

APPENDIX C

Guide for Justifying Snow Removal Equipment

Provided by the Minneapolis Airports District Office – October 2006

Snow Removal Equipment (SRE) is eligible for federal funding. The amount and size of equipment must be evaluated for each individual airport.

Variables used to determine allowability for federal funding for snow removal equipment include:

- Type of Airport – In general, commercial service airports justify more snow removal equipment than general aviation airports.
- Average Annual Snowfall – Average annual snowfall above 30” a year receives a higher priority than below 30”. Any credible source may be used. Many county seats have the average annual snowfall data available and will provide the data if requested. One Internet source is as follows:
<http://www.hprcc.unl.edu/wrcc/states/mn.html>
- Number of operations – More equipment is justified for airports with more activity. The number of operations can be obtained from the airport’s 5010 Master Record. This information can be found online at:
<http://www.gcr1.com/5010web/>
- Size of Runways, Taxiways, and Apron – The runways, taxiways, and apron area that are critical for aircraft operations are used to justify SRE. Typically, crosswind runways and supporting taxiways are not considered critical, and are not included for SRE justification. For simplicity reasons, half the apron can be considered as critical to aircraft operations. If more than the main runway and supporting taxiways and apron are considered critical, written justification should be provided. Emergency vehicle routes should also be considered as critical area.
- Size of Equipment – The larger the equipment is, the fewer pieces of equipment that are needed; therefore fewer are justified.

A request for SRE should include the following:

- A description of the proposed equipment and estimated cost. If the equipment is to replace existing equipment, an explanation for the replacement should be included. Also, include what you plan to do with the old vehicle.
- A “Snow Removal Equipment Calculations” spreadsheet. Figure 1 shows a spreadsheet that was put together to factor the above variables. An

electronic copy of the spreadsheet can be obtained on MnDOT's website or by calling our office at 612-713-4350.

- Documentation supporting the information used on the spreadsheet, for example, the source of the average annual snowfall.
- A completed "Airport Snow Removal Equipment" sheet (Attachment 1). Note: Commercial service airports have this information included in their certification manual. This list can be provided rather than completing attachment 1.
- A drawing showing the critical areas as shown in figure 2. You can use an ALP sheet, 5010 sketch, Minnesota Airport Directory or other drawing to show these areas.

When the Airports District Office receives the above information, the proposed information will be evaluated for eligibility. Once approved, the SRE would be allowed to be included in the grant process. The submittal can be sent to:

Federal Aviation Administration
Minneapolis Airports District Office
6020 28th Avenue South, Room 102
Minneapolis, MN 55450

Common Questions:

1. If SRE equipment is eligible, is mowing equipment? Currently mowing equipment is not an eligible item for a federal grant.
2. Are radios eligible? Communication equipment for an SRE is eligible as an incidental portion of an SRE.

References:

Advisory Circular 150/5220-20 "Airport Snow and Ice Control Equipment"
Advisory Circular 150/5200-30a "Airport Winter Safety Operations"

The above Advisory Circulars can be obtained on the Internet at:

http://www.faa.gov/airports_airtraffic/airports/resources/advisory_circulars/index.cfm?template=homepage

Snow Removal Equipment Calculations

* Shaded areas automatically calculated.

Airport Name			
Location			
Average Annual Snow Fall			
Type of Airport	Commercial Service		
Annual Operations	>40,000		
		Time allowed for removal per AC 150/5200-30a	0.5 hours.

Critical Snow Removal Areas:

Primary Runway (usually one)

	length (ft) x		width (ft)	=	0	sq. ft.
	length (ft) x		width (ft)	=	0	sq. ft.

Parallel taxiway and one or two principle connecting taxiways.

	length (ft) x		width (ft)	=	0	sq. ft.
	length (ft) x		width (ft)	=	0	sq. ft.
	length (ft) x		width (ft)	=	0	sq. ft.
	length (ft) x		width (ft)	=	0	sq. ft.

Terminal, Cargo, and General Aviation Aprons

Critical apron area assumed as 1/2 of the apron.

50	% Req' x		length (ft) x		width (ft)	=	0	sq. ft.
50	% Req' x		length (ft) x		width (ft)	=	0	sq. ft.
50	% Req' x		length (ft) x		width (ft)	=	0	sq. ft.
50	% Req' x		length (ft) x		width (ft)	=	0	sq. ft.
50	% Req' x		length (ft) x		width (ft)	=	0	sq. ft.

Other critical areas (ie. emergency or ARFF access roads)

	length (ft) x		width (ft)	=	0	sq. ft.
	length (ft) x		width (ft)	=	0	sq. ft.
	length (ft) x		width (ft)	=	0	sq. ft.

Total Area = 0 sq. ft.

Tons of Snow (using 1 in. of snow at 25 .lbs/cu. ft.) 0 tons

Minimum snow removal rate (70% efficiency) 0 tons/hr

Eligible Items	Maximum Quantity	Assumptions Made:
Snow Blower	0	Class 3 (up to 2500 tons/hr)
Plow	0	2 times the # of snow blowers (plows should have equal capacity as blower).
Sweeper	0	1 sweeper per 750,000 sq. ft. (rounded up)
Hopper Spreader	0	1 Hopper Spreader per 750,000 sq. ft.
Front End Loader	0	Front End Loader per 500k sq. ft. of critical apron space.

Note: If an airport requests more than the listed quantities of snow removal equipment, special justification must be submitted.

Figure 1

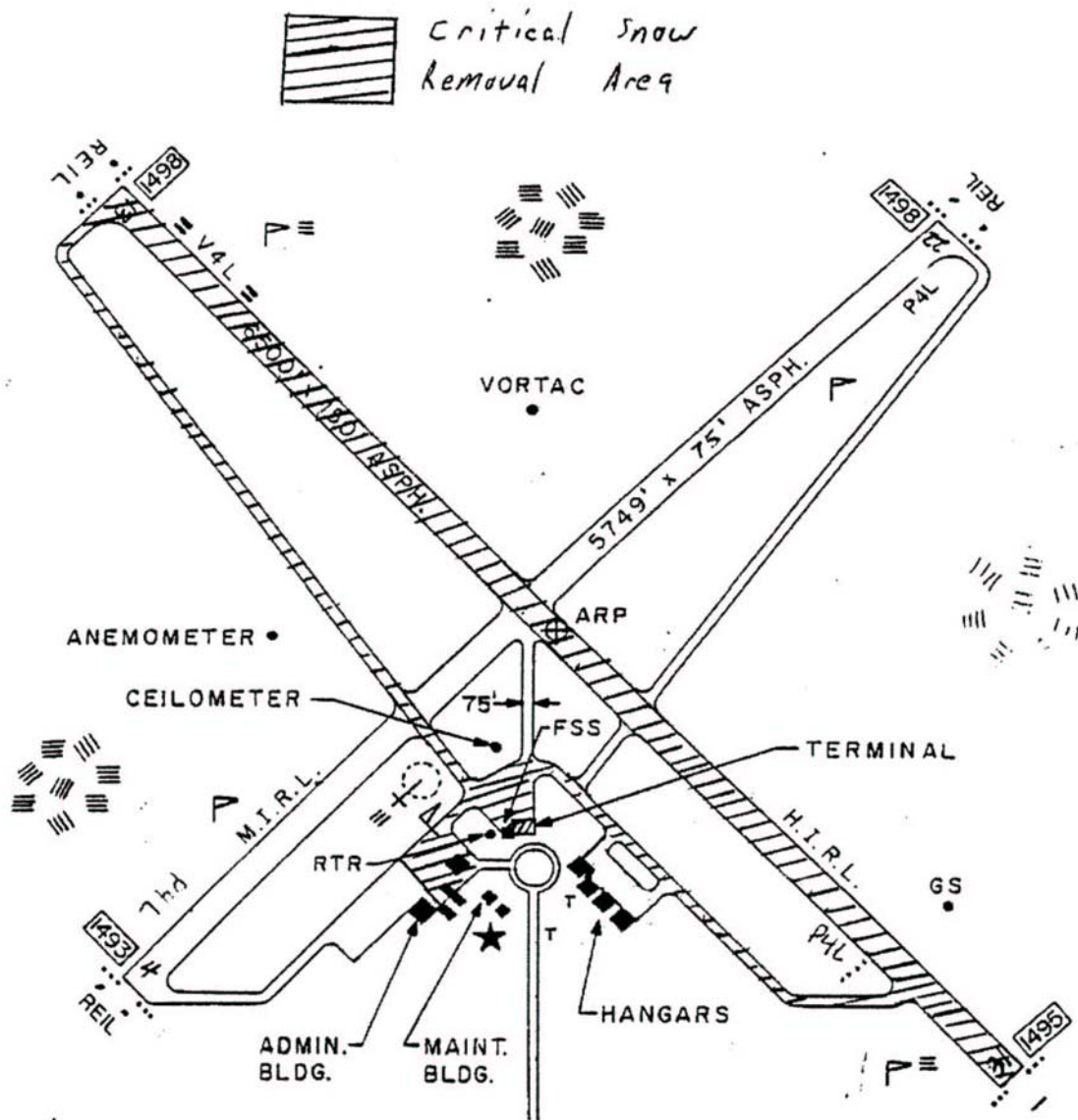


Figure 2

Airport Snow Removal Equipment Inventory Sheet

Airport Name: _____

The airport has the following snow removal equipment:

	Type Example: Blower	Make Example: John Deere	Model	Capacity Tons/Hour	Any Federal Funding?
1.	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____
5.	_____	_____	_____	_____	_____
6.	_____	_____	_____	_____	_____
7.	_____	_____	_____	_____	_____
8.	_____	_____	_____	_____	_____
9.	_____	_____	_____	_____	_____
10.	_____	_____	_____	_____	_____

Acquisition would be for:

1.	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____

Signature of Airport Representative, Date

Attachment 1