Appendix 2E
Truck Traffic Issues

Among the comments heard during the public engagement work were complaints related to truck traffic. These stem form concerns about the number of garbage trucks in an alley or on a street during a week, and the reasons for concern included noise, wear and tear on streets, safety, and pollution.

The following data were gathered on the issue of garbage trucks and traffic. References cited are at the end of the summary.

Reduced wear and tear on streets

- Reduction of road impacts of overweight vehicles, especially during spring road restrictions when roads are the most vulnerable to damage as the frost moves out of the ground.
  - "As they fill up on the route, many refuse collection vehicles operate overweight, especially during the spring months when waste generation rates increase but road weight limits may be at their lowest…Further, the number of overweight vehicles using roadways increases the potential for paving damage." (GBB, pg V-2)
  - "The damage that garbage trucks inflict on City streets is magnified in the spring when road restrictions typically restrict other trucks from using the same streets." (Bonestroo)
  - "During the road restriction period, most refuse vehicles exceed the allowable axle load limits. Because of the variable nature of refuse, these vehicles are rated by volume capacity rather than by weight. Minnesota is said to have some of the lowest allowable load limits when road restrictions are in effect; therefore refuse vehicle manufacturers are not inclined to design vehicles to meet Minnesota standards. Haulers generally acknowledge in some cases when road restrictions are in effect, their fully loaded vehicles exceed the allowable load limits. Tertiary (tag) axles and duel wheels are available on some refuse vehicles of more recent design, but they are not generally used in this area. Although these auxiliaries reduce the load on a road, they do not guarantee compliance with road restrictions….Mn/DOT will issue special permits to haulers who apply for such permits. These permits increase the allowable limit by 2,000 pounds/axle. Certain communities that enforce road restrictions may grant exemptions to refuse trucks operating on their residential streets. This practice is most common in cities with organized collection." (Roseville, pg 21)
  - "The number of exceptions to weight limits has direct bearing on the potential for damage to pavement. An increase in the frequency of overweight vehicles increases the risk of damage." (Chanhassen, pg 22)

- Reduction of relative impact on local streets of collection vehicles
  - "According to research conducted as part of the City of Chanhassen Organized Collection Study, MSW collection vehicles have road impacts

equivalent to 1,125 automobiles. Recycling vehicles represent the same impact as 525 automobiles." (GBB, pg V-2)

- Residential use of a typical cul-de-sac may generate 700-1,400 vehicle trips. A single hauler serving the cul-de-sac exceeds the weekly residential usage with an equivalent of 1,650 automobile trips. Five haulers serving the cul-de-sac in one week create the impact of 8,250 automobiles."
  - Minor residential street: 4,200-7,000 trips/week; five haulers 8,250
  - Local residential collector 7,000-21,000; five haulers 8,250
  - City collector street (MSA 9 ton roadway), 21,000-70,000 trips/wk
  - The pattern is clear. With exception of the MSA streets, solid waste collection vehicles currently serving the City create a significant portion of the relative impact of vehicles on local streets. "(Chanhassen, pg 21) [Note: presumably they are assuming each hauler does both MSW and recycling]
- "In general, garbage trucks are the heaviest vehicles that regularly use City streets. The impact that one garbage truck has on a City street equates to roughly 830 cars." (Bonestroo)
- "The expected life of any street or alley surface is related to the traffic which is carried by the street or alley. The roadway surface is particularly affected by heavy wheel loads. The effect on a roadway of one refuse truck is equivalent to 1,500 automobiles. This document has been documented by the Research Section of Mn/DOT and is currently used by Mn/DOT in street and highway design." (Metro Council)
- "Garbage collection vehicles are perceived to be very destructive to the roads, especially in the neighborhoods. Yet, there are only estimates of an equal number of car loads for every run of a garbage vehicle. We have not been able to find data which would reflect a "real" monetary savings to the community by the elimination of competitive haulers through organized collection. The weight of the vehicle which results in a negative impact to the road surface is based on the weight per sq. inch of wheel base that meets the road surface. Today all haulers are using third axle or flotation tires which would lessen the impact of weight per sq. inch of wheel base meeting the road surface." (Maplewood haulers' draft proposal, 1996)
- Haulers serving Maplewood in 1996 offered an alternative plan, which included: a) city would require haulers to use third axles or flotation tires on their equipment to reduce roadway wear and tear, and b) routing to be cognizant of load-sensitive streets, so that trucks are as empty as possible when service accounts on them
- Haulers in Roseville commented: "the number of trucks/vehicles on a street is not the cause of wear and tear on the streets; vehicle weight is the determining factor." (Roseville, pg 17)
- Soils: "The cost of constructing and maintaining roadways is generally higher in Chanhassen than in some communities, due to the clay soils prevalent in the community. Protecting the integrity of the local street network may, correspondingly, be a higher priority in Chanhassen than in other communities." (Chanhassen, pg iii)

- Champlin implemented organized collection in 1987 in conjunction with installation of sewers and new streets throughout the City; organized collection was implemented to reduce street wear from the start (per JoAnne Brown, City staff)
- Pavement design manuals give load factor values to vehicle typed
    - Car load factor - .0007
    - Truck 18,000 lb/axle – 1.0 load factor
    - Garbage truck can be as high as 1.6 load factor

  Another equivalency that design engineers use is 1 garbage truck trip = 1,000 car trips in terms of damage to pavement. Residential streets have average daily traffic counts of 200 – 500 vehicles. (Roseville Public Works 2001)

Bonestroo = Memo to Rick Getschow, City Administrator, Lauderdale, from Paul Heuer, Bonestroo Rosene Anderlik & Associates, Engineers & Architects, 4/9/01

Chanhassen = City of Chanhassen Organized Collection Study, Final Report, 9/93, Resource Strategies Corporation

GBB = Comparative Economic Analysis of MSW and Recycling Collection in the Twin Cities Metropolitan Area, prepared for Metro Council by GBB, 9/94; data from late summer through fall, 1993

Metro Council = Study of Organized Collection in the Twin Cities Metropolitan Area, 1985

Roseville = Options for Residential Waste Collection and Recycling for Roseville, a report to the Roseville City Council, prepared by Roseville's Citizen Advisory Committee for Residential Solid Waste Management, 4/91

Roseville Public Works 2001 = Impact of Heavy Trucks on Low Residential Streets, presented by Duane Schwartz, Roseville Public Works Director, 10/11/01 to Roseville Solid Waste Commission.

Saint Paul = An Integrated Solid Waste Management System for the City of Saint Paul (1990)