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SUBJECT: Clackamas County Residential TSDC Analysis
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Introduction

Clackamas County (the County) adopted a transportation system development charge (TSDC) methodology in 2018 that includes TSDCs for different categories of residential development (e.g., single family residential and multifamily). Under the current methodology, each unit within a defined category pays the same TSDC regardless of size of dwelling unit. In the fall of 2018, the County authorized Galardi Rothstein Group, in association with Clifton-Currans LLC (collectively the Consultant Team), to work with a group of stakeholders to evaluate the merits of scaling the TSDC based on the size of the dwelling unit. This memorandum summarizes the recommendations of the stakeholders and describes the supporting analysis used to develop the final recommended TSDCs for single-family dwellings.

Over the course of the study, the Consultant Team developed a number of options for consideration by the stakeholder group. These options differed in terms of data used, basis for rate differential (number of bedrooms or square footage of dwelling), development type (single family or multifamily, and number of rate tiers. The preliminary options and analyses are provided in the Appendix of this memorandum.

Stakeholder Involvement

A working group made up of representatives from the development community, a member of the Home Builders Association (HBA), a county resident interested in developing an Accessory Dwelling Unit (ADU) on their land, and County staff was convened to provide input to help shape the review. Members of the group met three times between October 2018 and July 2019. Members reviewed and provided input on the following topics:

- Data sources for trip rate adjustments
- Rate structure for single family residential (SFR), multifamily, and accessory dwelling units
- Number and scale of dwelling size tiers
- Definition of dwelling size (e.g., bedrooms, square footage, living area)
- Process for application of tiers and potential issues or considerations

- Policies related to dwelling additions and conversions

The recommendations outlined in this memorandum reflect the consensus of the working group on these issues.

Summary of Recommendations

Single Family Homes

Table 1 shows the potential relative adjustments to the TSDC fee schedule for single-family dwellings (currently \$4,590 / dwelling unit). Adjustments are shown as a percentage of the current TSDC for single-family dwellings and as a dollar amount. Key results include:

- No change to the TSDC rate for homes between 1,700-2,999 square feet (sq. ft.).
- Decrease in TSDC for homes smaller than 1,700 sq. ft. (up to 1,699).
- Increase in TSDC for homes 3,000 sq. ft. or larger.

Table 1 Comparison of Current and Recommended Single Family Residential TSDC Fee Schedule and Trip Rates

Item	Current	Recommended		
	All Units	<1,700	1,700-2,999	≥3,000
Avg. (Weighted) Vehicle Trip Rate ¹	4.23	3.70	4.22	4.46
Relative Adjustment ²	100%	87.5%	99.8%	105.4%
Proposed (Adjusted) TSDC Rate ³	\$4,590	\$4,015	\$4,579	\$4,840

¹ Source: 2011 OHAS & RLIS

² Source: Computed from analysis of OHAS & RLIS and Regional Average Trip Rate of 4.23 trips (see FIGURE 2 for interpolation)

³ Source: Current TSDC Rate (\$4,590) multiplied by the relative adjustment percentage

Additions, Conversions & Detached Units

In the event that the County moves forward with implementation of SFR TSDC structure based on the size of the unit, the following additional recommendation is provided to balance administrative burdens and equity:

- Exempt up to 199 sq. ft. additions or detached units 199 sq. ft. or smaller.

Accessory Dwelling Units (ADUs)

Historically the County has charged the multi-family rate (currently \$3,207 or about 70% of the SFR rate) for accessory dwelling units (ADUs). While local travel data allowed for transportation impact analysis for SFR dwellings, few observations exist in existing travel model data for smaller homes comparable to ADUs. Specifically, less than 50 travel observations were observed for dwellings less than 800 square feet, and only one observation was collected for SFR housing less than 500 square feet. Given the lack of local data specifically for ADUs, the working group provided the following recommendation:

- Apply the lower Condo/Townhome rate of \$2,802 (61% of the standard SFR rate) for ADUs ranging in size from 900-450 sq. ft.
- Apply ½ of this rate (\$1,401) for an ADU between 450-200 sq. ft.

Multifamily Dwelling Units

After extensive deliberation, the stakeholder group recommended that the County continue the current practice of assessing TSDCs for multifamily residential based on the type of unit only (without consideration of the size of the unit). The County's existing TSDC methodology has a number of potential discounts that are available to multifamily development projects, if they meet requirements for transit access or development density.

In addition to the Mixed-Use Development and Station Area reductions, the existing ordinance provides a mechanism for developers to submit trip data from similar facilities in the region to demonstrate reduced trips from a proposed development type. Because the available transportation network and the design of the facilities can vary greatly, the County has had workforce housing facilities take advantage of this provision to reduce the TSDC assessment on a particular development.

Single-Family Residential Supporting Analysis

The supporting analysis for the recommended SFR TSDC structure links household-generated travel to dwelling size. Current methods used to calculate the TSDC fee schedule in Clackamas County rely on daily vehicle trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation* manual. However, there is no way to relate ITE data to variations in household size (people) or dwelling size (square footage). Thus, for this analysis we relied on household travel survey data from Oregon to estimate vehicle trip generation rates and provide information on dwelling size. Unlike the rates from ITE, the trip generation information from household survey data include travel generated from household members only and exclude trips made by visitors, including friends, deliveries, and service workers. Because of this difference between trip generation data sources, the rates calculated from household travel surveys are used to create *relative* adjustments to the current fee schedule.

Data Sources

The SFR analysis used three local data sources:

- (1) 2011-2012 Oregon Household Activity Survey (OHAS);
- (2) 2012 tax lot data from the Regional Land Information System (RLIS) for Clackamas County; and
- (3) 2010-2019 single-family development permits data for Clackamas County (ACCELA program).

The OHAS data were limited to SFR observations located in Clackamas County or elsewhere within the Portland metropolitan area in areas with similar densities and dwelling sizes to those in Clackamas County (Observations (N)=2750)¹.

From the OHAS information, the Consultant Team calculated the home-based vehicle trip rates for a 24-hr period (Monday through Thursday only) by household size (i.e., number of people). These data were then spatially linked to the RLIS tax lot data, which provides information about dwelling square footage. From this analysis, the household vehicle-trip rates by dwelling size were calculated.

Finally, data on County SFR building permits since 2010 were used to determine the historical distribution of new SFR dwellings by size (based on square footage of living space, excluding garage and deck space).

¹ Clackamas County (N= 552) and the rest of Portland Metro region with similar activity density ranges and dwelling unit sizes as those in Clackamas County (N=2198).

Summary of Analysis

The working group recommended that any adjustments to the existing TSDC schedule be categorical (i.e., limited to 3 or 4 categories) in order to balance administrative burden and equity of the charges. In recommending the specific thresholds for each category, the working group considered: 1) the historical distribution of dwellings by size (from the permit data), 2) the degree to which average trip rates were statistically different within various square footage groupings with adequate sample sizes; and 3) whether the adjusted schedule would be revenue neutral when compared to the current TSDC structure.

The recommended SQFT categories, and the historical percentage of permits issued within each category are shown in Figure 1.

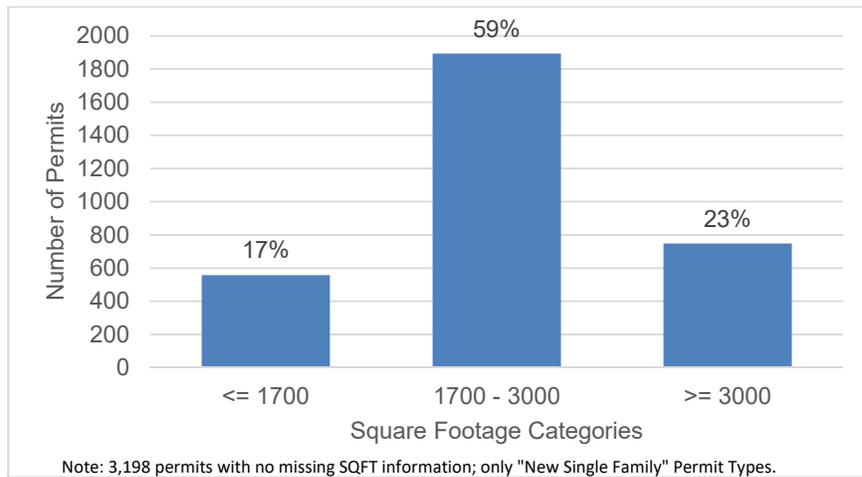


Figure 1 New Single-Family Permits Issued in Clackamas County (since 2010, ACCELA program)

Average Trip Rates by Dwelling Size Category

Vehicle trip rates by selected dwelling size category (tier) were estimated using OHAS and RLIS data. This process started with determination of the trip rates by household size (people per household) from the OHAS data, as shown in Table 2.

Table 2 Daily Vehicle Trip Rate by Household Size

Household Size (people)	Average Daily Vehicle Trips
1	1.98
2	3.55
3	4.77
4	5.81
5+	6.95

Source: OHAS 2011/2012

Then, the distribution of household sizes across the selected dwelling size categories were determined from the combined OHAS/RLIS information described previously. The results of this analysis are shown in Table 3.

Table 3 Distributions of Household Size by Dwelling Unit Size

Household Size (people)	% Households within Dwelling Size Category		
	<1,700	1,700-2,999	≥3,000
1	29%	14%	9%
2	40%	41%	42%
3	15%	20%	18%
4	12%	19%	21%
5+	5%	6%	11%
	100%	100%	100%
<i>N</i>	1027	1385	350

Source: 2011 OHAS & RLIS

Finally, the average trip rates within each dwelling size category are determined by multiplying the trip rate for each household size (from Table 2) by the percent of households at each household size (Table 3) and summing the results within each dwelling size category. The results are shown in Table 4.

Table 4 Estimated Trip Generation Rates by Square Footage of Dwelling Unit

Dwelling Square Footage Category	<1,700	1,700-2,999	≥3,000
Avg. (weighted) Vehicle Trip Rate	3.70	4.22	4.46

Source: 2011 OHAS & RLIS

Relative TSDC Adjustments by Dwelling Size Category

To determine the recommended TSDCs by dwelling size category, the average vehicle trip rates by category (from Table 4) are compared to the average SFR vehicle trip rate for the County as a whole. To approximate this average trip rate for a typical household in Clackamas County, we interpolate vehicle trip rates by household size from the data in Table 2 and apply the results to the average persons per household in Clackamas County. As shown in Figure 2, the average household size for Clackamas County is 2.56 people (from 2010 Census Data), and the resulting estimated average trip rate 4.23 vehicle trips per household, excluding visitors (friends, deliveries and service workers).

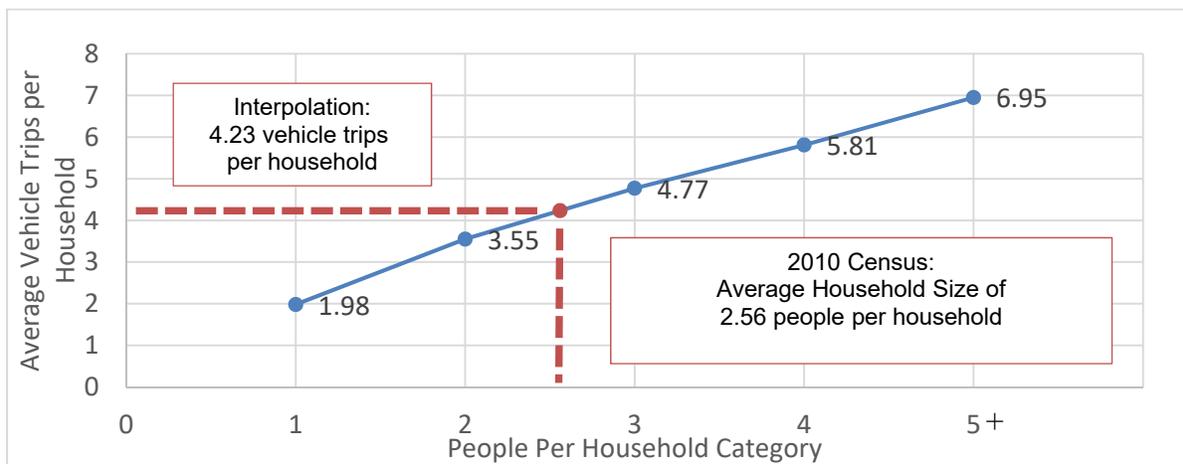


FIGURE 2 Average Vehicle Trips by Household Size (OHAS 2011-2012)

The average trip rates by dwelling size category in Table 4 are compared to the average SFR trip rate of 4.23 in order to determine adjustments to the current system-wide average TSDC for each category. These adjustments are shown in Table 5.

Table 5 Estimated TSDC Adjustments by Dwelling Size Category

Dwelling Square Footage Category	<1,700	1,700-2,999	≥3,000
Avg. (weighted) Vehicle Trip Rate ¹	3.70	4.22	4.46
Relative Adjustment ²	87.5%	99.8%	105.4%
Proposed (Adjusted) TSDC Rate ³	\$4,015	\$4,579	\$4,840

¹ Source: 2011 OHAS & RLIS

² Source: Computed from analysis of OHAS & RLIS and Regional Average Trip Rate of 4.23 trips (see FIGURE 2 for interpolation)

³ Source: Current TSDC Rate (\$4,590) multiplied by the relative adjustment percentage

For example, a dwelling that is 1,500 square feet (<1,700 SQFT) is estimated to have an average (weighted) vehicle trip rate of 3.70, which is about 87% of the estimated vehicle trip rate for the County (4.23). In our 1,500 square foot example, the estimated adjusted TSDC rate for this size dwelling would be 87% of the current TSDC charge – or \$4,015.

Revenue Neutrality Analysis

The final step in the analysis is to explore whether the recommended TSDCs by dwelling size category would be revenue neutral with respect to the current TSDC structure. Based on the distribution of permits since 2010 (from Figure 1), we apply the proposed adjustments to the same distribution of forecasted permits (per 100 permits) to estimate what each of the forecasted permits would be worth in terms of the 'current TSD schedule'. This analysis is presented in Table 6. Based on permit history (since 2010), the 3-tier approach is not expected to generate revenue that is materially different than the current rate (within 2.1%).

Table 6 Estimation of Change in Revenue for Proposed Adjustments per 100 Future Permits

Square Footage Category	Proportion of Permits Issued (Since 2010) ¹	Proposed Adjustments to the TSDC Schedule ²	Forecasted Permits to be Issued per 100 Permits ³	For the forecasted permits, how many 'current TSDC schedule' permits are these worth? ⁴
< 1,700	17%	87.5%	17	14.9
1,700 – 2,999	59%	99.8%	59	58.9
≥ 3000	23%	105.4%	23	24.3
<i>Total revenue change (out of 100)⁵:</i>				<i>98.0</i>

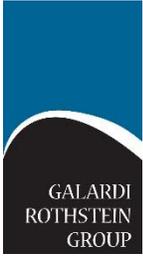
¹ Source: Clackamas County permit data

² See Table 5.

³ 100 permits issued multiplied by proportion of permits issued since 2010.

⁴ Forecasted permits issued per 100 permits multiplied by the proposed adjustments to the TSDC schedule.

⁵ The sum of the 'worth' of forecasted permits across all dwelling size categories.



Appendix