HENNEPIN COUNTY RESOURCE RECOVERY PROJECT

DRAFT ENVIRONMENTAL IMPACT STATEMENT

PART 2: ALTERNATIVE CONSIDERATIONS

For Purposes of Public Meetings on

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1. NO-BUILD ALTERNATIVES

This section of the environmental impact statement discusses building the resource recovery facility with no transfer stations, and not building both the recovery facility and transfer stations. The impacts on the solid waste system and environment and effect on needed landfill capacity are described.

1.1 Resource Recovery Facility without Transfer Stations

1.1.1 Solid Waste System Impacts

The proposed transfer stations are intended to serve as delivery points where solid wastes generated substantial distances from the resource recovery facility can be taken. At the transfer stations, wastes from packer trucks can be consolidated in larger semitrailer-type transfer vehicles to reduce transportation costs and traffic. The transfer stations can supply wastes to the recovery facility on a "metered" basis, providing more or less waste, depending on the volumes received being directly hauled to the facility (HDR TechServ, 1985c). The county also proposes the transfer stations have the same tipping fees which, in turn, help equalize waste management service costs throughout the county. The transfer stations are proposed, therefore, to promote an efficient county-wide waste management system.

Without transfer stations, the county's designation ordinance would specify only the recovery facility as the delivery point for solid wastes (see discussion, 3.1.6.3 Designation Ordinance). Wastes would be hauled directly to the recovery facility, creating some additional impacts and reducing transportation cost savings. Without conveniently located facilities in the suburbs, haulers would be unable to pass on the transportation cost savings to their customers. The county would also have less flexibility to respond to changes in the solid waste system, particularly if additional recovery facilities are built and more waste becomes subject to designation. The county would have less opportunity to supply wastes to the exclusion projects under contractual agreements (see discussion, 4.1.5 System Impacts on the Transfer Stations).

From the standpoint of managing wastes on a county-wide basis, not building the transfer stations could have a significant effect on overall efficiency. If, however, the county chooses to manage waste to the extent only necessary to serve the Greyhound facility, there would be less of an impact. Without the proposed transfer stations, one option would be to use the existing Minneapolis North and South transfer facilities to serve the recovery facility.

The total estimated costs of the resource recovery system with the Greyhound project and transfer stations are $32 to $42 per ton. Eliminating the costs of the transfer stations would result in tipping fees in 1990 of about $24 per ton, attributable to the Greyhound facility alone. Without the transfer stations, household costs in 1990 for solid waste services would be about $89 to $126 per household per year. There would be a loss of 20 to 40 new employment opportunities if the transfer station system is not built.

1.1.2 Environmental Impacts

If the resource recovery facility is built without the proposed transfer stations, more direct haul to the facility can be expected. All vehicles delivering to the facility would be packer trucks, rather than transfer trailers and

packer trucks. The additional truck traffic could increase the need for a larger queuing area. The additional traffic would also result in more noise and the increased potential for safety impacts. The utility requirements would not change from those required with the transfer stations.

Present land uses would continue at the proposed locations if the transfer stations are not built. No properties would need to be acquired by the county at the Bloomington and Brooklyn Park sites. These parcels would remain on the property tax rolls. New industrial activity at both of these locations may occur with or without the transfer stations. At the Hopkins site, it is expected that the county would continue its transportation department storage and maintenance operations. At the Minneapolis South site, the existing transfer station would probably continue to operate at its current level of activity.

Not building the transfer stations would eliminate the potential for erosion and sedimentation problems associated with construction of the facilities. Alteration of present drainage patterns would also be avoided. The Hopkins, Bloomington and Minneapolis South sites would benefit the least from not building the transfer stations, because they are in previously disturbed industrial areas. The most significant prevention of impacts would occur at the Brooklyn Park site, which is presently undeveloped and relatively undisturbed. Parts of the site lie within the Shingle Creek flood fringe and would not have to be filled. As mentioned above, however, future development at the site may occur, even if the transfer facility is not built.

Without the transfer stations, there would be the avoidance of additional traffic at the proposed locations. The increased noise and vehicle emissions associated with the traffic would not occur. The potential for safety problems and nuisance impacts, such as litter, would also not increase. No new utilities would be required, nor increased levels of local fire and police services provided. Drop-off recycling containers could still be provided at the Hopkins and Minneapolis South transfer locations, albeit on perhaps a more limited scale. It's difficult to say to what extent their utilization would be affected.

1.1.3 Impact on Landfill Capacity Requirements

Implementation of the transfer stations could facilitate more efficient county-wide waste management services. The county could better control the movement of wastes, providing specific quantities to various designated resource recovery facilities. From the transfer stations, wastes could be sent to county recovery facilities and other private facilities. Under such a system, the transfer stations would have a direct bearing on promoting landfill abatement activities. Moreover, during shutdowns when recovery facilities are not operating, compacted waste delivered to the landfills in transfer vehicles would save land disposal capacity.

1.2 No Resource Recovery Facility and Transfer Stations

1.2.1 Solid Waste System Impacts

The purpose of the resource recovery facility is to abate the use of landfills and to recover energy and materials. The transfer stations are intended to facilitate this purpose. If the recovery facility and transfer stations are not built, other methods will be needed to manage waste these facilities were

intended to handle. One option would be to develop other resource recovery projects. Another option would be to continue reliance on the use of area landfills. Currently, the vast majority of solid waste generated in the county goes to two landfills in the county and to a number of landfills in adjacent counties. This system of landfills is expected to be exhausted between 1991 and 1993 (see discussion, 3.1.4 Landfill Availability).

State legislators recognized the need to change the present land disposal system with passage of the 1980 Waste Management Act. Two principles embodied in the act are: 1) that counties be responsible for waste disposal, and 2) that land disposal of wastes be minimized. The act provides for counties to develop and implement waste abatement proposals to decrease land disposal, and to site and implement landfills if abatement is not feasible. The proposed project, if not implemented, will diminish the county's ability to further the overall abatement purposes of the state act (see discussion, 4.1.1 Compliance with State Laws and Regional Policies).

The proposed resource recovery project is one element in the county's waste management strategy. The county's draft solid waste master plan proposes a mix of other projects, including waste reduction, recycling and composting (Hennepin County, 1985b). These methods, however, are limited in their ability to abate significant quantities of waste. The draft plan calls for a 20 percent level of abatement to be reached in 1990 by the low-technology methods, waste reduction, recycling and composting. The plan designates the other 80 percent to be abated by large-scale refuse incineration. Other technologies are not being proposed (see discussion, 3. RDF and Alternative Technologies).

If the recovery facility and transfer stations are not built, the county would have to consider other large-scale abatement projects. Another recovery facility could be implemented in the county and/or the county could consider the implementation of intercounty projects. Projects being developed by Anoka, Dakota, Ramsey and Washington Counties have some capacity to handle additional waste supplies (see discussion, 3.1.7 Solid Waste Projects Outside of Hennepin County). The Pacific St. alternative site could be a possible location for another recovery facility in the county (see discussion, 6.1 Pacific St. Site).

The ability of the county to implement another resource recovery project hinges on a number of factors: siting, financial, environmental and markets. Other locations that are considerable distance from the Greyhound site could affect the usefulness of the various proposed transfer station locations.

1.2.2 Environmental Impacts

If the resource recovery project is not developed, none of the costs described in the socioeconomics section of the EIS would probably be incurred (see discussion, 4.10 Socioeconomics). There would be no potential for employment or energy revenues resulting from the recovery facility construction or operation. In addition, the taxing authorities for the Greyhound site would not realize the property tax gains from the recovery facility.

The visual upgrading provided by the new development and landscaping at the Greyhound site would not occur, which could be perceived as a negative impact for the site as a whole. The Greyhound site is considered an underutilized industrial plot. The garage would remain on the site and the ample parking space would continue to exist. Aesthetically, a 213-foot stack would not be needed at the site, which could be considered a positive impact on visual aesthetics for receptors of the stack.

The Greyhound site-generated traffic would decrease to no daily trips under a no-construction scenario (see discussion, 4.7 Transportation Impacts). Increased traffic-related safety and accident concerns would not occur, as well as potential noise and nuisance impacts. Additional emissions caused by facility-generated traffic would be avoided, as well as stack emissions from the refuse combustion.

Not building the recovery facility would have little impact on the surrounding area. The amount of traffic adjacent to the site would likely remain unchanged, assuming a no-growth scenario for the area. All the utilities on and adjacent to the Greyhound site would remain as is. The 36-inch storm sewer will not need to be rerouted, existing services will not be changed and additional services will not be required. No construction would eliminate the potential for related erosion and sedimentation problems. The alteration of present surface drainage patterns would be avoided.

Without the recovery facility, there would be no need for an ash disposal facility. On the other hand, if the solid wastes not abated by the recovery facility are land disposed, this would continue the potential for the contamination of groundwater and surface water. All of the landfills that have operated in the Metropolitan Area since 1970 are contributing to environmental or potential health problems. Groundwater contamination is of considerable concern because leachate migration is difficult to detect, extremely difficult to control or correct, and may continue for decades after facility closure. Without both the recovery facility and transfer stations, there would be less potential to screen out hazardous materials that would ultimately end up in landfills. Landfills will also generally be located away from the main center of waste generation, and transportaiton costs could increase as a result.

Not implementing the recovery facility will result in a loss of energy savings. The project would result in an overall decrease in the combustion of fossil fuels to meet the energy needs of Hennepin County. Operation of the plant will produce the energy equivalent to that produced by about 547,500 barrels of oil or about 164,300 tons of coal on an annual basis (HDR TechServ, 1985c).

The environmental impacts of not building the transfer stations would be the same as previously described (see discussion, 2.1.2 Environmental Impacts).

1.2.3 Effect on Needed Landfill Capacity

If the county were to choose landfilling in place of the resource recovery project, additional landfill capacity would have to be developed. The Council's solid waste guide requires 8,726 acre-feet of landfill capacity to be developed in the Metropolitan Area. Without the Hennepin County project, another 4,972 acre-feet of capacity would be required. This is the equivalent of probably two new landfills.

2. ALTERNATIVE PROJECT SIZES

The primary objective of the proposal is to economically minimize the need for the land disposal of Hennepin County's solid waste. With this objective in mind the following discussion evaluates two potential facility sizes in terms of their ability to handle the wastes projected for the present and future. Two facility sizes were evaluated: 606 tons per day and 1818 tons per day.

2.1 Alternative Resource Recovery Facility Sizes

Scenario 1 - One Boiler (606 tons per day)

Scenario 1, which is one boiler has the capacity to treat about 181,000 tons per year. Since the actual amount of waste in the County which needs to be burned exceeds this capacity, it is assumed that the facility will be operated continuously at its rated capacity. For this scenario there is no excess capacity. In fact the facility has a "capacity shortage" of about 500 tons per day and this waste must be landfilled without treatment.

It is noted that 225 acre feet of landfill will be required if the 182,500 TPY (225 TPD) of waste are not treated at all. Treatment in a mass burn facility reduces this land space requirement in two ways. First, the waste burned does not require landfill space. Second, the residue and ash that do require land disposal are much more dense than the raw waste, and require less space (volume) per ton than does a similar amount of waste. Consequently the reduction in land space requirements (volumetric reduction) noted when a mass burn facility is used, is even greater than the weight reduction previously discussed.

In spite of the weight and volume reductions noted, Scenario 1 is undersized to meet the disposal needs of Hennepin County. Use of a one boiler facility would require the County to actively pursue additional means of reducing annual land disposal requirements. These methods might include additional recycling and/or composting of industrial and commercial waste, a mass-burn facility, co-composting waste and sewage sludge, pyrolysis of waste to produce liquid or gaseous fuels or biological processing to produce liquid fuels such as ethanol. However, there are potential problems associated with the application of these alternatives. For example, pyrolysis and biological processing of solid waste to produce fuel are still experimental processes. Additional recycling and composting requires active and voluntary participation by the commercial and industrial sectors as well as the public. Co-composting of solid waste and sewage sludge is a promising technology,but one that requires additional research and the development of an end use market for the soil conditioner that is generated by this process.

The use of a one boiler facility would substantially reduce the solid waste landfill requirements of the County. However, it would not, in itself, minimize the amount of landfill capacity required by the County. Adoption of this scenario would still require an additional commitment, in cost and manpower, to promote other alternative techniques for minimizing land-fill requirements.

Scenario 2 - Three Boilers

Scenario 2 assumes the use of three 606 TPD boilers (1,818 TPD total). This facility would have a maximum rated capacity of about 554,000 TPY. This facility could process much of the county's waste (about 75 percent of the average).

A three-boiler facility would allow for the daily and seasonal fluctuations associated with solid waste generation and for lower than expected public participation in the recycling and composting programs. State legislation, however, prohibits the construction of a resource recovery facility in Minneapolis which processes more than 1,000 TPD average (365,000 TPY). Therefore, implementation of such an option, although possibly desirable, is infeasible under current law.

2.2 Alternative Transfer Station Facility Sizes

Bloomington East

Potential air quality impacts would not be significantly altered, although they would be lessened if the project were reduced in size. Vehicular emissions would be approximately one-half those estimated for the facility operating at design capacity. Similarly, potential odor from the refuse would likely be less since approximately one-half the amount of waste would be handled. There would be no significant change in impacts on geology and soils with a smaller transfer station. Similarly, no significant change in water quality would be expected with a smaller facility. Operation of a reduced throughput facility would not alter potential impacts on land use and zoning since such impacts are associated with the mere presence of the proposed land use. Transportation truck traffic would be decreased to nearly one-half the proposed number of trips if the facility size is reduced. Significantly less truck traffic would be generated. Noise levels would be reduced by one to two decibels if the project were downsized. There would be no significant effect on utilities from a reduction in project size. Impacts on socioeconomics would likewise not be altered and employment would be expected to remain unchanged. Impacts on property values and tax payments would likely be unchanged. There would be no significant difference in cultural or aesthetic impacts with a reduction in facility size. Any aesthetic impacts would be associated with the presence of the facility, rather than its throughput capacity. Ecological impacts would be slightly reduced if less land were disturbed.

Brooklyn Park East

Potential air quality would not be significantly affected if the project were reduced in size. Vehicular emissions would be reduced by about 50 percent. Similarly, odor from the refuse would be less. There would be no significant change in impacts to geology or soils with a smaller transfer station. If the facility were constructed on a smaller scale outside of the flood fringe, an improvement in water quality could result. Land use and zoning impacts would not be altered by a reduction in facility size. Land use impacts relate primarily to the presence or absence of the proposed facility. Truck traffic would be reduced by about 50 percent, with a subsequent reduction in noise levels of from one to two dBA. Utilities and socioeconomic impacts would not be affected by a reduction in project size. Likewise, impacts on property

values, cultural and aesthetic resources would be unchanged if the facility were smaller. Cultural and aesthetic resources would be associated with the mere presence of the facility rather than its potential throughput capacity. Ecological impacts would be reduced if construction required less land and would take place out of the flood plain.

Hopkins DOT

Vehicular emissions would be reduced by about 50 percent if the facility were reduced in size. Similarly, the potential for odor from the refuse would be less since approximately one-half the amount of waste would be handled. There would be no significant change in impacts on geology and soil. No significant change in water quality would be expected. Land use and zoning impacts are associated with the presence or absence of the facility. As a result, reducing the facility size would not be expected to reduce potential impacts on land use and zoning. Truck traffic would be one-half that of the proposed action. Noise levels could be reduced by as much as two dBA relative to that of the proposed project. There would be no significant effects on utilities, socioeconomics or property values. Downsizing of the facility would have no significant effect on aesthetic impacts. Any aesthetic impacts would be related to the presence of the facility in the community, not its throughput capacity.

Minneapolis South

Vehicular emissions would be 50 percent less with a smaller facility. Potential odors might also be less. There would be no significant change in impacts to geology or soils. No significant change in water quality would be expected. Land use and zoning impacts likewise would not be altered by a reduction in project size. Land use and zoning impacts are more closely related to the mere presence of the facility. Truck traffic would be reduced by 50 percent with a reduction in noise levels of one to two dBA. There would be no significant effects on cultural and aesthetic resources.

3. RDF AND ALTERNATIVE TECHNOLOGIES

3.1 Operational Differences

Mass-Burn Process*

In this technology, the waste-to-energy system accomplishes both volume reduction of refuse and the use of generated heat to produce steam and/or electricity. The incinerator is typically fed by a reverse reciprocating stoker and integrated with a multipass, welded waterwall boiler. The system generally employs electrostatic precipitator baghouses, or scrubbers for removal of particulates. Mass-burn incinerators burn municipal refuse that has not been preclassified or pretreated. The solid waste is incinerated as received, and only large, bulky items are separated. Over 400 mass-burn facilities operate worldwide, and refinements have occurred in the technology over the last 20 years.

Refuse-Derived Fuel (RDF) Process*

In the RDF technology, municipal solid waste is typically first sorted to separate out noncombustibles and then shredded to near-uniform particle size before being introduced into a high-velocity column of air (air classification) to "blow-off" the light, primarily organic material. The product of this process is RDF. This technology can be used in many combinations to process waste, and it is, therefore, possible to produce RDF fuel in several forms. The heavy, primarily inorganic, fraction can be channeled through a series of separation processes to sort out iron, as well as aluminum and glass. Depending on the particular system and the desired separation, such processing can include secondary shredders, screens, magnetic separators (ferrous metals), eddy current separators or "aluminum magnets" (aluminum), froth flotation units and optical sorters (glass).

A primary objective of the production of RDF is the removal of nonburnable, inorganic materials in order to enhance the combustion process. A second objective is to facilitate the mechanical recovery of recyclables from the inorganic fraction. Experience to date reveals that over 80 percent of an RDF facility's product revenue comes from the sale of the fuel, not the sale of recyclables.

Pyrolysis Process**

In a pure pyrolysis process organic material is thermally cracked into solid char and volatiles in the absence of air. Heat for cracking is usually generated by electrical resistance heating, or by combusting fuel gas either in a firebox that surrounds the reaction chamber, or in fire tubes inserted into the reaction chamber. In practice, pure pyrolysis is achieved only in batch reactors where

*National Center for Resource Recovery, Inc.

**Fuels from Biomass and Wastes, Klass and Emert, 1981, Ch. 11, pp. 207-237 Ann Arbor Science Publishers, Inc.

complete removal of air is possible. The operation of more efficient continuous fed units is accompanied by air injection and subsequent partial combustion of volatiles and carbon. As a consequence, the quality of the resultant fuel gas is degraded relative to batch reactor gas by the presence of a large proportion of noncombustible nitrogen and carbon dioxide. Typically, organic waste is chemically broken down at high temperature (900 to 3000°F) in the absence of oxygen. A gaseous fuel or an oil-like liquid fuel can be produced through this process.

Several alternative pyrolysis technologies have been suggested. The Mansato Landgard system is designed to shred incoming waste to equal size. It is then fed into a rotating refractory kiln and pyrolized at a maximum temperature of 1765°F. The resulting gases are then burned to produce steam for sale. An alternative process is the Andeo-Torrex system in which pyrolysis occurs in a vertical shaft. Air is preheated and blown into the bottom of the furnace which is fed from the top with refuse. Noncombustibles are recovered and steam is produced from the combustion of the pyrolysis gases. Union Carbide has pioneered a technology called the Purox process. The pyrolysis gases are compressed and refined into a fuel comparable to natural gas. Another alternative, the Occidental flash pyrolysis system, also produces fuel gas, but can be altered to compress the gases to a liquid fuel.

Co-Composting

Co-composting is a method of managing solid waste and sewage sludge. Municipal co-composting systems typically operate in five sequential steps: preparation, digestion,curing, finishing or upgrading and storing. Co-composting** is the decomposition of organic solid wastes to a relatively stable humus-like material. Decomposition is accomplished by various micro-organisms including bacteria, actinomycetes and fungi. the by-products of aerobic decomposition are principally carbon dioxide, water and heat. Temperatures during aerobic processes are within both mesophilic and thermophilic ranges. Optimum temperatures have been reported to be between 95-149°F (35C-65C°).

The various composting technologies are windrow pile, aerated static pile and mechanical systems. Mechanical composting systems include those processes which utilize automated equipment for turning and aerating the compost during the digestion phase. This includes rotating drum digesters, circular tank-rotating arm digesters and multideck digesters which mechanically pass the compost system between deck-serated static pile systems. Aerated static pile systems involve placement of the material over air jets that introduce oxygen to accelerate decomposition of the wastes. Windrow pile systems include those processes which involve piling material in rows with periodic turning by front-end loaders or manually for smaller scale systems.

**National Waste Processing Conference, 1980 Washington, D.C., p. 122.

In most modern co-composting, the aerobic process is used rather than the anaerobic. There are three major reasons for this: time of process, temperature and odor problems. Aerobic decomposition with microorganisms requires free oxygen to decompose the waste. The speed of decomposition is oxygen dependent. Too little oxygen and the process may either slow down or become anaerobic. Thus, in forced digestion systems, oxygen must be introduced by force draft or agitation. The forced digestion system reduces the windrow composting time of approximately six weeks to around five to seven days.

In the aerobic systems, the temperature reaches 60° to 70°C or higher. This level of heat in the processing and finishing destroys pathogenic organisms, weed seeds and fly ova. With the anaerobic systems, temperatures are only about 38° to 55°C and pathogens may survive. Also, anaerobic decomposition produces foul odors. In aerobic decomposition, the process progresses rapidly without excessively unpleasant odors. The major odor and pest problems in the windrow method are either from cooler outer regions or pockets of the windrow where the oxygen has been exhausted and anaerobic decomposition is taking place.*

3.2 Evaluation of Alternative Processes

Capital Cost

Costs of existing plants were identified and typical costs of facilities were estimated as follows: mass-burn-- (600-1000 cogeneration) $55 to $85 million; RDF (dedicated boilers at 600-2000 tpd) $45 to $120 million; and co-compost (sludge mixed at 300-600 tpd) $20 to $40 million. Pyrolysis plants on a 1,000 ton-per-day scale do not appear to be practical; costs for a 100 ton-per-day system were estimated at $2 to $4 million.

Operating Cost

The following discussion is for a typical generic facility. In the initial years of operation, an RDF facility using an existing boiler will have a lower operating cost, per ton of solid waste processed, than a mass-burn facility (although the NSP proposal showed a higher operating cost for this project). Over a 15- to 20-year period, the net costs for an RDF facility would be expected to rise due to equipment maintenance and replacement costs. Therefore, an RDF facility has the potential for significantly lower initial operating costs relative to mass-burn, but over the project life it is believed that the cost of RDF and mass-burn systems are about equal. Pyrolysis and co-compost operating costs are comparable to those of the mass-burn and RDF technologies although the co-compost estimates are at the low end of the range identified. Specific proposals will be different from those discussed above (see Proposals for this specific project).

Reliability

Mass-burn technology is proven nationally and worldwide with more than 400 successful operations. In general, RDF technology has not

*Energy from Solid Waste Recent Developments; Energy Technolgoy Review No. 42, Pollution Technology Review No. 56, Noyes Data Corp.; 1979; pp. 57-59.

proven as reliable as mass-burn. This technology was initially introduced in the US. on a significant basis in the early 1970s. Typical problems include: excessive shredder maintenance needs; fire and explosion hazards, in-plant air quality and waste storage. It is possible to address these problems, as at least seven RDF plants currently operating in the U.S. demonstrate. Pyrolysis systems are complex and must conform to critical performance criteria. Large plants have not been viable in the U.S. and none are operational on a full-scale basis. Despite a fairly simple process, only two co-composting plants are believed to be currently operational in the U.S.

Thermal EFficiency

Mass-burn plants generally achieve waste volume reduction of 90 to 95 percent, and thermal efficiencies of 60 to 75 percent. RDF plants achieve higher thermal efficiencies with processed waste, but less waste volume reduction because some organic material is not recovered in processing and becomes a residual that is landfilled. Pyrolysis should produce a low-sulfur, high-quality fuel. It is potentially a more efficient and versatile technology than incineration. It is not yet a proven technology and still is in the experimental stages. Co-composting produces recoverable gas only as a by-product.

Availability

Mass-burn technology is available on a small-scale modular basis, where a preassembled product is delivered, or on a larger-scale field-erected basis custom designed for the amount of energy output desired. RDF technology and vendor expertise are available. No U.S. pyrolic system, other than an inoperative plant in Baltimore, is known to have progressed from the experimental or pilot plant stages. Only two co-compost plants are believed to be operational in the U.S. However, the technology has been widely used in Europe. There are companies in the Midwest with the interest and capability to develop co-compost plants.

Environmental Concerns

Mass-burn concerns include: fugitive dust, ash, odors, noise, residue (fines, unburned combustibles, metal, glass/rock), microorganisms (aerosols), organic compounds (flammable gases and vapors, and pesticides), and occupational health considerations. The primary consideration is air pollution, but control technologies including electrostatic precipitators and scrubbers can control emissions.

It is generally believed that most types of air emissions from RDF fired boilers are no more objectionable than those from mass-burn fired boilers. Processing to concentrate organic material of uniform size is believed to contribute to more complete combustion. Other environmental concerns such as noise, traffic and materials handling

risks are known to exist. These concerns (other than noise impacts which tend to be greater for RDF) appear to be of the same order of magnitude as those associated with similar size mass-burn facilities. Fire and explosion hazards have been associated with RDF facilities. High dust levels appear to be common within RDF plants. EPA studies have indicated additional in-plant health risks from microorganisms. Excessive dust buildup can potentially be a source of explosions.

Pyrolysis processes produce emissions containing tars, particulates and corrosive gasses that can be reduced with electrostatic precipitators and scrubbers. Water effluents are also produced that contain acid gases, corrosive tars and oily substances that must be removed.

In co-composting, if anaerobic digestion occurs, potential odor and health problems can result. In addition, since the aeration piles are in many instances exposed, there is concern regarding infiltration by vectors and/or other animals. There could be a potential for water pollution through stormwater run-off and aquifer infiltration. Proper design and operation of aerobic and enclosed (anaerobic) systems can overcome these problems. In general, co-composting is currently in the experimental stages in the U.S. despite extensive use in Europe and relatively little is known regarding full-scale plant operations. The Council's solid waste plan suggests that the counties coordinate efforts with the Metropolitan Waste Control Commission and/or septage haulers to obtain adequate quantities of sewage sludge or septics to develop solid waste co-composting projects. The marketability of the co-compost material remains to be determined.

4. ALTERNATIVE SITES

The Metropolitan Council, at its meeting on Aug. 22, 1985, authorized solid waste staff to begin the amendment process on the Hennepin County resource recovery EIS scoping document. The Council directed staff to identify specific alternative sites to the designated sites for the transfer stations and the resource recovery plant. The Minnesota Environmental Quality Board rules require EISs to discuss reasonable alternatives.

Staff utilized review criteria in conjunction with readily available information to identify the sites. Previous Hennepin County siting reports were used, as well as aerial photographc and land use plans. Reports on specific sites were also available from the Minnesota Pollution Control Agency and the Minnesota Waste Management Board. Documents from the Council's files were also available for several sites.

On Oct. 10, 1985, the Council amended the EIS scoping document to include the following sites in the EIS as reasonable alternatives (see Figure 4-1).

ALTERNATIVE TO THE "MINNEAPOLIS GREYHOUND" RESOURCE RECOVERY SITE

1. Pacific St. Site

ALTERNATIVES TO THE BROOKLYN PARK TRANSFER STATION SITE

1. 73rd Av. N. and Winnetka Av. Site

ALTERNATIVES TO THE HOPKINS TRANSFER STATION SITE

1. Westwood Industrial Site--Eden Prairie
2. Railroad Site--Eden Prairie
3. Greenhouse Site--Eden Prairie
4. National Lead/Golden Auto Parts Site--St. Louis Park
5. Pyrofax Site--St. Louis Park

ALTERNATIVES TO THE BLOOMINGTON TRANSFER STATION SITE

1. Airport Southwest Site--Bloomington
2. I-494 and Nicollet Site--Bloomington
3. Freeway Landfill Site--Dakota County

SITE ALTERNATIVES TO THE SOUTH MINNEAPOLIS TRANSFER STATION SITE

Alternative locations for the proposed South Minneapolis Transfer Station were evaluated using the site screening criteria and no alternative sites were found. Further, the proposed site is already used for transfer station purposes by the city of Minneapolis, and the city wishes to retain this location for the transfer station. No alternative sites were suggested in any comments regarding the proposed facility. Therefore, it was determined that no alternatives to the proposed site will be evaluated in this EIS.

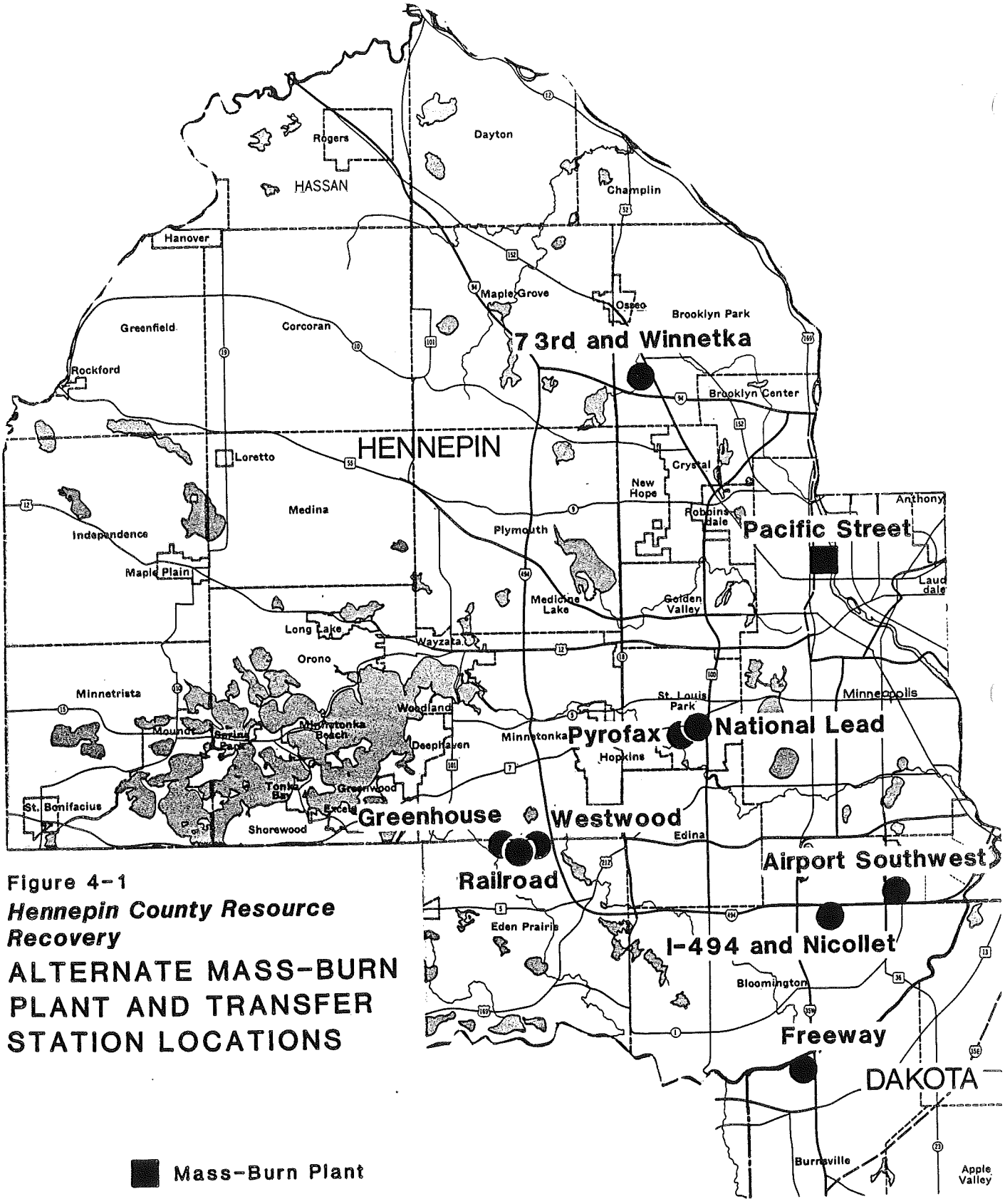


Figure 4-1

Hennepin County Resource Recovery

ALTERNATE MASS-BURN PLANT AND TRANSFER STATION LOCATIONS

4.1 Pacific St. Site

4.1.1 Site Description

The Pacific St. site is an alternative for the proposed Greyhound site. The site lies north of 26th Av. N., west of the Mississippi River, south of 28th Av. N. and east of the Soo rail line (see Figure 4.1-1). The site is currently occupied by eight businesses and city activities. The three largest occupants in area on the site are Minneapolis Gas Co., Heron Cement Co., and Williams Steel and Hardware, Inc. The Minneapolis North transfer station is also located on the site.

The site surface area is approximately 20 acres. The distance to the primary energy market (Minneapolis Energy Center) is approximately 2.5 miles to the south. The site is approximately 1.5 miles north of the proposed Greyhound site.

Truck access to the site would be via I-94 or Hwy. 52 using Washington Av., Lowry Av., 2nd St., Pacific St. or 26th Av.

4.1.2 Affected Environment and Environmental Impacts

4.1.2.1 Air Quality

The facility is sized and designed to combust 1,000 tons of refuse daily. The plant site has been shifted 1.5 miles to the north, altering the location of maximum plant impacts. The basic contextual discussion of the facility's impacts and local air quality is described in Section 4.2. The change of facility site does not require remodeling the effects of the plant since the meteorological data used was regional rather than site-specific, and the stack height and characteristics would remain the same.

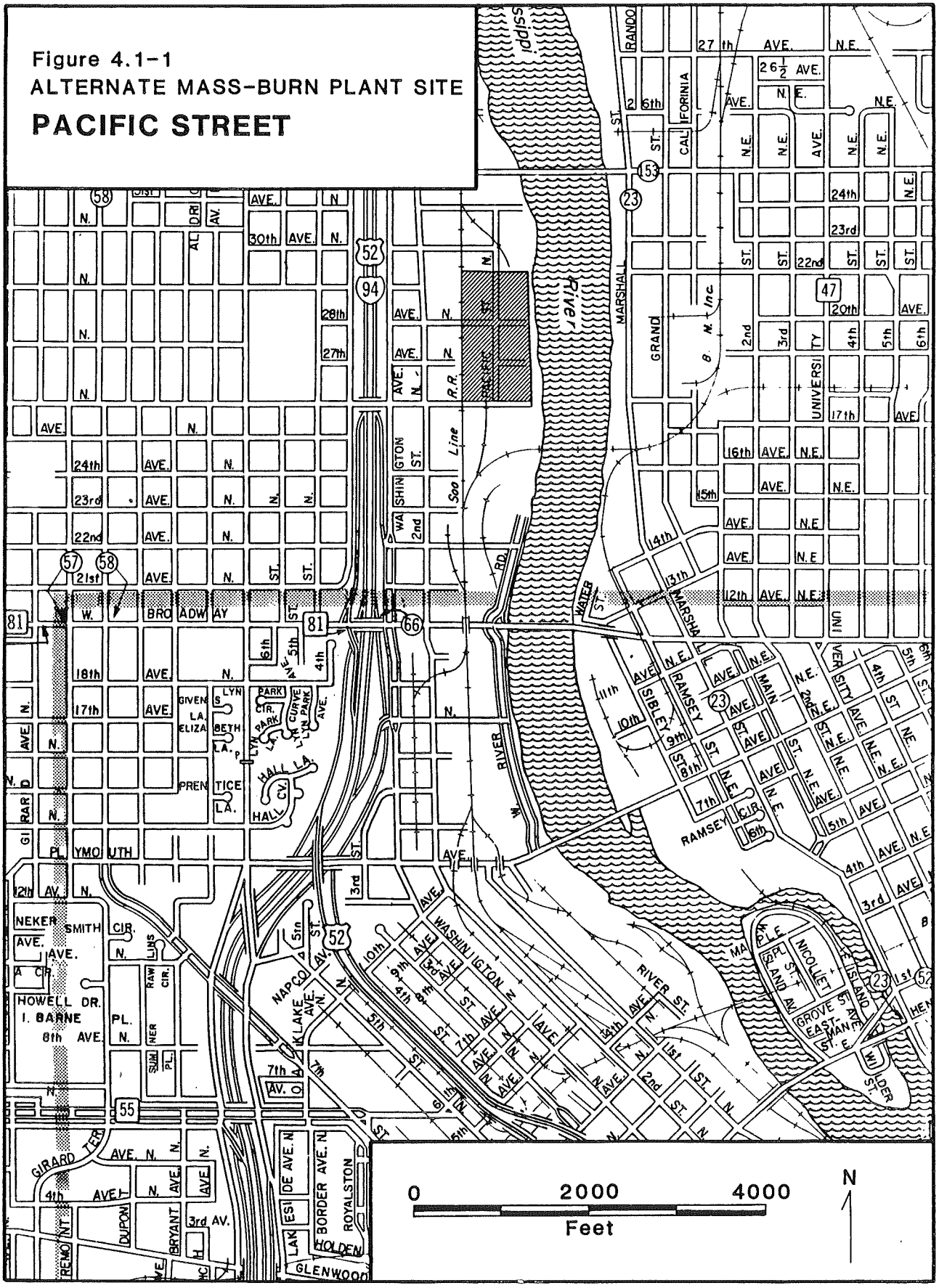
The movement of the effects of the plant to the Pacific St. site would shift the maximum impact away from the downtown SO_2 hot spot to the GAF hot spot in North Minneapolis. The maximum one-hour impact of the proposed facility in the GAF hot spot would be 25 ug/m^3. This would be an increase of 4 percent from 620 ug/m^3 to 645 ug/m^3 in the impacted area. Although this does represent a degradation of air quality in the vicinity of the site, it represents a very small incremental increase toward the 1,300 ug/m^3 standard. Results of the 24-hour and annual modeling and analysis show similar levels of impact on air quality in the vicinity of the site.

The facility would generate 150 refuse truck arrivals in excess of the 50 currently traveling to the site. The additional truck traffic to the site would further congest traffic at Broadway and Washington Avs. The traffic volume and level of service at the intersections are very similar to the intersection of Olson Memorial Hwy. and 7th St. N. (Section 3.6.1.2). It is anticipated that the carbon monoxide levels generated by the traffic on Broadway and Washington Avs. would not exceed the levels identified in Table 4.2-14. The background concentrations used for the Greyhound site are very conservative for the Pacific St. site due to the distance of the Pacific St. site to the central business district. Exceeding the carbon monoxide standards is not anticipated at the site.

The human health impact of the facility emissions would be the same as those identified in Section 4.3.

Figure 4.1-1
ALTERNATE MASS-BURN PLANT SITE

PACIFIC STREET



4.1.2.2 Geology and Soils

The soils on site are characterized by clay-loam soils that are poorly drained. The depth to groundwater is typically 10 feet in areas with this soil type. During the wet season, the groundwater may be 1 to 3 feet in depth for a period of up to 90 days. The depth to bedrock is not known for this site (USDA, 1974) (Hennepin County Soil Survey).

4.1.2.3 Surface Water

The site is immediately adjacent to the Mississippi. The runoff from the facility will be directed to a storm sewer and would not directly impact the river. The site is currently covered by a very high level of impervious surface. Demolition of the existing structures, and construction and landscaping the facility would reduce the impervious surface and mitigate runoff currently generated on site. Operations procedures preventing release of raw waste material to the environment are described in Section 1.1.

4.1.2.4 Land Use and Zoning

The site is currently zoned M3-2 by the city of Minneapolis. The zoning and Minneapolis land use plan designate the future use of the site as light industrial. The area to the west and north of the site is used predominantly for warehouse operations. The adjacent businesses would be buffered by the Soo rail line and 28th Av. N. The nearest occupied residence is over 1,600 feet west on the west side of I-94. The presence of a noise barrier wall would prevent any adverse and visual effects from the site. The zoning and land use is not fully compatible with the surrounding land use; however, the facility would not be expected to have an adverse impact on the surrounding land use.

4.1.2.5 Transportation

Incoming trucks from 17th and Washington, or 3rd and Broadway exit ramps could go via either Washington Av. N. or 2nd St. N. to 26th Av. N. and easterly to the site. Either route appears to be satisfactory, with some advantages or disadvantages to both. A four-way stop sign control at 17th and 2nd Sts. similar to 26th Av. may be needed. The outgoing trucks would generally traverse these routes to 22nd Av. and Washington, or 3rd and Broadway with a greater advantage to use 2nd St. N. for ease of turning movements. The roadbeds all appear to be satisfactory.

All of the common assumptions of Section 3.6.1 would apply in regard to the 1,000 ton-per-day mass burn facility that is being considered for the site.

The site would use the I-94 freeway entrance and exit ramps near W. Broadway. The Pacific St. site could feasibly use the Dowling ramps as "backup emergency" alternate routes. It is slightly farther but in a generally uncongested area. There are no grades on the affected routes, particularly at traffic signals, to impede loaded trucks.

Most of the traffic generated would be concentrated in the Broadway-Washington Av. area. This is also one of the most congested areas in that vicinity. Improvements have been made with the I-94 construction, and a general decrease in traffic volumes in the area due to the freeway has been observed.

Trucks that normally dump at the city's north side collector presently would continue to go directly to the new facility on this site. Approximately 50 vehicles would continue to traverse the same routes that they do today and would, therefore, be included in the existing traffic counts. Presently, approximately 250 tons per day of waste are carried to the site.

The peak arrival period at the facility would be from 10 a.m. to noon with up to 25 trucks per hour. The remaining volume of 750 tons per day would arrive predominantly in packer and transfer trucks. With the assumptions that truck trips would be fairly evenly distributed throughout a 16-hour day, there would be an additional nine vehicles per hour arriving at the facility.

The peak hour volumes are generally about a 10:1 proportion to average daily trips, with the heavy commuter routes like 2nd St. about 8:1, and a "crosstown" route like W. Broadway about 11:1. The two streets with highest volumes in the area of concern are W. Broadway and Washington Av. N. Both of these streets maintain a fairly high volume throughout the day, indicating less of a commuter nature and less directional in nature. Actual directional counts are not available. Also, the 1981 counts available are before I-94 was open completely, and the Plymouth Av. Bridge was and still is closed for reconstruction. If we assume a "worst case condition" of a 2:1 directional split in volumes of a maximum peak hour volume of approximately 1,400 per hour, the worst direction would be approximately 940 per hour for two lanes plus a left-turn lane. These are fairly high, but the addition of nine trucks per hour or 1 percent should not have a significant effect. Counts for 1983 indicate about a 20 percent reduction in volumes in the area, which is far greater than this 1 percent addition. It is also anticipated that there will be at least some reduction in the MTC usage of the Northside Garage at 26th Av. N., which should have an additional improving effect. The opening of the 3rd and 4th St. connectors to I-94 and the Plymouth Av. Bridge should reduce some of the present congestion, particularly during rush hours.

4.1.2.6 Noise

The existing noise on site is 64 dBA for L_{50}, 67 dBA for L_{10}, and 65 dBA for L_{eq}. The site is located entirely in an area that would be considered commercial in nature. The applicable noise standards in the vicinity of the site are 65 dBA for L_{50}, 70 dBA for L_{10} and 68 dBA for L_{eq}. The site is currently within the existing and proposed MPCA noise standards for the commercial area that abuts the site.

The facility will have little impact on the residential area. The impact from the facility will be 53 dBA for L_{50}, 56 dBA for L_{10}, and 54 dBA for L_{eq}. The background noise levels generated by the freeway adjacent to the residential area are near or exceed the noise standards. The impact of the project would not be measurable at the nearest residential receptor.

The transportation impacts of the noise generated at the facility along 2nd St. N. may be as great as 5 dBA. With background levels, the noise adjacent to the roadway will be very close but should not exceed noise standards.

4.1.2.7 Utilities

The utility requirements for the facility are described in Section 4.9.2 Greyhound Site. The facility will require a 10-inch water main to service the water needs. The necessary facilities are available on 2nd St. and may be extended to the facility. The facility will require an 8-inch service line connected to the sewer system at 26th Av. N.

The runoff from the site is currently going to storm sewers on site. The project would decrease demand on the existing storm sewer service.

The waste-to-energy facility will require electric service to supply a reliable source of power to plant auxiliaries. The service will be approximately 3,000 KVa and will be used for lights, motors, and power requirements of process control equipment, closed circuit television and a fire alarm system. The resource recovery facility will produce 40 MW of electric power for sale to NSP through a 13.8 KV underground interconnection. Electric conductors will be installed underground to prevent any adverse visual impact. The facility will, thus, result in a net increase in electrical production.

The facility will generate 200,000 pounds per hour of steam at a pressure of 300 psig, which would be available for export. A 12-inch steam line would be required. Although a market for steam has not been negotiated, the preferred alternative is a steam line connection to the MEC steam line on the north side of 7th St. S. between Hennepin Av. and Nicollet Mall. The cost for construction of the steam line would be approximately $15,777,000.

Existing and proposed utilities are shown in Figure 4.9-1.

4.1.2.8 Socioeconomics

The proposed facility would be located almost one-fourth of a mile away from any substantial residential development. Impacts to the general population and to housing in the census tract in which the proposed facility would be located are not anticipated.

New employment opportunities would be created by the construction (as many as 210 employees) and operation (45 employees) phases of the resource recovery facility. The employment and payroll information is provided in Section 4.10.1.

The use of the site as a resource recovery facility represents a heavier industrial use than the existing uses. The facility may enhance the industrial area in which it sits. The construction of the resource recovery facility on the site may improve property values in the area. The production of steam could attract new industry to redevelop the area, improving the general industrial area.

The Pacific St. site contains one parcel under construction with an assessed value of $1,712,400 (County of Hennepin, July 2, 1985; property tax records). The taxing authorities of jurisdiction would lose $165,213.13 annually (1985 assessments) in revenues as a result of county purchase of the parcels.

The city would require payment for special assessments of this amount at the time of the ownership transfer.

4.1.2.9 Aesthetics and Cultural Resources

This site is located in an industrial area and is currently occupied by eight businesses including Minneapolis Gas Co., Heron Cement Co., and Williams Steel and Hardware, Inc. The Minneapolis North transfer station is also located on the site. With the possible exception of the stack (213 feet high), no impact on the aesthetics of this industrial area are anticipated.

4.1.2.10 Ecological Resources

The entire site has been used for heavy industrial purposes. All of the native vegetation and habitat has been eliminated on site The landscaping plan for the site would provide habitat for birds that currently does not exist on site.

The plant's proximity to the river may permit the facility to draw cooling water from the river. The effect of drawing cooling water from the river has not been assessed.

4.2 73rd Av. N. and Winnetka Av.

4.2.1 Site Description

The alternative to the Brooklyn Park East transfer station site is located at the corner of 73rd Av. N. and Winnetka Av. (see Figure 4.2-1). This site is in the southwestern area of Brooklyn Park approximately one-half mile north of the designated site. The city's comprehensive plan shows this area as planned for general industrial use. The site is comprised of two parcels of land. The first is a 5-acre parcel adjacent to the west of the intersection of 73rd Av. N. and Winnetka Av. The present land use on this parcel is a house used as a business office, and a vehicle salvage operation. The second parcel is approximately 2.5 acres and is adjacent on the west to the 5-acre parcel. This 2.5-acre parcel is undeveloped and located in the floodplain of Shingle Creek. Access to this site would be via Winnetka, or the extension of 73rd Av. N. to Boone Av. This extension is planned by the city for completion by 1987.

The area surrounding this site is primarily undeveloped, industrially zoned land. To the west is Shingle Creek and its floodplain, which is zoned conservancy district (or public open space). North of the site is vacant land zoned I-2 general industrial. Northeast of the site is a "mini-storage" facility currently under construction. East of the site is vacant land zoned I-2 with the exception of a church at the corner of 73rd Av. N. and Winnetka Av. This church is the Minneapolis Independent Epistolic Lutheran Church, and currently has gatherings one Sunday per month. Directly south of the site is a relatively new truck repair business. Across Winnetka Av. from the truck repair business is one residential home.

4.2.2 Affected Environment and Impacts

4.2.2.1 Air Quality

Pollutant concentrations measured at monitors within the Minneapolis central business district show air quality over the area to be generally good.

Although there are no ambient monitors located in the vicinity of the four proposed transfer stations, ambient pollutant concentrations at these locations are expected to be at or below levels measured in to central business district due to the fewer number of pollutant sources.

Impacts on air quality at the site during construction will involve two to three months of grading and earth moving, and a total construction time of seven to nine months. Emissions during construction will result from diesel-powered construction equipment, vehicle travel to and from the site by 30 to 40 workers, and particulate emissions of approximately 45 tons per month during grading operations.

Because the Hopkins-DOT site is expected to have the highest traffic volume of the four proposed transfer stations, a determination of compliance with the ambient standards for CO at Hopkins-DOT implies compliance at the other transfer stations. Predicted ambient standards compliance at the Hopkins-DOT site implies compliance at the remaining transfer stations as well (ERT, 1985).

Odors that do become a problem at transfer station facilities can generally be traced to design or operational problems. The proposed Hennepin County transfer stations will be designed to contain odors within site buildings and to minimize packer truck queuing. The proposed plan calls for daily removal of waste to nearby landfills. Thus, the facilities should not be a source of odor to surrounding neighborhoods.

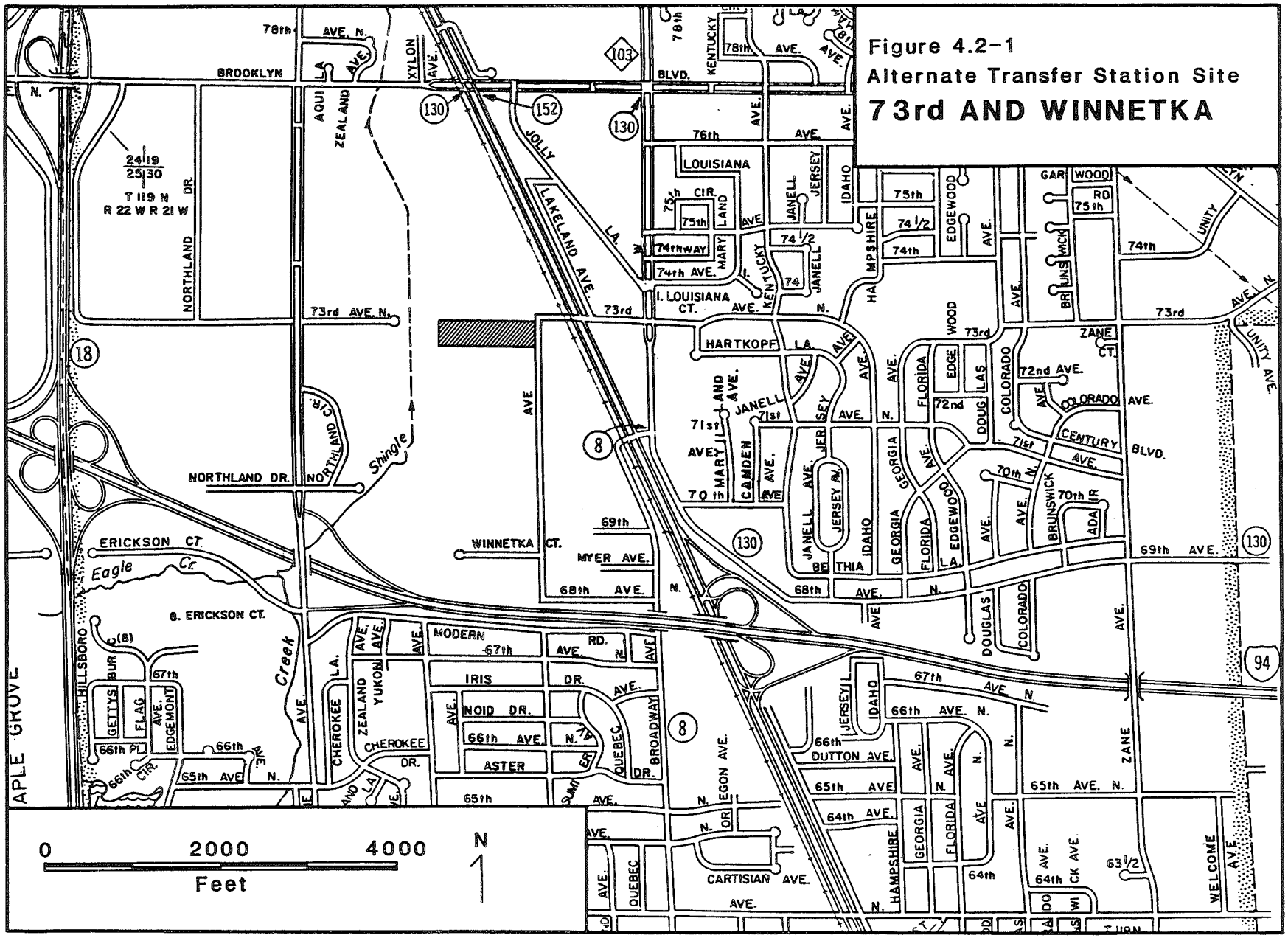


Figure 4.2-1
Alternate Transfer Station Site
73rd AND WINNETKA
0
2000
4000
Feet
N
24 19
25 30
T 119 N
R 22 W R 21 W
BROOKLYN
78th AVE. N.
AQUILA
ZEALAND
XYLON AVE.
LAKELAND AVE.
JOLLY
NORTHLAND DR.
NORTHLAND CT.
Shingle
NORTHLAND DR.
73rd AVE. N.
LOUISIANA
76th AVE.
75th CIR.
75th LAND AVE
74th WAY
74th AVE.
MARY
KENTUCKY
JANELL
JERSEY
IDAHO
HAMPSHIRE
EDGEWOOD
GARWOOD RD
UNITY AVE.
73rd AVE. N.
HARTKOPF LA.
ZANE CT.
72nd AVE.
COLORADO AVE.
CENTURY BLVD.
71st AVE.
CAMDEN AVE.
FLORIDA
GEORGIA
BRUNSWICK
70th AVE.
69th AVE.
WINNETKA CT.
MYER AVE.
68th AVE. N.
ERICKSON CT.
Eagle Cr.
Creek
S. ERICKSON CT.
HILLSBORO
APLE GROVE
GETTYS
FLAG
EDGEMONT AVE.
66th PL
66th CIR.
65th AVE. N.
CHEROKEE
ZEALAND
YUKON
MODERN RD.
67th AVE. N.
IRIS DR.
NOID DR.
66th AVE. N.
ASTER
65th AVE. N.
QUEBEC
BROADWAY
DUTTON AVE.
64th AVE.
CARTISIAN AVE.
DOUGLAS
ZANE
WELCOME AVE.
63 1/2
103
130
152
18
8
94

In the immediate vicinity of the transfer stations, however, there may be some odor from waste in the MSW packer trucks if vehicles are in line waiting to unload. Transfer truck trailers that may occasionally need to wait for a truck tractor may become an odor source. However, this impact will probably be minor, because the Hennepin County transfer stations are designed to handle peak deliveries efficiently.

In general, municipal collection vehicles will not pose an odor problem, because the MSW will remain in the vehicles only as long as it takes to travel from the collection area to the transfer stations or directly to the resource recovery facility. Odors at the transfer station fall into two major categories: hydrogen sulfide (rotten egg odor) and organic. These odors would occur if refuse was stored on site for long periods. The operation of the transfer stations will generally not allow refuse to collect for more than five hours. No odor complaints have been received a a result of the existing Minneapolis South transfer station operation (City of Minneapolis, August 1985).

4.2.2.2 Geology and Soils

This 7.5-acre site is approximately one-half mile north of the designated Brooklyn Park East solid waste transfer station site. Most of the site is developed as a vehicle salvage yard, with the westerly 2.5 acres vacant grassland. The entire site slopes toward the west with a total vertical relief of approximately 10 feet. West of the site is the floodplain of Shingle Creek.

The site is in the Mississippi Valley Outwash geographic region and contains predominantly sandy, well-drained soils. A Soil Conservation Service soils map shows the site is predominantly Dickman sandy loam with slopes of 0 to 6 percent. A small area of Hubbard loamy sand is located along the northwestern edge of the site and slopes toward the Shingle Creek floodplain. The soils on this site are well to very well drained.

Depth to bedrock in this general area is approximately 100 feet and consists of glacial till and post-glacial sediments.

No other geologic hazards, such as active faults, sinkholes or steep slopes, are known to exist on or adjacent to the site.

The construction of the transfer station will involve the excavation, grading and filling of surficial soils. A house and other buildings located on the property will be removed. Native soils existing on the site will be disturbed during grading and in areas where structures and paved surfaces will be placed. Excavated soils will be reused on site to the greatest extent practical. Demolition debris from the removal of the house will require landfilling at a permitted facility.

4.2.2.3 Surface Water

The site is located in the central portion of Shingle Creek Watershed. The watershed contains 4 creeks and 13 lakes. General drainage for the Shingle Creek Watershed is from west to east. Brooklyn Park, the city where this site is located, is drained by storm sewer leading to the Mississippi River and by small tributaries of the Mississippi River, principally Shingle Creek. Periodic creek flooding normally occurs in the spring when snowmelt combines with spring rain. The proposed facility would be situated along the east side of the Shingle Creek conservancy district, which is mostly Type 3 wetland. This marsh area contains the floodway and flood fringe of the Shingle Creek 100-year floodplain.

This site slopes slightly from east to west, and drainage would be primarily surficial over the well-drained soils present on the site. A small amount of runoff would flow toward the east to an existing catch basin located about 80 feet south of the site on Winnetka Av. From this catch basin, runoff would enter an 18-inch pipe and flow south to a large (78-inch) concrete storm sewer that runs underground toward the west and discharges into Shingle Creek.

Because of the permeability of the soil west of the site coupled with the filtration characteristics of the natural vegetation present, minimal impact on the volume and quality of stormwater runoff from this site is anticipated.

Runoff from the developed portion of the site will be collected and diverted by a storm sewer that will discharge directly into Shingle Creek. A permanent holding/settling basin is necessary to purify storm runoff prior to the eventual discharge to Shingle Creek. Surface water impacts related to contact with stored waste materials would not occur because the tipping and storage areas will be fully enclosed. Wastewater generated by the facility (approximately 100 GPD) will be contained on site and discharged to the municipal sanitary sewer for treatment.

By using standard techniques and practices during the construction phase, adverse surface runoff impacts to the adjoining Type 3 wetland and associated waterway can be reduced. Construction impacts would be short term, lasting only about nine months. With the incorporation of an on-site drainage system, including an in-line drop box structure, impacts to Shingle Creek are not expected to be significant.

4.2.2.4 Land Use and Zoning

The 73rd Av. N. and Winnetka Av. site is located in one of the larger industrial areas of Brooklyn Park. Approximately 5 acres of the 7.5-acre site is developed as a vehicle salvage operation with a house used as an office. Across Winnetka from the site is the Minneapolis Independent Epistolic Lutheran Church. A substantial amount of land surrounding the site is vacant; however, new industrial and commercial development is occurring throughout this area of the city. For example, northeast of the site was undeveloped in mid-summer 1985. By fall of 1985, a mini-storage facility was under construction.

Adjacent on the west of the site is the Shingle Creek conservancy district designated for future use as parkland. Adjacent northwest of the site is Shingle Creek Park. The Brooklyn Park comprehensive plan update notes that the creek offers an opportunity for lunch-hour relaxation, trails and interpark pedestrian travel.

The city's comprehensive plan shows the western one-half of the site as planned for public/quasipublic use while the eastern one-half is planned for industrial use. The zoning for the area, from the conservancy district (park) zone on the west to Hwy. 169 on the east and for about three-eighths of a mile north and south of the site, is I-2 general industrial. Permitted uses in this zone include builder and contractor yards, sand and gravel sales, and bus or truck storage and maintenance. Conditional uses include junkyards, steam or diesel power plants, and truck terminals.

The major components of the proposed transfer station are an entrance/exit road, scale house with incoming and outgoing scales, a tipping area, an office, a parking area and truck storage area. Most of the site is at present used as a vehicle salvage business. The site's land use will be altered once the

facility is constructed. Construction of the facility will result in the displacement of the existing salvage business.

There are several residences within the industrial and business zoned districts along Winnetka Av. near the site, as well as a church on industrially zoned land across from the site. The facility would not be fully compatible with these residential uses. The facility would, however, be consistent with the city's comprehensive plan, zoning, and other existing industrial land uses in the vicinity. Residential lands to the southeast would be buffered from the facility.

New industrial and commercial expansion is occurring on undeveloped lands. These lands are slated for industrial growth in the city's comprehensive plan update. The proposed industrial land use would be consistent with the comprehensive plan, insofar as an industrial use is proposed.

The site is located within a general industrial-zoned district I-2. Conditional land uses allowed within the I-2 district are far more encompassing than other commercial or industrial zoning in Brooklyn Park. They include uses with characteristics similar to a transfer station. Based on the city planning office's interpretation of the zoning ordinance, the proposed facility is suitable in a heavy industrial zone (Gary Berg, 1985).

4.2.2.5 Transportation

Access to the 73rd Av. N. and Winnetka Av. site will be primarily from Hwy. 169 to 73rd Av. N. Once 73rd Av. N. is extended to Boone Av. N. (planned for completion in 1986), some traffic would be expected on 73rd from Boone Av.

Hwy. 169, just east of the site, is a four-lane roadway (two lanes per direction) with a 40-foot median divider. Winnetka Av. is a two-lane local street with 35- and 40-foot cross sections. Access to the site can be obtained from Hwy. 169 via 73rd Av. N. to Winnetka Av. At the site, 73rd Av. N. is a two-lane local roadway approximately 25 feet wide.

Intersection capacity analyses were conducted using the morning and evening commuter peak hour traffic demands to determine existing levels of service. Capacity analyses measure operating characteristics of an intersection by letter designation.

The intersection of Hwy. 169 and 73rd Av. N. functions at LOS "C" operations during both the morning and evening peak hours. This represents acceptable operating conditions with average delay to traffic.

Vehicle generation at the transfer station was based on a design capacity of 800 tons per day (tpd). The anticipated operating capacity is 400 tpd. Refuse trucks will carry 5 tons per truck, transfer station trucks will carry 18 tons per truck and private vehicles will carry 350 pounds per vehicle to the transfer station.

The transfer station is expected to employ 10 persons on an 11-hour basis. About 160 packer trucks (design capacity) are expected to use the transfer station on a daily basis. During the morning commuter peak hour (7-8 a.m.), about 15 truck trips in and out will be made. During the evening peak hour (4:30-5:30 p.m.), 10 packer truck trips will be made in and out. About 45 transfer trucks (design capacity) are expected to use the transfer station on a daily basis. During the morning and evening peak hours, 5 transfer truck trips will be made in and out of the transfer station. About 160 private vehicles

(design capacity) are expected to use the transfer station on a daily basis. Private vehicles (including employees) will make about 25 trips in and out of the transfer station during the morning peak hour and 20 trips in and out during the evening peak hour.

Of the three intersections (Hwy. 169 and 73rd Av. N.; W. Broadway and 68th Av. N.; Hwy. 169 and W. Broadway) analyzed by ERT during the 1989 baseline scenario, two (Hwy. 169 and 73rd Av. N.; Hwy. 169 and W. Broadway) will operate below a LOS "C" condition. The intersection of Hwy. 169 and 73rd Av. N. will operate a LOS "D" condition during both the morning and evening peak hours. This intersection is currently unsignalized and carries heavy traffic demand on Hwy. 169. Hwy. 169 has two through lanes of traffic with exclusive right-turn lanes at this intersection. The separation of the grass median at the intersection of 73rd Av. N. allows vehicles to store in the turn lane area before proceeding onto either direction of Hwy. 169. This not only increases the capacity of the 73rd Av. N. approaches, but also increases the possibility of accidents. This intersection should be signalized to achieve LOS "C" or better operations.

Of the three intersections proximate to the proposed transfer station, two will not change in LOS condition from the 1989 baseline condition. Hwy. 169 and 73rd Av. N. will remain at a LOS "D" during morning and evening peak hours. Traffic improvements for this intersection are discussed under the 1989 baseline condition and will not be impacted due to development of the facility.

4.2.2.6 Noise

The noise limits tabulated for this study are based upon requirements of the existing and potential future MPCA standards. The existing standard employs L_{10} and L_{50} noise level values (the noise levels exceeded 10 and 50 percent of the measurement time, respectively). The potential future standard (Minnesota State Register, Mar. 19, 1985) is based upon L_{eq}; the equivalent steady level equal to the energy average of the actual time varying level over the measurement time. Also included, where appropriate, are "background" or L_{90} noise level data (the level exceeded 90 percent of the measurement time).

There are no federal noise regulations that apply to the operation of resource recovery facilities or transfer stations. Thus, only state regulations and local ordinances apply to the proposed project.

The Brooklyn Park ordinances deal exclusively with noise as a nuisance and do not set noise level requirements.

In Brooklyn Park, residential (or where the dumpsters are within 300 feet of residential units) refuse collection is limited to 6:30 a.m. to 8:30 p.m. on any day and is prohibited on Sundays and legal holidays.

The 73rd Av. N. and Winnetka alternative transfer station site is located north of Interstate Hwy. 94, west of Hwy. 169, and east of Shingle Creek Park. The access road is 73rd Av. N. off Hwy. 169. The closest noise-sensitive receptors in the area are a home south of the site, and a home and two churches across Winnetka Av. There is also an office complex under construction west of the site across Shingle Creek.

Noise measurements were performed by ERT during the period Oct. 30 to Nov. 1 during dry, calm (less than five mph) winds. All tests were done during MPCA daytime hours 7 a.m. to 10 p.m. Transfer stations will operate from 7 a.m. to 6 p.m. The location of the sensitive receptor was a house on the site that is being used as a business office for an existing vehicle salvage operation.

Tests show that MPCA noise standards of 60 dBA for L_{50} and 65 dBA for L_{10} (both daytime standards) were met with readings of 58 dBA and 61 dBA, respectively. The proposed MPCA standard of 63 L_{eq} was also met with an average reading of 60 dBA. Although some additional noise at the transfer station is expected to increase these readings, it is anticipated that noise levels would remain below MPCA limits.

4.2.2.7 Utilities

The city of Brooklyn Park's water supply is provided by a series of drift and rock wells throughout the city. Currently, the average daily demand is 4 mgd; the peak is 16-17 mgd. The current capacity with all wells producing is 19 mgd. The city owns and operates both underground and above-ground storage facilities.

An eight-inch ductile iron municipal water main is buried in the right-of-way of Winnetka Av. N. The static pressure at 7300 Winnetka Av. N. is 75 psi, and the residual pressure is 45 psi--with a flow of 2,106 gpm (HDR, 1985).

The sanitary sewer system of Brooklyn Park is based on a system of interceptors owned and operated by the MWCC, and city trunk and subtrunk lines. Brooklyn Park's sanitary sewage is discharged into the Metropolitan Wastewater Treatment Plant, south of downtown St. Paul.

An existing eight-inch sanitary sewer is located in Winnetka Av. N. This sewer line flows south approximately 2,000 feet to a 10-inch subtrunk line that flows in a westerly direction. The subtrunk connects to an interceptor line just west of Shingle Creek.

A system of storm water laterals, subtrunks and trunk lines serves this portion of Brooklyn Park. A catch basin located approximately 80 feet south of the site connects an 18-inch pipe with a 78-inch concrete storm sewer. This 78-inch sewer directs storm water runoff west until it discharges into Shingle Creek (Lenthe, 1985).

There are two gas mains in Winnetka Av. N.: a 12-inch, 175 psi line located 19 feet west of the east right-of-way, and a 2-inch, 60 psi line located 13 feet east of the 12-inch line (HDR, 1985).

NSP maintains a 13.8 kV, 3-phase overhead line on the west side of Winnetka Av. N. adjacent to the east side of the site. Northwestern Bell provides telephone service on the west side of Winnetka Av. N.

The water, sanitary sewer, storm sewer, gas, fire protection, electric and telephone service requirements for all the transfer stations will be similar. A facility consisting of a tipping area, load-out area and minimal office space and toilet facilities will require the following utility capacities:

- 2-inch domestic water service (35 GPM Peak Flow--500 GPD Total)
- 4-inch sanitary sewer (25 GPM Discharge--100 GPD Total)
- 10-inch storm sewer (1.92 CFS--862 GPM)
- 6-inch fire protection service (850 GPM)
- 1 1/4-inch low-pressure gas service or smaller, depending on final building heating requirements
- 100 ampere, 120/240 volt, single-phase (assuming a connected load of less than 25 kVA--in excess of 50 kVA 3-phase service will be required)

All service requirements for a transfer station at this site either exist or are readily available with adequate capacities to meet the facility's requirements.

4.2.2.8 Socioeconomics

The city of Brooklyn Park has experienced rapid growth over the last 20 years. For example, during the period 1970 to 1980 the population increased from 26,230 to 43,220. Like most communities in the Metropolitan Area, the rate of growth in households was even higher. The number of households more than doubled from 1970 to 1980 with a growth from 7,846 units in 1970 to 15,803 in 1980.

The site is subject to three property tax authorities: Hennepin County, the city of Brooklyn Park and Independent School District 279. The site is also subject to the miscellaneous levies rate assessed by the Metropolitan Council.

The assessed market values of land parcels at the proposed transfer station site and selected lands adjacent to the site are included in Table 2.8.1. Total tax loss if this site were to be developed as public land (transfer station) would be approximately $5,969.

Table 2.8.1

No. of Parcels	Assessed Market Values (ASM)	Total ASM	Adjacent Parcels
1	$42,840	$42,840	$4,400; $222,555; $17,948

4.2.2.9 Aesthetics and Cultural Resources

Structures on the site are a house used as an office, and buildings used for the vehicle salvage business currently in operation. South of the site is a relatively new truck repair business. Since most of the site has been previously disturbed, there are no structures of historic, architectural, cultural or engineering significance. In addition, since the site is previously disturbed, the chance of this site containing previously unreported archaeological resources is greatly reduced.

4.2.2.10 Ecological Resources

A mixture of industry and open grasslands surrounds the site to the north and south. The Shingle Creek area, an undeveloped conservancy district under the authority of the Brooklyn Park Parks Dept., borders the transfer station site to the west. Shingle Creek Park follows the floodway of Shingle Creek for approximately 2.25 miles from its headwaters in Eagle Lake to its outlet to the Mississippi River. The park encompasses the wetland area associated with Shingle Creek and has a maximum width of 600 feet. Construction of a hard-surface running and biking trail along the western site of Shingle Creek has been proposed, although no date for this project has been announced (Berg, 1985).

The wetland areas within Shingle Creek Park will not be affected by a transfer station at this site. Permanent impacts to the adjacent wetlands may result

from an alteration of the surface drainage patterns on the site and from the increase in industrial activity in close proximity to the wetland. Heavy truck traffic and noise associated with construction and transfer operations may cause some sensitive marsh species to abandon the area. This is not expected, however, to have an overall impact on population levels with the Shingle Creek wetland ecosystem.

4.3 Westwood Industrial Site

4.3.1 Site Description

The Westwood site is an alternate site for the proposed Hopkins facility. The site is located approximately one-half mile from Interstate Hwy. 494 on County Rd. 67 in the city of Eden Prairie (see Figure 4.3-1). Access to the facility is via County Rd. 67 to Bury Dr. S. The site is located in an industrial park, and the parcel selected for analysis is currently under development for a light industrial building.

The analysis for the facility will be based on the facility size of 1,200 TPD corresponding to the Hopkins facility. The operational level will be assessed at 600 TPD (see Part 1, Section 4).

4.3.2 Affected Environment and Impacts

4.3.2.1 Air Quality

The proposed site will generate traffic, relate air pollutants including dust and carbon monoxide emissions. There are no ambient monitors in the vicinity of the site. The modeled air quality for the area does not show any air quality problems at the site (Ref. A).

Construction activities will generate dust during the three-month period that grading and earth moving will occur. The anticipated impact of this operation would be the generation of 30 tons of particulate emissions per month. Additional emissions during construction will be generated by diesel-powered construction equipment and the activities of the 30 to 40 workers on the site.

After construction and during operations, the facility should not emit any criteria pollutants. The indirect source impacts of the facility will be less than the Hopkins facility impacts. No ambient air quality violations are expected at the site.

Odors that do become a problem at transfer station facilities can generally be traced to design or operational problems. The proposed Hennepin County transfer stations will be designed to contain odors within site buildings and to minimize packer truck queuing. The proposed plan calls for daily removal of waste to nearby landfills. Thus, the facilities should not be a source of odor to surrounding neighborhoods.

In the immediate vicinity of the transfer stations, however, there may be some odor from waste in the MSW packer trucks if vehicles are in line waiting to unload. Transfer truck trailers that may occasionally need to wait for a truck tractor may become an odor source. However, this impact will probably be minor, because the Hennepin County transfer stations are designed to handle peak deliveries efficiently.

In general, municipal collection vehicles will not pose an odor problem, because the MSW will remain in the vehicles only as long as it takes to travel from the collection area to the transfer stations or directly to the resource recovery facility. Odors at the transfer station fall into two major categories: hydrogen sulfide (rotten egg odor) and organic. These odors would occur if refuse was stored on site for long periods. The operation of the transfer stations will generally not allow refuse to collect for more than five hours. No odor complaints have been received a a result of the existing Minneapolis South transfer station operation (City of Minneapolis, August 1985).

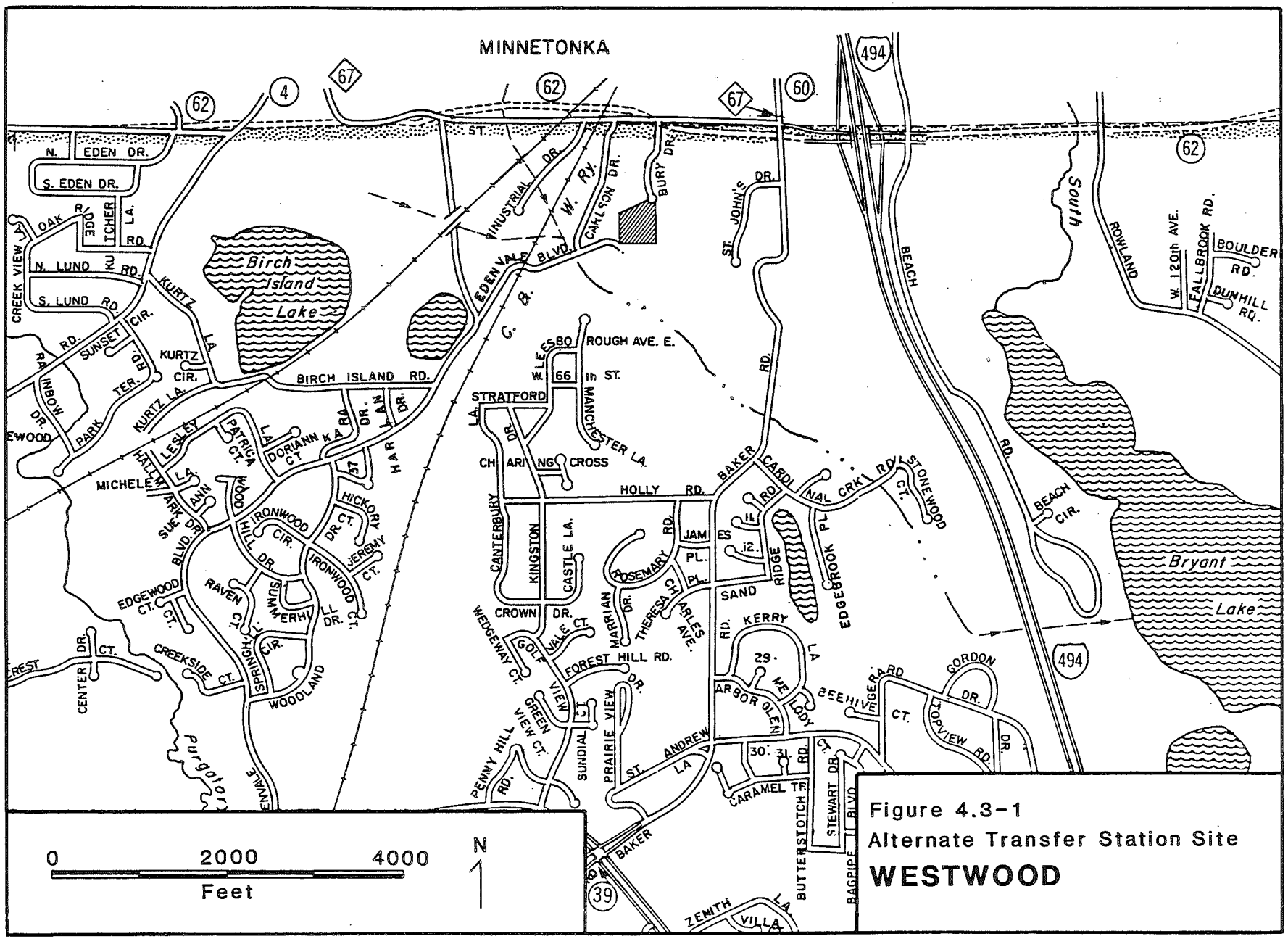


Figure 4.3-1
Alternate Transfer Station Site
WESTWOOD

4.3.2.2 Geology and Soils

The site is covered predominantly by coarse, sandy loam soils. A portion of the southern edge of the proposed site is marshy soil and wetland. The entire site has been cleared, graded and prepared for construction. The soils on site are adequate to support low-profile industrial development including a transfer station. The depth to bedrock averages 180 feet on the site. Groundwater has a minimum depth of 20 feet below grade and averages 30 feet below grade. There are no known wells or other geological hazards known to be on the site to promote rapid movement of surface water into the groundwater on site.

4.3.2.3 Surface Water

The southern edges of the site are in the floodplain area of the northern branch of Nine-Mile Creek. Drainage from this area travels through a residential area into Bryant Lake Regional Park less than one mile away. The possibility of contamination emanating from the facility could have a negative impact on surface water resources. The facility would handle wastes only in the transfer building. The floor drains for the building will be connected to the sanitary sewer, reducing the potential for contamination of surface water. The site has historically been undeveloped with natural vegetation to slow the runoff emanating from the site. The construction of a facility on site that greatly increases the amount of impervious surface will have a negative impact on the surface water quality of Nine-Mile Creek.

4.3.2.4 Land Use and Zoning

The site is zoned I-2 PRK. This zoning signifies that the area is an industrial park with lot sizes of two acres minimum. The city of Eden Prairie land use regulations state the purpose of the industrial park designation is:

1. To establish and maintain high standards of site planning, architecture, and landscape design that will create an environment attractive to the most discriminating industries and research and development establishments seeking sites in the Metropolitan Area.

2. Provide and ensure the continuity of locations for industries that can operate on small sites with minimum mutual adverse impact.

The volume of truck traffic coupled with transfer station equipment operation do not correspond to the standards set forth by the city for the zoning classification industrial park. The site is bounded to the west and north by other parcels that are largely undeveloped. To the south the adjoining zoning is for multifamily residential. Land use 400 feet to the east is multifamily residential.

The city of Eden Prairie feels that the site use as a transfer station is incompatible with zoning. The inconsistent land use may inhibit development of the adjacent industrial parcels as detailed in the city's master plan.

The site is currently under construction of a two-story office/warehouse structure. The development of the site as a transfer station would require the removel of the structure.

4.3.2.5 Transportation

Access to the site is via Hwy. 67 with the majority of traffic originating to the east of the site. Prior to the completion of the construction for the resource recovery facility, which will derive waste from the transfer stations, the section of County Rd. 62 between County Rd. 18 and I-494 adjoining County Rd. 66 will be completed. Hwy. 67 is scheduled to be upgraded to a four-lane divided highway with right-hand turn lanes in 1990, the first year of resource recovery facility operation. The anticipated traffic is expected to nearly double from 4,750 vehicle trips in 1980 to 9,800 vehicle trips in 1990. The current section of County Rd. 67 will be retained to serve as a frontage road for the industrial area in which the site lies. The roads servicing the site are expected to operate at service level C or higher during peak traffic periods after road construction is complete. The effects of construction of the roadway may induce very heavy congestion during the first year the resource recovery facility is open.

The tranportation of waste in the proposed service area for the site to the transfer station will necessitate hauling most of the waste received at the transfer station in the opposite direction from the resource recovery facility. The actual service area cannot be accurately assessed; however, the transportation time from the Hopkins site to the Westwood site is regularly 15 minutes.

4.3.2.6 Noise

The Westwood industrial site is located 500 feet from the closest sensitive (residential) receptor to the east of the site. The applicable noise standards are those corresponding to residential areas. The current state standards and the proposed standard for the receptor are 60 dBA for L_{50}, 65 dBA for L_{10} and 63 dBA for L_{eq}. Currently, the noise level at the site from screening level noise monitoring is 50 dBA for L_{50}, 60 dBA for L_{10} and 55 dBA for L_{eq}. The impact of facility operations alone would produce the following noise impacts (see Part 1, Table 4.8-2): 62 dBA for L_{50}, 64 dBA for L_{10} and 65 dBA for L_{eq}. The impact of the facility alone would exceed the proposed noise standard (55 dBA for L_{eq}). The cumulative impact of the development of the site as a transfer station would be 62 dBA for L_{50}, 65.5 dBA for L_{10} and 65 dBA for L_{eq}. The impact of operating the facility on the Westwood site would be to exceed the current L_{10} noise standard, and it would also exceed the proposed L_{eq} noise standard. Given the undeveloped nature of this industrial park area, the impact on the residential area would be perceived as a doubling of the noise at the residential area to the east of the site.

The transportation impacts of the noise generated at the facility along County Rd. 67 may be as great as 5 dBA with background levels the noise adjacent to the roadway will be very close but should not exceed noise standards. No sensitive noise receptors are within 500 feet of the roadway providing alteration of the transportation noise impacts.

Construction of the transfer station is expected to be of relatively brief (9 to 12 months) total duration. The period of maximum noise generation (excavation) is expected to be short, on the order of one month or less.

4.3.2.7 Utilities

Water, sanitary, sewer, storm sewer, fire protection, electric, gas and telephone service requirements are presented in Part 1, Section 4.9.3. A six-inch water service line for domestic water and fire protection to the building will be provided. The building water service line will tie into the city water main in Bury Dr. This line is adequate for facility water requirements. The transfer station's water demand represents an insignificant percentage (less than 1 percent) of the average daily municipal water demand.

The facility wastewater discharge will be 100 gpd. A four-inch sanitary sewer line from the building to the existing sanitary sewer in Bury Dr. at the northern border of the site will be required.

The development of the site and paved area would result in a 25-year, one-hour storm flow of 6.3 cfs. An eight-inch diameter storm sewer would be required to provide the necessary drainage.

The building would require a connected load of approximate 25 Kva, which can adequately be provided by the existing 13.8 Kv line. Since this site is an existing commercial/industrial area, the existing NSP electric distribution system will accommodate building requirements with only minor on-site changes and no required off-site changes.

Low-pressure natural gas from Minnegasco would be required for the facility and would likely be provided from their three-inch, 60 psi line on Bury Dr. The facility will require telephone service, which would be provided to the building by Northwestern Bell.

4.3.2.8 Socioeconomics

The proposed facility would be located almost half a mile away from any substantial residential development. Impacts to the general population and to housing in the census tract in which the proposed facility would be located are not anticipated. This population is similar in racial composition, age structure and income to the community of Eden Prairie as a whole, and housing prices are comparable.

New employment opportunities would be created by the construction (as many as 50 employees) and operation (10 employees) phases of the transfer station. Since Eden Prairie is part of the broader metropolitan economic unit, the extent of income and revenue returned to the Eden Prairie economy as a result of the transfer station's employment opportunities would be minor.

As discussed in Part 1, Section 4.10.2, the effect of an industrial facility on nearby property values cannot be completely predicted. The proposed facility would be located in an area of industrial and commercial expansion slated for industrial growth. As a result of demand for industrial property, development of industrial tracts and industrial property values within Eden Prairie has been increasing in recent years (Metropolitan Council, 1984). A private appraiser did feel that compliance with city zoning requirements (regarding nuisance impacts such as odor, noise, etc.) could preclude impacts to neighboring properties in Brooklyn Park. Eden Prairie is experiencing similar growth in commercial and industrial activity. The proposed site, while inconsistent with its zoning designation of light industrial, would, if

properly designed and operated, comply with nuisance standards and standards regarding landscaping and setback requirements. The private appraiser also indicated that the effect of the proposed facility on the property values of adjacent industrial and commercial lands would be influenced by supply and demand relationships.

The Westwood industrial site contains one parcel under construction with an assessed value of $50,400 (County of Hennepin, July 2, 1985; property tax records). The taxing authorities of jurisdiction would lose $5,392.28 annually (1985 assessments) in revenues as a result of county purchase of the parcels.

The city would require payment for special assessments of this amount at the time of the ownership transfer.

4.3.2.9 Aesthetics and Cultural Resources

The site is bounded to the west and north by other industrial parcels that are largely undeveloped. South of the site is multifamily residential. Land use 400 feet to the east is multifamily residential. One-half mile south of the site is Forest Hills Elementary School.

The city of Eden Prairie has stated that use of the site as a transfer station is incompatible with zoning. The inconsistent land use may inhibit development of the adjoining parcels as detailed in the city's master plan.

The site is currently under construction of a two-story office/warehouse structure. The development of the site as a transfer station would require the removal of the structure.

4.3.2.10 Ecological Resources

The natural habitat for flora and fauna has been previously disturbed, and naturally occurring species no longer exist on site.

4.4 Railroad Alternate Site

4.4.1 Site Description

The railroad site is an alternate site for the proposed Hopkins site. The site is 2,000 feet west of the Westwood industrial site (see Figure 4.4-1). Access to the site is via County Rd. 67 and south to the end of Industrial Dr. The site is a 7.5-acre parcel currently being used as an asphalt plant site by Midwest Asphalt, Inc. The site is bounded on the east and west by elevated bed rail lines. A general industrial area is to the north and a floodplain area borders to the south across Edenvale Blvd.

The analysis of facility impacts will be based on the facility operating capacity of 1,200 TPD corresponding to the Hopkins facility. The operating of the facility will be based on a throughput of 600 TPD (see Part 1, Section 4).

4.4.2 Affected Environment and Impacts

4.4.2.1 Air Quality

The air quality impacts of the facility are identical to those of the Westwood site (Section 4.3.2.1). The Railroad site is, however, in use currently. The asphalt plant occupying the site does emit criteria pollutants. The removal of the plant would have a net positive impact on sulfur dioxide and particulate emissions and ambient pollutant concentrations in the vicinity of the plant. The production of asphalt also involves the outside handling and storage of aggregate. The movement of material and truck activity on unpaved portions of the site will generate fugitive dust emissions. The construction of a transfer station would reduce dust emissions on site. Asphalt plants generally produce odors corresponding to the organics present in asphalt oil. The use of the site as a transfer station would eliminate this source of odors.

4.4.2.2 Geology and Soils

The existing site has all currently been disturbed by the existing land use. The site is covered by cut and fill soils that currently support very little vegetation. The on-site soils will support the construction of a transfer station. The depth to bedrock on the site is 120 to 130 feet. Depth to groundwater is a minimum of 20 feet below the surface, and averages 30 feet over much of the area (Hennepin County Soil Survey, 1974).

Current activities on site involve the extensive handling of petroleum distillates. No soil contamination from production processes was observed on site; however, extensive site investigation may produce evidence of site contamination. If this is contaminated, it is not expected that this contamination would preclude the use of this site as a transfer station, although the effect on development costs cannot be determined at this time.

4.4.2.3 Surface Water

The site lies entirely on well-drained soil. The current site is compacted by activities on site and has a high percentage of impervious surface. The runoff generated by the site will flow toward the floodplain area south of the site. No storm water retention ponds were examined on site. The construction of a transfer station on site would reduce the quantity of runoff generated due to site landscaping.

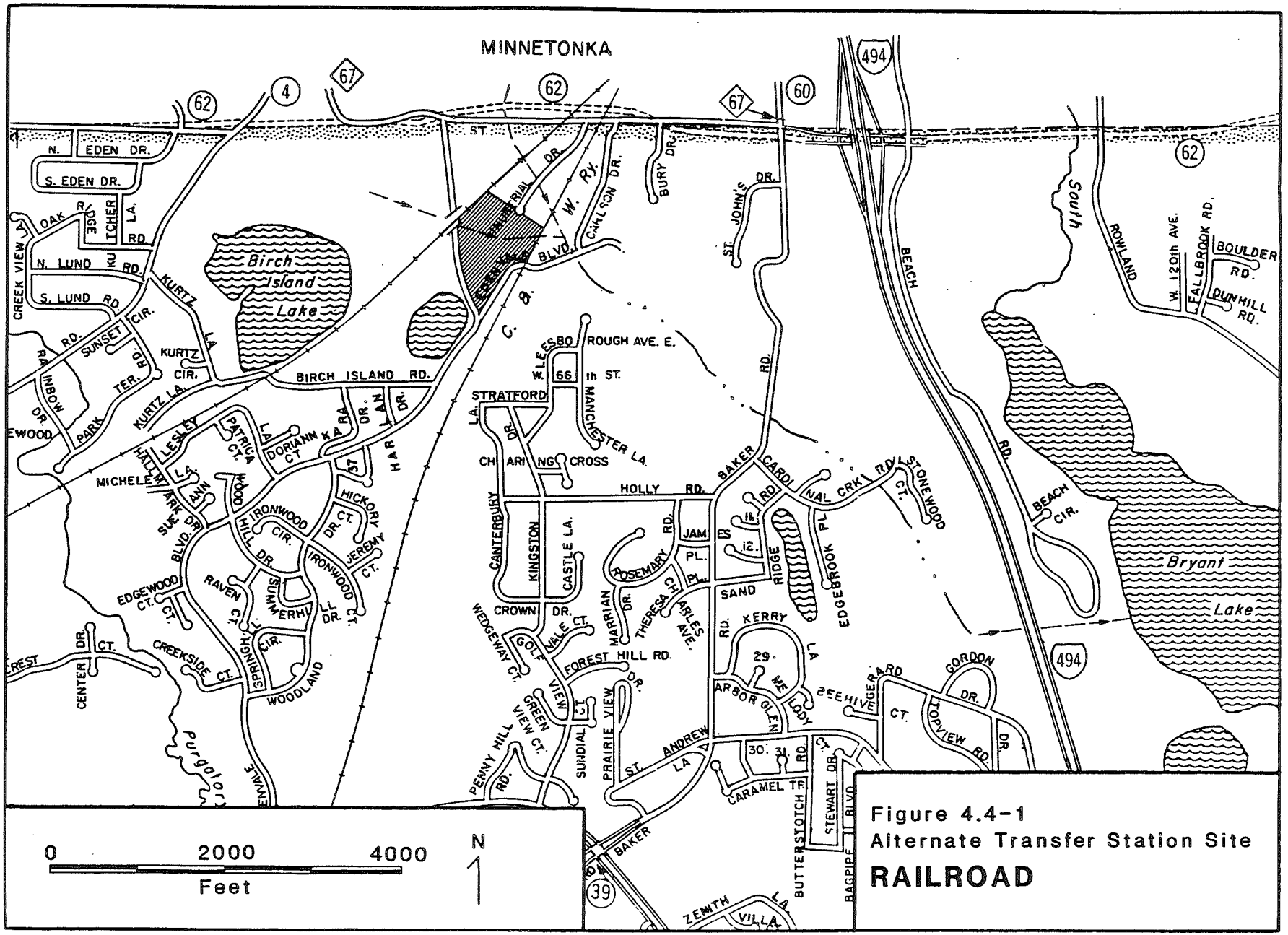


Figure 4.4-1
Alternate Transfer Station Site

4.4.2.4 Land Use and Zoning

The site is zoned I-GEN by the city of Eden Prairie.

The special purpose of the I-general industrial district is to provide locations where industries that desire larger sites and outside storage can operate with minimum restriction and without adverse effect on other uses.

The permitted uses in a I-GEN general industrial district are:

1. Manufacturing, warehousing, wholesale, distribution, processing, packaging, assembling, compounding and accessory uses, conducted within structures except in I-GEN where uses may include properly screened outsite storage.

2. Office uses.

3. Public facilities and services.

4. Supporting minor commercial uses as contained within office/industrial buildings providing a supplemental function to the major office and/or industrial use (Eden Prairie Land Use Regulations).

The use of the site for a transfer station is fully compatible with the zoning classification. A land use on a parcel 500 feet to the north along Industrial Dr. is being used as a refuse company's office, which includes repair facilities and outside storage of refuse trucks. Other facilities between the site and County Rd. 67 have outside storage of trucks and equipment. The city of Eden Prairie has stated:

> The railroad yard is superior from a zoning standpoint: its I-general classification is the type suited for a transfer station. A transfer station may be a more optimal use for this site compared with the existing land uses. Current land uses do not reflect an efficient use of this land. These uses include towed auto storage, roofing, natural gas storage and asphalt production. A transfer station would appear to blend well with the existing uses; in fact, the new construction would probably enhance the area. This area is relatively isolated and well screened from nearby lands and roadways. A transfer station in the railroad yard is more consistent with the goals and objectives of the city for land use and economic development.

The use of the site as a transfer station would involve relocating the existing business. This relocation would involve locating a site that would be acceptable to both the displaced business and the community in which it would be located.

4.4.2.5 Transportation

Transportation access to the site will also benefit from roadway improvements of County Rd. 67 as detailed in Section 4.3.2.5. The transportation efficiency will be similar for the Railroad site as described for the Westwood site in Section 4.3.2.5. Access to the site may be adversely impacted by the presence of two at-grade railroad crossings to the east and west of Industrial Dr. on the current County Rd. 67. Traffic delays to the facility may occur in response to the at-grade rail lines. Time and frequency of rail traffic has not been conducted for the site.

4.4.2.6 Noise

Background noise generation for the Railroad site was measured at the Christian Day School facility approximately 1,400 feet to the northwest of the site. The background noise levels include industrial activity as well as transportation noise along County Rd. 67. The monitoring site was the closest used in the screening level monitoring performed at the site. The closest sensitive receptor is 800 feet southeast of the site. The noise generated by the existing facility on the site cannot be factored out of the monitoring data. This will provide a conservative estimate of noise existing at the residential receptor. The background levels at the site during peak traffic periods are estimated to be 57 for L_{50}, 61 for L_{10}, and 59 for L_{eq}. The applicable daytime standards for the residential area are 60 for L_{50}, 65 for L_{10}, and 63 for L_{eq}. From the information above, it is clear that the area is currently meeting daytime noise standards.

The facility will have a noise impact on the residential area. The calculated noise generation for the facility at a distance of 800 feet including the effect of the raised bed rail line is 59 for L_{50}, 56 for L_{10}, and 57 for L_{eq}. Adding these noise levels to the background yields 56 for L_{50}, 57 for L_{10}, and 61 for L_{eq}. The elevation of noise level does not exceed noise standards for the site. The 2 dBA rise in noise level is below the threshold of perception at the background noise levels.

The transportation impacts of the noise generated at the facility along County Rd. 67 may be as great as 5 dBA. With background levels, the noise adjacent to the roadway will be very close but should not exceed noise standards. No sensitive noise receptors are within 500 feet of the roadway providing alteration of the transportation noise impacts.

Construction of the transfer station is expected to be of relatively brief (9 to 12 months) total duration. The period of maximum noise generation (excavation) is expected to be short, on the order of one month or less.

4.4.2.7 Utilities

Water, sanitary sewer, storm sewer, fire protection, electric, gas and telephone service requirements are presented in Part 1, Section 4.9.3. A six-inch water service line for domestic water and fire protection to the building will be provided. The building water service line will tie into the city water main in Industrial Dr. This line is adequate for facility water requirements. The transfer station's water demand represents an insignificant percentage (less than 1 percent) of the average daily municipal water demand.

The facility wastewater discharge will be 100 gpd. A four-inch sanitary sewer line from the building to the existing sanitary sewer in Industrial Dr. at the northern border of the site will be required.

The development of the site and paved area would result in a 25-year, one-hour storm flow of 9.5 cfs. A ten-inch diameter storm sewer would be required to provide the necessary drainage. Catch or sedimentation basins would be required for water discharged to Nine-Mile Creek.

The building would require a connected load of approximate 25 Kva, which can adequately be provided by the existing 13.8 Kv line. Since this site is an existing commercial/industrial area, the existing NSP electric distribution system will accommodate building requirements with only minor on-site changes and no required off-site changes.

Low-pressure natural gas from Minnegasco would be required for the facility and would likely be provided from their three-inch, 60 psi line on Industrial Dr. The facility will require telephone service, which would be provided to the building by Northwestern Bell.

4.4.2.8 Socioeconomics

The proposed facility would be located almost one-fourth of a mile away from any substantial residential development. Impacts to the general population and to housing in the census tract in which the proposed facility would be located are not anticipated.

New employment opportunities would be created by the construction (as many as 50 employees) and operation (10 employees) phases of the transfer station. Since Eden Prairie is part of the broader metropolitan economic unit, the extent of income and revenue returned to the Eden Prairie economy as a result of the transfer station's employment opportunities would be minor.

The use of the site as a transfer station represents a lighter industrial use than the existing asphalt plant. The city of Eden Prairie has stated that it may enhance the industrial area in which the facility is lotated. The construction of the transfer station on the site may improve property values in the area.

The Railroad site contains one developed parcel with an assessed value of $122,700 (County of Hennepin, July 2, 1985; property tax records). The taxing authorities of jurisdiction would lose $4,672.77 annually (1985 assessments) in revenues as a result of county purchase of the parcels.

The city would require payment for special assessments of this amount at the time of the ownership transfer.

4.4.2.9 Aesthetics and Cultural Resources

The site is a 7.5-acre parcel currently being used as an asphalt plant site by Midwest Asphalt, Inc. The site is bounded on the east and west by elevated bed rail lines. A general industrial area is to the north and a floodplain are borders to the south across Edenvale Blvd.

The site is zoned I-GEN by the city of Eden Prairie.

The special purpose of the I-general industrial district is to provide locations where industries that desire larger sites and outside storage can operate with minimum restriction and without adverse effect on other uses.

The use of the site for a transfer station is fully compatible with the zoning classification. The land use on a parcel 500 feet to the north along Industrial Dr. is being used as a refuse company's office, which includes repair facilities and outside storage of refuse trucks. Other facilities between the site and County Rd. 67 have outside storage of trucks and equipment. The city of Eden Prairie has stated:

> The railroad yard is superior from a zoning standpoint: its I-general classification is the type suited for a transfer station. A transfer station may be a more optimal use of this site compared with the existing land uses. Current land uses do not reflect an efficient use of this land. These uses include towed auto storage, roofing, natural gas storage and asphalt production. A transfer station would appear to blend well with the existing uses; in fact, the new construction would probably enhance the area. This area is relatively isolated and well screened from nearby lands and roadways.

4.4.2.10 Ecological Resources

Native flora and fauna habitat has been removed from the site. The landscaping associated with the construction of a transfer station may improve the site as a habitat for naturally occurring species.

4.5 Greenhouse Alternative Site

4.5.1 Site Description

The Greenhouse site is located on the south side of County Rd. 67 and the east side of Indian Chief Rd. (see Figure 4.5-1). The site is comprised of three parcels of land totaling 11.5 acres. The site is bounded on the east by the north branch of Nine-Mile Creek. To the south lies an elevated bed rail line, and beyond that to the south lies the railroad site (see Part 1, Section 6.4). To the north and west lie property owned by Hennepin County. A school building lies on the property to the west. The school building is currently occupied by a Christian Day Elementary School. Property to the southwest of the site is wetland and public land used for recreational purposes. The site is currently proposed for redevelopment from the existing greenhouse operations to a refuse-derived fuel processing plant by Reuter, Inc. The use of the site as a transfer station would preclude its use as a processing plant.

The analysis of the facility impacts will be based on the facility operating capacity of 1,200 TPD corresponding to the Hopkins facility. The operations of the facility will be based on a throughput of 600 TPD (see Part 1, Section 4).

4.5.2 Affected Environment and Impacts

4.5.2.1 Air Quality

The proposed site will generate traffic, relate air pollutants including dust and carbon monoxide emissions. There are no ambient monitors in the vicinity of the site. The modeled air quality for the area does not show any air quality problems at the site (Ref. A).

Construction activities will generate dust during the three-month period that grading and earth moving will occur. The anticipated impact of this operation would be the generation of 30 tons of particulate emissions per month. Additional emissions during construction will be generated by diesel-powered construction equipment and the activities of the 30 to 40 workers on the site.

After construction and during operations, the facility should not emit any criteria pollutants. The indirect source impacts of the facility will be less than the Hopkins facility impacts. No ambient air quality violations are expected at the site.

Odors that do become a problem at transfer station facilities can generally be traced to design or operational problems. The proposed Hennepin County transfer stations will be designed to contain odors within site buildings and to minimize packer truck queuing. The proposed plan calls for daily removal of waste to nearby landfills. Thus, the facilities should not be a source of odor to surrounding neighborhoods.

In the immediate vicinity of the transfer stations, however, there may be some odor from waste in the MSW packer trucks if vehicles are in line waiting to unload. Transfer truck trailers that may occasionally need to wait for a truck tractor may become an odor source. However, this impact will probably be minor, because the Hennepin County transfer stations are designed to handle peak deliveries efficiently.

In general, municipal collection vehicles will not pose an odor problem, because the MSW will remain in the vehicles only as long as it takes to travel from the collection area to the transfer stations or directly to the resource

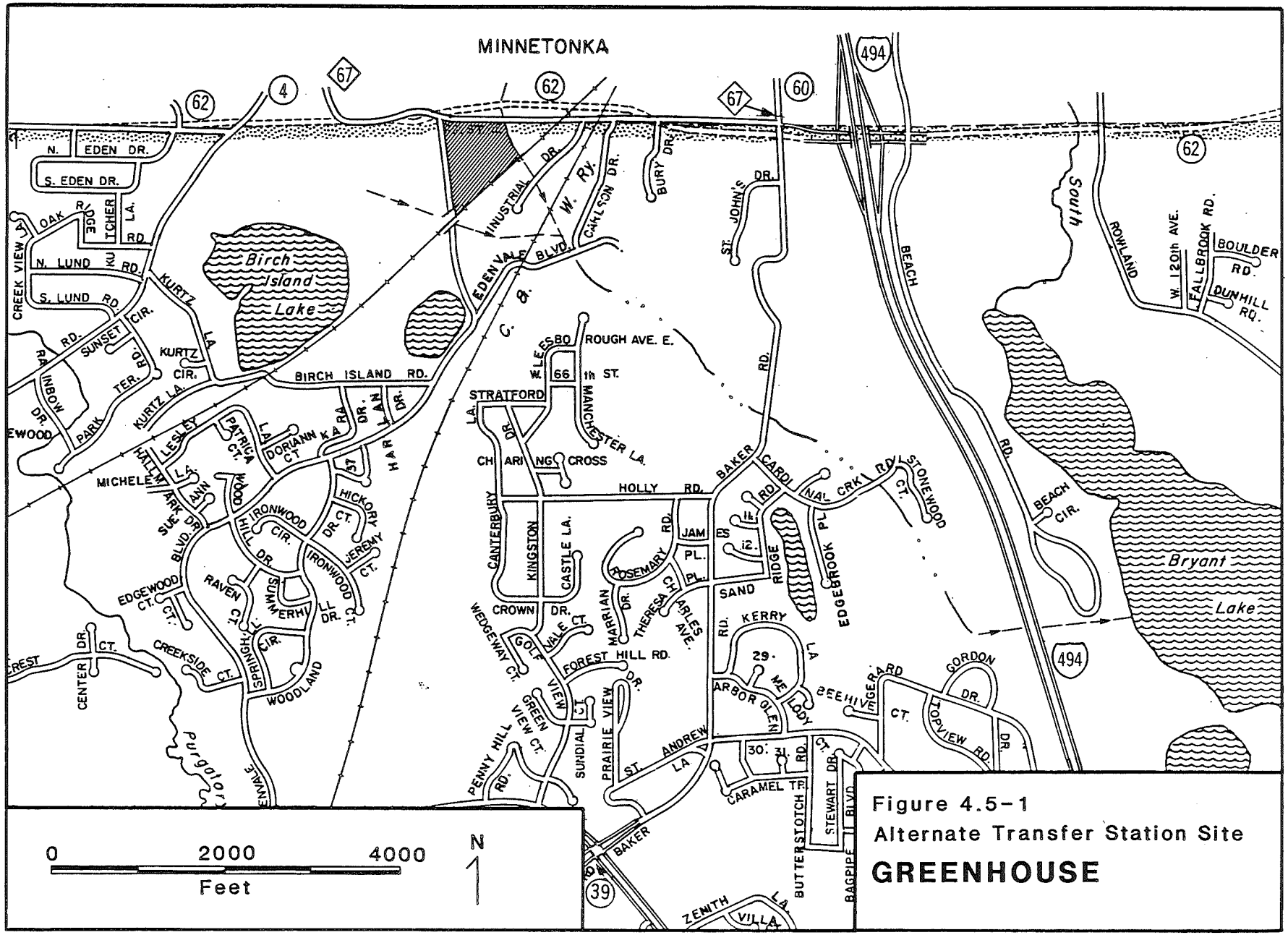

MINNETONKA
Birch Island Lake
Bryant Lake
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Figure 4.5-1
Alternate Transfer Station Site
GREENHOUSE

recovery facility. Odors at the transfer station fall into two major categories: hydrogen sulfide (rotten egg odor) and organic. These odors would occur if refuse was stored on site for long periods. The operation of the transfer stations will generally not allow refuse to collect for more than five hours. No odor complaints have been received a a result of the existing Minneapolis South transfer station operation (City of Minneapolis, August 1985).

4.5.2.2 Geology and Soils

All of the site has been disturbed by earlier construction to the extent that no "A" horizon soils remain in place. The subsoils are sandy clay and glacial till. The existing site supports structures and equipment similar to that needed for a transfer station. Depth to bedrock at the site averages 180 feet, and depth to groundwater averages 30 feet. Seasonal variations of flow in Nine-Mile Creek will cause the groundwater elevation to rise in the spring. There are two known wells on the site. One served an abandoned single-family house and the other served the western set of greenhouses while they were in operation. Groundwater contamination may occur if the wells are not filled to prevent groundwater migration.

4.5.2.3 Surface Water

A small portion of the site falls within the shoreline setback of Birch Island Lake to the southwest of the site. The eastern boundary of the site is the center line of the north fork of Nine-Mile Creek. The floodplain associated with Nine-Mile Creek has been illegally filled to a present one-to-one slope. Development of the site will require removal of soil and grading the site to the original contours found in the 1970 watershed district survey. A very high percentage of the site is currently impervious surface. The construction of a transfer facility on the site may show a net decrease in runoff generated.

The facility would handle wastes only in the transfer building. The floor drains for the building would be connected to the city sanitary sewer, reducing the potential for contamination of surface water.

4.5.2.4 Land Use and Zoning

The site is zoned I-2 PRK. This zoning signifies that the area is an industrial park with lot sizes of two acres minimum. The city of Eden Prairie land use regulations state the purpose of the industrial park designation is:

1. To establish and maintain high standards of site planning, architecture and landscape design that will create an environment attractive to the most discriminating industries and research and development establishments seeking sites in the Metropolitan Area.

2. Provide and ensure the continuity of locations for industries that can operate on small sites with minimal mutual adverse impact.

The city of Eden Prairie feels that the Greenhouse site is inconsistent with zoning regulations.

The site is located only 200 feet away from an elementary school. Four hundred feet to the southwest lies Birch Island Park, a passive recreation area which has a large expanse of wetland habitat. Camp Indian Chief has been established adjacent to the site on the southwest. The traffic and noise generated by a transfer station would be incompatible with adjacent land use.

4.5.2.5 Transportation

The transportation access to the facility would be predominantly from the east, and the general level of vehicle traffic on major access routes would be the same as those described in Part 2, Section 4.3.2.5. The completion of the upgraded four-lane divided highway on County Rd. 67 will necessitate the development of left-turn lanes on the current County Rd. 67 for westbound traffic (predominantly full packer trucks). The site plan shows that Indian Chief Rd. will be the location of the right-hand turn lane. The truck traffic will pass the northeast corner of the elementary school site. Peak truck traffic will correspond to the peak trip generation periods of the elementary school The combined effects of the traffic would have a negative impact on the service level of the intersection.

Safety of children with the peak refuse truck volumes is an impact whose severity has not been assessed. The sight distance from the west is only 200 feet at Indian Creek Rd. This is less than half the safe sight distance at the intersection with 45 mph traffic along County Rd. 67.

4.5.2.6 Noise

The Greenhouse site is located 200 feet from the closest sensitive receptor to the west of the site. The applicable noise standards are those corresponding to residential areas. The current state standards and the proposed standard for the receptor are 60 dBA for L_{50}, 65 dBA for L_{10} and 63 dBA for L_{eq}. Currently, the noise level at the site from screening level noise monitoring is 46 dBA for L_{50}, 56 dBA for L_{10} and 53 dBA for L_{eq}. The impact of facility operations alone would produce the following noise impacts (see Table 4.8-2): 65 dBA for L_{50}, 67 dBA for L_{10} and 68 dBA for L_{eq}. The impact of the facility alone would exceed both the current and proposed noise standards. The cumulative impact of the development of the site as a transfer station would be 65 dBA for L_{50}, 67 dBA for L_{10} and 68 dBA for L_{eq}. The impact on the elementary school would be perceived as two-and-one-half times the noise currently at the site.

The transportation impacts of the noise generated at the facility along County Rd. 67 may be as great as 5 dBA with background levels the noise adjacent to the roadway will be very close but should not exceed noise standards. No sensitive noise receptors are within 300 feet of the roadway providing attenuation of the transportation noise impacts.

Construction of the transfer station is expected to be of relatively brief (9 to 12 months) total duration. The period of maximum noise generation (excavation) is expected to be short, on the order of one month or less.

4.5.2.7 Utilities

All necessary on-site utilities are present as described in Section 4.3.2.7. Municipal services and utilities must be extended to the exact location of the facility.

4.5.2.8 Socioeconomics

The proposed facility would be located almost half a mile away from any substantial residential development. Impacts to the general population and to housing in the census tract in which the proposed facility would be located are not anticipated.

New employment opportunities would be created by the construction (as many as 50 employees) and operation (10 employees) phases of the transfer station. Since Eden Prairie is part of the broader metropolitan economic unit, the extent of income and revenue returned to the Eden Prairie economy as a result of the transfer station's employment opportunities would be minor.

As discussed in Part 1, Section 4.10.2, the effect of an industrial facility on nearby property values cannot be completely predicted. The proposed facility would be located in a mature area of industrial and commercial development. As a result of demand for industrial property, development of industrial tracts and industrial property values within Eden Prairie has been increasing in recent years (Metropolitan Council, 1984). A private appraiser did feel that compliance with city zoning requirements (regarding nuisance impacts such as odor, noise, etc.) could preclude impacts to neighboring properties in Brooklyn Park. The proposed site, while inconsistent with its zoning designation of light industrial, would, if properly designed and operated, comply with nuisance standards and standards regarding landscaping and setback requirements. The private appraiser also indicated that the effect of the proposed facility on the property values of adjacent industrial and commercial lands would be influenced by supply and demand relationships.

The Greenhouse site contains three parcels with an assessed value of $227,000 (County of Hennepin, July 2, 1985; property tax records). The taxing authorities of jurisdiction would lose $7,979.42 annually (1985 assessments) in revenues as a result of county purchase of the parcels.

The city would require payment for special assessments of this amount at the time of the ownership transfer.

4.5.2.9 Aesthetics and Cultural Resources

The site is bounded on the east by the north branch of Nine-Mile Creek. To the south lies an elevated bed rail line, and beyond that to the south lies the railroad site (see Part 1, Section 4.4). To the north and west lie property owned by Hennepin County. A school building lies on the property to the west. The school building is currently occupied by a Christian Day Elementary School. Property to the southwest of the site is wetland and public land used for recreational purposes. The site is currently proposed for redevelopment from the existing greenhouse operations to a refuse-derived fuel processing plant by Reuter, Inc.

The site is located only 200 feet away from an elementary school. Four hundred feet to the southwest lies Birch Island Park, a passive recreation area which has a large expanse of wetland habitat. Camp Indian Chief has been established adjacent to the site on the southwest The traffic and noise generated by a transfer station would be incompatible with adjacent land use.

4.5.2.10 Ecological Resources

The natural flora and fauna habitat has been disturbed, and naturally occurring species no longer exist on site.

4.6 National Lead/Golden Auto Parts Site

4.6.1 Site Description

The National Lead/Golden Auto Parts site is located in the city of St. Louis Park. It is south of Hwy. 7 between Hampshire Av. and Monitor St. bounded on the south by a railroad track (see Figure 4.6-1). This 9.5-acre site was the location of a secondary lead smelting operation from 1940 to 1982. Originally owned by National Lead Industries, Inc., the lead smelting facility was sold to Taracorp in August of 1979. Taracorp ceased operation of the smelter in February 1981.

The Golden Auto Parts portion of this site (4.5 acres) was sold by National Lead in 1962 to Republic Enterprises, Inc. Republic then sold the property to Morris and Harry Golden, who leased the area to Golden Auto Parts Co., Inc. Golden Auto Parts operated an automobile wrecking and used parts business.

After investigation, sampling and analysis, the Minnesota Pollution Control Agency (MPCA) issued a Notice of Noncompliance to Taracorp, Inc., in October 1980 and requested an investigation of contamination resulting from the operation of the smelting facility. The following are excerpts from the "Finding of Fact" portion of a consent decree dealing with the National Lead/Taracorp/Golden Auto site:

> National Lead filed a Hazardous Waste Site Notification with U.S. EPA on June 8, 1981, which indicated that hazardous waste may have been stored on the Site. The Taracorp Area of the Site was placed on the National Priorities List by U.S. EPA on October 23, 1981. The Golden Area of the Site was incorporated with the Taracorp Area of the Site on the National Priorities List issued by U.S. EPA on September 8, 1983.

Investigations in 1981 by consultants retained by Golden Auto Parts, Inc., and similar work done by National Lead and Taracorp in 1982 indicated that significant contamination of soils and groundwater exist on this site.

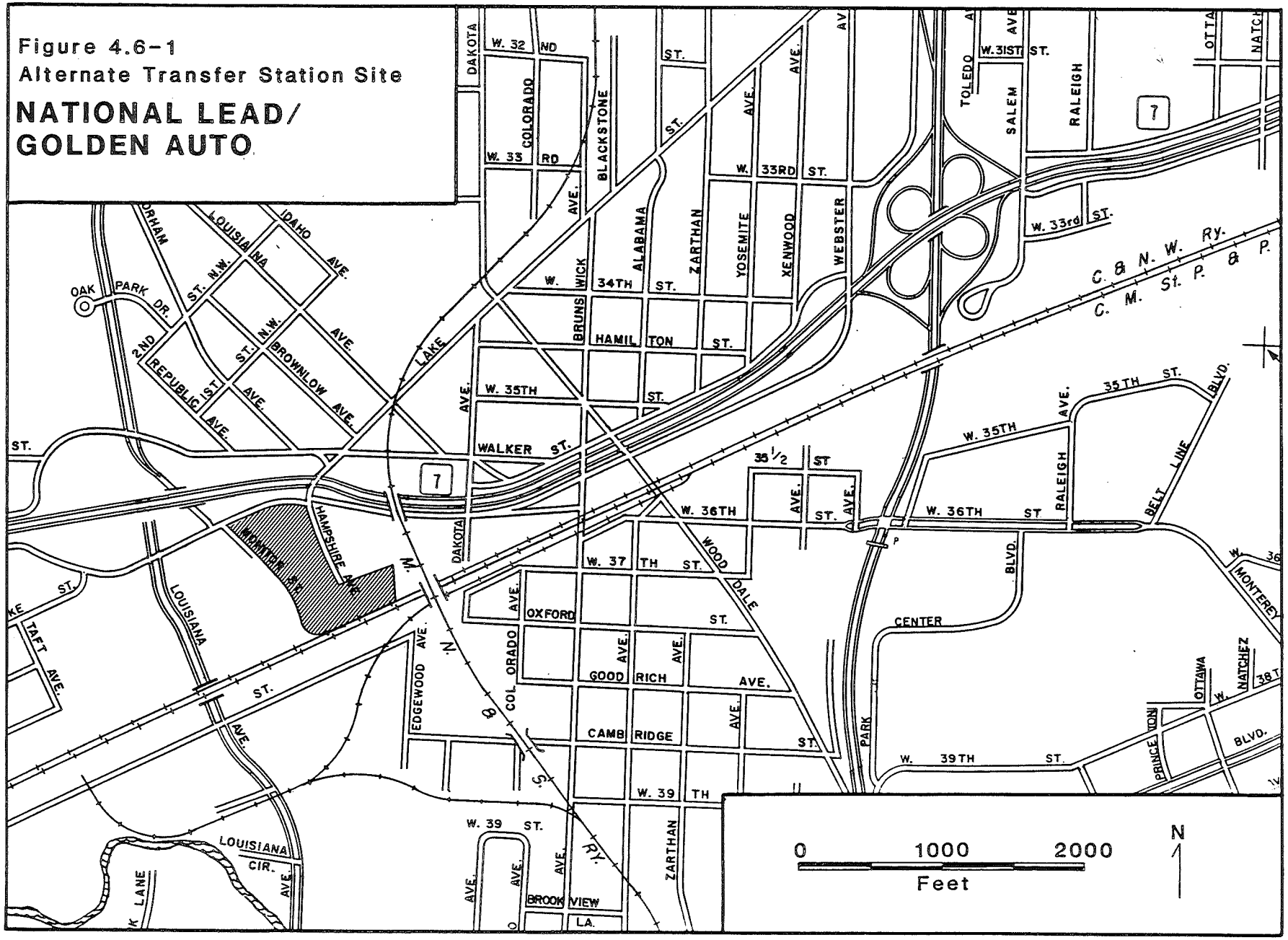
> On Jan. 10, 1984, the MPCA issued a Request for Response Action to National Lead, Taracorp, Inc., and Golden Auto Parts Co., Inc., pursuant to the provisions of Minn. Stat. 115B.17 and 115B.18. National Lead informed the MPCA that it was willing to discuss the terms of a consent order to implement the Request for Response Action.

The scope of this reads as follows:

> A. This Order shall govern the following matters:
>
> 1. The development and implementation of the Response Measures set forth in Part II and Exhibit A to this Order.
>
> 2. A Remedial Investigation and a Feasibility Study to (1) determine the extent of off-site soil contamination resulting from the operation of the lead smelting facility; (2) assess the actual and potential impacts of any such soil contamination on the public health, welfare and environment; and (3) determine the scope of any response action which is necessary; and, if necessary, the implementation of response actions.

Figure 4.6-1
Alternate Transfer Station Site

NATIONAL LEAD/ GOLDEN AUTO



3. A long-term groundwater monitoring program to determine the effectiveness of the Response Measures and, if necessary, a Feasibility Study to determine the scope of any groundwater response actions which are necessary and, if necessary, the implementation of response actions.

4. The reimbursement of the MPCA's and the U.S. EPA's expenditures associated with the National Lead/Taracorp/Golden Site.

B. Nothing within this Order or the Exhibits thereto is intended to preclude new construction and development on the Site. National Lead shall use its best efforts to ensure that any proposed construction or development is presented for approval to the MPCA Director and U.S. EPA; however, such approval is limited to environmental concerns.

The Minnesota Pollution Control Agency (MPCA) has indicated that there may be some limitations placed on types of construction at this site. The agency may require special precautions in the handling of contaminated materials during construction. The MPCA may require repaving over the contaminated soils, or removal of these soils for shipment to an approved disposal facility (Thompson, MPCA, 1985).

4.6.2 Affected Environment and Impacts

4.6.2.1 Air Quality

Pollutant concentrations measured at monitors within the Minneapolis CBD show air quality over the area to be generally good.

Although there are no ambient monitors located in the vicinity of the four proposed transfer stations, ambient pollutant concentrations at these locations are expected to be at or below levels measured in to CBD due to the fewer number of pollutant sources.

In response to complaints from Golden Auto Parts employees that harmful emissions were emanating from the smelting facility, the MPCA installed an air quality monitor on the roof of Golden Auto in June 1979. An additional monitor was located in a residential area immediately east of the National Lead site in September 1979. Both monitors were operated until September 1981. Results of this ambient air monitoring showed that prior to shutdown of the smelting facility, quarterly average ambient air concentrations at the Golden Auto monitor were regularly above the federal standard of 1.5 microgram/m^3. After shutdown, the ambient air quality was well within the 1.5 microgram/m^3 standard. Results of monitoring at the residential area monitor immediately east of the facility showed that federal ambient air quality standards were met during the sampling period September 1979 to September 1981 (MPCA, 1985).

Impacts on air quality at the site during construction will involve two to three months of grading and earth moving, and a total construction time of seven to nine months. Emissions during construction will result from diesel-powered construction equipment, vehicle travel to and from the site by 30 to 40 workers, and particulate emissions of approximately 45 tons per month during grading operations. Due to contamination of soils by fugitive lead dust from the National Lead smelting facility, particulate emissions may contain lead particulates (see Section 4.6.2.2 Geology and Soils).

Because the Hopkins-DOT site is expected to have the highest traffic volume of the four proposed transfer stations, a determination of compliance with the ambient standards for CO at Hopkins-DOT implies compliance at the other transfer stations. Predicted ambient standards compliance at the Hopkins-DOT site implies compliance at the remaining transfer stations as well (ERT, 1985).

Odors that do become a problem at transfer station facilities can generally be traced to design or operational problems. The proposed Hennepin County transfer stations will be designed to contain odors within site buildings and to minimize packer truck queuing. The proposed plan calls for daily removal of waste to nearby landfills. Thus, the facilities should not be a source of odor to surrounding neighborhoods.

In the immediate vicinity of the transfer stations, however, there may be some odor from waste in the MSW packer trucks if vehicles are in line waiting to unload. Transfer truck trailers that may occasionally need to wait for a truck tractor may become an odor source. However, this impact will probably be minor, because the Hennepin County transfer stations are designed to handle peak deliveries efficiently.

In general, municipal collection vehicles will not pose an odor problem, because the MSW will remain in the vehicles only as long as it takes to travel from the collection area to the transfer stations or directly to the resource recovery facility. Odors at the transfer station fall into two major categories: hydrogen sulfide (rotten egg odor) and organic. These odors would occur if refuse was stored on site for long periods. The operation of the transfer stations will generally not allow refuse to collect for more than five hours. No odor complaints have been received as a result of the existing Minneapolis South transfer station operation (City of Minneapolis, August 1985).

4.6.2.2 Geology and Soils

The site is underlain by glacial drift and five bedrock aquifers. The sediments in the area are of glacial origin, characterized by fine sands to coarse gravels separated by glacial till strata. The thickness of the drift varies by four distinct strata, including (Barr Engineering Co., 1977):

1. The upper drift, consisting of organic soils running north to south through the area, with outwash deposits on both sides of the organic soils.

2. The middle drift aquifer which is composed of glacial outwash and ice contact deposits.

3. Till separating the upper and middle drift aquifers.

4. The lower drift which is composed of sands and till.

The upper drift is not continuous in the area (USGS, 1981).

In October 1979, the Minnesota Pollution Control Agency obtained surface soil samples from 15 locations near and on the site to determine lead concentrations in the soil.

The lead concentration in the soil samples ranged from 12 to 130,000 microgram/gram. The off-site samples exhibited lead concentrations in the range of 12 to 990 microgram/gram. The on-site soils samples, however, had significantly higher concentrations of lead, ranging from 1,600 to 130,000 microgram/gram. In all but one case, the lead concentration in the silt

fraction was observed to be higher than that observed for the whole sample. The concentration of lead in the silt fraction is of major concern because it represents that concentration which has the greatest potential of migrating off-site with dust and airborne particulates.

In 1980, the USGS drilled test holes on the site. Samples obtained from test holes drilled in part of the area that is now property of Golden Auto Parts contained what was described as crushed battery casings and sludge. No chemical analyses were reported for the recovered materials (MPCA, 1985).

The construction of the solid waste transfer station will involve the excavation, compaction, grading and filling of surficial soils. Existing buildings will be demolished. The near-surface native soils on the site have been disturbed by previous development. The impact of the proposed construction may be substantial due to prior lead contamination of the soils. The level of impact is contingent on the cleanup work done by National Lead as required by the previously discussed consent decree. Excavated soils will be reused on site whenever possible. Demolition debris from the removal of the buildings from the site will require landfilling at a permitted facility.

4.6.2.3 Surface Water

The site is located in a relatively industrialized section of St. Louis Park.

The landscape in Hennepin County is varied, characterized by gently rolling to steep hills of glacial origin. In the vicinity of the site, there is little variation in geographic relief.

Marshy areas exist approximately 1,000 feet to the south and southwest of the site. A pond is located approximately 500 feet to the northwest of the site. Minnehaha Creek is within one mile to the southwest of the site and the Mississippi River is approximately three miles to the northeast.

Storm water runoff from the site would be directed toward the southwest to a municipal storm sewer line located under Monitor Av. From the collection point(s) along Monitor Av., the storm water would flow northwest and join other storm sewer lines at W. Lake St.

When the facility is completed, surface runoff will be directed into the existing municipal storm sewer system. Surface water impacts related to contact with stored waste materials would be unlikely since the tipping and storage areas would be fully enclosed. In addition, wastewater generated by the facility (approximately 100 GPD) would be contained on site and discharged to the municipal sanitary sewer system to eventually be treated and discharged. Most of the site surface area will be either paved or sodded, thereby reducing the potential for erosion. Although the probability of oil or other types of contaminated liquid being spilled from trucks during facility operation is slight, this can occur. Appropriate methods to collect and trap these liquids should be incorporated into the on-site drainage plan.

Since there are no natural surface water bodies on or adjacent to the site, the major surface water concern during construction is the potential for increased contaminants in site runoff. The removal of buildings and vegetation from the site would expose bare soils to precipitation. These soils would erode more easily than covered soils and decrease the quality of the surface runoff. The impacts would, however, be short term in nature, lasting only about nine months.

4.6.2.4 Land Use and Zoning

The National Lead/Golden Auto Parts site is located in an industrial area of the city of St. Louis Park. Existing land uses in the area include Quality Auto Body, which leases the Golden Auto portion of the site. Adjacent land uses are: a Northern States Power Co. substation, Strand Manufacturing Co. and Sports Wheels. North of the site across Hwy. 7 are an automobile service station, advertising agency, animal hospital and welding supply company. West of the site is vacant industrial land formerly used by a bottle gas company. On the far northwest corner of this vacant seven-acre parcel is the Cardinal Glass Co.

The St. Louis Park comprehensive plan, adopted by the city in March 1985, shows this area as planned for general industrial use. According to the plan, general industrial uses cover a wide range of manufacturing, warehousing and general business operations. This includes industrial uses which are characterized by substantial nuisance characteristics such as noise, odor, vibrations and traffic.

In August 1985, the city adopted a redevelopment plan for a corridor along Hwy. 7. This redevelopment plan will use tax increment financing to encourage the location of new businesses in this older part of the city. The National Lead/Golden Auto site is located within this redevelopment corridor. Although still planned for industrial use, the redevelopment plan states that: "The plan does not include uses such as, but not limited to, automotive service station, auto repair, billboards, outdoor sales, adult uses, car wash, drive-in restaurants, automobile repair, contractor's yards or heavy industrial use."

Zoning of this property is I-1 industrial. This is the heaviest of three industrial zoning districts in the city. This I-1 district allows a wide variety of industrial and business uses, including those with potential nuisance impacts. These nuisance uses are regulated by requiring a special permit. This district also has the least restrictive regulations governing lot coverage and setbacks (St. Louis Park Comprehensive Plan, 1982).

Major components of the proposed transfer station are an entrance/exit road, external scale facility with incoming and outgoing scales, a tipping area, an office, a parking area and truck storage area. This site currently has several structures associated with the former National Lead operation. In addition, the existing Quality Auto Body business may have to be relocated and the existing structures removed if warranted by site configuration. County staff have indicated that a transfer station could not be designed to operate correctly on the National Lead property alone (Porter, 1985).

Although the city has planned and zoned this area for industrial use, the Hwy. 7 corridor development plan anticipates industrial uses will generally be of an industrial office complex type (Thibault, 1985).

4.6.2.5 Transportation

Primary access to this site will be from Hwy. 7 to Hampshire Av. Hwy. 7 is a four-lane, divided highway providing two lanes of travel in each direction. Access from the north and south would be, for the majority of traffic, provided by Hwy. 100. A full cloverleaf interchange with Hwy. 100 and Hwy. 7 is approximately one mile east of the site. Additional access from the south would be from Louisiana Av. to W. Lake St., then easterly to Hampshire Av. A second alternate route from the south would be from Louisiana Av. to an extension of Hampshire Av. intersecting with Louisiana Av. This extension is

proposed in the city's Hwy. 7 corridor redevelopment plan, and no date for completion of the Hampshire Av. extension is given.

Average daily trips (ADT) along Hwy. 7 in the vicinity of the site were 28,600 in 1984. According to Metropolitan Council modeling forecasts, ADT in the year 2000 is forecast at 28,100. With respect to Hwy. 100 ADT, the 1984 figure is 66,000, and the Metropolitan Council forecast for the year 2000 is 100,800.

Operation of a transfer station at this site is expected to result in an increase in vehicular traffic (at design capacity) of 130 vehicle trips in the morning peak hour, and 90 vehicle trips in the evening peak hour. Some congestion westbound on Hwy. 7 may occur as a result of vehicles waiting to turn left onto Hampshire Av.

4.6.2.6 Noise

The National Lead/Golden Auto site is located south of Hwy. 7, north of a railroad track, and between Monitor Av. and Hampshire Av.

Noise measurements were performed by ERT during the period Oct. 30 to Nov. 1 during dry, calm (less than five mph) winds. All testing was done during daytime hours 7 a.m. to 10 p.m. since transfer stations will only be operating from 7 a.m. to 6 p.m. The first location of the test was a residential house near the intersection of Colorado Av. and Oxford St. This residence is approximately 1,000 feet southeast of the site. This area is consistent with an NAC-1 classification. Monitoring results at this test location show that the MPCA daytime standards of 60 dBA for L_{50} and 65 dBA for L_{10} were met by readings of 53 dBA and 61 dBA, respectively. In addition, the MPCA proposed standard for L_{eq} during daytime of 63 dBA was met with readings of 60 dBA in midmorning and 59 dBA during the 5 p.m. rush hour.

A second monitoring site was located approximately 1,800 feet west of the site, using a residential house as the noise-sensitive receptor. Results show that the MPCA daytime standard was met for L_{50} and L_{10}. Readings were 55 dBA and 59 dBA, respectively. The proposed MPCA standard of 63 dBA for daytime L_{eq} was also met by reading averaging 57 dBA.

Due to the distance to sensitive receptors and buffering aspects of existing conditions near the site, increases in noise levels at these receptors are expected to be imperceptible (less than 3 dBA).

4.6.2.7 Utilities

The city of St. Louis Park's water supply is provided by a series of 16 deep wells. In 1980, 5 of 14 wells listed as operational were not in use, due to the presence of polynuclear aromatic hydrocarbons (PAH). This is a family of petroleum-based chemical compounds, some of which have carcinogenic properties. These closures reduced the city water system's capacity by about 15 percent to 20 million gallons per day. According to the St. Louis Park comprehensive plan, this capacity is adequate for the present. However, there may be a need to replace pumps or lower pumps in the well bore in order to meet demands anticipated by the year 2000.

Currently, water is supplied to the site by a water line located beneath Hampshire Av. along the eastern boundary of the site. This supply line is connected to a 12-inch water main located beneath West Lake St.

Sanitary sewer service in the city is provided by a local collection system that connects to four metropolitan interceptors owned and operated by the Metropolitan Waste Control Commission. The sewage is transported to the Pig's Eye treatment plant south of downtown St. Paul. One of these interceptors is located beneath W. Lake St. on the north side of the site. Local sewage collection pipes are located beneath both Hampshire Av. on the east, and Monitor Av. on the west.

Storm water runoff from the site would be collected by a storm sewer line located beneath Monitor Av. This line is part of the local collection system that serves most of the city. Storm water is collected and directed to a system of ponding areas that provide temporary storage until discharged at various points within the city and allowed to leave the city.

Natural gas, electrical and telephone services are provided throughout the city of St. Louis Park. Investigations indicated capacities adequate to serve the requirements of a transfer station at this site.

The water, sanitary sewer, storm sewer, gas, fire protection, electric and telephone service requirements for all the transfer stations will be similar. A facility consisting of a tipping area, load-out area and minimal office space and toilet facilities will require the following utility capacities:

- 2-inch domestic water service (35 GPM Peak Flow--500 GPD Total)
- 4-inch sanitary sewer (25 GPM Discharge--100 GPD Total)
- 10-inch storm sewer (1.92 CFS--862 GPM)
- 6-inch fire protection service (850 GPM)
- 1 1/4-inch low-pressure gas service or smaller, depending on final building heating requirements
- 100 ampere, 120/240 volt, single-phase (assuming a connected load of less than 25 kVA--in excess of 50 kVA 3-phase service will be required)

4.6.2.8 Socioeconomics

The city of St. Louis Park typifies the experience of other older, fully developed suburbs in the Metropolitan Area The city's population showed a slight decline from about 48,000 people in 1970 to 42,931 in 1980. Households, however, increased at a rate of about 1 percent per year during the 1970 to 1980 period. This phenomenon is due to recent declines in the size of households. Unless a community experiences a drastic decline in population, the number of housing units continues to rise.

The National Lead/Golden Auto site is subject to the following taxing authorities: Hennepin County, the city of St. Louis Park, Independent School District 283 and the Minnehaha Creek Watershed District. Property tax losses if this site were to develop as a transfer station (public land) would be approximately $25,457.

The assessed market values of land parcels at the proposed transfer station site and selected lands adjacent to the site are included in Table 2.8.1.

Table 2.8.1

No. of Parcels	Assessed Market Values (ASM)	Total ASM	Adjacent Parcels
2	$89,900; $74,420	$164,320	$21,328; $7,280

4.6.2.9 Aesthetics and Cultural Resources

The National Lead/Golden Auto site is located in an industrial area of the city of St. Louis Park. Surrounding land uses in the area include: an NSP substation, a manufacturing company, an automobile service station and a welding supply company. Immediately west of the site is a vacant industrial property. South and east of the site are elevated railroads that screen the site from residential areas.

The National Lead portion of the site contains several concrete buildings dating back to 1940 or earlier, currently in various stages of disrepair and collapse. The 4.5-acre Golden Auto site is currently being used as an automobile wrecking and used parts business by Quality Auto Body.

4.6.2.10 Ecological Resources

The National Lead/Golden Auto site is in an industrial area of the city and has been a disturbed area since approximately 1940 when National Lead first began operation. There are no structures on site that are of historic, architectural, cultural or engineering significance. Since the site has been disturbed both on its surface and below ground, chances of it containing archeologically significant artifacts are greatly reduced.

Development of the proposed site will not have an adverse impact on local or regional plant communities or wildlife populations. The site is currently covered with artificial fill and does not provide any permanent habitat for wildlife. Landscaping of the site with shrubs, trees and herbaceous vegetation upon completion of construction may slightly increase utilization of the site by species tolerant of the noise and human activity associated with the operation of the transfer station. A landscaped buffer strip with a mixture of structural components and plant species could provide cover and foraging habitat for wildlife within an urban environment.

4.7 Pyrofax Site

4.7.1 Site Description

The Pyrofax site is located in the city of St. Louis Park, south of Hwy. 7 between Monitor Av. and Louisiana Av. (see Figure 4.7-1). This seven-acre site was previously used for production and distribution of bottle gases. According to available information, Pyrofax Gas Co. ceased production in the late 1950s. All buildings were removed in the late 1960s. Remnants of the foundation are still in evidence.

4.7.2 Affected Environment and Impacts

4.7.2.1 Air Quality

Pollutant concentrations measured at monitors within the Minneapolis central business district show air quality over the area to be generally good.

Although there are no ambient monitors located in the vicinity of the four proposed transfer stations, ambient pollutant concentrations at these locations are expected to be at or below levels measured in to central business district due to the fewer number of pollutant sources.

In response to complaints from Golden Auto Parts employees that harmful emissions were emanating from the National Lead smelting facility adjacent to this site, the Minnesota Pollution Control Agency installed an air quality monitor on the roof of Golden Auto in June 1979. An additional monitor was located in a residential area immediately east of the National Lead site in September 1979. Both monitors were operated until September 1981. Results of this ambient air monitoring showed that prior to shutdown of the smelting facility, quarterly average ambient air concentrations at the Golden Auto monitor were regularly above the federal standard of 1.5 microgram/m^3. After shutdown, the ambient air quality was well within the 1.5 microgram/m^3 standard. Results of monitoring at the residential area monitor immediately east of the facility showed that federal ambient air quality standards were met during the sampling period September 1979 to September 1981 (Minnesota Pollution Control Agency, 1985).

Impacts on air quality at the site during construction will involve two to three months of grading and earth moving, and a total construction time of seven to nine months. Emissions during construction will result from diesel-powered construction equipment, vehicle travel to and from the site by 30 to 40 workers, and particulate emissions of approximately 45 tons per month during grading operations.

Because the Hopkins-DOT site is expected to have the highest traffic volume of the four proposed transfer stations, a determination of compliance with the ambient standards for CO at Hopkins-DOT implies compliance at the other transfer stations. Predicted ambient standards compliance at the Hopkins-DOT site implies compliance at the remaining transfer stations as well (ERT, 1985).

Odors that do become a problem at transfer station facilities can generally be traced to design or operational problems. The proposed Hennepin County transfer stations will be designed to contain odors within site buildings and to minimize packer truck queuing. The proposed plan calls for daily removal of waste to nearby landfills. Thus, the facilities should not be a source of odor to surrounding neighborhoods.

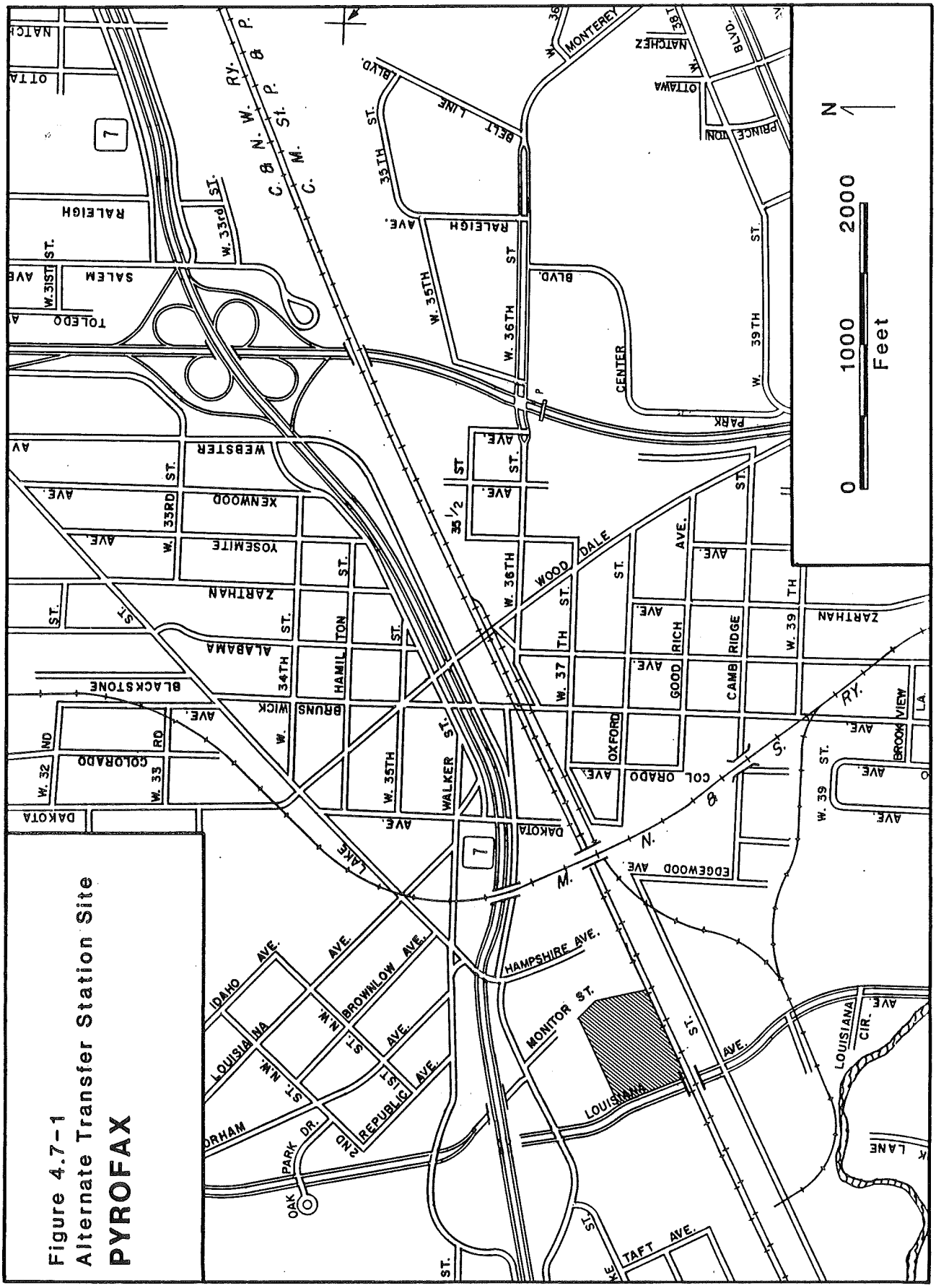


Figure 4.7-1
Alternate Transfer Station Site
PYROFAX

In the immediate vicinity of the transfer stations, however, there may be some odor from waste in the MSW packer trucks if vehicles are in line waiting to unload. Transfer truck trailers that may occasionaly need to wait for a truck tractor may become an odor source. However, this impact will probably be minor, because the Hennepin County transfer stations are designed to handle peak deliveries efficiently.

In general, municipal collection vehicles will not pose an odor problem, because the MSW will remain in the vehicles only as long as it takes to travel from the collection area to the transfer stations or directly to the resource recovery facility. Odors at the transfer station fall into two major categories: hydrogen sulfide (rotten egg odor) and organic. These odors would occur if refuse was stored on site for long periods. The operation of the transfer stations will generally not allow refuse to collect for more than five hours. No odor complaints have been received as a result of the existing Minneapolis South transfer station operation (City of Minneapolis, August 1985).

4.7.2.2 Geology and Soils

The site is underlain by glacial drift and five bedrock aquifers. The sediments in the area are of glacial origin, characterized by fine sands to coarse gravels separated by glacial till strata. The thickness of the drift varies by four distinct strata, including (Barr Engineering Co., 1977):

1. The upper drift, consisting of organic soils running north to south through the area, with outwash deposits on both sides of the organic soils.

2. The middle drift aquifer which is composed of glacial outwash and ice contact deposits.

3. Till separating the upper and middle drift aquifers.

4. The lower drift which is composed of sands and till.

The upper drift is not continuous in the area (USGS, 1981).

In October 1979, the MPCA obtained surface soil samples from 15 locations near and on the National Lead site to determine lead concentrations in the soil.

The lead concentration in the soil samples ranged from 12 to 130,000 microgram/gram. The off-site samples, none of which were on the Pyrofax site, exhibited lead concentrations in the range of 12 to 990 microgram/gram. In all but one case, the lead concentration in the silt fraction was observed to be higher than that observed for the whole sample. The concentration of lead in the silt fraction is of major concern because it represents that concentration which has the greatest potential of migrating off-site with dust and airborne particulates. Because of the potential for this lead-contaminated dust to migrate onto the Pyrofax site, soil testing should be performed on this site to determine the extent to which the soils may contain this contamination.

The construction of the solid waste transfer station will involve the excavation, compaction, grading and filling of surficial soils. Existing buildings will be demolished. The near-surface native soils on the site have been disturbed by previous development. The impact of construction on this site may be substantial due to containers of calcium hydroxide buried on the site. Calcium hydroxide is a byproduct of production of acetylene (manufactured by Pyrofax). Although burial of this material was approved by the state of Minnesota at the time (approximately 1960), future excavation of this site may require disposal of this material at an approved facility.

4.7.2.3 Surface Water

The site is located in a relatively industrialized section of St. Louis Park.

The landscape in Hennepin County is varied, characterized by gently rolling to steep hills of glacial origin. In the vicinity of the site, there is little variation in geographic relief.

Marshy areas exist approximately 700 feet to the south and southwest of the site. A pond is located approximately 800 feet to the northwest of the site. Minnehaha Creek is within one mile to the southwest of the site and the Mississippi River is approximately three miles to the northeast.

Storm water runoff from the site would be directed toward the southwest to a municipal storm sewer line located under Monitor Av. From the collection point(s) along Monitor Av., the storm water would flow northwest and join other storm sewer lines at Lake St.

The site is located within the Minnehaha Creek Watershed District. It is also within the boundaries of a secondary floodway district (100-year flood zone) as defined in St. Louis Park ordinances. In areas such as this, the city has several construction criteria and conditions that must be met before issuing permits allowing construction.

Storm water runoff would be collected by municipal storm sewers located beneath Monitor Av. and/or Louisiana Av. This storm water would flow northward to connect with storm sewer lines beneath W. Lake St.

When the facility is completed, surface runoff will be directed into the existing municipal storm sewer system. Surface water impacts related to contact with stored solid waste materials would be unlikely since the tipping and storage areas would be fully enclosed. In addition, wastewater generated by the facility (approximately 100 GPD) would be contained on site and discharged to the municipal sanitary sewer system to eventually be treated and discharged. Most of the site surface area will be either paved or sodded, thereby reducing the potential for erosion. Although the probability of oil or other types of contaminated liquid being spilled from trucks during facility operation is slight, this can occur. Appropriate methods to collect and trap these liquids should be incorporated into the on-site drainage plan.

Since there are no natural surface water bodies on or adjacent to the site, the major surface water concern during construction is the potential for increased contaminants in site runoff. The removal of buildings and vegetation from the site would expose bare soils to precipitation. These soils would erode more easily than covered soils and decrease the quality of the surface runoff. The impacts would, however, be short term in nature, lasting only about nine months.

4.7.2.4 Land Use and Zoning

The Pyrofax site is located in the city of St. Louis Park, south of Hwy. 7 between Monitor Av. and Louisiana Av. This 7-acre site was previously used for manufacture and distribution of bottle gases. According to available information, Pyrofax ceased production in 1959. All buildings were removed in the mid-1960s. Remnants of the foundation are still in evidence. North of this site is the Cardinal Glass Co.

The St. Louis Park comprehensive plan, adopted by the city in March 1985, shows this area as planned for general industrial use. According to the plan, general industrial uses cover a wide range of manufacturing, warehousing and general business operations. This includes industrial uses which are characterized by substantial nuisance characteristics such as noise, odor, vibrations and traffic.

In August 1985, the city adopted a redevelopment plan for a corridor along Hwy. 7. This redevelopment plan will use tax increment financing to encourage the location of new businesses in this older part of the city. The Pyrofax site is located within this redevelopment corridor. Although still planned for industrial use, the redevelopment plan states that: "The plan does not include uses such as, but not limited to, automotive service station, auto repair, billboards, outdoor sales, adult uses, car wash, drive-in restaurants, automobile repair, contractor's yards or heavy industrial use."

Zoning of this property is I-1 industrial. This is the heaviest of three industrial zoning districts in the city. This I-1 district allows a wide variety of industrial and business uses, including those with potential nuisance impacts. These nuisance uses are regulated by requiring a special permit. This district also has the least restrictive regulations governing lot coverage and setbacks (St. Louis Park Comprehensive Plan, 1982).

Major components of the proposed transfer station are an entrance/exit road, external scale facility with incoming and outgoing scales, a tipping area, an office, a parking area and truck storage area.

With the exception of the permanent foundations on the property, the site is vacant industrial land.

Although the city has planned and zoned this area for industrial use, the Hwy. 7 corridor redevelopment plan anticipates industrial development to be industrial office space (Thibault, 1985).

4.7.2.5 Transportation

Access to this site will be from Hwy. 7 via Lake St. to Monitor Av. Hwy. 7 is a four-lane, divided highway providing two lanes of travel in each direction. Access from the north and south would be, for the majority of traffic, provided by Hwy. 100. A full cloverleaf interchange with Hwy. 7 is approximately one mile east of the site. Additional access from the south would be from Louisiana Av. to an extension of Hampshire Av. intersecting with Louisiana Av. This extension is proposed in the city's Hwy. 7 corridor redevelopment plan, and no date for completion of the Hampshire Av. extension is given.

Average daily trips (ADT) along Hwy. 7 in the vicinity of the site were 28,600 in 1984. According to Metropolitan Council modeling forecasts, ADT in the year 2000 is forecast at 28,100. With respect to Hwy. 100 ADT, the 1984 figure is 66,000, and the Metropolitan Council forecast for the year 2000 is 100,800.

Operation of a transfer station at this site is expected to result in an increase in vehicular traffic (at design capacity of the transfer station) of 130 vehicle trips during the morning peak hour, and 90 vehicle trips during the evening peak hour. Some congestion westbound on Hwy. 7 may occur as a result of vehicles waiting to turn left onto Monitor Av.

Since no right-turn lane is planned for northbound Louisiana Av. onto the Hampshire Av. extension, some delays and potential accident hazards may occur

on Louisiana Av. from vehicles entering and leaving the site directly via Louisiana Av.

4.7.2.6 Noise

The Pyrofax site is located south of Hwy. 7, north of a railroad track, and between Monitor Av. and Louisiana Av.

Noise measurements were performed by ERT during the period Oct. 30 to Nov. 1 during dry, calm (less than five mph) winds. All testing was done during daytime hours 7 a.m. to 10 p.m. since transfer stations will only be operating from 7 a.m. to 6 p.m. The first location of the test was a residential house near the intersection of Colorado Av. and Oxford St. This residence is approximately 1,500 feet southeast of the site. This area is consistent with an NAC-1 classification. Monitoring results at this test location show that the MPCA daytime and nighttime standards of 60 dBA for L_{50} and 65 dBA for L_{10} were met by readings of 53 dBA and 61 dBA, respectively. In addition, the MPCA proposed standard for L_{eq} during daytime of 63 dBA was met with readings of 60 dBA in midmorning and 59 dBA during the 5 p.m. rush hour.

A second monitoring site was located approximately 1,300 feet west of the site, using a residential house as the noise-sensitive receptor. Results show that the MPCA daytime and nighttime standard was met for L_{50} and L_{10}. Readings were 55 dBA and 59 dBA, respectively. The proposed MPCA standard of 63 dBA for daytime L_{eq} was also met by reading averaging 57 dBA.

Due to the distance to sensitive receptors and the buffering aspects of existing conditions near the site, increases in noise levels at these receptors are expected to be imperceptible.

4.7.2.7 Utilities

The city of St. Louis Park's water supply is provided by a series of 16 deep wells. In 1980, 5 of 14 wells listed as operational were not in use, due to the presence of polynuclear aromatic hydrocarbons (PAH). This is a family of petroleum-based chemical compounds, some of which have carcinogenic properties. These closures reduced the city water system's capacity by about 15 percent to 20 million gallons per day. According to the St. Louis Park comprehensive plan, this capacity is adequate for the present. However, there may be a need to replace pumps or lower pumps in the well bore in order to meet demands anticipated by the year 2000.

Currently, water is supplied to the site by a water line located beneath Hampshire Av. along the eastern boundary of the site. This supply line is connected to a 12-inch water main located beneath W. Lake St.

Sanitary sewer service in the city is provided by a local collection system that connects to four metropolitan interceptors owned and operated by the Metropolitan Waste Control Commission. The sewage is transported to the Pig's Eye treatment plant south of downtown St. Paul. One of these interceptors is located beneath W. Lake St. on the north side of the site. Local sewage collection pipes are located beneath both Hampshire Av. on the east, and Monitor Av. on the west.

Storm water runoff from the site would be collected by a storm sewer line located beneath Monitor Av. This line is part of the local collection system that serves most of the city. Storm water is collected and directed to a system of ponding areas that provide temporary storage until discharged at various points within the city and allowed to leave the city.

Natural gas, electrical and telephone services are provided throughout the city of St. Louis Park and appear to have capacities adequate to serve the requirements of a transfer station at this site.

The water, sanitary sewer, storm sewer, gas, fire protection, electric and telephone service requirements for all the transfer stations will be similar. A facility consisting of a tipping area, load-out area and minimal office space and toilet facilities will require the following utility capacities:

- 2-inch domestic water service (35 GPM Peak Flow--500 GPD Total)
- 4-inch sanitary sewer (25 GPM Discharge--100 GPD Total)
- 10-inch storm sewer (1.92 CFS--862 GPM)
- 6-inch fire protection service (850 GPM)
- 1 1/4-inch low-pressure gas service or smaller, depending on final building heating requirements
- 100 ampere, 120/240 volt, single-phase (assuming a connected load of less than 25 kVA--in excess of 50 kVA 3-phase service will be required)

4.7.2.8 Socioeconomics

The city of St. Louis Park typifies the experience of other older, fully developed suburbs in the Metropolitan Area. The city's population showed a slight decline from about 48,000 people in 1970 to 42,931 in 1980. Households, however, increased at a rate of about 1 percent per year during the 1970 to 1980 period. This phenomenon is due to recent declines in the size of households. Unless a community experiences a drastic decline in population, the number of housing units continues to rise.

The Pyrofax site is subject to the following taxing authorities: Hennepin County, the city of St. Louis Park, Independent School District 283 and the Minnehaha Creek Watershed District. Total tax losses, should this site develop as a county-owned transfer station, would be approximately $29,390.

The assessed market values of land parcels at the proposed transfer station site and selected lands adjacent to the site are included in Table 2.8.1.

Table 2.8.1

No. of Parcels	Assessed Market Values (ASM)	Total ASM	Adjacent Parcels
2	$206,000; $3,360	$209,360	$340,590; $12,040

4.7.2.9 Aesthetics and Cultural Resources

The Pyrofax site is located in an industrial area of the city of St. Louis Park. Nearby land uses in the area include: an NSP substation, a manufacturing company, an automobile service station and a welding supply company. Foundations of the previous business (Pyrofax) remain. South and east of the site are elevated railroads that screen the site from residential areas.

4.7.2.10 Ecological Resources

The Pyrofax site is in an industrial area of the city and has been previously disturbed. There are no structures on site that are of historic, architectural, cultural or engineering significance. Since the site has been disturbed both on its surface and below ground, chances of it containing archeologically significant artifacts are greatly reduced.

Development of the proposed site will not have an adverse impact on local or regional plant communities or wildlife populations. The site is currently covered with artificial fill and does not provide any permanent habitat for wildlife. Landscaping of the site with shrubs, trees and herbaceous vegetation upon completion of construction may slightly increase utilization of the site by species tolerant of the noise and human activity associated with the operation of the transfer station. A landscaped buffer strip with a mixture of structural components and plant species could provide cover and foraging habitat for wildlife within an urban environment.

4.8 Airport Southwest Site

4.8.1 Site Description

The Airport Southwest site is 13 acres in size and is located in the southwest corner of the Minneapolis/St. Paul International Airport (see Figure 4.8-1). This property is owned and operated by the Metropolitan Airports Commission and is presently vacant. This site is in line with runway 4-22. This runway is proposed to be extended approximately 2,750 feet toward this site, subject to approval of the Metropolitan Airports Commission 1987 capital budget. Extension of this runway, and its "clear zone" would then be very near the site's northeastern boundary.

Surrounding land uses, other than airport operations, include a golf course north of the site and a Metropolitan Transit Commission bus garage east of the site.

4.8.2 Affected Environment and Impacts

4.8.2.1 Air Quality

Pollutant concentrations measured at monitors within the Minneapolis central business district show air quality over the area to be generally good.

Although there are no ambient monitors located in the vicinity of the four proposed transfer stations, ambient pollutant concentrations at these locations are expected to be at or below levels measured in to central business district due to the fewer number of pollutant sources.

Impacts on air quality at the site during construction will involve two to three months of grading and earth moving, and a total construction time of seven to nine months. Emissions during construction will result from diesel-powered construction equipment, vehicle travel to and from the site by 30 to 40 workers, and particulate emissions of approximately 45 tons per month during grading operations.

Based on a study done by the Minnesota Pollution Control Agency for the Minneapolis/St. Paul International Airport, using simple proportional modeling, the worst case values anticipated were 72 percent of the carbon monoxide standard, and 50 percent of the hydrocarbon standard, all as adopted by the Minnesota Pollution Control Agency.

Odors that become a problem at transfer station facilities can generally be traced to design or operational problems. The proposed Hennepin County transfer stations will be designed to contain odors within site buildings and to minimize packer truck queuing. The proposed plan calls for daily removal of waste to nearby landfills. Thus, the facilities should not be a source of odor to surrounding neighborhoods.

In the immediate vicinity of the transfer stations, however, there may be some odor from waste in the municipal solid waste packer trucks if vehicles are in line waiting to unload. Transfer truck trailers that may occasionally need to wait for a truck tractor may become an odor source. However, this impact will probably be minor, because the Hennepin County transfer stations are designed to handle peak deliveries efficiently.

In general, municipal collection vehicles will not pose an odor problem, because the MSW will remain in the vehicles only as long as it takes to travel

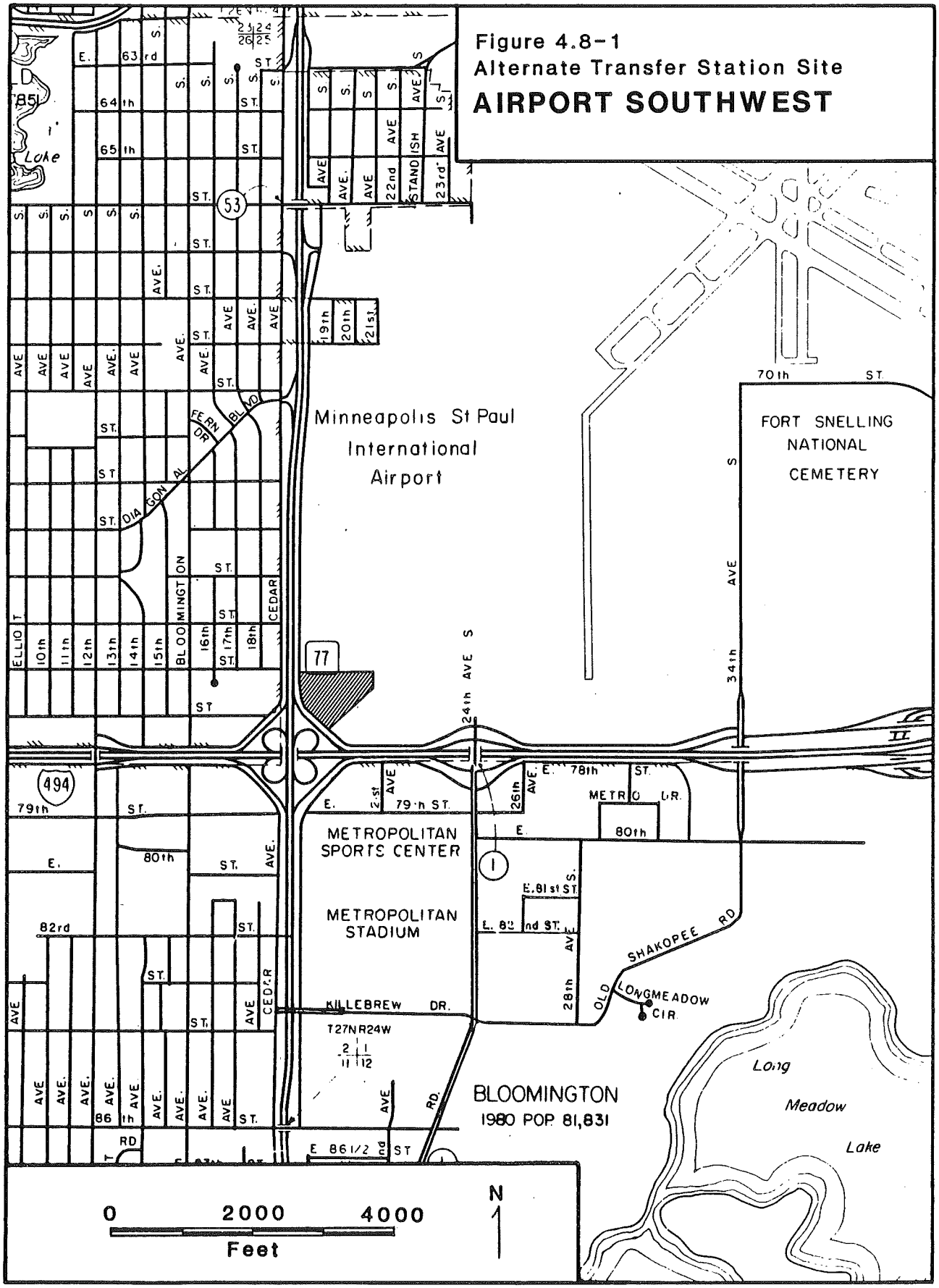


Figure 4.8-1
Alternate Transfer Station Site
AIRPORT SOUTHWEST
Minneapolis St Paul
International
Airport
FORT SNELLING
NATIONAL
CEMETERY
METROPOLITAN
SPORTS CENTER
METROPOLITAN
STADIUM
BLOOMINGTON
1980 POP 81,831
Long
Meadow
Lake
T27N R24W
0
2000
4000
Feet
N

from the collection area to the transfer stations or directly to the resource recovery facility. Odors at the transfer station fall into two major categories: hydrogen sulfide (rotten egg odor) and organic. These odors would occur if refuse was stored on site for long periods. The operation of the transfer stations will generally not allow refuse to collect for more than five hours. No odor complaints have been received a a result of the existing Minneapolis South transfer station operation (City of Minneapolis, August 1985).

4.8.2.2 Geology and Soils

The site is located in the Minnesota Valley Outwash geomorphic region, an alluvial plain area characterized by sandy, well-drained soils (University of Minnesota, 1978). Soils on the site include primarily those from the Hubbard group. These are well-drained, loamy sand soils varying in slope from 0 to 12 percent. Most of the site is nearly level (0 to 2 percent), with two small areas that are 2 to 6 percent and 6 to 12 percent, respectively (Hennepin County Soil Survey).

4.8.2.3 Surface Water

The Airport Southwest site is located where surface water drainage study is toward the south and southeast. A large storm sewer, 10 feet wide by 7.5 feet high, was constructed in 1968 to convey storm water from this area to the Minnesota River. It flows parallel to I-494 until it crosses beneath the freeway and eventually discharges into the Minnesota River.

Since there are no surface water bodies or designated wetlands on or adjacent to the site, the quality of runoff that enters the municipal storm sewer does not pose adverse environmental impacts.

4.8.2.4 Land Use and Zoning

The Airport Southwest site has been located within the airport property since the formation of the Aero Club of Minneapolis, which was organized in 1920. Although the airport has undergone major changes in the last 65 years, the subject site has changed very little. East of the site is a MTC bus garage. This facility was built about 1978. North of the site is Rich Acres golf course. Northeast of the site is vacant airport, or MAC property. Some of this land will be used for an extension of runway 4-22. This extension, planned for construction beginning 1987, will lengthen runway 4-22 2,750 feet toward the southwest and the subject site. The approximate 35-foot height of a transfer station if placed at the end of the runway's clear zone, a worst case situation, would be about nine feet below the "clear glide slope" for this extended runway.

East of Cedar Av. (Hwy. 77) existing land uses in the vicinity of this site along Cedar are apartments, and some commercial uses along the intersection of I-494 and Cedar Av. The area south of I-494 from the site is mixed service commercial, primarily motels and restaurants. Also in this area is the Metropolitan Sports Center used for professional hockey and other events. Adjacent to the sports center is the former Metropolitan Stadium site. Previously used for professional baseball, football and concerts, there is currently a proposal to build a large commercial and recreational complex known as the Mall of America and Fantasyworld. This complex would, as proposed, contain approximately 10.5 million square feet of space for 800 commercial shops; 1 million square feet of indoor recreation; a 0.5 million square foot convention center; 2 million square feet of hotel space; 2 million square feet of office space.

A transfer station at this site may impact airport operations of runway 4-22 and may have a slight impact on multifamily residences approximately 300 feet west of the site across Cedar Av.

Acquisition of this property for use as a transfer station may not be possible. A metropolitan county does not have explicit authority to condemn public property for transfer station purposes; it has only general condemnation authority for such purposes. Minn. Stat. 473.811, subd. 1 (1984). Accordingly, the issue is whether there is implied authority for such condemnation.

Implied authority exists in the following circumstances: 1) where the land to be condemned has not been put to public use by the authority that owns it; 2) where the proposed use is consistent with its current public use; 3) where without the condemnation, the would-be condemnor cannot otherwise reasonably carry on its franchise powers, i.e., a showing of necessity (Metropolitan Council legal staff, 1985).

On Oct. 24, 1984, the Metropolitan Airports Commission received a letter from Hennepin County, based upon an adopted county board resolution, that directed Hennepin County staff to negotiate with the Metropolitan Airports Commission for use of land on Minneapolis/St. Paul International Airport in the general vicinity of the Metropolitan Transit Commission bus garage for development of a county solid waste transfer station. The board resolution directed county staff to negotiate for the lease or purchase of airport property to accomplish this development.

The recommendation to the Physical Planning and Development Committee of the Metropolitan Airports Commission was:

> Recommend to the full Commission that the Hennepin County Board be notified that adequate space is not available on Minneapolis-St. Paul International Airport for development of a solid waste transfer station by Hennepin County. Motion made by Commissioner Del Calzo, seconded by Commissioner Jerich. Passed unanimously.

In December 1984, the Metropolitan Airports Commission adopted this recommendation.

4.8.2.5 Transportation

Access to the Airport Southwest site would be provided almost exclusively by 24th Av. S. to the frontage road parallel to I-494 and Cedar Av. (Hwy. 77). An additional access is possible by traffic exiting from northbound Cedar Av. at 68th St., and then negotiating a hairpin turn onto the frontage road southbound to the site. Traffic from the north could come down Cedar Av.; exit at 63rd St.; drive southbound on the frontage road named Cedar Av.; turn left onto 66th St.; turn right onto the frontage road on the airport side of Cedar Av.; and proceed to the site. The indirect nature of this route coupled with the number of turns to be negotiated make use of this route improbable.

Average daily trips (ADT) along I-494 (six-lane freeway) between Cedar Av. and 24th Av. S. in 1984 were 71,000. Projections by the Metropolitan Council for 1990 show this segment's ADT to increase to 143,400. Cedar Av. is a four-lane divided highway with ADT for 1984 of 44,400. Projections by the Council show 1990 ADT as 48,900.

None of the above ADT figures include the trips generated by the Mall of America and Fantasyworld should this complex be built. The low estimate of the

number of trips generated by this complex is 123,000 trips per day. This estimate greatly exceeds the threshold of the existing highway (I-494 and Hwy. 77) system. High estimates for this complex are 339,000 ADT. Operation of a transfer station at this site is expected to result in an increase in vehicular traffic (at design capacity) of approximately 365 vehicle trips. Although the number of vehicle trips generated by a transfer station at this site would not significantly impact the transportation system, movement of vehicles to and from the site would be greatly hampered by the transportation system's projected deficiencies.

4.8.2.6 Noise

The Airport Southwest site is located near the intersection of Cedar Av. (Hwy. 77) and I-494, in the southwestern corner of the Minneapolis/St. Paul International Airport.

Noise measurements were performed by ERT during the period Oct. 30 to Nov. 1 during dry, calm (less than five mph) winds. All testing was done during daytime hours 7 a.m. to 10 p.m. since transfer stations will only be operating from 7 a.m. to 6 p.m. The test location was an apartment building across Cedar Av. from the site near the intersection of 18th Av. S. and 76th St. This area is an NAC-1 classification with MPCA standards of 65 dBA for L_{50}, 60 dBA for L_{50}, and 63 dBA for L_{eq} for daytime noise. The test site is approximately 300 feet west of the Airport Southwest site. Readings show that vehicle traffic on Hwy. 77 coupled with jet aircraft noise exceed all of these standards. In addition, the L_{90} reading (used to determine "background" noise since it represents the level of noise 90 percent of the time) was 66 dBA. Although not part of the regulations, this background noise level provides an indication of the quietest sound levels at a given location.

Existing noise levels exceed the Minnesota Pollution Control Agency residential, daytime (NAC-1) standards.

4.8.2.7 Utilities

The only utility currently provided at the Airport Southwest site is storm sewers. A large storm sewer line, 10 feet high by 7.5 feet wide, carries storm water runoff parallel to I-494 and eventually discharges into the Minnesota River.

All other utilities (that is, sanitary sewer, water supply, electrical service, natural gas and telephone service) are provided to the Metropolitan Transit Commission garage adjacent to the east of the site. Available information indicates that extensions of these services, with capacities sufficient for transfer station operations, could be extended to serve this site.

4.8.2.8 Socioeconomics

Estimated employment at the Minneapolis/St. Paul International Airport is approximately 20,000 employees.

There are no records of assessed values for parcels within the airport site since it is tax exempt land.

The Airport Southwest site is publicly held and is not assessed for property taxes. Development of a transfer station at this site would not alter the tax exempt status, and the taxing authorities with jurisdiction would neither gain nor lose revenues.

4.8.2.9 Aesthetics and Cultural Resources

Although a large structure will occupy a vacant site, the building of a transfer station at this location would not significantly alter the present visual conditions. No quality visual paths are interrupted by the proposed structure, only the views of the airport. The facility itself could not be considered a visual disadvantage over present conditions.

Sensitive receptors to be considered are the apartment buildings along Cedar Av. to the northwest and west. The remaining views of the site are from industrial and commercial properties. Much of the truck traffic at the facility would be visible, especially to residents to the northwest and west. Architecturally, the facility appears to be compatible with the industrial visual character of the area. The change of visual conditions posed by the transfer station may not likely be considered to improve on the existing situation, but it is not likely to degrate the aesthetics either. The development of a transfer station on the airport site will not adversely affect the visual aesthetics of the area.

4.8.2.10

Although a few scattered areas within the airport may be capable of supporting minimal wildlife populations, no such habitats exist on the Airport Southwest site.

4.9 I-494 and Nicollet Av.

4.9.1 Site Description

The I-494 and Nicollet Av. site is located in the city of Bloomington west of Nicollet Av., between 78th St. W. and 79th St. W. (see Figure 4.9-1). It is approximately seven acres in size and is an active industrial area of the city. Presently, the site encompasses approximately 10 existing businesses consolidated within six structures, and includes a vacant 1.6-acre parcel. The surrounding land uses in the area are all industrial and are shown in the Bloomington comprehensive plan as remaining in industrial uses.

Access to the site would be provided by I-494 with exits at Nicollet Av. east of the site, and Lyndale Av. west of the site.

4.9.2 Affected Environment and Impacts

4.9.2.1 Air Quality

Pollutant concentrations measured at monitors within the Minneapolis central business district show air quality over the area to be generally good.

Although there are no ambient monitors located in the vicinity of the four proposed transfer stations, ambient pollutant concentrations at these locations are expected to be at or below levels measured in to central business district due to the fewer number of pollutant sources.

Impacts on air quality at the site during construction will involve two to three months of grading and earth moving, and a total construction time of seven to nine months. Emissions during construction will result from diesel-powered construction equipment, vehicle travel to and from the site by 30 to 40 workers, and particulate emissions of approximately 45 tons per month during grading operations.

Because the Hopkins-DOT site is expected to have the highest traffic volume of the four proposed transfer stations, a determination of compliance with the ambient standards for CO at Hopkins-DOT implies compliance at the other transfer stations. Predicted ambient standards compliance at the Hopkins-DOT site implies compliance at the remaining transfer stations as well.

Odors that do become a problem at transfer station facilities can generally be traced to design or operational problems. The proposed Hennepin County transfer stations will be designed to contain odors within site buildings and to minimize packer truck queuing. The proposed plan calls for daily removal of waste to nearby landfills. Thus, the facilities should not be a source of odor to surrounding neighborhoods.

In the immediate vicinity of the transfer stations, however, there may be some odor from waste in the MSW packer trucks if vehicles are in line waiting to unload. Transfer truck trailers that may occasionally need to wait for a truck tractor may become an odor source. However, this impact will probably be minor, because the Hennepin County transfer stations are designed to handle peak deliveries efficiently.

In general, municipal collection vehicles will not pose an odor problem, because the MSW will remain in the vehicles only as long as it takes to travel from the collection area to the transfer stations or directly to the resource recovery facility. Odors at the transfer station fall into two major

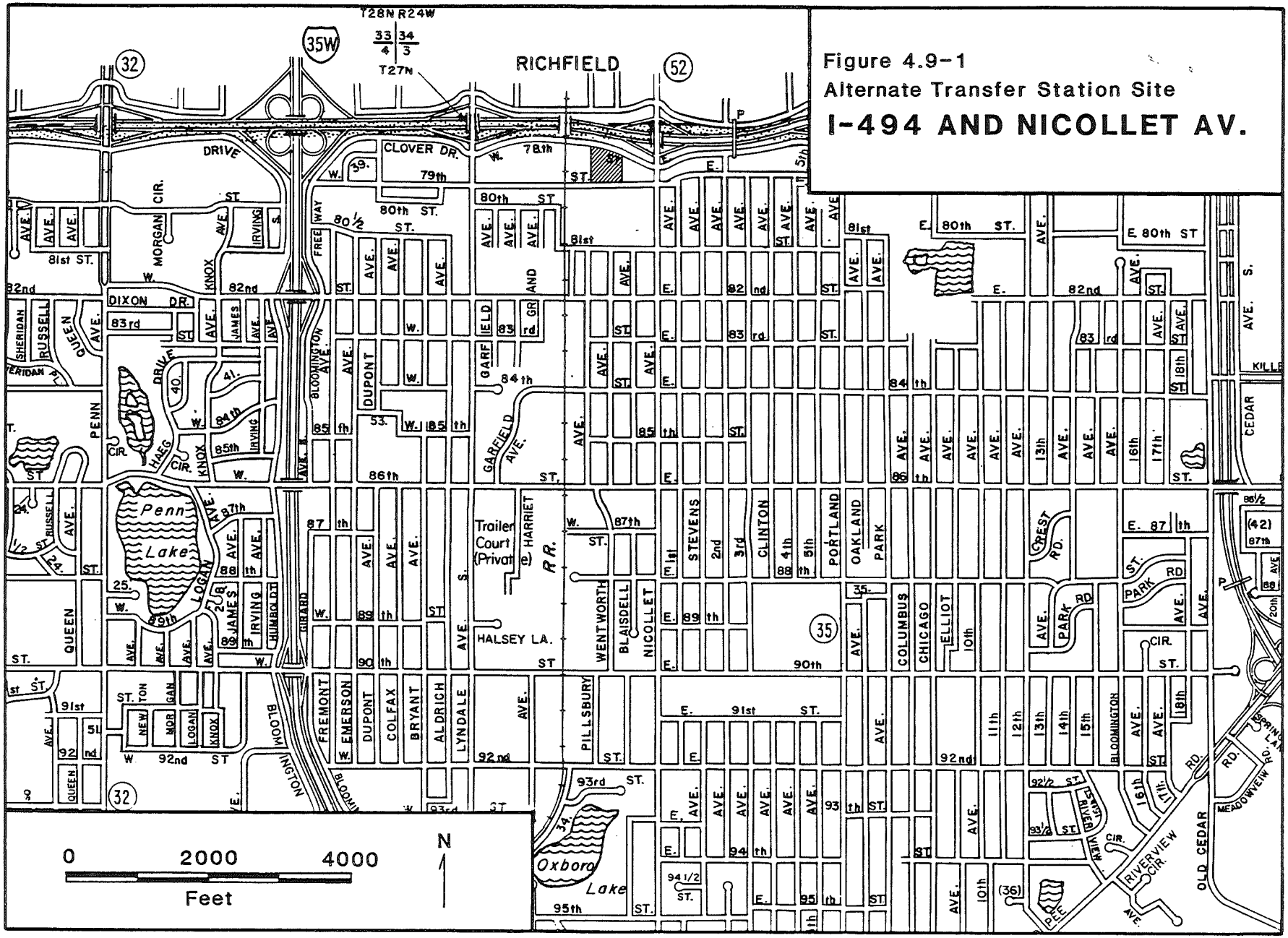


Figure 4.9-1
Alternate Transfer Station Site
I-494 AND NICOLLET AV.

categories: hydrogen sulfide (rotten egg odor) and organic. These odors would occur if refuse was stored on site for long periods. The operation of the transfer stations will generaly not allow refuse to collect for more than five hours. No odor complaints have been received a a result of the existing Minneapolis South transfer station operation (City of Minneapolis, August 1985).

4.9.2.2 Geology and Soils

This 7-acre site is west of Nicollet Av. between 78th and 79th Sts. W. Most of the site is covered by buildings and pavement. A small amount of land serves as unimproved roads and parking. The USGS topographic map, Bloomington Quadrangle, shows this area as nearly level.

The site is located in the Minnesota Valley Outwash geomorphic region, an alluvial plain area characterized by sandy, well-drained soils (University of Minnesota, 1974). Because the site has been previously disturbed and developed for sometime, surficial geology would not be representative of the soil types in existence prior to development.

4.9.2.3 Surface Water

The I-494 and Nicollet Av. site is primarily buildings and pavement although some unpaved areas serve as roads and vehicle parking. The site is nearly level. Storm sewers located in the immediate vicinity of the site would carry surface water runoff to natural and manmade ponding areas.

Since there are no surface water bodies or designated wetlands on or adjacent to the site, the quality of runoff which enters the municipal storm sewer does not pose adverse environmental impacts.

4.9.2.4 Land Use and Zoning

The I-494 and Nicollet Av. site is located in an industrial area of Bloomington, south of I-494 between 78th and 79th Sts. W. In 1979, approximately 2.2 percent of the city or 800 acres of land was developed in industrial uses. The city's comprehensive plan (as amended October 1982) shows a large area south of I-494 between Nicollet Av. and Lyndale Av. as remaining in industrial use through the year 2000.

This area is zoned I-3 general industrial. This is the heaviest industrial zone in the city. Uses in this district include:

- Manufacturing
- Public and public utility uses
- Warehousing
- Repairing, rebuilding and painting of vehicles, machinery and equipment
- Retail sales or heavy equipment
- Junk yard disposal business
- Truck and/or trailer rental

Transfer stations are not specifically listed, but conditional uses have been granted by the city for similar uses (that is, aluminum recycling business). A transfer station would be a public use as indicated in the zoning ordinance.

4.9.2.5 Transportation

Access to the I-494 and Nicollet Av. site would either be provided by an interchange with I-494 and Nicollet Av., or by the interchange of Lyndale Av.

and I-494. Vehicles would most likely approach the site via Nicollet Av. to 79th St. W. The entrance to the site would be approximately 500 feet west of Nicollet Av. on 79th St.

Average daily trips (ADT) along Nicollet Av. south of I-494 were 18,100 in 1982. According to the Minnesota Department of Transportation traffic counts for 1984, ADT on I-494 between Nicollet Av. and Lyndale Av. were 95,900.

Operation of a transfer station at this site is expected to result in an increase in vehicular traffic (at design capacity) of approximately 365 vehicle trips. The breakdown of the type of trips is 160 packer trucks (15 during the morning peak, 10 during the evening peak, and the remainder spread throughout the day). Private vehicle trips (including transfer station employees) will be about the same number and distribution as packer trucks. In addition, transfer truck trips will be 5 during the morning peak, 5 during the evening peak, and the remaining 35 transfer truck trips will be made throughout the day.

This increase in traffic is not expected to reduce the current level of service on the roads in the site area.

4.9.2.6 Noise

The I-494 and Nicollet Av. site is between 78th St. W. and 79th St. W., about 500 feet west of Nicollet Av.

Noise measurements were performed by ERT during the period Oct. 30 to Nov. 1 during dry, calm (less than five mph) winds. All testing was done during daytime hours 7 a.m. to 10 p.m. since transfer stations will only be operating from 7 a.m. to 6 p.m. The location of the test was a local park near the intersection of 80th Av. E. and 1st Av. S. This park is approximately 1,000 feet southeast of the site. This area is consistent with an NAC-2 classification. Monitoring results at this test location show that the MPCA daytime standards of 65 dBA for L_{50} and 70 dBA for L_{10} were met by readings of 57 dBA and 62 dBA, respectively. In addition, the MPCA proposed standard for L_{eq} during daytime of 68 dBA was met with readings of 60 dBA in the morning rush hour.

Due to the distance to sensitive receptors and buffering aspects of existing conditions near the site, increases in noise levels at these receptors are expected to be imperceptible.

4.9.2.7 Utilities

Bloomington's water supply is obtained from both groundwater and surface water sources. Groundwater is the primary source and accounts for approximately 76 percent of the city's water supply. Treated surface water is purchased from the city of Minneapolis during periods of peak demand to assist in replenishing city reservoirs. Bloomington is one of the few communities in the Metropolitan Area that utilizes both groundwater and surface water sources.

Groundwater is taken from the municipal well field located at Normandale Blvd. and Poplar Bridge Rd. The water is drawn from the Jordan sandstone that underlies Oneota dolomite which is part of the Prairie du Chien-Jordan aquifer, the major aquifer in the south Metropolitan Area. The groundwater obtained from these wells is a high-quality water source, but relatively hard, and requires treatment for softening.

The water distribution network consists of storage reservoirs and various sized distribution mains. Distribution mains literally surround the site, as they are located south of I-494; beneath Nicollet Av.; beneath 80th St. W.; and beneath Lyndale Av.

Although central sanitary sewer service is provided throughout Bloomington, some on-site systems remain, including this site. A trunk sewer line is available at 79th St. W. with adequate capacity to serve the 100 gallons per day generated by a transfer station.

Storm drainage in this area is provided by storm sewers which carry runoff to natural or manmade ponding areas. Adequate storm draining facilities exist at the site.

Electrical service to the site would be provided by the Northern State Power Company's Wilson substation located just to the east of the site.

Minnegasco's Dakota station has natural gas mains running beneath both Lyndale Av. and Nicollet Av. Natural gas service appears available and adequate at the site.

4.9.2.8 Socioeconomics

Bloomington is primarily a residential neighborhood. Forty-five percent of Bloomington's land area is currently dedicated to residential use.

The 1980 population of Bloomington was 81,831, a slight decrease from the 1970 population of 81,970.

Between 1970 and 1980, the number of dwelling units within Bloomington increased from 22,300 to 29,500.

The assessed market values of land parcels at the proposed transfer station site and selected lands adjacent to the site are included in Table 2.8.1.

Table 2.8.1

No. of Parcels	Assessed Market Values (ASM)	Total ASM	Adjacent Parcels
5	$9,884; $56,695; $93,654; $259,750; $181,761	$603,744	$117,979; $32,237; $236,315; $36,163; $386,097

The parcels of land within the I-494 and Nicollet Av. site are privately held and thus contribute to the taxing authorities of jurisdiction. Once purchased by the county for the construction of a transfer station, the parcels would not be subject to property tax.

The current assessed value of the parcels currently under industrial use is $603,744. Taxing authorities would lose $63,737 annually (1985 assessments) in revenues as a result of the county's purchase of the parcel.

4.9.2.9 Aesthetics and Cultural Resources

The I-494 and Nicollet Av. site has been used as a commercial and industrial site for some time. The city's comprehensive plan shows this area as "urban

without vegetation." Between the site's being previously disturbed for development and the moving of material during construction of I-494, the probability of this site containing archeological historic or culturally significant items is remote.

4.9.2.10 Ecological Resources

The I-494 and Nicollet Av. site is located in an existing industrial area. All vegetation has been removed from the site and replaced with artificial fill. The site does not support any wildlife habitat.

4.10 Freeway Landfill Site

4.10.1 Project Description

The proposed Freeway Landfill site is an alternate site for the proposed Bloomington transfer station. The site is approximately two miles south of the proposed Bloomington site and is located in the city of Burnsville in Dakota County (see Figure 4.10-1). The site is a 200-acre parcel that has been used as a sanitary landfill by R. B. McGowan and Inc. The site is bounded on the north by the Minnesota River and an approximately 5-acre general industrial parcel. The site is bounded on the south by a low marshy area. Further to the south and adjacent to the west lie active gravel pits. The east side of the site has a drainage swale about 100 feet wide, and I-35W lies beyond the swale.

The analysis of the Freeway transfer station site will be conducted under the assumption that the facility will have a design capacity of 800 tons per day (TPD) and an operating capacity of 500 TPD.

4.10.2 Affected Environment and Impacts

4.10.2.1 Air Quality

The proposed site will generate traffic, relate air pollutants including dust and carbon monoxide emissions. There are no ambient monitors in the vicinity of the site. The modeled air quality for the area does not show any air quality problems at the site (Ref. A).

Construction activities will generate dust during the three-month period that grading and earth moving will occur. The anticipated impact of this operation would be the generation of 30 tons of particulate emissions per month. Additional emissions during construction will be generated by diesel-powered construction equipment and the activities of the 30 to 40 workers on the site. The dust emissions should not exceed dust levels currently generated by landfill activities.

After construction and during operations, the facility should not emit any criteria pollutants. The indirect source impacts of the facility will be less than the Hopkins facility impacts due to the decreased operating capacity of the transfer station, and traffic patterns. No ambient air quality violations are expected at the site.

Odors that do become a problem at transfer station facilities can generally be traced to design or operational problems. The proposed Hennepin County transfer stations will be designed to contain odors within site buildings and to minimize packer truck queuing. The proposed plan calls for daily removal of waste to nearby landfills. Thus, the facilities should not be a source of odor to surrounding neighborhoods.

In the immediate vicinity of the transfer stations, however, there may be some odor from waste in the MSW packer trucks if vehicles are in line waiting to unload. Transfer truck trailers that may occasionally need to wait for a truck tractor may become an odor source. However, this impact will probably be minor, because the Hennepin County transfer stations are designed to handle peak deliveries efficiently.

In general, municipal collection vehicles will not pose an odor problem, because the MSW will remain in the vehicles only as long as it takes to travel

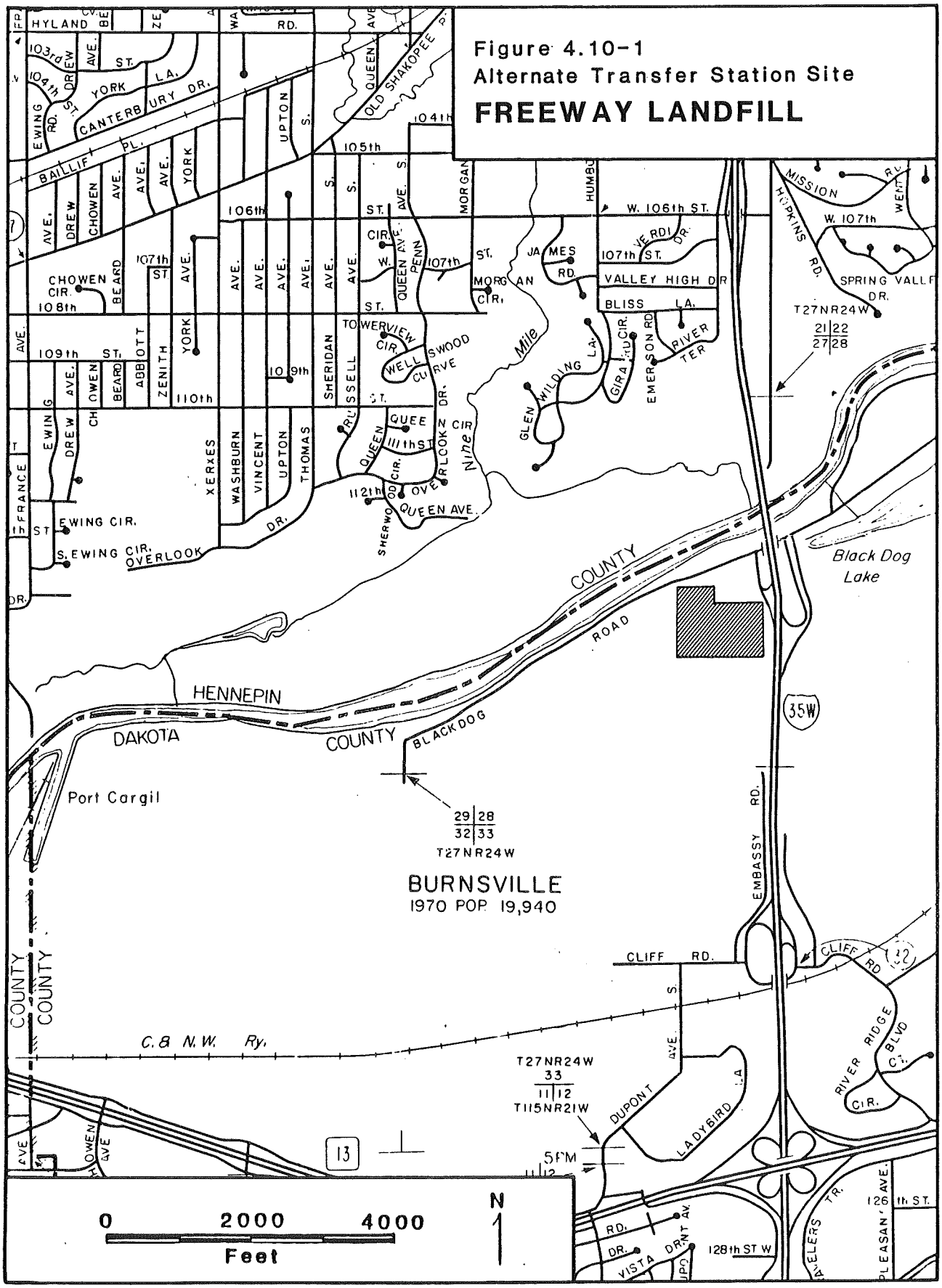


Figure 4.10-1
Alternate Transfer Station Site
FREEWAY LANDFILL
HENNEPIN COUNTY
DAKOTA COUNTY
BURNSVILLE
1970 POP. 19,940
Port Cargil
Black Dog Lake
BLACK DOG ROAD
C. & N.W. Ry.
T27NR24W
T115NR21W
0 2000 4000
Feet
N

from the collection area to the transfer stations or directly to the resource recovery facility. Odors at the transfer station fall into two major categories: hydrogen sulfide (rotten egg odor) and organic. These odors would occur if refuse was stored on site for long periods. The operation of the transfer stations will generaly not allow refuse to collect for more than five hours. No odor complaints have been received a a result of the existing Minneapolis South transfer station operation (City of Minneapolis, August 1985).

The industrial facility at the northeast corner of the site has the potential to be impacted by the construction of a transfer facility. The site is currently subjected to potential odors from existing operations as described in Part 1, Section 4.2.9.3.

4.10.2.2 Water Quality and Ecological Resources

The soils over the entire Freeway site are fill material from landfill operations and intermediate cover. The depth of the fill and disturbed soil is approximately 20 feet. The soils are highly compressible and would not support slab development similar to transfer station construction.

The bedrock layer underlying the site averages 40 feet, and depth to first groundwater contact is 25 to 30 feet over much of the site. The short distance to bedrock makes the use of piles for the support of the structure practicable. The swale serves as a discharge area for the shallow groundwater system under the landfill. In a 1980 survey conducted by the Metropolitan Waste Control Commission, the flow was approximately 0.2 cfs. The water quality of the flow showed very high nitrate, chloride and volatile particulate material. The levels of contaminants are similar to those observed in landfill leachate. The surface water quality appears to be impacted by the existing facility. Extensive groundwater monitoring and flow studies have been conducted at the site. To date no evidence exists that leachate from the existing landfill is migrating to the east, west or south of the site. The site is, however, listed on the Minnesota Pollution Control Agency list of permanent priorities (State Superfund) for remedial action and cleanup if necessary. A city water supply well is located approximately 1.5 miles from the site. The current site development has been designed to promote runoff generation. The facility currently employs mitigating measures for runoff flow and contaminant control.

The swale and lowland areas adjacent to the site provide habitat for several naturally occurring species. Deer, rabbits and other wildlife have been observed on the site. The construction and operation of the site as a transfer station may increase noise impacts to the wildlife habitat, displacing sensitive species. The site is, however, currently receiving significant refuse truck traffic at the existing landfill, and the use of heavy construction equipment for landfill operations is ongoing.

4.10.2.3 Land Use and Zoning

The site and most adjacent land is zoned for general industrial use. The zoning of the site is compatible with the construction of a transfer station. The land surrounding the site is vacant or used for mining and general industrial. The construction of a transfer station on the site would be compatible with existing land uses. The nearest sensitive land use is a residential area over one mile from the site. The owner of the site has expressed a willingness to allow the development of a transfer station.

A metropolitan county may designate a transfer station outside the county. Although there is authority to suport the conclusion that metropolitan counties may condemn property for solid waste purposes outside county boundaries, such authority is not absolutely clear. If a metropolitan county does acquire the land outside the county for a transfer station site, it would have to be constructed and operated consistent with applicable local regulations. Implementation of a transfer station and a designation ordinance outside the county may pose practical difficulties (Metropolitan Council legal staff, 1985).

4.10.2.4 Transportation

Transportation access to the site will be via I-35W to the exit at Black Dog Rd. The site and roadways currently serve the operation of a landfill that receives approximately 20 packer trucks per day. The delivery of 500 TPD of waste at the facility would increase the anticipated traffic to the facility by 180 truck trips and 160 private automobiles per day. This represents an additional 640 traffic trips to the site daily. The current traffic trips on I-35W equal 67,000 per day. The traffic increase would be less than 1 percent of the average daily trips on the highway at the site. The bridge and roadway on I-35W are currently undergoing improvements to enhance the capacity of the highway.

4.10.2.5 Noise

The site is located in an area of industrial land. The closest sensitive receptors for noise are located in excess of one mile from the site. The attenuation of on-site noise from the site would reduce the facility impact from approximately 70 dBA for L_{50} and L_{eq} to less than 35 dBA at the receptor. Thirty-five dBA is much lower than the average urban residential noise level of 55 dBA in the region. The site would not have a measurable impact on noise at sensitive receptors.

4.10.2.6 Utilities

Water, sanitary sewer, storm sewer, fire protection, electric, gas and telephone service requirements are presented in Section 4.9.3. A six-inch water service line for domestic water and fire protection to the building are needed.

City sewer and water services are located at the southeastern edge of the site. Connections and site development would be required to extend services to the transfer station. The transfer station's water demand represents an insignificant percentage (less than 1 percent) of the average daily municipal water demand.

The facility wastewater discharge will be 100 gpd. A four-inch sanitary sewer line from the building to the existing sanitary sewer at the southeast corner of the site will be required.

The building would require a connected load of approximately 25 Kva, which can adequately be provided by the existing 13.8 Kv line. Since this site is an existing commercial/industrial area, the existing NSP electric distribution system will accommodate building requirements with only minor on-site changes and no required off-site changes.

Low-pressure natural gas would be required for the facility and would likely be provided by propane storage on site. The facility will require telephone service, which would be provided to the building by Northwestern Bell.

4.10.2.7 Socioeconomics

The facility is zoned industrial and will be taxed at a very low rate associated with vacant land after the landfill closes (anticipated closure is December 1985). The facility, due to its proximity and current use, is not expected to have an impact on the socioeconomics of Burnsville.

4.11 Alternate Sites that Were Considered But Eliminated

Several potential sites were investigated as alternatives to the designated transfer station sites. Some of these sites were first analyzed by Hennepin County's consultants, HDR, Inc., and included in the firm's "Site Selection Study--Solid Waste Transfer Stations Supplemental Report," July 27, 1984. These sites, together with sites selected by Council staff, were screened for suitability as reasonable alternative sites for solid waste transfer stations. Each site evaluation included site visits, facility layout considerations, environmental factors and zoning considerations. The following is a summary of sites investigated and rejected for inclusion in this EIS.

POTENTIAL ALTERNATIVES TO BROOKLYN PARK EAST DESIGNATED SITE

73RD AV. N. AND U.S. HWY. 169 (CITY OF BROOKLYN PARK)

This seven-acre triangular site is north of 73rd Av. N. and west of the Burlington Northern railroad tracks that parallel Hwy. 169. Although zoned general industrial, this site was removed from further consideration due to its triangular configuration. The site would not allow on-site queuing of vehicles; would require extensive retaining walls due to short turning radii; space limitations would require interior maneuvering; and would not have adequate space for transfer trailer parking on site. The site is currently being developed as a ministorage facility (Berg, 1985).

73RD AV. N. AND WINNETKA AV. COMBINED WITH 73RD AV. N. AND HWY. 169 SITE (CITY OF BROOKLYN PARK)

This alternative would have combined the 73rd Av. N. and Winnetka Av. site (see Part 2, Section 4.2) and the above discussed triangle This potential site was analyzed as using the 73rd Av. and Winnetka site for the transfer station, while the triangular 73rd and Hwy. 169 portion would provide on-site queuing and transfer trailer parking. This combined site was rejected because the extension of 73rd Av. N. west to Boone Av. (planned for completion 1986) would separate the two parcels, resulting in queuing and transfer trailer parking north of 73rd, and the transfer station itself south of 73rd.

I-494 BETWEEN COUNTY RD. 9 AND COUNTY RD. 10 (CITY OF PLYMOUTH)

Located west of I-494 north of Roxford Rd. (County Rd. 9), this 240-acre site was previously used for clay mining and processing. The site was volunteered in 1981 to the Minnesota Waste Management Board (WMB) as a hazardous waste processing site. After being rejected by the WMB for this purpose, it was evaluated as a potential transfer station site. Rejection of this site for a transfer station was due primarily to poor transportation access. Vehicles would need to exit I-494 at either County Rd. 9 or County Rd. 10. From either of these roads, trucks would have to negotiate approximately 1.5 to 2 miles of local streets through residential areas to arrive at the site. In addition, the area is not (nor will it be prior to the year 1990) served by municipal sanitary sewer service. The area is planned for future industrial use, but is zoned rural/agricultural.

POTENTIAL ALTERNATIVES TO HOPKINS DESIGNATED SITE

COUNTY HOME SCHOOL (CITY OF MINNETONKA)

This 7.4-acre site is county-owned land currently used for a juvenile home. It was formerly Glen Lake Sanitarium. Located west of I-494 and north of the proposed realignment of County Rd. 67, the site is just east of a small creek. The site was rejected because access would be directly from the proposed four-lane, divided County Rd. 67; would be in a zoned floodplain district of the creek; located in a marsh area draining to a protected wetland; could not be relocated farther east due to steep slopes; would be adjacent to the County Home School which currently uses the property for horseback riding and pasturing; would be nearly adjacent to a nursing home west of the site; is planned for institutional use; and is zoned R-1 residential.

FARM SITE (CITY OF MINNETONKA)

This privately owned site is approximately eight acres in size but will be slightly less than five acres after construction of the County Rd. 67 realignment. Although planned by the city for office-industrial use, the site is currently zoned residential. In addition to its residential zoning, the site was rejected due to configuration requiring short turn radii; the need for extensive tree removal and grading of steep slopes; the area drains to a designated wetland; realignment of County Rd. 67 will raise the road bed approximately 25 feet, requiring ingress and egress slopes well in excess of 6 percent.

MINNETONKA PUBLIC WORKS (CITY OF MINNETONKA)

This site is south of the Minnetonka Public Works facility along County Rd. 5 between County Rd. 73 and I-494. While the site itself is vacant undeveloped land, the surrounding area is predominantly residential. In addition to the incompatibility with existing residential development, other factors leading to rejection of this site include: an actively used baseball field adjacent to the site; transportation of waste would be along County Rd. 5 from I-494 or County Rd. 18 (a distance in either case of approximately 1.5 to 2 miles) through residential areas of the city.

POTENTIAL ALTERNATIVES TO BLOOMINGTON EAST

I-494 AND FRANCE AV. S. (CITY OF EDINA AND BLOOMINGTON)

This triangular five-acre site is located north of the I-494 Frontage Rd. and between France Av. S. and York Av. S. The site is undeveloped and appears to be an inactive quarry. Although this site is situated very near the I-494 and France Av. S. interchange, access to the south was not considered good due to high levels of congestion in this area. The site is located along a portion of France Av. that narrows from six lanes of traffic to four lanes. Rejection of the site was due to site configuration; existing and projected traffic problems in the area; planning and zoning (by both Bloomington and Edina) incompatible with a transfer station; and incompatibility with existing office space adjacent to this site.

CROSSTOWN EAST (NORTHWEST AIRPORT AREA PROPERTY OWNED BY STATE OF MINNESOTA)

This site is 15.5 acres and is located near the intersection of Crosstown Hwy. 62 and Hwy. 55. The site is situated in the southwest quadrant of the intersection of Hwys. 62 and 55. This land is currently owned by the state of Minnesota.

Major factors affecting this siting area were development of the Crosstown Hwy. 62 and Hwy. 55 interchange and its location within the clear zone for runway 4/22 of the Minneapolis-St. Paul International Airport. With regard to the interchange, Hiawatha Corridor Plans show the improvement of Crosstown Hwy. 62 and a proposed interchange realignment. Most of this site will be used for the Crosstown Hwy. realignment and new interchange with Hwy. 55.

Another major site development concern is access to the remaining site after the new highway is constructed. It appears as though the new interchange may preclude access off of Minnehaha Av. to the east. It was not known at the time of investigation if access off Minneahaha Av. would be allowed because of the close proximity to the interchange. Access from the west would be prohibited because of the residential area. This may have left the site without access, which would make it unsuitable for a transfer station.

A second factor affecting the location of a transfer station on the site was that it would be located within the existing clear zone of runway 4/22. A runway clear zone is an area that is recommended to be totally clear of all obstructions for safety purposes.

For the above reasons, this site was eliminated from further consideration as an alternative transfer station site.

POTENTIAL ALTERNATIVES TO THE DESIGNATED MINNEAPOLIS SOUTH SITE

LYNDALE YARD SITE (CITY OF MINNEAPOLIS)

This site is located adjacent to a railroad yard north of Hwy. 12 and west of Colfax Av. N. Adjacent north of the site is the Minneapolis School Transportation Center. The site was rejected due to severe transportation constraints. Access would be from several local streets that are brick, and are so narrow that only replacement of some of them would provide adequate, although marginal, access. Additionally, concern was expressed over contamination of the site from PCP, lead and zinc (Wagner, 1985).

HIAWATHA AV. AND 39TH ST. E. (CITY OF MINNEAPOLIS)

This site is located along the east side of Hiawatha Av. south of 39th St. E. The site is occupied by Ralston Purina feed manufacturing and Davidson Distributing. Adjacent to the south is an NSP power substation. This site was rejected due to the costs associated with relocating the existing businesses and removing the vacated buildings; the narrow site configuration between Hiawatha and the railroad tracks along the east side of the site; and because access to the site would require vehicles to enter directly from Hiawatha Av. without the aid of traffic controls.

HIAWATHA AV. AND 43RD ST. E. (CITY OF MINNEAPOLIS)

This site is along the east side of Hiawatha Av., south of 43rd St. E. The site is currently occupied by the Judy Instructo Co., manufacturers of educational books and visual education equipment. This site was rejected for reasons similar to those given for the Hiawatha and 39th St. E. site, specifically: vehicle access constraints; narrow site configuration; relocation costs; and demolition costs.

5. ALTERNATIVE POLLUTION CONTROL EQUIPMENT

Alternative types of pollution control equipment could be incorporated into the design of the facility.

5.1 No Pollution Control Equipment

The proposed facility could be designed without use of the latest state of the art pollution control equipment. While this would result in energy and financial savings, it would reduce the efficiency of the pollutant removal processes. It would result in uncontrolled emissions of gases into the atmosphere.

5.2 Electrostatic Precipitators

Electrostatic precipitators would accomplish the same objective as the baghouses proposed for this project, namely particulate removal. The use of an ESP option only would eliminate the emission of all but the smallest particulate particles. However, the ESP has no effect on gaseous emissions. The ESP control option does have the advantage of producing a hot, buoyant, rapidly rising plume that quickly lifts the emitted pollutants far above the ground. The ESP only plume would be relatively dry and this would not form a visible moisture laden plume. However, acid gases would not be significantly removed.