

# Issue Paper # 3

Date: July 26, 2007

To: City of Hillsboro Ad-Hoc Transportation Finance Committee

cc: Tom Arnold, P.E., Mary Gruss,

From: DJ Heffernan, Project Manager

Re: Hillsboro Transportation Utility Fee – Customer Benefit Analysis

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In this Issue Paper, we ask committee members to consider three topics that relate to the methodology: how to measure benefit for users of the city's street system, how to account for disproportional wear and tear by some users (e.g. heavy trucks), and how to group customers for billing purposes, including how to treat public and semi-public entities.

The answers will influence the utility cost recovery methodology, which is a set of formulas that fixes the wear and tear contribution each customer is responsible for and sets associated cost to offset that benefit. The bottom line: more benefit equates to a higher fee. The formulas for calculating the fee needs to be tailored to local conditions. The following discussion asks questions about how to approach these benefit/cost allocation issues in Hillsboro.

## **Traffic Data Proxy**

We know the number of street miles the City maintains and the “functional classification” (residential, collector, arterial) of those streets. We do not have direct information that measures how many miles each resident or retail delivery vehicle or business employee drives on city streets. We have data from Metro's traffic model that provides estimates for travel behavior on various types of streets. Metro also has traffic volume estimates for collector and arterial streets and highways, including through trips (i.e. traffic that does not originate or stop in Hillsboro). For example, an analysis of traffic patterns on Hillsboro's collector streets shows that approximately 50% of the traffic originates from households, 35% from commercial businesses, and 15% from industrial land uses. We can use this information to estimate the wear and tear on city streets that is related to traffic from these customer groups. In the absence of direct measurements, we propose to use this information as a proxy for estimating the contribution to wear and tear on the city street system by various groups.

The Metro Model does not include information for trips related to civic uses (e.g. schools, parks, and governments offices) or quasi public uses like churches and fraternal organizations. In order to make sure these uses are represented in the analysis, we diverted

5% of the trips attributed to Commercial uses to this customer category. The Metro Model also does not include data for local streets. Further research is underway to establish a basis for that setting that distribution. In the final utility methodology, a traffic based wear and tear distribution will be included for local streets. The following table shows a simplified model for how traffic information may be used to represent the contribution to street wear and tear by customer groups.

**Table 3.1 – Traffic based Cost Allocation Model**

<b>Street Type</b>	<b>Local</b>	<b>Collector</b>	<b>Arterial</b>
Residential		50%	45% share
Commercial		30%	35% share
Industrial		15%	15% share
Public/Quasi-public		5 %	5% share

Source: Metro Traffic Model

### **Heavy Vehicles**

Another factor to consider in the analysis is that not all traffic causes the same amount of wear and tear. Traffic and pavement engineering studies have demonstrated that heavier vehicles cause more damage to the pavement than lighter vehicles. Estimates have been made that a fully loaded tractor-trailer rig has the wear equivalency of between 5000 and 10,000 cars, depending on the pavement design. One approach for allocating costs, then, would be to establish an auto-based wear equivalency standard and then assign additional wear units to land uses that generate trips by heavy vehicles. This approach is similar to a technique used in many system development fee methodologies where benefit is measured on a household equivalency basis.

The problem with this approach is that it ignores the fact that households, where most of the car traffic originates, create the demand for the truck deliveries to businesses and especially to retail businesses. Households indirectly benefit from the truck wear by having goods delivered to retail outlets in their community. An auto-unit approach over simplifies an extremely complex measurement problem. If trucks pay more, should we differentiate between smaller delivery trucks and long-haul trucks? Should households that own vans and pickups pay more than households that own compact cars? What about households that use studded-tires in the winter? What about households that exclusively use alternative transportation modes? At some point, the complexity and cost associated with ensuring equity in the rate structure becomes too complex and expensive to administer effectively.

These complexities enter into every rate setting process. The question is how to deal with them in a manner that seems fair. For trucks, should an effort be made to adjust maintenance cost allocation factors to account for the disproportionate wear and tear they cause or just use a simple trip-based allocation formula like the one in Table 3.1?

### **Customer Groups**

It is common in most municipal utilities to group customers into classes. For example, the city could charge all single family residential properties the same street utility rate. Similarly, businesses may be grouped together so that companies with similar traffic

characteristics pay the same amount. This approach has the advantage of simplifying billing and collection steps. The alternative is to prepare a custom bill for each user.

The International Traffic Engineers Society (ITE) publishes a manual that provides estimates for how many trips, on average, are generated by the different types of land uses. This information may be used to develop traffic information for customer invoices. Assuming the city uses the ITE manual for traffic generation, Hillsboro must then decide whether to prepare a unique invoice for each customer or group customers into classes where all users in a class pay the same amount. The decision is affected by the sophistication of the city's billing system and the available resources in the accounting department. City staff should weigh in on this question regarding limitation of the billing system and its future capabilities.

A related question to the customer grouping issue is how to calculate bills for public and semi-public entities. These entities include schools, churches, fraternal organizations, and public buildings like city hall, libraries, and county offices. Because the TUF is being developed as a fee for service, these users may not be exempted from the fee. The methodology, however, may recognize unique characteristics of these entities. It may be appropriate to invoice them on an annual basis, for example, or to recognize offsetting contributions they make to the city transportation system. A discussion on how to treat these customers will be helpful to our work on the allocation formulas, which we will present at our next meeting.

#### **Discussion Summary:**

- The measurement needs to be simple and easy to explain or people will not trust it – follow the KISS principal.
- Metro's traffic data has been called into question in the past and found not to be reliable, especially at the micro level. Does the City have more current data that could be used to verify the Metro data?
- There are a growing number of home-based businesses; is it possible to adjust the rate to reflect the fact that these businesses generate more traffic than typical homes?
- Trucks cause a disproportionate amount of damage to streets. Truck deliveries are increasingly being made using "line-haul" vehicles rather than smaller delivery vehicles, even in local neighborhoods, and they do a lot of damage to local streets that are not designed for heavy loads. It was agreed, however, that out of town trucking companies won't pay because they are not city utility customers.
- Is it possible to develop a the rate structure with and without a "truck surcharge" so the committee can see the affect?
- Utility credits are available for customers that reduce consumption. E.G., stormwater customers that reduce off-site discharge can earn a credit. Is it possible to offer something similar for the street utility? Is there a way to offer credits using performance-based monitoring for industrial and commercial customers that are able to

demonstrate reductions in traffic levels? Some SDC methodologies provide credits for promoting alternative modes but the customer must document the trip reduction is real. Who keeps track of the credits and monitors actual performance?

- Concerns were expressed about the cumulative impact of fee increases on businesses and schools. Schools just took a big hit on water rates as did businesses. They saw a cost shift from residential users to institutional and commercial users because usage data showed residential customers had been subsidizing other customer groups.
- It is hard to know how to evaluate the relative fairness of these cost/benefit measures in the absence of information about individual customer costs. City staff shared that a preliminary analysis developed last year concluded that it would cost the average residential customer about \$2.75 per month in order for the city to raise \$1 million. Based on national traffic studies, a single family residence contributes around 10 average daily trips (ADT) so the equivalent cost per daily trip would be:  $\$2.75/9 = \$0.31/ADT$ . Assuming residences pay half the cost of the utility, which is the residential share in Wilsonville, then commercial and industrial customers would be charged a similar cost/trip factor. Some commercial customers should pay monthly fees similar to residential customers. For example a small 1000 sq. ft. law office may not generate more daily trips than a residence. Customers with businesses that generate a lot of trips, however, face much larger fees.
- Property managers of commercial centers with multiple tenants will need to deal with how to allocate a single utility fee to their commercial tenants. For example, a highway strip mall that has one city water and sewer account will be treated as one street utility account. Their monthly TUF would be based on the cumulative trip characteristics of their tenants. They in turn will need to allocate costs to tenants. If all the tenants have similar traffic generating characteristics, then the cost allocation will be easy but that is rarely the case. The city may wish to provide technical assistance to property managers to help them sort out how to fairly assess fees between tenants.

### **Decision Summary:**

- Use Metro's "traffic loading" data for various land use categories for estimating benefits to customer groups for different types of streets.
- Use ITE traffic generation rates as a proxy for measuring customer benefit.
- Develop fixed rate categories for groups of customers to simplify the rate setting and billing process. For example, develop three or four "bins" for commercial customers like Lake Oswego and Wilsonville do.
- Use actual maintenance cost information to allocated costs between different classes of city streets.
- Provide credit incentives for businesses that take action to reduce traffic. Some customers may need to have their bills customized to do this.