Memorandum

To: Kirk McDonald, City Manager

CC: Jeff Sargent, Director of Community Development

From: Jeff Alger, Community Development Assistant

Date: February 20, 2018

Subject: Responses to City Council questions on organized garbage collection

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At the December 18, 2017, work session, the City Council presented several comments and questions to be researched prior to the March 5, 2018, meeting with haulers. In response to the questions, staff offers the following summary:

Average truck weights

Staff contacted Commercial Vehicle Operations with MnDOT to inquire about average truck weights. According to MnDOT staff, average weights are not tracked and the impact of a truck on a street varies significantly, depending on the number of axels, spacing of axels, and type of tire. Minn. Stat. § 169.824 includes a gross weight schedule, which is attached, that specifies weight limits depending on the number of axels.

Natural gas trucks

The January 2, 2018, letter to the haulers requesting their attendance at the March 5, 2018, meeting, included a list of questions, one of which requested information on the number of natural gas trucks and number of diesel trucks in operation. The item will be included on the March 5, 2018, meeting agenda as one of the questions for haulers.

MnDOT truck impact model

According to the "Analysis of Waste Collection Service Arrangements," report produced by the Minnesota Pollution Control Agency (MPCA) and Foth Infrastructure & Environment, LLC, MnDOT "uses a formula providing one garbage truck is equivalent to 1,000 car trips." Staff requested that MnDOT provide the source for the impact model used in the report to justify findings that the weight of refuse trucks causes street damage. MnDOT forwarded the inquiry to Foth Infrastructure & Environment, LLC. According to Foth, the information was obtained from the R3 Consulting Group, a firm that was commissioned by Fort Collins, Colorado to evaluate the impacts of garbage trucks on residential streets. An excerpt from that report was included in the

original staff report on organized garbage collection, which was presented to the City Council at the April 17, 2017, work session.

In responding to the city's inquiry, MnDOT also provided a "more recent and comprehensive study and computer model" completed in 2014 by Dr. W. James Wilde, P.E. The report, "Assessing the Effects of Heavy Vehicles on Local Roadways," includes an analytical model that evaluates the impact of changing from an open system to an organized system. The collection of data related to pavement structure, traffic, pavement condition, construction, cost, and additional heavy vehicle information is necessary in order to utilize the model.

Request for MnDOT engineers to attend meeting with haulers

When staff requested the source of the impact model cited within the MnDOT report, it was also requested that an engineer attend a future meeting. MnDOT provided the source for the model but did not respond to the request for an engineer to attend a meeting. Subsequently, staff emailed the request to the four members of MnDOT's pavement design department on January 5, 2018. Tim Anderson, Pavement Design Engineer, referred staff to Joel Ulring, State Aid for Local Transportation Pavement Engineer, with MnDOT and Gene Hicks, Principal Engineer, with MnDOT. Staff contacted both individuals, neither of which had intimate knowledge of the report and recommended that the city contact Dr. Wilde, the author of the *Assessing the Effects of Heavy Vehicles on Local Roadways* report, instead. In response to the inquiry from staff, Dr. Wilde stated, "about the question regarding 1 truck equivalent to 1,000 cars, I don't know where that one came from either, but it is quoted in the Foth report, published about 5 years before my report was finished. I quoted their report in mine." Dr. Wilde is now teaching in Texas and is unable to attend a city meting; however, did call city staff to discuss his model. He explained that in order to utilize the model, the city must collect and input data into a spreadsheet related to pavement structure, traffic, pavement condition, construction, cost, and additional heavy vehicle information. The goal of the spreadsheet is to provide information that will be helpful in making decisions related to roadways. It utilizes three methods of pavement design and analysis for estimating the damage and the related cost associated with heavy traffic loads.

1. Incremental design – This method involves the design of two new pavements for future service – one without any of the heavy vehicles in question, and one with the additional heavy vehicle loads.
2. Overlay Design – This method uses the standard MnDOT overlay design method for bituminous pavements.
3. Percent of Life Consumed – This method compares the amount of additional "life" consumed by additional pavement loads each year with the annual or total loads for which the pavement was designed.

The spreadsheet and report are not included as attachments due to their size, but can be made available to the City Council, if so desired.

Attrition model requiring minimum number of accounts

If the City Council opts to maintain the current open collection system, but wishes to reduce the number of available licenses through attrition, staff requests that the City Council set a goal for total number of licenses. In other words, the number (minimum) at which staff would discontinue the practice of reducing licenses through attrition. In order to expedite this process, other cities have adopted ordinances requiring that garbage haulers service a minimum number of accounts in order to renew their license. The city of Newport, for example, requires that haulers submit lists of all active accounts. The haulers needed at least 50 active residential accounts in order to renew their license in 2015 and 100 active residential accounts to renew in 2016 and beyond. Cottage Grove does not issue more than three licenses and requires haulers to have a minimum of 200 active accounts in order to renew.

Summary

The responses to questions presented by the City Council at the December 18, 2017, work session, are summarized as follows:

- Average truck weights are not tracked by MnDOT.
- It has been requested that haulers determine the number of natural gas and diesel trucks in operation prior to the meeting with the City Council on March 5, 2018.
- The model cited by MnDOT and MCPA equating the impact of one garbage truck to 1,000 car trips was obtained from the R3 Consulting Group, a firm that was commissioned by Fort Collins, Colorado to evaluate the impacts of garbage trucks on residential streets. MnDOT recommends a "more recent and comprehensive study and computer model" by Dr. W. James Wilde, titled "*Assessing the Effects of Heavy Vehicles on Local Roadways*."
- No MnDOT engineers accepted this city's request to attend the March 5, 2018, City Council special work session.

Attachments

- State statute 169.824 gross weight schedule

169.824 GROSS WEIGHT SCHEDULE.

Subdivision 1. **Table of axle weight limits.** (a) No vehicle or combination of vehicles equipped with pneumatic tires shall be operated upon the highways of this state where the total gross weight on any group of two or more consecutive axles of any vehicle or combination of vehicles exceeds that given in the following axle weight limits table for the distance between the centers of the first and last axles of any group of two or more consecutive axles under consideration. Unless otherwise noted, the distance between axles must be measured longitudinally to the nearest even foot, and when the measurement is a fraction of exactly one-half foot the next largest whole number in feet shall be used, except that when the distance between axles is more than three feet four inches and less than three feet six inches the distance of four feet shall be used.

	Axle Weight Limits		
	Maximum gross weight in pounds on a group of		
	2	3	4
Distances in feet between centers of foremost and rearmost axles of a group	consecutive axles of a 2-axle vehicle or any combination of vehicles having a total of 2 or more axles	consecutive axles of a 3-axle vehicle or any combination of vehicles having a total of 3 or more axles	consecutive axles of a 4-axle vehicle or any combination of vehicles having a total of 4 or more axles
4	34,000		
5	34,000		
6	34,000		
7	34,000	34,000	
8	34,000	34,000	
8 plus	34,000	42,000	
	(38,000)		
9	35,000	43,000	
	(39,000)		
10	36,000	43,500	49,000
	(40,000)		
11	36,000	44,500	49,500
12		45,000	50,000
13		46,000	51,000
14		46,500	51,500