



4.0 FACILITY REQUIREMENTS

4.1 Critical Aircraft

The FAA prescribes standards to which runways, taxiways, aprons, and other features should be developed. These standards are based on the dimensions and performance characteristics of the airport's critical aircraft. A critical aircraft is defined as the most demanding aircraft anticipated to operate (land or take off) at the airport at least 500 times annually within the 20-year planning horizon. As indicated in Section 3.10, the existing and ultimate critical aircraft for the Deadhorse Airport is the Boeing 737-800 with an ARC of D-III and the Lockheed C-130/L-382E Hercules, with an ARC of C-IV. The Boeing 737 and Lockheed Hercules were also the critical aircraft in the prior master plan and airport layout plans.

4.2 Runway

4.2.1 Runway Alignment and Wind Coverage

The current wind coverage of 99.48 percent at 20-knot crosswind component exceeds the 95 percent wind coverage requirement, and a crosswind runway is not needed.

Recommendation: *Do not plan for a crosswind runway*

4.2.2 Runway Capacity

The runway capacity of a single runway with parallel taxiway configuration, like that of SCC, is 98 operations per hour in VFR conditions and 59 operations per hour in IFR conditions (FAA AC 150/5060-5 *Airport Capacity and Delay*). Neither the VFR or IFR operations rates at the Deadhorse Airport are at the levels defined in the AC. Predicted operations also do not exceed the capacities stated in the AC.

Recommendation: *Do not plan for an additional runway to add capacity.*

4.2.3 Runway Length and Width

The runway at Deadhorse Airport is 6,500 feet long by 150 feet wide. Alaska Airlines has asked that the master plan recommend a runway with at least an Accelerate Stop Distance Available/Landing Distance Available (ASDA/LDA) of 7,500 feet. This is based on their over 50 B737-MAX-9 aircraft currently in the fleet, the new B737-800 freighter brought online at the end of 2023, and future deliveries of the 737-MAX-8 and 737-MAX-10 on order. When the DOT&PF is ready to begin a runway extension project, Alaska Airlines indicated it would complete a more detailed analysis of their existing/future fleet and the runway length required. For now, the company suggests the master plan should be prepared assuming a need for 7,500 feet ASDA/LDA.

In addition, the DOD has asked for a runway extension to 8,000 feet. The military has also indicated it requests an arrestor system be installed at about midfield, at least until the runway is extended.

The existing runway width of 150 feet meets requirements for ADG Category IV aircraft.



Recommendation: Plan for an ultimate extension to 8,000 feet for military use and 7,500 feet for the critical aircraft operated by Alaska Airlines and others (see Appendix D for runway length requirement requests). Reconfirm runway extension needs with users when an extension project is ready to begin. Retain current 150 feet runway width. **(Please note that during the alternatives evaluation stage Alaska Airlines further evaluated their future runway extension needs and revised their runway length request to 7,150 feet (see Appendix D). While the 7,500-foot length is noted here in the Facility Requirements and in the later Alternatives chapter, the Recommended Plan, Capital Improvement Program, and ALP assume the 7,150 foot runway length that was requested by Alaska Airlines during the alternatives evaluation.)** Once the projected critical aircraft is within five years, begin a runway extension project and reconfirm runway needs with air carriers; this is consistent with guidance supplied by the FAA's Reauthorization Act of 2024.

4.2.4 Runway Standards

Table 4-1 lists existing dimensions for Runway 6/24 and dimensions required of ADG III and ADG IV runways. In all cases the existing runway dimensions exceed both ADG III and ADG IV standards. Most notably the runway to parallel taxiway separation exceeds the standard by 200 feet, allowing some flexibility for future planning.

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Table 4-1: Deadhorse Airport Runway Dimensions and FAA Dimension Standards

	FAA Airplane Design Group III Standard (feet)	FAA Airplane Design Group IV Standard (feet)	Existing Dimensions (feet)	Corrective Action
Runway Width	100	150	150	None
Runway Shoulder Width	20	25	25	None
Runway Blast Pad Width	140	200	200	None
Runway Blast Pad Length	200	200	200	
Runway Safety Area Length	1,000 feet beyond each runway end; 600 feet prior to threshold	1,000 feet beyond each runway end; 600 feet prior to threshold	1,000 feet beyond each runway end	None
Runway Safety Area Width	500	500	500	None
Runway Object Free Area Length	1,000 feet beyond each runway end; 600 feet prior to threshold	1,000 feet beyond each runway end; 600 feet prior to threshold	1,000 feet beyond each runway end	None
Runway Object Free Area Width	800	800	800	ROFA not met for Taxiway A when used as temporary runway
Precision Obstacle Free Zone Length	200	200	200	None
Precision Obstacle Free Zone Width	800	800	800	None
Approach Runway Protection Zone	2,500 x 1,000 x 1,750	2,500 x 1,000 x 1,750	2,500 x 1,000 x 1,750	None
Departure Runway Protection Zone	1,700 x 500 x 1,010	1,700 x 500 x 1,010	1,700 x 500 x 1,010	None
Runway Centerline to Taxiway Centerline	400-450*	400-450*	600	None
Building Restriction Line	750	750	950 minimum	Consider adjusting to make more uniform and to address Taxiway A use as runway

Notes: *runway with high-speed exit

Recommendation: Maintain existing dimensions unless other planning objectives dictate reducing standards to ADG III or ADG IV dimensions. Consider adjusting BRL to provide a ROFA for Taxiway A when used as a temporary runway and to address other issues related to snow drifting/removal and apron expansion needs (also see Section 4.3).



4.3 Taxiways

Taxiway, taxiway safety area, and taxiway object free area dimensions, standards, and corrective actions are provided in Table 4-2. While existing taxiway widths exceed taxiway standards for ADG IV, the safety area widths are less than the ADG standard. Other issues and recommendations are addressed below. It should be noted that the most recent ALP designates most of the taxiways as ADG/TDG IV/5. It is not apparent why the TDG 5 designation is used, and this plan recommends ADG/TDG IV/3.

4.3.1 Taxiway Designations

Deadhorse Airport has a parallel taxiway, Taxiway A, along the north side of the runway. The connectors on each runway end are designated Taxiway A East and Taxiway A West, causing confusion. Several other taxiways are not designated.

Recommendation: *The taxiways on the airport should be renamed in accordance with FAA Engineering Brief #89A Taxiway Nomenclature Convention and new taxiway signs installed.*

4.3.2 Taxiway A Used as Runway

During prior runway reconstruction projects, Taxiway A was used for nearly two years as a temporary runway. This required a special waiver from FAA regarding runway width and RSA width. The taxiway was marked and lighted as a runway, and some navigation aides were relocated to the temporary runway. The minimum ROFA standard for Deadhorse is 400 feet horizontally from the runway centerline. This dimension should also be applied to the taxiway centerline to preserve the option of safely using the taxiway as a temporary runway in the future. Buildings on the Era lease lot are approximately 350 feet from the Taxiway A centerline and are the only existing structures that penetrate the ROFA when applied to Taxiway A. These buildings (Figure 4-1) were present during prior runway resurfacing projects when the taxiway was used as the temporary runway. Other runway repaving options are to repave half the width at a time while keeping half of the runway in operation or to construct a temporary runway on the widened RSA.

Recommendation: *Recommend tenant lease be terminated and buildings be removed to provide a 400-foot ROFA along Taxiway A (also see later discussion about the buildings' effect on snow removal and terminal apron expansion).*



Figure 4-1: Vacant Era Buildings are in Taxiway A ROFA when Taxiway A is used as Temporary Runway

4.3.3 Taxiway Erosion/Drainage

The taxiways generally have steep shoulder slopes, are constructed of erodible materials, and are unable to support vegetation that would reduce erosion (Figure 4-2). Class 1 rock has been placed at some locations where the connector taxiways connect to the apron.

Recommendation: *The taxiway shoulder slope should be constructed with more gradual slopes or other methods should be investigated to reduce erosion, such as better compaction and alternative materials (such as recycled asphalt) used in the construction. Some taxiway shoulder slopes may be flattened as part of the upcoming fencing and drainage project.*



Figure 4-2: Steep Taxiway Shoulder Slopes and Erodible Materials



4.3.4 Direct Access from Apron to Runway

Taxiways C and D provide direct access from the apron to the runway, potentially leading to a pilot unknowingly entering the runway.

Recommendation: This direct access from the apron to the runway from Taxiways C and D should be eliminated.

4.3.5 Taxiway Safety Areas

As noted in Table 4-2, Taxiways A, B, C and D and one non-designated taxiway do not meet ADG taxiway safety area standards.

Recommendation: Taxiways A, B, C and D and the non-designated taxiway should be widened to the 171-foot width standard. This would also enable snow removal equipment to operate outside of the taxiway edge lights.

4.3.6 Taxiway A (East and West) Dogleg

Taxiway A East and Taxiway A West do not line up with the ends of the runway.

Recommendation: It is recommended to align taxiway edge markings on Taxiway A East and West with runway thresholds.

Table 4-2: Taxiway Standards/Requirements Summary

	ADG/TDG	Standard Dimension	Existing Condition	Corrective Action	Other Standards Issues
Taxiway A (Parallel)					
Width	IV/3	50	100	None	Taxiway designation is confusing Reconstruction or relocation may force a resizing
TSA	IV/3	171	140	Widen TSA	
TOFA	IV/3	243	259	None	
Taxiway A (Connector at West End)					
Width	IV/3	50	86	None	Taxiway designation is confusing, fix dogleg Reconstruction or relocation may force a resizing
TSA	IV/3	171	140	Widen TSA	
TOFA	IV/3	243	259	None	
Taxiway A (Connector at East End)					
Width	IV/3	50	86	None	Taxiway designation is confusing, fix dogleg Reconstruction or relocation may force a resizing
TSA	IV/3	171	140	Widen TSA	
TOFA	IV/3	243	259	None	
Taxiway B					
Width	IV/3	50	96	None	Reconstruction or relocation may force a resizing
TSA	IV/3	171	140	Widen TSA	
TOFA	IV/3	243	259	None	
Taxiway C					
					Direct access to runway from apron

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	ADG/TDG	Standard Dimension	Existing Condition	Corrective Action	Other Standards Issues
Width	IV/3	50	96	None	Reconstruction or relocation may force a resizing
TSA	IV/3	171	140	Widen TSA	
TOFA	IV/3	243	259	None	
Taxiway D					Direct access to runway from apron
Width	IV/3	50	96	None	Reconstruction or relocation may force a resizing
TSA	IV/3	171	140	Widen TSA	
TOFA	IV/3	243	259	None	
Taxiway E					
Width	III/3	50	50	None	
TSA	III/3	118	118	None	
TOFA	III/3	171	186	None	
Taxiway F					
Width	III/3	50	50	None	
TSA	III/3	118	118	None	
TOFA	III/3	171	186	None	
Non-designated Taxiway to ARFF					Taxiway is not designated with a letter.
Width	IV/3	50	90	None	Reconstruction or relocation may force a resizing
TSA	IV/3	171	140	Widen TSA	
TOFA	IV/3	243	259	None	
Non-designated Taxiway to DAC (East)					Taxiway is not designated with a letter
Width	IV/3	50	100	None	Reconstruction or relocation may force a resizing
TSA	IV/3	171	180	Widen TSA	
TOFA	IV/3	243	259	None	
Non-designated Taxiway to DAC (West)					Taxiway is not designated with a letter
Width	IV/3	50	100	None	Reconstruction or relocation may force a resizing
TSA	IV/3	171	180	Widen TSA	
TOFA	IV/3	243	259	None	

4.4 Aprons

The GA apron provides space to tie down transient fixed-wing aircraft and helicopters. Some transient aircraft owners also pay a fee to park at the DAC, or they park near the ARFF/SREB when the GA apron is full. Helicopters operating on the GA apron have blown windows out of adjacent fixed-wing aircraft and other helicopters. Apron congestion and conflicts between fixed-wing aircraft and helicopters is particularly problematic during periods of busy military training activity. There are up to 12 helicopters operating around the clock from this apron on a typical summer day. When conducting sling load operations, they sometimes drop Foreign Object Debris (FOD) on various locations on the airfield.

Airport staff are not always on duty when GA apron users need to access their parked aircraft or exit the airfield after parking their aircraft.



Recommendation: Eliminate conflicts between helicopters and fixed-wing aircraft by developing a segregated helicopter apron with adjacent lease space. Support military development of its own lease space with helicopter parking. Consider development of expanded transient GA parking to reduce apron congestion.

Consider turning over the GA apron to tenant management.

4.5 Airfield Pavement Condition

The Alaska Pavement Inspection, conducted in 2023, indicated the last pavement rehabilitation was performed in 2012 - 2013.

Table 4-3 shows that current pavement surfaces are over 10 years old. The airport had a weighted average PCI of 75.06 as of 2023, with the worst pavement condition found on the apron pavement.

Table 4-3: Pavement Age and Condition – 2023 Pavement Inspection

Area	Date Last Resurfaced	Weighted Average PCI
Runway 6/24	2012	74.04
Taxiways	2012-2013	77.85
Aprons	2013	72.00
All	2012-2013	75.06

Airport staff indicate that pavements at SCC need to be resurfaced/reconstructed every 15 years and while based on visual observations pavement condition generally appears good at this time, polygon cracking is increasing, and deterioration is expected to accelerate over the next five years. Annual crack sealing has helped to extend the life of the pavements. The 2023 Pavement Inspection Report shows the entire airport due for a rehabilitation in five years (2028) and a rehabilitation or reconstruction in 10 years (2033).

The keel section of the runway was reconstructed to a depth of 10 feet with a pavement depth of five inches in 2012. A centerline pavement crack has persisted through several runway resurfacing/reconstruction projects.

Older culverts under much of the airfield are being replaced as part of the fencing and drainage project in 2025, therefore culvert replacement would not need to be addressed in a resurfacing project.

Safety areas and shoulders along various taxiway and apron paved surfaces experience erosion due to steep slopes, gravel qualities, and inability to support vegetation. These conditions should be addressed in a future project. Some slopes may be addressed in the upcoming drainage and fencing project.

Military users of the airport recommend thicker pavement sections in the runway and any taxiway connectors from the runway to a future military lease lot. However, costs associated with any pavement modifications above and beyond the design commercial aircraft will be subject to DOD funding; FAA will not fund improvements accommodating military operations.



Pavements on the terminal apron that are insulated are performing better than uninsulated sections. Consideration should be given to expanding the insulated sections and insulating Taxiways E and F.

Pavement condition is also an issue at several other private aprons on the airport.

Recommendation: *Resurface/reconstruct airfield pavements by 2027. If DOD funding is available, consider pavement strength for military aircraft. Consider performance of the deeper runway keel section pavement and structural section. Consider Taxiway A pavement strength/thickness and grooving because it is used as a temporary runway when the runway is resurfaced. Consider insulation of Taxiways E and F. Evaluate methods to reduce erosion along runway, taxiway, and apron safety areas and shoulders. Address settling and ponding on the apron, including possibly adding insulation. Address airfield lighting and signage with the pavement rehabilitation/resurfacing project. Address taxiway redesignation/signage and fillet design with the pavement rehab/resurfacing project.*

4.6 Airfield Lighting, Marking, and Signage

The HIRL and taxiway lighting was replaced in 2012, is about 13 years old, and the lighting deteriorates rapidly in the cold and wet/icy operating environment. Regulators have already been partially rebuilt. Outages, repairs, and powerline breaks are increasing. Threshold lights have a short lifespan, heat from the lights cause winter icing, and ice removal can damage bulbs. LED lights would prevent this type of damage in winter conditions. Higher runway and taxiway edge lights would improve illumination during heavy snow conditions. Taxiway A in-pavement centerline lights would improve operations during the frequent low visibility conditions. Airfield signage is mainly from a 1995 runway reconstruction project. The airport backup generator is in acceptable operating order.

Recommendation: *The entire lighting system should be evaluated and rebuilt as needed during the next airfield resurfacing/reconstruction project; this should include replacement and upgrade of the ramp flood light and the obstruction lights. Airfield signage should be updated with new taxiway designations as noted in the taxiways section (Section 4.3). Airfield markings should continue to be replaced annually. According to the Airport Certification Manual the distance from the beginning of the landing surface to the start of the threshold markings is incorrect (30 feet instead of 20 feet). The airport should correct this during the next runway resurfacing project.*

4.7 Navigation Aids

The following is a list of navigation aid improvement projects at Deadhorse Airport provided by the FAA. In some cases, schedules for the projects have not been determined. Any project shown as TBD (to be determined) is likely to be five years or more from completion. The abbreviations provided by the FAA may not always clearly indicate what is being proposed. Most notably on the list are planned replacement of VASIs with PAPIs and replacing the MALSRs.

A new generator and transformer supplying power to the NAVAIDs were also planned for summer 2023. Previous projects have provided a new localizer array and raised the pad so the building and equipment are above ponded water. The NDB is to be decommissioned in 2024/2025. The airport reports extended outages for the old ILS equipment, but the FAA indicates repairs have made it more reliable than in the past.

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The MALSRs on both ends of the runway were built in the 1960s and 1970s; are frequently inoperable and parts for repairs are difficult to find. The west end MALSR has had some recent repairs and there urgent need to repair the east end MALSR.

Recommendation: *The FAA should complete the already planned improvements as soon as possible and should upgrade/replace ILS components that are outdated and causing extended outages. The oil companies operating from this airport indicate that every cancelled flight carries a cost of \$300,000 in oil company wages. As discussed in the prior master plan, the FAA should consider an upgrade to a CAT II ILS. A Ground Based Augmentation System (GBAS) for GPS approaches should be implemented to supplement the ILS and support lower minimums. The FAA should consider in-pavement threshold lights to reduce bulb failure and snow drifting. Coordinate scheduling of NAVAID replacement with the proposed runway extension. If a runway extension is recommended, address any NAVAID replacement (e.g., glide slope, MALSR) with the proposed runway extension.*

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Table 4-4: FAA Planned NAVAIDs Repairs/Upgrades at Deadhorse Airport – May 2023

Facility	Acronym Definition	Project Description	Start Date
VASI	Visual Approach Slope Indicator	REPLACE VASI with PAPI RWY 06 (SCC) at Deadhorse Apt, Deadhorse, AK	TBD
TANK	Fuel Storage Tank	REPLACE FST System or Components	TBD
DCBUS	Back-up Emergency Communications	Replace the LORAIN Deadhorse BUEC DC BUS	FY26
SX	Standby Engine Generator	IIJA Replace existing SCC SX and TANK (Diesel) with new SX and TANK (Diesel) at SCC ASTI site	FY24
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights	IIJA REPLACE System Cable at SCC MALSR R/W 5	FY26
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights	REPLACE MALSR RWY 06 (SCC) at Deadhorse Apt, Deadhorse, AK	TBD
ASTI	Alaskan Satellite Telecommunications Infrastructure	MODERNIZE Lightning protection, grounding, bonding, and shielding (LPGBS) system at the SCC SX.	TBD
VOR	Very High Frequency Omnidirectional Range	BIL JCN 19006159 LPGBS SCC ASR – Deadhorse, AK	TBD
FSS	Flight Service Station	ESTABLISH FAA Enterprise Network Services (FENS) Transition at FAA SMALL site environment.	FY29
VOR	Very High Frequency Omnidirectional Range	ESTABLISH FTI circuits	FY25
FSS	Flight Service Station	1508797 Improve Misc HVAC and Plumbing items at Deadhorse FSS	FY23/FY24
FSS	Flight Service Station	ESTABLISH Additional Mechanical Cooling System in the Electronics Equipment Room at Deadhorse FSS	FY24
ERMS	Environmental Remote Monitoring System	OPTIMIZE ERMS for EG replaced under JCN 18063793 SCC ATCBI	FY23/FY24
ASTI	Alaskan Satellite Telecommunications Infrastructure	REPLACE ASTI Ground Station Antenna Infrastructure (Controller Only)	FY23
BUEC	Back-Up Emergency Communications	REPLACE NEXCOM V1 Radios with most current VoIP NEXCOM Radio (Phase 3)-SCC BUEC	TBD

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Facility	Acronym Definition	Project Description	Start Date
FSS	Flight Service Station	REPLACE NEXCOM V1 Radios with most current VoIP NEXCOM Radio (Phase 3)-SCC FSS	TBD
GS	Glide Slope	REMOVE SCC abandoned shelter	FY27
FSS	Flight Service Station	MODERNIZE Upgrade FSS air traffic console at Deadhorse FSS	FY27
SAWS	Supplemental Aviation Weather Reporting System	REPLACE SAWS electronics with SWS electronics	FY28
SFAS	Security and Fire Alarm System	21001130 SCC SFAS SL1 PIV Upgrade at SCC FSS in Deadhorse, AK	TBD
FSS	Flight Service Station	DECOMMISSION FTI Decommissioning MEDIUM Control Site Environment	FY29
VOR	Very High Frequency Omnidirectional Range	ESTABLISH FAA Enterprise Network Services (FENS) Transition at FAA SMALL site environment	TBD
BLDG	Building	PROCURE Energy and Water Conservation Project (EMC) – FIP Placeholder	TBD
FSS	Flight Service Station	ESTABLISH Facility Assessment at the Deadhorse FSS	FY27
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights	2298155 22-AL-005146 Deadhorse, AK (SCC) perimeter fencing MALSR impacts	FY25
FSS	Flight Service Station	ESTABLISH FTI services	FY25
VASI	Visual Approach Slope Indicator	REPLACE VASI with PAPI RWY 24 (SCCA) at Deadhorse Apt, Deadhorse, AK	TBD
SX	Standby Engine Generator	IIJA Replace existing SCCA SX and TANK (Diesel) with new SX and TANK (Diesel) at SCC VOR site	FY24
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights	IIJA REPLACE System Cable at SCCA MALSR R/W 23	FY26
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights	REPLACE MALSR RWY 24 (SCCA) at Deadhorse Apt, Deadhorse, AK	TBD
SX	Standby Engine Generator	MODERNIZE Lightning protection, grounding, bonding, and shielding (LPGBS) system at the SCCA SX.	TBD
RVR	Runway Visual Range	REPLACE Teledyne RVR with PC-Based RVR (SCCA) at Deadhorse Apt, Deadhorse, AK (NSG 3) (VS 2),(RLIM 1)	FY24
ERMS	Environmental Remote Monitoring System	OPTIMIZE ERMS for DCBUS installed under JCN 18032421 SCC BUEC	TBD
ERMS	Environmental Remote Monitoring System	OPTIMIZE ERMS for EG replaced under JCN 18063537 SCC VOR	TBD
NASEB	National Airspace System Equipment Building	REPLACE Deadhorse, AK (SCCV) NASEB (VOR) – Replace Building	TBD

Source: FAA Western Service Area NAS Plan Program Manager



4.8 Part 77 Surfaces

The most current ALP does not show any Part 77 surface issues. However, some towers are located off the east end of the runway and affect airport operations. The towers need to be evaluated in a Part 77 analysis. Flights depart mostly to the west to avoid obstructions on the east end.

Recommendation: *Continue to protect Part 77 surfaces and expand surfaces if the runway is extended.*

4.9 Lease Lots

Oil and gas development is likely to continue to generate aeronautical and non-aeronautical lease lot demand at the rate of several lots per year.

All of the existing aeronautical lease lots north of the runway have been leased or are used by DOT&PF (Figure 2-3). Aeronautical lease areas on the south side of the airport do not have road and taxiway access. Several aeronautical lots on the north side of the runway:

- are partially developed and could be expanded (Deadhorse Aviation Center, Colville) (Figure 4-3)
- are mostly unused with old facilities that should be replaced/upgraded (Alaska Airlines)
- are used by DOT&PF for drainage ponds or snow storage.

In addition, buildings on some lots should be removed to facilitate airfield operations, snow removal, and terminal apron expansion.

In the past, the lease lots on the terminal apron generated enough aircraft parking demand that the apron barely supported the amount of aircraft parking needed by the tenants, suggesting the need for an expanded terminal apron and/or new lease lots and aprons for large and small aircraft. Since Alaska Airlines and Shared Services moved to the DAC facility, the crowding at the terminal apron has not been an issue, but it could reoccur if the Alaska Airlines lease lot were again used. The apron is also crowded during military events.

The potential replacement of the ARFF/SREB at a new location could also open up a new lease lot on the north side of the airport, but the apron depth would be limited to smaller aircraft unless the current ARFF/SREB is demolished.



Figure 4-3: This DAC Apron Could Support a New Terminal/Hangar Development on the Vacant Lease Lot Behind It

The irregular BRL on the north side of the runway extends about 1,210 feet from the runway centerline along most of its length, but is closer to the runway at the ARFF/SREB at the west end of the terminal apron and at the Era and Colville lease lots east of the terminal apron. In particular, the Era and Colville lots stick out from the standard lineup of buildings could become issues when Taxiway A is used as a temporary runway during reconstruction of Runway 6/24. Buildings on these lots also cause large snow drifts, requiring excessive M&O resources to clear.

The DOD has expressed an interest in a DOD lease lot with an apron and hangar sized for a KC-135, and a separate adjacent lease lot for a Live Support area. The Live Support area would be comprised of an approximately five-acre, 200-person personnel camp. The apron would have an apron taxiway to allow aircraft to taxi around parked aircraft. Ideally the military facility would be segregated from other airport facilities, to enhance security. A single taxiway access from the runway would have a wide turning radius and a thick pavement section to support military aircraft.

Non-aeronautical parcels also support development of Prudhoe Bay and generate a large revenue stream but there are only three remaining unleased non-aeronautical lots north of the runway and one unleased lot along the Dalton Highway south of the runway.

Recommendation: *Identify new aeronautical and non-aeronautical lease lots for the next 20+ years and road and taxiway access. Include a lease area that addresses DOD needs. Address the irregular BRL on the north side of the runway.*

4.10 Passenger Terminal

Independent passenger terminals on separate lease lots have been provided by individual carriers and developers at most airports in Alaska. Sometimes this is less efficient for passengers and carriers than a consolidated multi-user terminal that can offer more services and shared spaces in one location. The DAC is a private multi-user terminal facility that functions like a public terminal offered at Anchorage, Fairbanks, and Juneau International Airports. In an environment like Deadhorse, where lease lot development is expensive, supporting a consolidated multi-user terminal like the DAC can improve the passenger experience, make more efficient use of limited expensive space, consolidate TSA services and screening points in one location, and can allow carriers to enter and exit the passenger and cargo service market more easily.



Alaska Airlines owns a vacant SCC passenger terminal and subleases space for their air carrier operations in the DAC facility. The DAC facility can add a second jetway without major facility improvements, but a third jetway, if ever needed, would require building expansion and renovation. The vacant Alaska Airlines terminal is currently only used for storage but could also be used for cargo or renovated/replaced by Alaska Airlines or others. Alaska Airlines indicates it needs more space for cargo and ground service equipment.

Recommendation: Provide lease lot space for expansion of passenger terminal and cargo development. Look for opportunities to encourage continued development of private consolidated terminal space or locating passenger terminals in close proximity to improve convenience for passengers and cargo moving between different airlines.

4.11 Helicopters

During military helicopter operations the GA apron is crowded and helicopter rotor wash and flying debris can damage other helicopters and fixed-wing aircraft tied down on the apron. Helicopter sling loads leaving this apron can create operational conflicts with other aircraft and may drop FOD onto the aprons, taxiways, and runway. During busy summer months there may be 12 helicopters operating from the GA apron, around the clock (Figure 4-4). Oil exploration and development also have the potential to increase GA apron use.

Recommendation: Identify a separate apron for landing, taking off, and parking of helicopters with some adjacent space for lease lots. Support military development with a dedicated helicopter landing area.



Figure 4-4: GA Apron Used for Tie Downs and Helicopter Operations

4.12 Military Airport Use

During the preparation of the master plan DOT&PF and the project team met with representatives of the DOD to discuss airport improvements to support a potential larger military presence on the airport and in the region. Key takeaways included:



- Airport improvements could support potential increased military training activity and ability to respond to a Northern/Arctic military incident.
- The most demanding aircraft is likely the F-22 and KC-135; 20 to 30 additional military flights would be expected per year (40 to 60 operations) by these most demanding aircraft. There would be more flights by helicopters and less demanding fixed-wing aircraft by the U.S. Army and other military branches. Estimated numbers of operations by these less demanding aircraft were not provided by the military. With the airport improvements described below, all military branches could continue to have increased benefits of training and other military activity from Deadhorse, and military use of the airport would grow. The military would also generate some growth in air carrier traffic, mostly on existing scheduled carriers.
- Military desired airport improvements include:
 - Thicker pavement section in the runway and any taxiway connectors to the runway to a future military lease lot. Current runway keel is 5 inches and rest of runway is 2.5 to 3 inches. Factor in military needs in the pavement thickness determination for the next pavement rehabilitation project.
 - A runway extension to 8,000 feet.
 - An arrestor system on the runway at about midfield, at least until the runway is extended.
 - A load rated paved taxiway with wide turning radius connecting the runway to a military apron.
 - Large hangar lot sized for one KC-135 (approximately hangar door of 140 feet by x 25 feet). Adjacent apron with apron taxilane and apron depth to allow aircraft to taxi around each other (avoids immediate need for a partial parallel taxiway). Helicopters would also land on the runway and taxi to the hangar apron.
 - Adjacent lot outside the airport security fence and behind the hangar lot for an approximately five-acre “Live Support Area” (a camp for approximately 200 military personnel).

DOD preference is for a site on the south side of the runway with separation from development of other existing and future lessees. The fencing project to be built in the next few years may build road access part way to the lease lots. The military has design standards for development on military airfields (United Facilities Criteria – *Airfield and Heliport Planning and Design*) but those standards are not mandatory for facilities not built on a military airfield.

Unmanned aerial vehicles (UAVs) may operate from military lease lots and on the current airfield. There is no need for separate UAV airfield facilities at this time. There may be a need for a communications site with line-of-sight to UAV operations areas at Deadhorse extending 100 miles from airport. An Advanced Air Mobility Project may define UAV and other Advanced Air Mobility needs.

Recommendation: Plan for future airport development that addresses the DOD needs for a runway extension, taxiway connector, apron, lease lots and road access as described above. These improvements would be dependent on DOD funding.



4.13 Advanced Air Mobility

The DOT&PF and others are evaluating Advanced Air Mobility needs at Deadhorse and other airports in the state, but those needs have not yet been identified.

Recommendation: Address Advanced Air Mobility needs after they are defined under the DOT&PF Advanced Air Mobility Project.

4.14 Roads and Parking

There is currently only one road connecting Deadhorse Drive to Colleen Drive and properties off the airport. If Airport Way or Deadhorse Drive are closed, there may be no way to access some lease lots. Future lease lot development on the north side will also require new/expanded roads.

The upcoming road and drainage project will raise and resurface Deadhorse Drive and improve drainage. It will also develop a new road to the edge of future lease areas on the south side of the airport, but additional road extensions will be needed in this area to support lease lot development and provide for vehicle movements on the apron. The project will also develop a short road on the apron to connect the DAC apron to the terminal apron. This will avoid the need for fuel trucks to use the taxiway to access the DAC.

Recommendation: Long-term plans should provide a secondary connection(s) from Deadhorse Drive to off-airport lands. Road access should be provided to existing and future lease lots.

Future lease lot development on the south side should provide for public road access and an airside vehicle driving lane on the apron.

In the long term, when the south side of the airport is being developed, a perimeter airside road connecting the north and south sides of the airport should be developed.

Tenant development should continue to provide adequate vehicle parking space and accommodate large vehicles using the lease lots. No new public vehicle parking is recommended.

4.15 M&O Facilities

The combined ARFF/SREB building was expanded in 2016. It currently meets the airport's needs and is expected to continue to be adequate until expected replacement in 15 or 20 years. Support buildings on various lots on the north side of Deadhorse Drive are old and nearing the end of adequate use (Figure 4-5 and Figure 4-6). The buildings provide warm- and cold storage for sand and various maintenance and operations supplies and equipment that would be more efficiently located at the ARFF/SREB facility.

Alaska Airlines warns of the potential need for expanded hours of airport operations, which could hasten the timeframe for ARFF/SREB expansion and replacement.



Figure 4-5: Aged M&O Cold Storage Building



Figure 4-6: Aged M&O Warm Storage Building

Recommendation: Build a new combined ARFF/SREB in 15 to 20 years with space for equipment and supplies that are now scattered in various lots. The facility should be located close to the midpoint of the runway with efficient access to the runway. If the airport duty hours were expanded and/or the ARFF index changed, the need and timing for ARFF/SREB facilities would need to be reexamined. The older cold- and warm storage buildings should be replaced in the next 5 to 10 years, including space for an estimated 20,000 gallons of water, 50,000 gallons of de-icing chemical, sand, and bristle broom storage as well as other storage and maintenance needs.

4.16 M&O Equipment

DOT&PF replaces existing equipment based on a typical life cycle, with adjustments as needed to reflect actual airport maintenance issues.



Recommendation: *In the short term acquire a new snowplow, snow blower/broom, and a loader mounted snow blower for fence maintenance. In the longer term continue to replace/upgrade existing equipment according to a life cycle schedule, and acquire additional equipment as needed to address additions to airfield surfaces resulting from airport expansion.*

4.17 Fencing and Security

A new fence on the west, east, and south sides of the airport will finish the last segments of a perimeter fence, improving security and reducing wildlife hazards. Several segments of the existing fence are old and some gates are frequently inoperable in snow conditions. Currently, there is no closed-circuit television (CCTV) system installed at SCC, resulting in loss of real-time monitoring of the premises. CCTV systems are effective for real-time remote monitoring and act as a deterrent to crimes and can capture violations of regulatory policies.

Operational issues of airfield gates exist due to the harsh cold and windy climates of Deadhorse. At present, these gates are not rated to withstand the loads of heavy snow/ice and high winds. During extreme weather, gates can cease to operate.

SCC does not meet TSA standards for securely regulating airfield access points. Unapproved locking mechanisms and devices were observed to be in use.

Recommendation: *Complete perimeter fence project scheduled for 2025/2026. Repair/replace existing gates and fence west of Block 900, Lot 1. Install a CCTV system for additional security monitoring within the premises of the airport boundary. Install gates rated for arctic conditions. The Deadhorse Security Assessment recommends DOT&PF incorporate tenant-owned gates into the SCC physical access control system.*

4.18 Utilities

Utility companies provide electrical power, telephone, and natural gas. Water is hauled to the airport and sewage is hauled off the airport to approved disposal facilities.

Recommendation: *Utility companies should continue to extend utility service to existing and new development.*

4.19 Fuel

Fuel is provided by Colville and other tenants' self-fuel. This arrangement appears to work well. However, Colville's fuel storage used by fuel trucks on the west side of the terminal apron area is separated from Colville's tanks and pumps used to fuel aircraft on the east end of the airport. Colville's storage and pumps on the apron also cause an irregular BRL, inhibit expansion of the terminal apron, and facilitate snow drifting.

Recommendation: *Consider relocating Colville's apron fueling closer to its fuel tanks near the GA Apron. Consider Colville taking over operation of the GA Apron. Provide fuel on the south side of the airport as it is developed.*



4.20 Drainage

Drainage on and around the airfield and developed lease areas is poor because the area is flat, and tenants sometimes block or do not maintain drainage (Figure 4-7). Much of the airfield and lease areas south of Deadhorse Drive are being addressed in the upcoming fencing project by replacing and adding culverts, filling in low areas, and redirecting drainage. Airport staff also try to address spring/summer drainage issues by pumping water away from lease areas.

Recommendation: Consider options to improve drainage north of Deadhorse Drive, such as providing more power plug-ins for pumps and forcing pumped water into undeveloped areas.



Figure 4-7: Ponding in Front of ARFF/SREB Parking Lot

4.21 Snow Management

Airport staff spend considerable time moving snow off airfield and landside surfaces and at security gates. Because of drifting issues, some snow must be hauled away by loader, which is much less efficient than blowing and plowing snow. Several potential lease lots are used for snow storage. The lease lot layout at the Era/Colville area causes drifting and plowing becomes ineffective, causing a drain on M&O resources.

Recommendation: Remove the vacated buildings and structures in the Era/Colville area to reduce drifting and improve snow removal logistics.



Figure 4-8: Road to Wright Air Terminal/Hangar where Snow Removal is Problematic

4.22 Facility Requirements Summary

Table 4-5 and Figure 4-9 provide the facility requirements for the Deadhorse Airport

Deadhorse Airport Master Plan



Table 4-5: Facility Requirements Summary

Component	Identified Need or FAA Standard	Existing Condition	Corrective Action
Runway 6/24 – RDC D-IV-2400			
Alignment	95% crosswind coverage at 20 knots	99.48% crosswind coverage	None
Length	7,500 feet (civilian need), 8,000 feet (military need)	6,500 feet	Extend to 7,500 feet (civilian need) – 8,000 feet (military need) (7,500 feet revised to 7,150 feet by Alaska Airlines during the alternatives evaluation)
Width	150 feet	150 feet	None
Safety Area Width	500 feet	500 feet	None
Safety Area Length Beyond Runway End	1,000 feet	1,000 feet	None
Object-Free Area Width	800 feet	800 feet	None
Object-Free Area Beyond Runway End	1,000 feet	1,000 feet	None
Taxiways			
Taxiway Width			
ADG/TDG IV/3 Taxiways	75 feet	86 - 100 feet	Potentially narrow to 50 feet
ADG/TDG III/3 Taxiways	50 feet	50 feet	None
Taxiway Safety Area			
ADG/TDG IV/3 Taxiways	171 feet	140 feet - 180 feet	Widen all to 171 feet
ADG/TDG III/3 Taxiways	118 feet	118 feet	None
Runway/Taxiway Separation	400 feet	600 feet	None
Taxiway Designations	In accordance with FAA Engineering Brief #89A Taxiway Nomenclature Convention	Confusing designation of TW A and some taxiways not designated	Rename in accordance with FAA Engineering Brief #89A
Taxiway A Use as Runway	Clear ROFA around TW A	Era buildings in ROFA	Terminate lease and remove ERA buildings
Direct Access from Apron to Runway	Do not provide direct taxiway access from apron to runway	Taxiways C and D provide direct access from terminal apron to runway	Provide indirect taxiway access from terminal apron
GA Apron	Parking for transient aircraft parking	Inadequate parking when helicopters are using the GA Apron	Develop a separate helipad with adjacent lease lot. Support military development of its own helipad. Consider tenant management of GA apron.

Deadhorse Airport Master Plan



Component	Identified Need or FAA Standard	Existing Condition	Corrective Action
Pavement Condition/Strength	PCI \geq 70	Pavements are expected to be < 70 PCI in about 5 years and to deteriorate very quickly after that	Resurface/reconstruct all pavements by 2027. Consider pavement strength for military aircraft. Consider Taxiway A pavement strength/thickness and grooving because it is used as a runway when the runway is resurfaced. Possible insulation of Taxiways E and F. Evaluate methods to reduce erosion along runway, taxiway, and apron safety areas and shoulders. Address settling and ponding on the apron, including adding insulation.
On-Airport NAVAIDs	Operational modern navaids	Aging NAVAIDs, often not operational	Accelerate FAA replacement and upgrade of various navaids
Airfield Lighting	Operational modern lighting	Aging lighting system in a challenging environment has frequent outages and repairs	Evaluate and rebuild lighting system at same time as runway pavement resurfacing/rehab. Update airfield signage.
Part 77 Surfaces	Protected from penetrations	Some towers on east end of runway	Evaluate towers and extend Part 77 surfaces with runway extension
Lease Lots	Space for expansion	No vacant aeronautical lots. Only a few non-aeronautical lease lots.	Identify new aeronautical and non-aeronautical lease lots with road and taxiway access, including space to address DOD and passenger and cargo terminal needs. Fix irregular building restriction line on existing lease lots.
Helicopters	Provide safe helicopter operating areas	Conflicts between helicopter and parked fixed wing aircraft at GA apron. FOD issues on aprons, taxiways, and runway from helicopter sling loads.	Develop a separate helipad with adjacent lease lot. Support military development of its own helipad.
Roads	Roads to lease lots. Multiple access points to airport.	Some potential lease areas lack road access. Airport Way provides to only access into the airport.	Develop road access to all existing and future lease lots. Develop secondary access into the airport. Develop an airfield perimeter road.
Vehicle Parking	Vehicle parking on all lease lots	Vehicle parking is provided on all lease lots	Size future lease lots to include space for vehicle parking

Deadhorse Airport Master Plan



Component	Identified Need or FAA Standard	Existing Condition	Corrective Action
M&O			
ARFF/SREB	Functional ARFF/SREB	Currently functional but will be undersized and beyond useful life in about 20 years. Equipment size and longer operating hours could also accelerate building replacement.	Replace ARFF/SREB in 15-20 years
Warm/cold storage	Functional warm/cold storage	Warm/cold storage buildings are old and may fail in the next 5 years	Replace warm/cold storage buildings
Fencing and security	Functional perimeter fence and gates	Partial fence. Some of the existing fence and gates are aging.	Complete perimeter fence in 2025/2026. Replace sections of existing fence and gate west of Block 900, Lot 1.
Drainage	Properly draining airside and landside	Flat surfaces and inadequate culverts. Ponding attracting birds.	Complete drainage improvements in 2025/2026. Improve areas not in design north of Deadhorse Drive.
Snow Management	Airport development planned to minimize drifting	Era/Colville lots encourage drifting and limit staff's ability to clear snow	Consider removal of Era development to minimize drifting. Consider consolidating Colville fuel facilities in one location.



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Figure 4-9: Facility Requirements



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