2.0 INVENTORY OF EXISTING CONDITIONS

Existing conditions at SCC were evaluated through review of prior planning, airport records, on-site visits, and interviews with stakeholders. Data related to the following topics were collected: airspace, NAVAIDs, airport facilities, facility conditions, maintenance and operations (M&O), property leasing, environmental issues, historical development, and surrounding land use.

Project staff conducted interviews by phone and during a site visit in Deadhorse on February 6 to 7, 2023. Members of the project team spoke with DOT&PF and NSB staff, military representatives, and airport tenants. Inventory information from the prior airport master plan has been used where it remains correct and relevant.

2.1 Airport Ownership and Classifications

2.1.1 Airport Ownership

SCC and the adjacent Dalton Highway are owned, operated, and maintained by DOT&PF. SCC staff also maintain 65 miles of the Dalton Highway.

2.1.2 Airport Classifications

According to FAA's *National Plan of Integrated Airport Systems (NPIAS) 2023-2027* report, SCC is classified as a Commercial Service— Primary Non-hub Airport. The Primary Category is the highest of four levels of service recognized in the NPIAS and the Non-hub subcategory is the fourth-largest subcategory within the Primary category. Service levels reflect the type of services an airport provides, as well as representing funding categories set up by the United States (U.S.) Congress to assist in airport development. NPIAS defines a Commercial Service – Primary Non-hub Airport as one that receives less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements.

The *Alaska Aviation System Plan* (AASP) classifies SCC as a Regional Hub Airport, one of 28 Regional Hub Airports in Alaska. Regional Hub Airports are typically economic and transportation hubs for more than one community that often support larger aircraft; have instrument approaches with low minimums; and have more landside facilities, infrastructure, and services than smaller public-use airports.

SCC is certificated under 14 Code of Federal Regulations (CFR) Part 139 as a Class I airport, allowing scheduled operations of large air carrier aircraft and unscheduled passenger operations of large air carrier aircraft and/or scheduled operations of small air carrier aircraft. The certification specifies the airport will provide certain emergency response services for aircraft with more than 30 passenger seats and will provide runway maintenance services such as snow and ice control when needed. The DOT&PF as airport operator requires all scheduled carriers to file a request for a landing permit to ensure any changes or delays in scheduled flights can be accommodated. Non-scheduled aircraft with more than 30 passenger seats must also obtain prior permission to land from the airport manager to ensure that the trained emergency responders are available.

SCC is also a Transportation Security Administration (TSA) Category III Non-Hub Primary airport with a complete Airport Security Program (ASP). Presently, SCC averages three to five daily TSA regulated air carrier flights via Alaska Airlines, Monday through Friday, and one daily flight, Monday through Friday via Wright Air Service. There are generally no air carrier flights on the weekends.

2.2 Historical Background

Table 2-1 recaps the major milestones of development of SCC, beginning with construction of the initial facility in 1968 and 1969 after the first discovery of oil on the North Slope. The initial 5,000-foot by 150-foot gravel runway was extended to its current length of 6,500 feet in 1974 and it was paved in 1978. By 1977 the State of Alaska took over ownership and operation of the airport. Thermal instability has caused repeated deterioration of airfield surfaces and subsequent repairs over the life of the facility. Most of the current airfield was in place by 1995.

In 2007, the runway safety area (RSA) was expanded an additional 500 feet to the east and 500 feet to the west and was widened on both sides of the runway, bringing the total RSA to 8,500 feet by 1,000 feet. In 2009, the terminal apron was expanded with gravel westward. Since 2009 most airport improvements have been for maintenance and operations buildings and repairs of existing paved airport surfaces.

Table 2-1: Deadhorse Airport Timeline of Major Events

Year	Major Event
1968-1969	Standard Oil of California, Mobil Oil, and Phillips Petroleum commission the Burgess Construction Company of Fairbanks to build a 5,000-foot long by 150-foot-wide gravel runway.
1972	The terminal apron is constructed.
1974	Renovations to the runway begin in winter 1974. Aircraft parking apron is built by the Alaska-General Construction Company of Fairbanks. The runway is extended from 5,000 feet to 6,500 feet.
1977	The State of Alaska takes ownership and maintenance responsibilities.
1978	The runway is paved with an asphalt surface.
1985	The parallel Taxiway (Taxiway A), Taxiway F, and the itinerant apron are constructed.
1995	The runways and taxiways are rehabilitated to correct issues related to thermal instability.
2007	The RSA widening and lengthening project is completed.
2009	Runway headings are changed from Runway 4/22 to Runway 6/24. Gravel terminal apron expansion towards the Flight Service Station (FSS) apron is completed.
2016	Expand/Rehabilitate Aircraft Rescue and Fire Fighting (ARFF)/ Snow Removal Equipment Building (SREB)

Sources: 2012 Deadhorse Airport Master Plan; DOWL

2.3 Historic Airport Improvement Program Funding

FAA's Airport Improvements Program (AIP) provides grants to public agencies to improve and develop public-use airports. Since 2005, SCC has been awarded $51.06 million (M) in FAA grant funding for airport improvements plus additional smaller grant funding for equipment purchases and minor surface maintenance and marking (Table 2-2). Most of these funds have been used to support aviation infrastructure and snow-related needs, with largest sums dedicated to runway rehabilitation and safety area extension.

In 2005, $8.59M was used to expand the safety area and rehabilitate a parking apron. Three other grants, totaling $24.5M, were awarded in 2011 for the rehabilitation of a parking apron, taxiways, and the runway. Between 2014 and 2015 the funding shifted to snow-related needs with the construction of a Sand and Chemical Storage building, expanding SREB building, and expanding the ARFF building totaling $10.4M. More recent projects have addressed equipment and fencing needs.

A DOT&PF project currently under design will extend the perimeter fence to the south, east, and west sides of the airport, with an adjacent maintenance road, improve drainage between the runway and parallel taxiway, and improve drainage and surface condition along Deadhorse Drive. Construction is tentatively planned for 2025/2026.

Table 2-2: Historic AIP Funding for Deadhorse Airport Since FFY 2005

Federal Fiscal Year	AIP Project Description	Total
2005	Expand Apron	$791,541
	Extend RSA	$7,797,632
2007	Update Airport Master Plan Study	$472,857
	Acquire Snow Removal Equipment – Carrier Unit and Broom	$715,000
2008	Acquire Snow Removal Equipment – Sander	$75,000
2009	Acquire Water Rescue Equipment	$95,500
2010	Update Airport Master Plan Study	$132,519
2011	Rehabilitate Apron	$4,049,188
	Rehabilitate Runway	$16,250,846
	Rehabilitate Taxiway	$4,198,025
2012	Rehabilitate Apron	$1,659,936
2013	Acquire Snow Removal Equipment – De-icer	$331,149
2014	Construct Sand and Chemical Storage Building	$1,500,000
	Expand SREB	$1,393,790
	Acquire Snow Removal Equipment – Blower and Grader	$998,317
2015	Construct Sand and Chemical Storage Building	$1,370,734
	Expand ARFF Building	$4,700,750
	Expand SREB	$1,179,826
2016, 2017	Install Perimeter Fencing, Gates, Access Control System	$1,587,171
2017	Acquire Snow Removal Equipment – Tug and Towed Runway Broom	$688,209
2020	Acquire ARFF Vehicle	$1,074,026
2021	Corona Virus Response and Relief Supplemental Appropriations Act of 2021	$1,031,452
2024	Perimeter Fence, Drainage, and Access Road – Stage 1	$43,878,517
Total		**$95,971,985**

Source: DOT&PF – alaskaaasp.gov, 2023

FAA has provided grants every few years for airfield infrastructure, buildings, equipment, and studies. Since 2005, approximately 56 percent of AIP funds have been awarded to runway and taxiway projects, 19 percent to building projects, 13 percent to apron projects, 8 percent to equipment acquisition, 3 percent to fencing and security and 1 percent to planning (Table 2-3). *Note that these percentages do not include the unusually large fence and drainage project to be built in 2025 as they would skew the results.*

Table 2-3: AIP Funding Distribution Since FFY 2005, by Project Type

Type of Project	Percent
Runways and Taxiways	56
Buildings	19
Aprons	13
Equipment	8
Fencing/Security	3
Planning/ Aeronautical Studies	1
Total	**100**

2.4 Revenues and Expenses

Airport revenues come from leasing airport land as well as concession and other fees. There are no landing fees. Airport expenses are primarily from airport maintenance and operations staff, equipment, and supplies. Table 2-4 recaps revenues and expenses for the last five fiscal years (FY). In FY2022, SCC reported $2,055,570 in Leasing Revenue and $2,569,656 in M&O expenditures. Revenue minus expenses for FY2022 totaled $514,086. While this deficit is substantial, the revenues generated at SCC are far above any other airport in the Alaska rural airport system. FAA Grant Assurances require airports to be as self-sustainable as possible.

Table 2-4: Deadhorse Airport Revenues and Expenses, Fiscal Years 2018 – 2022

	FY2018	FY2019	FY2020	FY2021	FY2022
Leasing Revenues ($)	2,250,924	2,325,424	2,375,796	1,938,094	2,055,570
M&O Expenses ($)	2,647,363	2,349,953	3,147,898	3,096,064	2,569,656

2.5 Property Ownership and Land Uses

According to SCC's Property Plan, the airport property is comprised of three tracts totaling 6,506 acres. The tracts were acquired through a conveyance from Alaska Department of Natural Resources (ADNR) in 1967. Tract I is 2,790 acres and contains the airside and landside facilities and lease lots, and parts of the Dalton Highway and the Sagavanirktok (Sag) River. Tract I land interest is from an Interim Land Management Agreement from ADNR. Tract II is 714 acres and contains the southern part of Colleen Lake and lands west of the lake. Tract III is 3,002 acres and contains lands south of the airport, including parts of the Sag River and the Dalton Highway. Tracts II and III land interest are in the form of a Perpetual Easement and Right-of-Way (ROW) which is in the form of an avigation and hazard easement. Tracts II and III land remains under the control of ADNR and the airport is currently unable to lease or develop these properties.

The runway generally splits the Tract I airport property into northern and southern halves. The land south of the runway is available for development and has several developed non-

aeronautical lease lots along the Dalton Highway. Existing aprons, taxiways, lease lots, roads, and maintenance facilities are primarily north of the runway. The airside and landside areas on the north side are separated by fencing and access is restricted.

Properties in Tract I are classified aeronautical and non-aeronautical. Deadhorse Drive divides aeronautical and non-aeronautical leases north of the runway – with aeronautical leases to the south of the Deadhorse Drive and non-aeronautical to the north of the road. South of the runway aeronautical lease lots have been identified on the Land Occupancy Maps along the runway, and non-aeronautical leases have been identified to the south of the aeronautical lots. Development sits on approximately five-foot thick gravel pads placed on top of the tundra. Undeveloped areas are mostly tundra interspersed with ponds.

DOT&PF has created road building restriction lines that restrict improvements constructed between the BRL and the centerline of the roads, to reduce snow drifting on the roads. Areas on the lease lots in the BRLs can be mostly used for outdoor storage purposes, with the expectation that outdoor storage will not cause the extensive snow drifting.

Several lots on the airport have institutional controls, according to the Land Occupancy Maps. This means soil contamination has been found and the Alaska Department of Environmental Conservation (ADEC) has stipulations about future soil removal from the properties.

2.6 Airside Facilities

This section presents the existing airside facilities at SCC, based on information collected from research, the prior master plan, stakeholder interviews, and a field reconnaissance trip to the airport. Figure 2-1 depicts the existing facilities at SCC.

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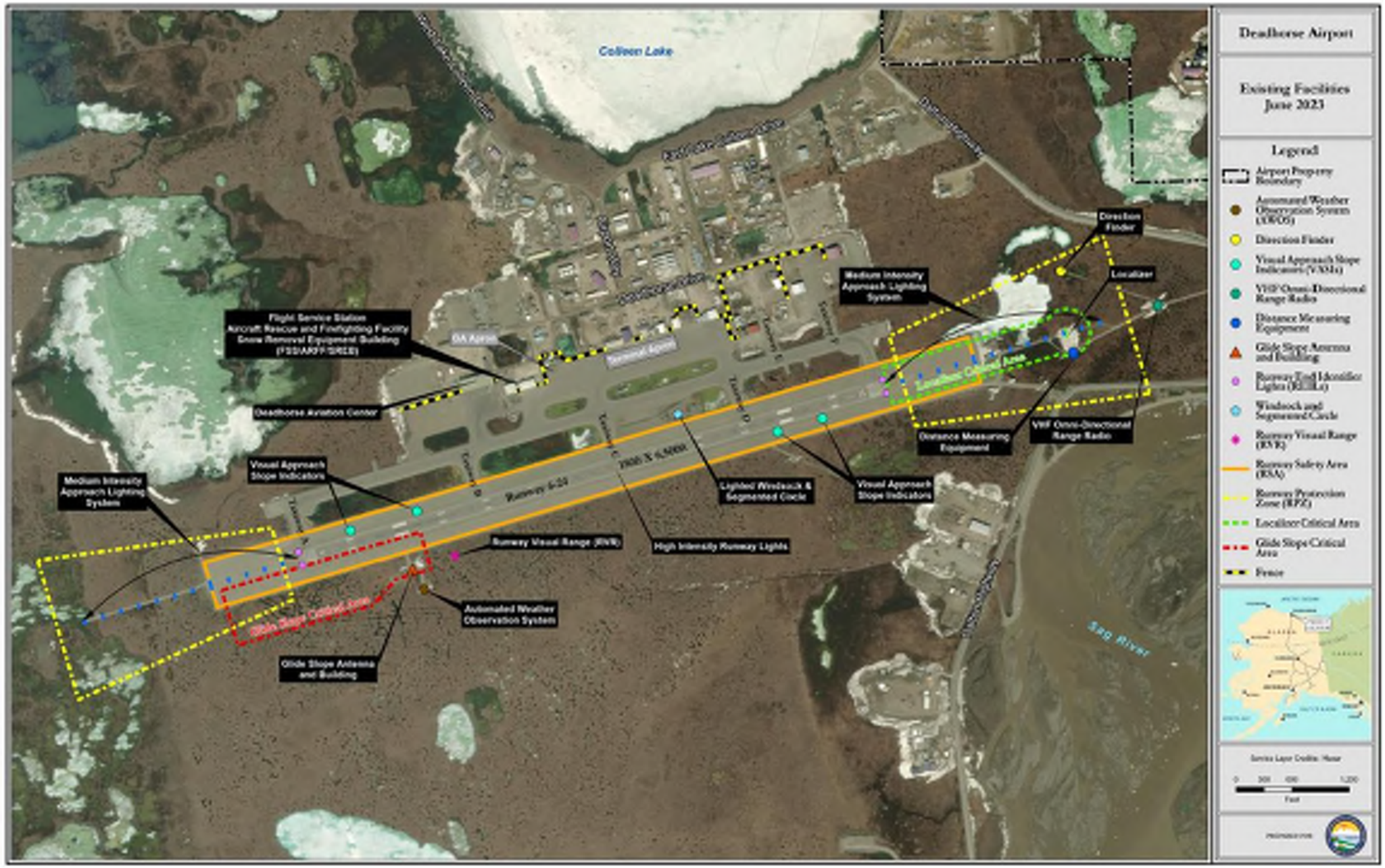

Figure 2-1: Existing Facilities, June 2023

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2.6.1 Runway

2.6.1.1 Runway Design Code

The Runway Design Code (RDC) is used to identify airport design standards for each runway on an airport. The RDC consists of three components: 1) Aircraft Approach Category (AAC), based on approach speed of the critical aircraft established for the runway; 2) Airplane Design Group (ADG), based on wingspan and tail height of the critical aircraft for the runway; and 3) approach visibility minimums, based on the lowest visibility published on an instrument approach chart for the runway. Table 2-5 lists AAC and ADG groups.

A runway's critical aircraft is the most demanding aircraft that uses it. The FAA defines a critical aircraft as the most demanding aircraft that has at least 500 annual operations. The 2019 Deadhorse Airport Layout Plan (ALP) reports the critical aircraft as the Lockheed C-130/L-382 Hercules, a C-IV aircraft, and the Boeing 737-800, a D-III aircraft. Based on these critical aircraft, an AAC/ADG of D-IV was used for future planning. The 2019 ALP reports a runway visibility range (RVR) value of 2,400 feet. Therefore, the RDC defined on the current Deadhorse ALP is D-IV-2,400.

Table 2-5: FAA AAC/ADG Groups

Aircraft Approach Category		Airplane Design Group		
Aircraft Approach Speed		Wingspan		Tail Height
Type	Speed (knots)	Type	Size (feet)	Size (feet)
A	Less than 91	I	Up to 49	< 20
B	91–120	II	49 - 78	20 - 29
C	121–140	III	79 - 117	30 - 44
D	**141–165**	**IV**	**118 - 170**	**45 - 59**
E	166 or more	V	171 - 213	60 - 65
		VI	214 - 262	66 - 79

Source: FAA AC 150/5300-13B

A variety of aircraft use SCC, some more regularly than others. Table 2-6 lists common types of aircraft used at SCC. Common types of aircraft include light single-engine, light twin-engine, heavy single-engine, heavy twin-engine, corporate jets, commercial jets, and heavy transport type aircraft.

Table 2-6: Common Types of Aircraft at Deadhorse Airport

FAA AAC/ADG Category	Aircraft
A-I	Cessna C182; Piper PA31, P46T; Quest Kodiak, Mooney M-20C, Socata TBM
A-II	Pilatus PC-12; DeHavilland Twin Otter; CASA Aviocar
B-I	Gulfstream Commander; Cessna Citation CJ2, CJ1; North American Rockwell Sabre 40/60
B-II	Beech 1900/C-12J; Beechcraft Super King Air 350, 200; Cessna 208, CJ3, C560; Dornier 328; Dassault Falcon 2000
B-III	Cessna Turbo Stationair 7; Bombardier DHC8-100, Q-400
C-I	Bombardier Learjet 31/A/B, 45
C-II	Bombardier Challenger 600/601/604, Gulfstream G280
C-III	Boeing 737-300, 737-400, 737-700; Boeing (Douglas) MD 82; Embraer 175
C-IV	Lockheed 130, 130J Hercules
D I	Lockheed F-16 Fighting Falcon; Bombardier Learjet 35/36;
D II	Gulfstream IV/G400
D III	Boeing 737-800; Gulfstream VG500; Boeing (Douglas) MD 83

Source: FAA ASPM Traffic Flow Management System Counts

Size and Orientation: SCC has a single paved runway, Runway 6/24, with an elevation of 67.5 feet above mean sea level. The grooved runway is 6,500 feet long and 150 feet wide and has been at its current length and width since 1974.

The runway is oriented east-west with the prevailing winds; the ALP reports it provides 99.48 percent wind coverage at 20 knots crosswind component.

2.6.1.2 Runway Dimension and Standards

Runway 6/24 has an RDC of D-IV-2400. Table 2-7 lists existing runway dimensions from the 2019 ALP and the ADG standards in FAA Airport Design AC 150-5300-13B. The current runway dimensions meet or exceed the design criteria listed in Table 2-7.

2.6.1.3 Building Restriction Line

Building Restriction Lines (BRL) have been defined on the north and south sides of the runway, 1,220 feet from the runway centerline to the north side BRL and 1,200 feet from the runway centerline to the south side BRL. The BRL defines the limits of development for all on-airport buildings and must consider the runway Federal Aviation Regulations (FAR) Part 77 surfaces, Object Free Area (OFA), Runway Protection Zone (RPZ) areas, navigational aid critical areas, and any other areas required for clear line-of-sight.

Table 2-7: Deadhorse Airport Runway Dimensions and FAA Dimension Standards (2020 ALP)

Feature	FAA Airplane Design Group IV (feet)	Existing Airport Dimensions (feet)
Runway Length	6,500	6,500
Runway Width	150	150
Runway Shoulder Width	25	75
Runway Blast Pad Width	200	200
Runway Blast Pad Length	200	200
RSA Length	1,000 feet beyond each runway end; 600 feet prior to threshold	1,000 feet beyond each runway end
RSA Width	500	500
ROFA Length	1,000 feet beyond each runway end; 600 feet prior to threshold	1,000 feet beyond each runway end
ROFA Width	800	800
POFZ Length	200	200
POFZ Width	800	800
Approach Runway Protection Zone	2,500 x 1,000 x 1,750	2,500 x 1,000 x 1,750
Departure Runway Protection Zone	1,700 x 500 x 1,010	1,700 x 500 x 1,010
Runway Centerline to Taxiway Centerline	400	600

RSA = Runway Safety Area; ROFA = Runway Object Free Area; POFZ = Precision Obstacle Free Zone

2.6.2 Taxiways

SCC has a parallel taxiway, Taxiway A, along the north side of the runway. Taxiway A has been used as a runway when the runway is closed for resurfacing. Five connector taxiways (Taxiway A West, Taxiway A East, and Taxiways B, C and D) connect the runway to the parallel taxiway. Six connector taxiways (Taxiways E, F, and four undesignated taxiways) connect the parallel taxiway to the aprons. All taxiways are paved.

Taxiway dimensions are listed in Table 2-8. The width and pavement strength limit aircraft using Taxiway E (maximum 79-foot wingspan) and Taxiway F (less than 12,500 pounds). All ADG IV taxiways meet or exceed the minimum 75-foot taxiway width standard but only two of them meet the 171-foot taxiway safety area width standard. All ADG III taxiways meet the minimum 50-foot taxiway width standard and the 118-foot taxiway safety area width standard.

Table 2-8: Deadhorse Airport Taxiways

Taxiway	Dimension (width x length (feet)	Taxiway Safety Area Width (feet)	Aircraft Design Group/Taxiway Design Group
A (Parallel)	100 x 6,430	140	IV/3
A (Connector at West End)	86 x 475	140	IV/3
A (Connector at East End)	86 x 475	140	IV/3
B	96 x 475	140	IV/3
C	96 x 689	140	IV/3
D	96 x 689	140	IV/3
E	50 x 875	118	III/3
F	50 x 1,050	118	III/3
Non-designated (accesses ARFF/AFSS)	90 x 200	140	IV/3
Non-designated (accesses the Deadhorse Aviation Center lease lot) East	100 x 200	180	IV/3
Non-designated (accesses the Deadhorse Aviation Center lease lot) West	100 x 200	180	IV/3

Source: 2019 Airport Layout Plan; 2012 Airport Master Plan; Pavement Condition Assessment, Airport Certification Manual

2.6.3 Helicopter Operating Areas

SCC does not have areas designated exclusively for helicopter operations. The General Aviation (GA) apron, southeast of the ARFF/SREB, is used for transient aircraft operations and helicopters. Aircraft land to this apron and also land to the runway and taxi to the apron. The military in particular uses this apron for helicopter operations, sometimes carrying sling loads of cargo. Various tenants also operate helicopters from their lease lots.

2.6.4 Aprons

There are two aprons owned and maintained by the airport: the GA apron and the terminal apron. The GA apron, east of the ARFF/SREB, is used for itinerant aircraft operations and helicopters. Typical users are corporate aircraft primarily related to oilfield businesses as well as military aircraft and helicopters. During hunting season, private aircraft can also tie down on this apron. There are 6 tie down anchors on the GA apron used by transient aircraft. Formerly Block 900 Lots 1 and 2 were also used as an itinerant apron, but this area has been converted to snow storage.

The terminal apron fronts lots leased by Alaska Airlines, Carlile Transportation Systems (Northern Air Cargo, Lynden, Delta Western), Colville Airport Services (fuel), and Pathfinder Properties (Figure 2-2). The Alaska Airlines terminal/cargo building has been mostly vacant for several years and Alaska Airlines currently operates from the Deadhorse Aviation Center (DAC) facility.

Figure 2-2: Terminal Apron with Vacant Alaska Airlines Terminal

The terminal apron serves as the parking area for most air cargo and air carrier aircraft and can support large aircraft such as the Boeing 737, or larger. The airport has lined the apron edge with crushed aggregate surface course material to deter erosion of the apron edge facing to the south.

Other aprons are owned and maintained by airport tenants, including the DAC apron next to the DAC terminal, built in 2009. This apron and terminal were designed for larger aircraft and are currently used by Alaska Airlines, Guardian Flight, and some corporate aircraft. The apron was subsequently expanded primarily for parking freighter aircraft, and the total apron measures approximately 1,250 feet by 350 feet. Two non-designated taxiways connect the DAC apron to Taxiway A. DOT&PF plans to connect the DAC apron to the adjacent DOT&PF/Flight Service Station apron with a road to enable fuel trucks, ARFF trucks, and other vehicles to access the aprons without driving on Taxiway A.

Smaller aprons are located on lease lots held by Era Aviation (vacant since about 2014), Wright Air Service, Bald Mountain Air Service, 70 North Air, Alpha Marine Services, and Alaska Frontier Constructors. Taxiways E and F access these aprons.

2.6.5 Airfield Pavement Condition Index

All public-use pavement was resurfaced in the 2012 – 2013 timeframe and is in good condition according to the 2023 DOT&PF Pavement Inspection Report for a pavement inspection completed in 2023 (Figure 2-3). The keel section of the runway was reconstructed to a depth of 10 feet at that time. A centerline pavement crack has persisted through several runway resurfacing and reconstruction projects.

The runway has an average Pavement Condition Index (PCI) of 74.04 as of December 2023. The PCI values range from 71 for Taxiway F to 84 for Taxiway E. The average PCI value for SCC pavements is 75.06.

The airport spends about $150,000 to $200,000 in FAA AIP funds and state general funds each year on crack sealing and marking. The crack sealing helps extend the life of the runway surface.

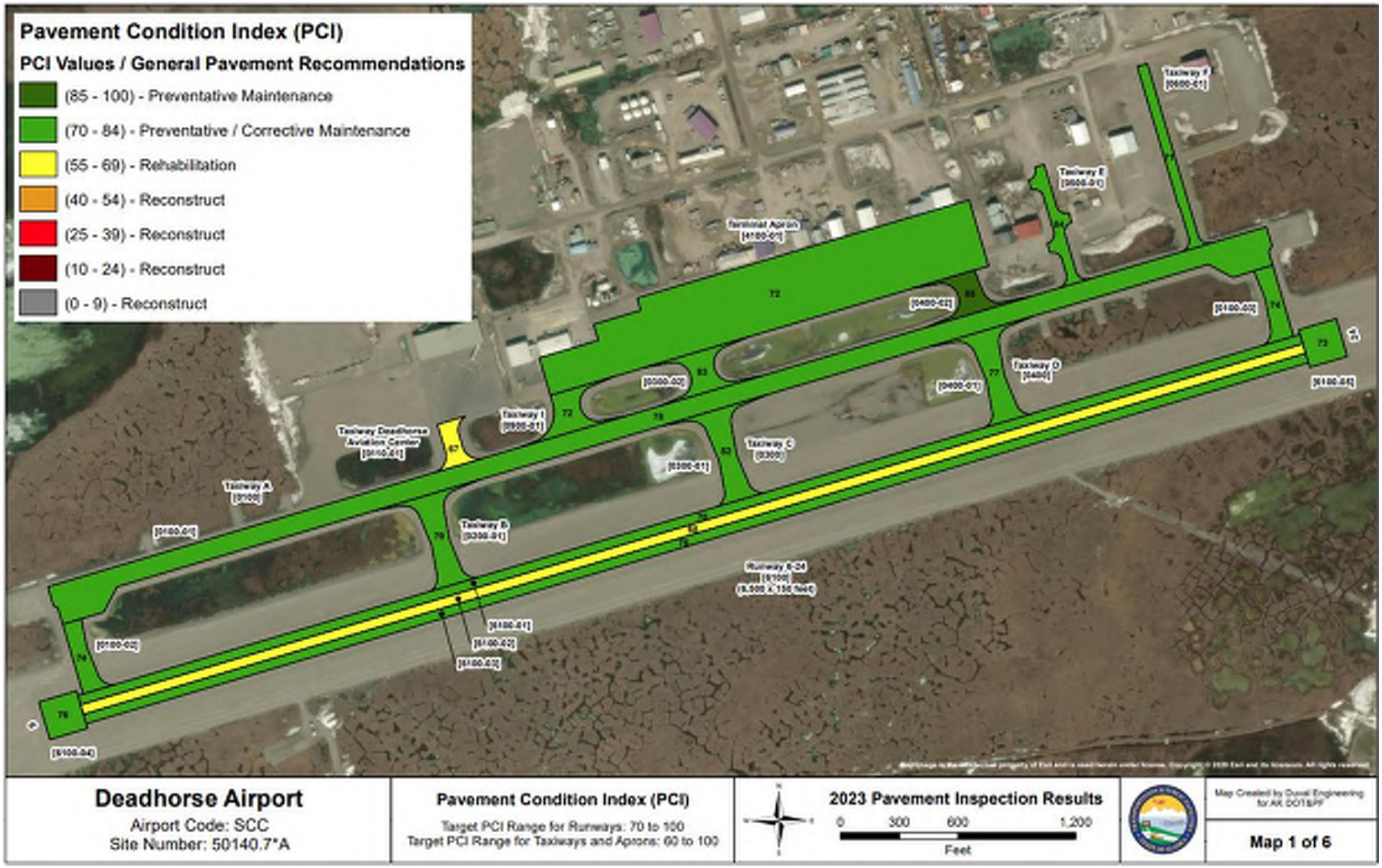

Figure 2-3: 2023 Deadhorse Airport PCI Values / General Pavement Recommendations

The runway is rated to support 120,000 pounds for aircraft with a single landing gear configuration; 250,000 pounds for a dual landing gear configuration; and 550,000 pounds for a dual-tandem landing gear configuration. Runway load capacity by wheel type is listed in Table 2-9.

Table 2-9: Runway Load Bearing Capacity by Wheel Type

Wheel Type	Maximum Gross Weight (lbs)
Single Wheel	120,000
Dual Wheel	250,000
Dual Tandem Wheel	550,000

lbs = pounds
Source: FAA Form 5010, April 22, 2023

2.6.6 Lighting, Marking, and Signage

TDX North Slope Generating, Inc. (TDX) generates power for airport lighting using its own on-airport power plant. Backup power for airport lighting is available from a generator operated by DOT&PF. NAVAIDs and aircraft radio communication backup power is provided from FAA generators.

Airport lighting includes:

High Intensity Runway Lights (HIRLs): Runway 6/-24 has HIRLs for runway edge lighting that was last replaced as part of the runway rehabilitation project in 2012. These lights also support a precision instrument approach.

Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR): Runways 6 and 24 each have a MALSR for visual horizontal alignment guidance with the runway centerline. (Runway 6 threshold and approach lights are shown in Figure 2-4.)

Runway End Identifier Lights (REILs): Runways 6 and 24 have REILs to provide positive delineation of the end of the runway threshold.

Centerline Lighting: Runway 6/24 has flush-mounted LED centerline lighting.

Medium Intensity Taxiway Lighting (MITL): All taxiways have LED MITLs for positive delineation of the edge of the taxiways.

Apron Flood Lighting: DOT&PF provides apron flood lighting for the terminal apron. Tenants also provide some flood lighting for vehicle parking on their lease lots.

Airport Marking: Runway 6/24 has precision markings that support precision instrument approaches. The precision markings are in conformance with FAA AC *150/5340-1J, Standards for Airport Markings.* Markings are typically repainted every year.

Airport Signage: The signs at SCC follow the version of AC 15/5340-18 in effect when they were installed with the runway reconstruction in 1995; some have been replaced/updated as needed by airport staff since then.

Figure 2-4: Runway 6 Threshold and Approach Lights

2.6.7 Airspace, Navigational Aids, Approaches

2.6.7.1 Airspace

SCC is a non-towered airport within Class E airspace which is controlled by the FAA from the Anchorage Air Route Traffic Control Center (ARTCC) in Anchorage. The ARTCC has jurisdiction of the airspace and control of all aircraft flying under Instrument Flight Rules (IFR) within Alaska, including instrument approaches and departures to and from SCC. A Remote Center Air Ground (RCAG) radio is located on the field to provide direct aircraft communication with the ARTCC. When the Deadhorse Flight Service Station is open, IFR clearances are relayed through the station. Otherwise, the Fairbanks Automated Flight Service Station is used.

2.6.7.2 Navigational Aids

A variety of visual and electronic NAVAIDs are located on or near SCC. The visual aids are ground-based and provide visual cues to pilots for approach, landing, taxiing and aircraft parking. Electronic aids work in concert with the aircraft on-board navigational systems for navigation and landing. Runway approach lights and runway and taxiway edge lighting also aid in navigation. The FAA generator and transformer supplying power to the NAVAIDs was scheduled for replacement in 2023.

VOR/DME and ILS: The Very High Frequency (VHF) Omni-Directional Range Radio with Distance Measuring Equipment (VOR/DME) and an Instrument Landing System (ILS) localizer antenna are located along the extended centerline of Runway 6, while the ILS glide slope antenna is located near the weather equipment at the southwest side of the runway. The localizer was upgraded and placed on a new pad above normal water levels in 2020. The MALSRs on both ends of the runway were built in the 1960s and 1970s; they experience frequent downtime and parts are difficult to find. The west end MALSR has had some recent repairs and there is a more urgent need to repair the east end MALSR. Trucks operating on the Dalton Highway can sometimes affect the VOR signal. The ILS is a Category 1 ILS.

NDB: The Putuligayuk (Put) River Non-Directional Beacon (NDB) is located just north of the VOR. The NDB approach plate is no longer published because the FAA plans to phase out the Deadhorse NDB in 2024.

Beacon: A white and green rotating beacon is located on the west side of the ARFF/SREB.

VASIs: Visual Approach Slope Indicator (VASIs) lights are installed toward the ends of Runway 6/24 and provide visual descent guidance over the runway threshold for Visual Flight Rules (VFR) approaches. SCC has two sets of four-box VASI lights, which can be remotely activated by pilots for approaches. There are slope stability issues beneath the VASI lights and they need to be releveled.

RVR and DF: The RVR system for determining visibility on the runway is located south of the runway on the eastern end and the Direction Finder (DF) is located within the RPZ east of the runway. The RVR has been out of service for extended periods and is scheduled for upgrades.

Windsocks: A lighted primary windsock and segmented circle are located near the midpoint of the runway, between Taxiways C and D, south of the terminal apron. The airport also has two supplemental lighted windsocks near the end of Runway 6/24.

Weather equipment: The airport is equipped with an Automated Surface Observation System (ASOS) which provides a computer-generated voice message which is broadcast via radio frequency to pilots in the vicinity of the airport. The ASOS is located south of the runway on the western end near the glide slope antenna adjacent to the glide slope critical area.

Ceiling and visibility: The National Oceanic and Atmospheric Administration (NOAA) reports that SCC experiences IFR conditions 16 percent of the time and SCC is below IFR minimum weather criteria 20 percent of the time due to poor ceiling and/or visibility conditions. Fog from Prudhoe Bay periodically produces a low ceiling at SCC and ice fog from building and equipment exhaust near the airfield can also be an issue. Anecdotal reports tell of ceilings between 150 and 200 feet, with good visibility for extended periods of time, prompting requests for a Category II approach.

2.6.7.3 Approaches

There are seven published instrument approaches for SCC (Table 2-10). Runways 6 and 24 have precision instrument approaches with an approach surface slope of 50:1 that is free of obstructions. Alaska Airlines is using proprietary Required Navigation Performance approaches, whereas other carriers are using aircraft equipped with Global Positioning System (GPS) Wide Area Augmentation System (WAAS) to fly the area navigation (RNAV) approaches.

Table 2-10: Deadhorse Airport Instrument Approaches

Instrument Approaches		Ceiling (feet)	Visibility (miles)
1	ILS or LOC/DME Runway 6	200	1/2 (for all airplane categories)
2	LOC BC Runway 24	300	1/2 (for all airplane categories)
3	RNAV (GPS) Z Runway 6	200	1/2 (for all airplane categories)
4	RNAV (GPS) Z Runway 24	200	1/2 (for all airplane categories)
5	VOR Runway 6	400	1/2 (for all airplane categories)
6	VOR Y Runway 24	600	1/2 (for Categories A and B) 1 (for Categories C and D)
7	VOR Z Runway 24	500	1/2 (for Categories A and B) 3/4 (for Categories C, D and E)

Source: FAA Approach Plates

ILS = instrument landing system; LOC = local operations; LOC BC = localizer back course; DME = distance measuring equipment

2.7 Landside Facilities

2.7.1 Lease Lots

In the 1970s lease lots were defined in Tract I on the north and south sides of the runway. Almost all development has occurred on the north side with supporting taxiways, roads, and utility infrastructure. Small areas of developable land on the north side are not currently depicted as available lease lots on Land Occupancy maps east of the Dalton Highway and west and south of Block 50 because of snow drifting issues or lack of road access. A few lots along the south side were developed next to the Dalton Highway but most south-side land remains undeveloped, partly due to lack of infrastructure.

Figure 2-5 depicts lease lots on the airport property, and identifies lots that are leased, lots occupied by DOT&PF, and several vacant lots available for lease. The ADNR Avigation and Hazard Easement Parcels north and south of the airport and aeronautical use and non-aeronautical land use designations are also shown on the figure.

Figure 2-5: Lease Lots

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Infrastructure and fill costs for construction at SCC are high. Tenants are required to place fill at least five feet thick on the tundra and provide their own road and taxiway access if that access is not already present, adding to development costs.

As of November 2022, DOT&PF had 43 leases, two permits, 13 concession agreements, one fuel dispensing agreement, two FAA licenses, three FAA Land Free agreements, and one Right of Entry. Many properties are used under subleases.

Over the past five to 10 years aeronautical lease lot demand has been low and non-aeronautical demand has been slightly greater but also low. There were just one or two lease applications submitted in the past year. Several lessees are trying to sell or sublease their properties. With the anticipated CPAI Willow Project, natural gas pipeline, and other potential North Slope oilfield development, there is potential for more demand for lease lots. There are currently only a few vacant unleased lots with developed access. Figure 2-6 shows a non-aeronautical lease lot and Figure 2-7 shows an aeronautical lease lot.

Figure 2-6: Non-aeronautical Lease Lot

Figure 2-7: Alaska Airlines Aeronautical Lease Lot

2.7.2 Terminal, Cargo and FBO Facilities

2.7.2.1 Terminal and Cargo Facilities

Primary passenger terminal facilities currently in use are at the DAC, Wright Air Service, 70 North Air, and Bald Mountain Air.

Alaska Airlines has a generally vacant passenger/cargo terminal and is currently conducting passenger and cargo operations from the DAC and its adjacent apron. The Alaska Airlines building, built in 1981, is only used for warehouse/storage purposes at this time and the company is evaluating how to use this property in the future. The building has 7,000 square feet of passenger area, 9,000 square feet of cargo area, and 7,000 square feet of employee housing on Lot 3A, Block 304 and has 300 feet of apron frontage. The northwest corner of Lot 3A is used for fuel storage. Lot 3B, immediately north of Lot 3A, is also leased by Alaska Airlines and is used for vehicle parking.

Bald Mountain Air leases Lot 8A, Block 900, with access from Taxiway E. An 80-foot by 150-foot membrane hangar, a connex, and a 28-foot by 48-foot mobile building were erected in 2007.

Carlile Transportation Systems leases Lots 5 and 5A of Block 303 and Lots 1A and 1B of Block 304 (Figure 2-8 and Figure 2-9). Lot 1B is immediately north of Lot 1A and is used for parking and storage. Lots 5 and 5A of Block 303 and Lot 1A, Block 304 are contiguous and have 700 feet of frontage on the main apron. Carlile has several subleases for hangar space, passenger terminal space, office space, and storage space.

Figure 2-8: Carlile Lease Lots From Airside, on Terminal Apron

Figure 2-9: Carlile Lease Lots From Landside

Deadhorse Aviation Center operates a hangar/terminal/office/housing facility with a footprint of approximately 42,400 square feet on Lot 4A, Block 700 (Figure 2-10 and Figure 2-11); parts of Lot 4A are used for non-aeronautical purposes. This facility can accommodate up to three gates with jetways. The DAC supports an estimated 20 flights a week primarily by Alaska Airlines, Guardian Air, and Lynden. Lot 4A has 431 feet of frontage paralleling Taxiway A.

Just to the west, on Lot 1A is a large gravel apron used for overflow freighter and passenger aircraft parking. The DAC has also just leased Lots 3, 4, 5, 6A, 6B and 6C of Block 200, all north of Lot 4A, Block 700. These “second-tier” lots can be used for non-aeronautical industrial/commercial purposes.

Figure 2-10: Deadhorse Aviation Center From Airside

Figure 2-11: Deadhorse Aviation Center From Landside

Era Helicopters leases Lots 3, 4 and Lot 5A, and Block 900 along taxiways A and E. Era facilities have been vacant since about 2014 (Figure 2-12).

Figure 2-12: Vacant Era Buildings

Pathfinder Properties leases Lots 2A and 2C, Block 304 and Lot 6 Block 303. Lot 2C is north of Lot 2A and is still mostly tundra used for snow storage. Lot 2A has 250 feet of frontage on the terminal apron. An 80-foot by 96-foot by 30-foot metal hangar/office building was constructed in 1980.

2.7.3 Fixed Base Operator Facilities

There are no full-service Fixed Base Operator (FBO) facilities. Itinerant aircraft park on the GA apron and are sold fuel by Colville Airport Services, Inc (Figure 2-13 and Figure 2-14). Colville dispenses fuel to trucks from its property in Block 303 and to aircraft from its property in Block 900. Other tenants have their own fueling facilities but are not permitted to sell their fuel. The DAC provides some services typically provided by an FBO but does not sell aviation fuel.

Figure 2-13: Colville Fuel Storage

Figure 2-14: Colville Fueling Apron

2.8 Roads and Parking

Public road access to SCC is from the north via Colleen Drive. Colleen Drive connects the airport to the Dalton Highway to the east and to off-airport local oilfield destinations. Airport Way connects Colleen Drive to Deadhorse Drive, the primary east-west road serving the lease lots facing the airfield as well as non-aeronautical lease lots to the north. Other unnamed roads connect to lease lots not adjacent to Deadhorse Drive, Colleen Drive, and the Dalton Highway. There is no dedicated perimeter road and there is no dedicated service road for vehicles on the apron.

A new perimeter fence with an adjacent perimeter road on the south and west sides of the runway is proposed for construction in 2025/2026.

All parking for employees and customers is provided on individual lease lots. There is no public parking lot. Users of the GA lot park vehicles at the DOT&PF parking area behind the ARFF/SREB building.

2.9 Utilities

Utilities are provided to most lease lots by the suppliers listed in Table 2-11. Most utilities are buried. There is no pipe distribution or collection system for water and sewer at the airport and buildings use on-site storage tanks.

Table 2-11: Utility Providers

Utility	Utility Company/Provider	Lease Lot	Area Served
Electricity	TDX North Slope Generating, Inc.	Block 301, Lots 1A and 2A	Buried service to most lease lots
Telephone	Alaska Telecom, Inc.	Block 60, Lot 3A	Buried service to most lease lots
Natural Gas	Norgasco, Inc.	None	North side of airport
Drinking Water	North Slope Borough	None	Delivered by truck to most lease lots
Wastewater	North Slope Borough	None	Removed by truck from most lease lots
Landfill	North Slope Borough	None	North Slope Borough landfill is 6 miles northwest of airport on Oxbow Road

2.10 Airport Maintenance and Operations

2.10.1 Personnel

Airport Maintenance and Operations (M&O) are provided by a crew of 12 DOT&PF staff, who support the airport in two six-person shifts. The crew is responsible for plowing, sanding, and maintaining the paved and unpaved surfaces and responding to emergencies. Airport personnel also maintain 65 miles of the Dalton Highway. Staff reside at the ARFF/SREB building.

Staff are cross trained in ARFF as well as their regular maintenance and operations duties. The staff are positioned to respond to emergencies during air carrier landings and takeoffs, but at other times may be working at their other assigned duties, which could be miles from the airport. In some circumstances, emergency response is also provided by the Prudhoe Bay Fire Department under a mutual aid agreement.

Law Enforcement Officer support is provided by the North Slope Borough Police Department. Backup, if needed, is provided by Doyon Security.

2.10.2 Security and Fencing

A security fence extends along the north side of the airport near the DAC, the ARFF/SREB, along the edge of the terminal apron, and at the other lease lots adjacent to the airfield. The remainder of the airfield remains unfenced, which is an FAA/TSA compliance issue for both wildlife and unauthorized access. As recommended in the Wildlife Hazard Management Plan, a project is being designed to fence around the east and west ends of the airfield and in the vicinity of the future BRL on the south side of the airport. This fencing will be continuous around the entire perimeter of the Deadhorse Airport and will improve security and wildlife control.

2.10.3 Snow Removal and Storage

Drifting snow is caused when snow-laden wind blows into an obstacle (e.g., a fence, building) causing the wind to slow, thus losing capacity to transport snow, and the snow accumulates as a drift downwind of the obstacle (Figure 2-15). Sometimes wind blows the runway and taxiways clear, but the ramps usually require plowing. Because there is not a continuous single apron with a linear BRL parallel to prevailing wind, snow frequently piles up on the downwind side. Snow drifting is a major challenge at SCC and snow removal requires considerable airport staff and equipment. Snow drifting also requires frequent snow removal at airfield gates.

Airport staff use well-timed application of de-icing chemicals to prevent ice formation and build-up on the airfield surfaces. De-icing chemical storage facilities have a capacity for 15,000 gallons of liquid deicer. At present, storage is insufficient for storage of deicer chemicals needed for an entire winter season. Snow blowers and brooms are used to help remove snow and ice.

Snow is blown onto infield areas north and south of the runway and Taxiway A. There are designated snow storage areas between Taxiway A and the terminal apron, behind the ARFF/SREB and in several other locations among the lease lots. Airport staff push snow from the terminal apron onto Block 303, Lot 2. When Lot 2 has reached snow storage capacity, snow is transported by truck to other snow storage areas. Tenants are also responsible for storing and moving snow on their lease lots.

Figure 2-15: Snow Buildup between buildings at SCC

2.10.4 Drainage

The airport topography is flat, and groundwater is close to the surface. Water ponds on airport surfaces and on unfilled airport lots. Ponds in the infield areas between the runway, taxiways and apron attract waterfowl. Ponding can contain deicer fluids used on the airfield. Airport staff pump water from road ditches and various airport ponds to reduce spring/summer ponding and flooding. A project to be constructed in 2025/2026 will fill in some of the airfield ponds, replace airfield culverts, and replace culverts and improve drainage along Deadhorse Drive.

2.10.5 Pavement Crack Sealing and Marking

Airport staff seal asphalt pavement cracks and apply new pavement markings every year during the short summer months, costing about $150,000 - $200,000 per year. Every third year, the crack sealing and marking are paid for with FAA AIP funds.

2.10.6 Equipment

According to the Airport Certification Manual, the primary snow and ice control equipment at SCC includes:

- Cat M 160 Grader #37007
- E-36 Truck #39509
- Ford-150 Pickup #39069
- Mack Plow/Sander #39259
- MB Blower/Broom #39739
- OshKosh Blower/Broom #36647
- F350 with mounted sander #11701
- Jet engine mounted on truck #11701
- Cradling Broom #40289
- Tractor #40288
- Larue Blower/Broom

The primary equipment used for aircraft rescue and firefighting is the Oshkosh Stryker, with a water capacity of 3,000 gallons, AFFF capacity of 420 gallons, 550 pounds of dry chemical, and 460 pounds of Halotron.

2.10.7 Maintenance and Operations Buildings

ARFF, snow removal, and other airport maintenance are carried out by DOT&PF staff from a combined ARFF/SREB facility located west of the terminal apron (Figure 2-16 and Figure 2-17). The FSS also operates from this facility. The building was expanded in 2016 and is in good condition. The airport is classified as Class 1 ARFF Index B and is staffed to provide ARFF services at this level only during air carrier operations. Airport staff sleeping, cooking, and entertainment space is also provided in this facility.

Figure 2-16: ARFF/SREB and snow removal equipment

Figure 2-17: ARFF/SREB Viewed from Airside

Maintenance equipment and supplies are stored in the existing ARFF/SREB and several other older buildings around the airport. Some of these other buildings are used for warm storage and others are used for cold storage (Figure 2-18).

Figure 2-18: M&O Building Used for Cold Storage of Equipment and Supplies

2.10.8 Wildlife Hazards

SCC is surrounded by the arctic tundra ecosystem which provides food, water, and habitat for migratory and non-migratory species (2021 Wildlife Hazard Management Plan). Hazardous wildlife considered to be the greatest threat to aircraft operation at SCC are those that flock (gulls, shorebirds, waterfowl, raptors) or those that are of a large size (caribou, bears) and which are frequently present or occur in large numbers. Table 2-12 lists wildlife strikes at SCC reported to the FAA Wildlife Strike Database.

Table 2-12: SCC Reported Wildlife Strikes

Incident Date	Operator	Aircraft	Species
08/02/2022	Business	CASA C-212	Unknown bird – small
08/21/2017	Horizon Air	DHC8 Dash 8	greater white-fronted goose
07/28/2017	Business	B737-700	Caribou
06/15/2013	Unknown	Unknown	red-necked phalarope
08/21/2008	Unknown	Unknown	greater white-fronted goose
07/03/2008	Business	B737-200	semipalmated plover
09/06/2007	Unknown	Unknown	Pacific golden-plover
07/22/2003	NAC	DC-6	sandhill crane
05/20/2002	Business	B737-200	gulls

A Wildlife Hazard Management Plan (WHMP) provides guidelines and responsibilities for controlling wildlife hazards. Daily monitoring and dispersal of wildlife hazards is performed by airport staff and US Department of Agriculture staff under contract with SCC. The WHMP also details SCC habitat management projects including two projects in the ACIP with a target completion date of 2026.

- Construct fencing around the airfield to exclude the presence of large mammals.

- Mitigate the drainage ponds between the runway and parallel taxiway and the ponds between the taxiway and the ramp.

Because the airport does not have a complete perimeter fence, mammals can move between the adjacent tundra and airfield surfaces (Figure 2-19). Several infield areas between the runway, parallel taxiway and ramp contain standing water and aquatic vegetation attractive to waterfowl and shorebirds.

Figure 2-19: Caribou Strike at Deadhorse Airport

2.11 Environmental Conditions

See Chapter 7 – Initial Environmental Analysis, for the updated environmental analysis of the resource categories consistent with FAA 1050.1F Desk Reference. The Environmental Analysis is based on the master plan study area defined as the totality of airport owned land.