These studies are needed for NEPA compliance on future projects.