Public Works / Engineering Department

MEMORANDUM

TO: Kevin Burke, Town Manager

FROM: James P. Shano, P.E., C.P.M., Public Works Director / Town Engineer / Assistant to the Town Manager for Strategic Planning

DATE: April 8, 2016

SUBJECT: **WEAR AND TEAR OF GARBAGE TRUCKS ON RESIDENTIAL STREETS**

I have reviewed several reports as it relates to the wear and tear of garbage trucks on residential streets:

1. R3 Consulting Group, Inc., Trash Services Study, City of Fort Collins, CO, 2008
2. Schneider, J., Analysis of Waste & Recyclable Materials Collection Arrangements, Presented to the Minnesota Pollution Control Agency, St. Paul, MN, 16 April 2009.
3. Foth Infrastructure & Environment, LLC, Analysis of Waste Collection Service Arrangements, submitted to the Minnesota Pollution Control Agency, St. Paul, MN, 2009.
4. Wilde, W.J., Assessing the Effects of Heavy Vehicles on Local Roadways, Minnesota Department of Transportation, August 2014

<u>Street Maintenance Impacts:</u>

- Trash trucks are typically the heaviest vehicles regularly operating on residential (local) streets and are a major contributor to wear and tear on those streets. While trash trucks also contribute to the wear and tear on collector and arterial streets, those streets are typically designed to a higher standard and experience significantly more vehicle trips and large truck trips than local streets.
- The most significant step the Town can take to minimize trash truck street maintenance impacts is to reduce the number of trash truck miles traveled on the Town's Streets.
- The Town uses a pavement condition index (PCI) which is a common unit of measure used to rate the condition of pavements. The PCI rates pavements on a score of 0 – 100 with a higher value indicating better pavement condition. Rapid deterioration of pavement typically occurs after roadways drop to a PCI score of 60 or lower. Studies have shown that every dollar spent performing preventative maintenance on a roadway with a PCI of 70 or higher saves $5 in future costs.
- Quoted from the City of Falcon Heights, 2004 study, that limiting the number of garbage trucks….to only one hauler could extend the usefulness of the street 5 to 10 years.

- Most common data available for making damage comparisons is Equivalent Single Axel Load (ESAL's). MnDOT uses a formula of one garbage truck equivalent to 1,000 car trips.
- The City of Roseville estimates $20 to $40 per household per year in pavement damage due to garbage trucks per year.
- The table below from the R3 report for the City of Fort Collins, Co provides a comparison of trash and other vehicle impacts to various roadways.

Comparison of Trash and Other Vehicle Impacts.

COMPARISON OF TRASH AND OTHER VEHICLE IMPACTS				
Vehicle Type		**Number of Axles**	**ESAL Factor**	**Passenger Car Equivalents**
General Classification	**AASHTO Classification**			
Cars	Passenger Cars	2	0.0008	1
Vans/Pickups	Other 2-Axle/4-Tire Trucks	2	0.0052	7
Large Pickups/Delivery Vans	Panel and Pickup Trucks	3	0.0122	15
Large Delivery Trucks	3 or More Axle Trucks	3	0.1303	163
Local Delivery Trucks	2-Axle/6-Tire Trucks	2	0.1890	236
Residential Recycling Trucks		**2**	**0.2190**	**274**
Buses	Buses	2 or 3	0.6806	851
Residential Trash Trucks		**3**	**1.0230**	**1,279**
Long Haul Semi-Trailers	Various Classifications	3-5+	1.1264	1,408