

SNOW DISPOSAL SITE SELECTION REPORT

Prepared for:

**Municipality of Anchorage
Department of Public Works
Division of Street Maintenance**

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I. INTRODUCTION

A. Purpose and Scope

This document provides site-specific information and recommendations on existing and potential snow disposal sites within the Municipality. The specific purpose is to obtain governmental approvals to secure the recommended sites for snow disposal operations under the jurisdiction of the Department of Public Works, Street Maintenance Division. CRW Engineering Group received authorization to prepare this document as an extension to an agreement with the Municipality of Anchorage, Department of Public Works, dated April 23, 1986.

Base information for this document was obtained from the document entitled "A Study of Current and Alternative Methods of Snow Removal in Anchorage, Alaska", October 1986, by CRW Engineering Group. This principal study, prepared under the agreement stated above, accomplished three objectives:

1. It presented an overview of current snow disposal methods used in the Municipality and described the economic affects of eliminating each existing disposal site.
2. It analyzed existing and potential snow disposal sites with respect to accessibility, effective size, drainage, soil characteristics, aesthetics, and environmental impact on adjacent areas. The analysis consisted of an overview of each site and its serviceability as a disposal site.
3. It evaluated alternative methods of snow disposal based on capital and operational costs, environmental impact, land use compatibility, local impact, and long term feasibility.

The study concluded that land application of snow would best serve the needs for snow disposal in the Anchorage bowl for the next 10 to 20 years. It further recommended that the existing sites and critical future sites be legally protected to prevent the continuing loss of disposal locations. Further reductions in available disposal locations will significantly affect the economics of snow removal operations in Anchorage.

This "Snow Disposal Site Selection Report" utilizes information presented in the initial study and further identifies each site with a legal description and location map; current owner, status of impending property transfer, leasing conditions, and/or inter-agency agreements; zoning and contiguous zoning districts; and specific recommendations for site reservations and improvements. This document may be regarded as an addendum to the initial study, an extension of

information gathered to assist the Municipality in their snow disposal policy planning. However, both documents are prefaced, supported, and illustrated independently and can be viewed as such.

B. Existing Data

The following data was used in preparation of this report:

1. U.S. Army Corps of Engineers, Alaska District, and Municipality of Anchorage.
Metropolitan Anchorage Urban Study, Volume 4: "Water Quality Management of Snow Disposal Operations," 1979.
2. CRW Engineering Group.
"A Study of Current and Alternative Methods of Snow Removal in Anchorage, Alaska", October 1986.
3. Crevensten, Dan and Markve, Ken. Municipality of Anchorage, Planning Department,
"Interim Snow Disposal Site Study", January 1981.
4. Municipality of Anchorage, Department of Community Planning, Comprehensive Planning Division.
Anchorage Metropolitan Area Transportation Study, "Bragaw Street Extension Feasibility Study" DRAFT (1987).
5. Municipality of Anchorage, Department of Community Planning.
"Tudor Road Public Lands and Institutions Plan", April 1986.
6. Municipality of Anchorage Department of Public Works, Street Maintenance Division.
"Snow Dump Work Session", June 11, 1985.
7. Rue, Sarah for Municipality of Anchorage, Department of Property and Facility Management, Property Management Division.
Heritage Land Bank Inventory Study: "A Report on Municipal Lands in Anchorage", May 1984.
8. U.S. Department of Commerce and State of Alaska Department of Community and Regional Affairs, Division of Community Planning.
Anchorage Wetlands Maps; April 30, 1982.
9. Municipality of Anchorage, Planning Department, Physical Planning Division.
Anchorage Coastal Resource Atlas; Volume One, June 1981.

II. SITE SELECTION

A. Snow Disposal Background in Anchorage

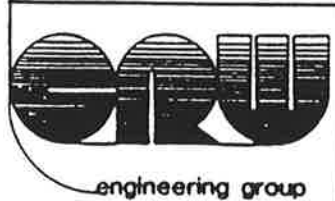
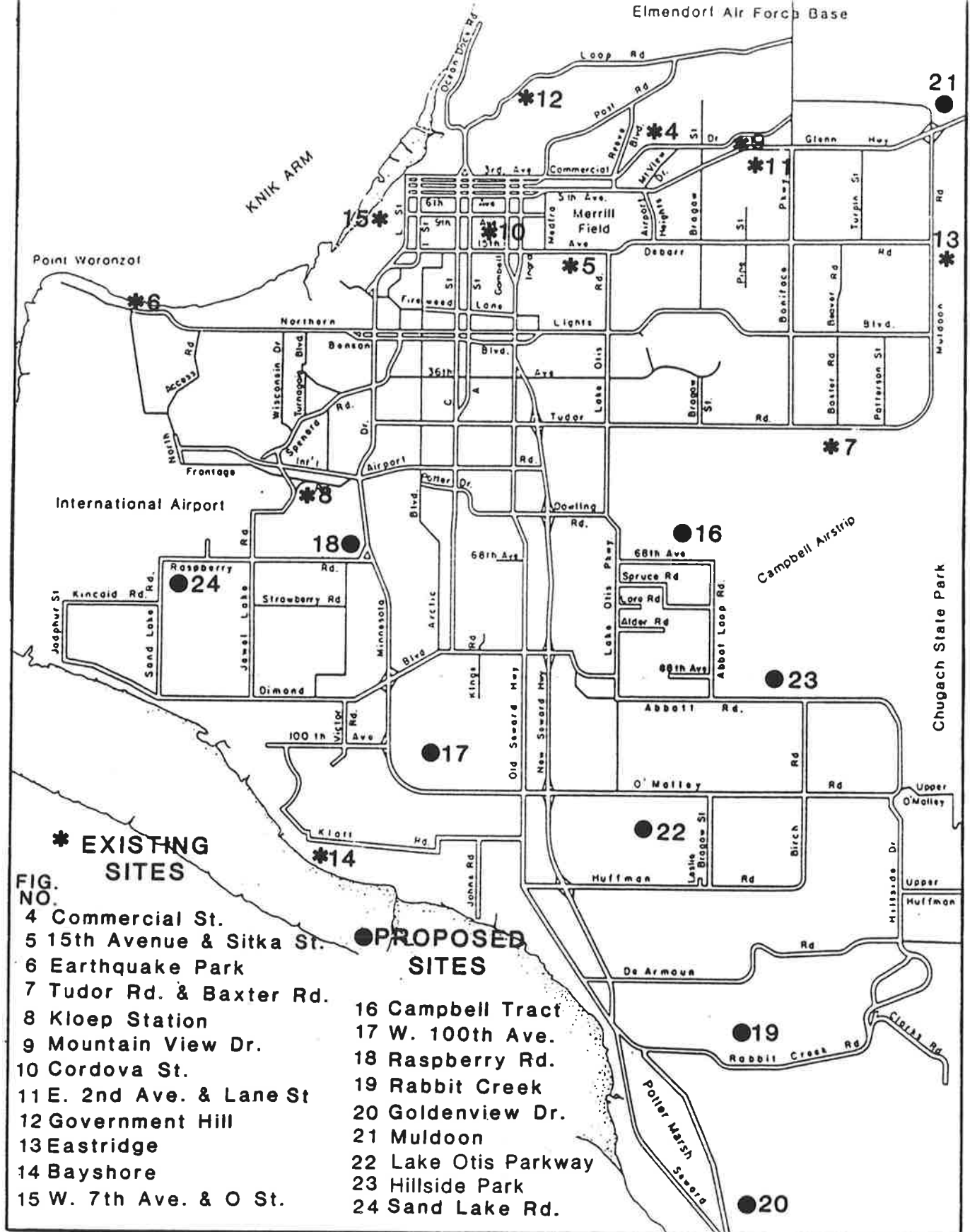
The Street Maintenance Division historically has had a difficult time securing and retaining adequate snow disposal sites. Snow disposal sites are, in fact, unsightly and obnoxious, but they are necessary if we expect the level of transportation comfort and safety of which we have grown accustomed. A snow disposal facility requires a relatively large area to function efficiently and to ensure that the storage of snow and its meltwater are not damaging to the surroundings. The Street Maintenance Division must compete with other municipal agencies to secure control of lands for snow disposal purposes.

Each existing and proposed site location is shown on Figure 1. The sites are further separated in three subgroups characterizing the historical and proposed usage of each site: primary, neighborhood, and emergency. The primary sites are typically larger sites that serve wide areas of the Municipality, while neighborhood sites are generally smaller and serve localized areas in the daytime only. Primary sites may be used during the day or night. Emergency sites are those that are used only if an extremely large snowfall occurs or as other extraordinary circumstances require their use. As an approximation, a primary site is assumed to encompass a serviceable area within a 2.0 mile radius, an average one way haul distance of 1.5 to 2.0 miles, and a maximum one-way haul distance of 4.0 miles. Likewise, a neighborhood site is assumed to encompass a serviceable area within a 0.75 mile radius, an average one-way haul distance of 0.5 miles, and a maximum one-way haul distance of 1.5 miles.

The Municipality is experiencing a continuing trend toward use of primary sites and the discontinued use of neighborhood sites. Over the past 10 years the Municipality has had access to nearly 40 disposal sites, but of these only 12 are now in use. The reasons have been increased population growth with the corresponding subdivision development and arterial and collector road construction. Complaints of the unsightliness and noise have resulted in the loss of these localized neighborhood sites, forcing longer hauls to more isolated sites. The more isolated sites are now fewer in number and the snow disposal activity is busy. Night time operation is common.

B. Evaluation Criteria

Evaluation criteria used for discussion and rating of each site are described below. Information sources used in gathering data are also stated. These criteria were obtained from other sources (Data:1) and abbreviated for applicability in this report. The Site Evaluation Matrix is shown on Figure 2.



Snow Disposal Study

Snow Disposal Site Identification

Fig. 1	Project 8527
	SCALE: N.T.S.

Snow Disposal Sites			Evaluation Criteria														
			OWNERSHIP	TRUCK ACCESS & MANEUVERABILITY	DRAINAGE	GROUNDWATER	SOILS	GLACIATION	MULTIPLE USE	ZONING	AESTHETICS	NOISE	DUST & TRASH CONTROL	PLANT AND WILDLIFE HABITAT	MONITORING	OVERALL RATING	
Fig. No.	Site Size Acres	Description	EXISTING SITES														
4	10	COMMERCIAL STREET	F	F	F	F	F	F	F	U	F	F	F	F	F	F	F
5	8.3	15th AVE & SITKA ST.	F	F	U	F	U	U	F	U	U	U	U	F	U	U	
6	9	EARTHQUAKE PARK	F	F	F	F	F	F	U	F	F	F	U	F	U	F	
7	26	TUDOR RD. & BAXTER RD.	F	F	F	F	F	F	U	F	F	F	F	F	F	F	
8	19	KLOEP STATION	F	F	F	F	F	F	F	F	F	F	U	F	U	F	
9	17.5	MOUNTAIN VIEW DR.	F	F	F	F	F	F	U	F	F	F	U	F	U	F	
10	4.6	CORDOVA STREET	U	U	F	F	F	U	U	U	U	U	U	U	U	U	
11	4	2nd & LANE ST.	F	U	U	F	F	U	F	U	U	U	U	U	U	U	
12	2	GOVERNMENT HILL	U	F	F	F	F	U	U	U	U	U	U	F	U	U	
13	9.5	EASTRIDGE	F	U	U	F	U	F	F	U	U	U	F	F	U	F	
14	12	BAYSHORE	U	U	F	F	F	F	U	U	F	F	F	F	U	F	
15	2	W. 7th AVE. & O ST.	F	U	F	F	F	F	U	U	U	U	F	U	U	U	
PROPOSED SITES																	
16	20	CAMPBELL TRACT	F	F	F	F	U	F	U	U	F	F	F	F	F	F	
17	20	W. 100th AVE.	F	F	U	F	U	F	U	F	F	F	F	F	F	F	
18	20	RASPBERRY RD.	F	F	U	F	U	F	U	F	U	U	U	F	F	F	
19	15	RABBIT CREEK	F	U	U	U	F	U	F	U	U	U	F	F	F	F	
20	20	GOLDENVIEW DR.	F	U	U	F	F	U	U	U	F	F	F	F	F	F	
21	20	MULDOON	F	U	F	F	F	F	F	F	F	F	F	F	F	F	
22	20	LAKE OTIS PARKWAY	U	F	F	F	F	F	U	U	F	F	F	U	F	F	
23	20	HILLSIDE PARK	F	F	F	F	F	F	U	U	F	F	F	F	F	F	
24	20	SAND LAKE ROAD	F	F	F	F	F	F	U	U	F	F	F	F	F	F	



Snow Disposal Study	Fig. 2	Project
Site Evaluation Matrix		8527 Scale: NTS

A favorable or unfavorable rating is assigned to each criterion and an overall rating is assigned to each site. A scoring system was not established to arrive at each overall rating; it would be difficult to weigh each criterion in an equitable manner. Rather, a objective evaluation resulted in the overall rating based on all criteria. Refer to IV. Site Descriptions for site specific recommendations, especially for those sites with an overall unfavorable rating.

OWNERSHIP - Municipal owned parcels receive a favorable rating; anticipated transfer or long term lease arrangements from other public ownerships are favored. Private ownerships are not favored.

The Department of Property and Facility Management researched municipal files for ownerships, status of impending property transfers, and agency management authority. Private ownerships are shown as recorded in municipal tax records.

TRUCK ACCESS AND MANEUVERABILITY - Proximity to arterials and collectors is favored. Large site size for maneuverability is favored. Residential street use is unfavored. Difficult left turns, steep grade roads, and dangerous intersections are unfavored.

DRAINAGE - On-site percolation is preferable over surface drainage, however both on-site percolation and positive drainage via ditches or storm drains is favored. Contaminant removal is necessary prior to the drainage reaching a receiving water. The drainage network should be adequate to handle snow melt flows as well as other drainage runoff. Drainage to Cook Inlet is favored. Uncontrolled drainage off the site is not favored. Extremely steep slopes are unfavored.

GROUNDWATER - Sites which can recharge shallow groundwater aquifers and restore natural lake and pond water levels are favored. Sites which may raise the water table and cause septic tank failures are unfavored.

Snowmelt percolation has been found to pollute shallow groundwater acquifers with chlorides and nitrates in other parts of the country. Sites located in areas recharging the acquifer systems with wells nearby must include provisions for contaminate removal or are unfavored. Contaminates are usually removed by a sedimentation basin with a soil filter bed beneath.

Groundwater information was obtained from James Barrett, hydrologist for OTT Water Engineers. Mr. Barrett visited the majority of sites during Spring 1986 and offered information based on these visits and his personal knowledge of the area.

SOILS - Soils with high to moderately high permeability are favored to support on-site percolation. Extremely silty soils that would pond water and become messy during thaws are unfavored. Soils with some silt are best for filtering action.

Soils information was obtained from Anchorage surficial geology and soils mapping developed as part of the Coastal Zone Management Program, (Data: 9) as well as personal knowledge of CRW Engineering Group and OTT Water Engineers.

GLACIATION - Icing should not cause flooding or erosion problems.

MULTIPLE USE - Multi-purpose areas are favored where snow disposal is compatible with other uses.

ZONING - Industrial or similar land use within the surrounding area is favored. Surrounding residential land use is unfavored.

Zoning information was obtained from municipal zoning maps available from the Department of Community Planning.

AESTHETICS - Sites which are not highly visible are favored.

NOISE - Sites within typically noisy areas are favored. Remote sites or sites isolated by buffering are favored. Sites within otherwise quiet areas are unfavored.

DUST AND TRASH CONTROL - Sites protected from the wind are favored.

PLANT AND WILDLIFE HABITAT - Sites which maintain some habitat on-site are favored. Sites which destroy large trees or impact wildlife habitat are unfavored.

MONITORING - Sites that have drainage channels that permit the collection of meltwater for testing of contaminants are favored.

C. Wetlands Compatibility

Some of the sites included in this report, existing and proposed, are located on the fringes of a protected wetland. A Section 404 permit from the U.S. Army Corps of Engineers to place fill and a Section 401 water quality permit from the Alaska Department of Environmental Conservation would be required for each site within a wetland. Though these locations can be viewed as sensitive and potentially damaging to the surrounding plant and wildlife habitat, there are benefits also:

- other than park and open space, land on the fringes of a wetland are not usually in great demand by other municipal users.
- such land is not as expensive as uplands; uplands make better building lots.
- snow disposal sites are not compatible with nearby developments. Protected wetlands are not readily developed and are likely to remain open space indefinitely.
- snow disposal sites provide ground or surface water recharge to adjacent down-gradient areas. This is a benefit to a wetland. The water must first be cleaned of contaminants, however.

With these stated benefits and the realization of the environmental risks, it was determined that siting of primary snow disposal sites upon the fringes of a wetland are desirable.

D. Existing Sites

There are 13 existing sites presently being used or available for snow disposal. They are:

Existing Primary Sites

1. Commercial Street.
2. E. 15th Avenue & Sitka Street
3. Earthquake Park
4. Tudor Road & Baxter Road
5. Kloep Station
6. Mountain View Drive

Existing Neighborhood Sites

1. Cordova Street
2. E. 2nd Avenue & Lane Street
3. Government Hill
4. Eastridge
5. Bayshore
6. E. 64th Avenue & Ruth Street

Existing Emergency Site

1. W. 7th Avenue & "O" Street

The site identified as Elmendorf Access in the previous report has been incorporated in the discussion of the Commercial Street site because of its similar location.

The Mountain View site was again put into operation this year. Its long term availability previously had been questioned. The privately owned Bayshore site has not been utilized for the past three years. The E. 64th Avenue & Ruth Street site is used only intermittently. Its discussion is incorporated into the proposed Campbell Tract site because of their similar locations. The W. 7th Avenue and "O" Street site has been used only once during the past three years.

E. Proposed Sites

There are nine proposed sites discussed in this report. They are:

Proposed Primary Sites

1. Campbell Tract
2. W. 100th Avenue
3. Raspberry Road
4. Rabbit Creek
5. Goldenview Drive
6. Muldoon
7. Hillside Park
8. Lake Otis Parkway
9. Sand Lake Road

The proposed sites were selected from those known to be available and potentially available for snow disposal purposes from the Heritage Land Bank Inventory Study and from knowledge of personnel from Street Maintenance Division, Department of Community Planning, and CRW Engineering Group. Attention was directed to public owned land, especially those owned by the Municipality. These lands were believed to be more accessible and relevant to securing long term use. The purchase or trading of properties with private parties has historically been expensive for the Municipality and the belief that suitable snow disposal sites could be secured from public lands was the general consensus of those involved.

Other sites were considered for snow disposal purposes but were excluded during evaluation. These sites included:

- 92nd Avenue & Arctic Boulevard site. This site was considered during the previous study but has since been excluded because of its selection as a school site.

- Section 16 Park site east of Lake Otis Parkway and bordered by Abbott Road and O'Malley Road. The Section 16 Park accommodates a golf course, equestrian center, bike and ski trails, baseball fields, and open space. A snow disposal facility was considered as an opposite season shared use with the ball fields, but their compatibility was questioned and extensive encroachment into the wetlands would have been necessary. There were apparent conflicts with bike/ski trails also. The proposed Hillside Park site or Lake Otis Parkway site substituted to fill the need of a snow disposal site in this area.

- Chugach Estates site within Chugach Estates Subdivision near E. 64th Avenue and Lake Otis Parkway. This parcel is privately owned and surrounded by residential development. A sedimentation basin is being constructed on the parcel adjacent to the north fork of the Little Campbell Creek as a municipal water quality project. This site was rejected because of its ownership and obvious conflicts with the contiguous development. The proposed Campbell Tract site was substituted to fill the need for a snow disposal site in this vicinity.