

TRANSPORTATION IMPACT FEE PROGRAM UPDATE RATE STUDY

Prepared for:
Thurston County, Washington



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FEHR  PEERS

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Introduction

This report summarizes the policy and technical development of the Transportation Impact Fee program for Thurston County, Washington.

Definition of Impact Fees

Impact fees are a broad category of charges on new development assessed to pay for capital improvements (e.g., parks, schools, fire stations, roads, etc.) necessitated by new development. Cities and counties collect transportation impact fees to fund improvements that add capacity to the transportation system accommodating the travel demand added by new development.

The County developed the program based on the following findings:

- Development activity in the County, including residential, commercial, retail, office, and industrial development, will create additional demand and need for public road facilities.
- Thurston County is authorized under the State's Growth Management Act (Chapter 82.02.050 RCW) to require new growth and development within the unincorporated County to pay a proportionate share of the cost of new roadway facilities serving that new growth and development through the imposition of impact fees.
- Impact fees may be collected and spent for public road facilities needed for system improvements that are included within the capital facilities plan in the County's Comprehensive Plan.
- Impact fees do not pay for road maintenance and repair. These costs are paid by other County funding sources.

Legal Basis

The primary enabling mechanism for imposing impact fees in Washington State is the Growth Management Act (GMA). Prior to the passage of the GMA, local agencies primarily relied on the State Environmental Policy Act (SEPA) process to require developers to fund mitigation projects necessitated by new development.

The GMA, passed in 1990, added RCW 82.02.050-100 regarding impact fees and specifically authorized the use of impact fees for jurisdictions planning under the Growth Management Act. The GMA allows impact fees for system improvements that reasonably relate to the impacts of new development and specifies that fees are not to exceed a proportionate share of the costs of improvements.

The GMA allows impact fees for ‘streets and roads’. For purposes of this rate study, the term ‘transportation’ means ‘streets and roads’ as identified in the GMA. Street and road projects may include pedestrian, bicycle, and transit facilities consistent with the County’s adopted design standards.

For a county to impose GMA impact fees, the following specific provisions are required:

- The county must have an ordinance authorizing impact fees;
- Fees may apply only to improvements identified in a Capital Facilities Plan;
- The agency must establish one or more geographic service areas for fees;
- A formula or other method for calculating impact fees must be established;
- The fees cannot be used to finance the portion of improvements needed to pay for existing capacity deficiencies;
- The fees can be used to recoup the cost of improvements already made that address the needs of future development;
- The fees may not be arbitrary or duplicative;
- The fees must be earmarked specifically for eligible transportation improvements and be retained in special interest-bearing accounts;
- Fees may be paid under protest;
- Fees not expended within ten years must be refunded with interest; and
- The County “cannot rely solely on impact fees” to pay for needed improvements.

An accounting system is important to ensure that the impact fees collected are assigned to the appropriate improvement projects and the developer is not charged twice for the same improvement.

Guiding Principles

A set of guiding principles provides consistent direction for development and implementation of the transportation impact fee program. The program should:

- Be legally and technically defensible (provide a nexus to impact);
- Be financially constrained;
- Be fair, consistent, and predictable in its development and application;



- Have reasonable rates based on the cost of improvements necessary to accommodate new growth and development under the Comprehensive Plan; and
- Be simple to administer and not preclude other requirements of SEPA such as improvements to address safety issues, access to the development, etc.

Impact Fee Structure

The key steps involved in the development of an impact fee program are shown in **Figure 1**. Steps include developing a list of road improvements and costs, allocating growth-related costs to development within the unincorporated County (excluding existing capacity deficiencies and development outside of unincorporated areas), and identifying available funding. The remaining costs can be charged as impact fees, which are displayed in the form of a fee schedule. Each step is described in more detail in subsequent sections of this report.

Organization of Report

This report includes the following sections:

- Introduction
- Impact Fee Project List
- Cost Allocation
- Impact Fee Schedule

Data Rounding

The data in this study were prepared using computer spreadsheet software. In some tables in this study, there will be small variations from the results that would be obtained using a calculator to compute the same data. The reason for these insignificant differences is that the spreadsheet software calculated the results to more places after the decimal than is reported in the tables in the report.



Figure 1: Transportation Impact Fee Program Development Steps



Impact Fee Project List

Washington State law RCW 82.02.050 specifies that Transportation Impact Fees are to be spent on 'system improvements.' System improvements can include physical or operational changes to existing 'roads and streets', as well as new roadway connections that are built in one location to benefit projected needs at another location. These are generally projects that add capacity to accommodate growth in traffic volumes (new streets, additional lanes, widening, signalization, etc.).

The impact fee program for Thurston County was designed to determine the fair share of roadway improvement costs that may be charged to new developments. During the County's transportation planning process, the County identified projects needed over the next twenty years to meet the transportation needs of the adopted land use in the Comprehensive Plan. The task was accomplished by examining existing roadway deficiencies and forecasting future needs. Thurston County developed cost estimates for these capacity improvements. These capital projects form the basis for the impact fees project list.

The impact fee project list was composed of selected capacity projects from the County's Transportation Improvement Program (TIP), Capital Facilities Element (CFE), and selected other capital projects identified as needed by public works staff. The CFE will be revised to include all projects not currently listed prior to the imposition of this updated fee. The project list, shown in **Table 1** and illustrated as a map in **Figure 2**, includes 38 projects totaling \$243 million.

Table 1: Transportation Impact Fee Projects

Project ID	Project Location	Project Description	Total Project Cost (2021 \$)
1	Meridian Rd NE from Martin Way E to Interstate 5	Widen to 2-3 lanes, urban improvements, shoulders	\$2,500,000
2	Pacific Ave SE from Union Mills Rd to SR 510	Phase I - widen road to 2-3 lanes, urban improvements, shoulders, and intersection modifications at Steilacoom Rd	\$5,000,000
3	Yelm Hwy and Meridian Rd Intersection Improvements	Install roundabout at intersection	\$3,500,000
4	Marvin Rd SE from Pacific Ave SE/SR 510 to Mullen Rd SE	Widen to 2-3 lanes, intersection modifications and urban improvements	\$20,000,000
5	Steilacoom Rd SE from Pacific Ave SE to Dutterow Rd SE	Widen to 2-3 lanes, shoulders, and urban improvements	\$20,000,000
6	Mullen Rd SE from Timberline High School to Marvin Rd SE	Widen to 2-3 lanes, shoulders, and urban improvements	\$20,000,000
7	Yelm Hwy SE from BNSF Crossing to Meridian Rd SE	Phase 1-3 Replace and widen Bridge O-12 at BNSF railroad crossing, roundabout at Spurgeon Creek Rd SE, corridor improvements between Spurgeon Creek Rd and conceptual Marvin Rd extension	\$20,000,000
8	Carpenter Rd NE from Martin Way E to 1,300 ft North of Martin Way E	Widen to 2-3 lanes, shoulders, and urban improvements	\$1,500,000
9	Old Pacific Hwy SE from Reservation Rd SE to Nisqually River Bridge	Widen to 2-3 lanes, shoulders, and urban improvements	\$8,000,000
10	McCorkle Rd SE from 113th Ave SE to Old Hwy 99 SE and 113th Ave SE from SR 121 to McCorkle Rd SE	Rural Mobility Improvements include widening, geometrics, shoulders, and turn lanes if necessary	\$5,000,000
11	Rich Rd SE from Deschutes River to Normandy Rd SE	Rural Mobility Improvements include widening, geometrics, shoulders, turn lanes if necessary and bridge over Scatter Creek	\$6,372,219
12	Rich Rd SE from Rixie Rd SE to Yelm Hwy SE	Widen to 2-3 lanes, urban improvements, and shoulders	\$4,500,000



Project ID	Project Location	Project Description	Total Project Cost (2021 \$)
13	Yelm Hwy SE Capacity Project 5 from Orvas Ct SE to Rich Rd SE	Widen to 4-5 lanes, access management, and urban improvements	\$19,226,223
14	Old Hwy 99 SE from Rich Rd SE to 500 ft South of Silverspot Dr SE	Widen to 2-3 lanes, shoulders, and urban improvements	\$2,500,000
15	Rainier Rd SE at Fir Tree Rd SE Intersection	Widen to 2-3 lanes, shoulders, and intersection improvements	\$5,000,000
16	Elderberry Rd SW from SR 12 to 196th Ave SW	Widen to 3 lanes, urban improvements, access management, intersection improvements at 196th and SR12	\$3,000,000
17	Old Highway 99 S & Tilley Rd S Intersection	Provide left turn lane on EB Old Hwy 99 and provide illumination, rural mobility improvements, potentially a roundabout	\$1,500,000
18	Albany St SW from James Rd SW to Littlerock Rd SW	Rural Mobility Improvements include widening, geometrics, shoulders, and turn lanes if necessary, Sidewalks	\$2,500,000
19	183rd Ave SW from Old Hwy 99 SW to SR 12	Rural Mobility Improvements include widening, geometrics, shoulders, intersection improvements, and turn lanes if necessary	\$4,000,000
20	US 12 from West UGA boundary to Old Hwy 99 SW	New SR 12 Intersection at west UGA, and SR12/Old Hwy 99/Elderberry Intersection improvements, additional EB lane, EB turn lane	\$9,300,000
21	North Grand Mound UGA improvements - 196th Ave SW from Sargent Rd SW to Elderberry St SW	Widen to 2-3 lanes, intersection modifications and urban improvements	\$10,020,000
22	South Grand Mound UGA improvements - Sargent Rd SW from US 12 to Old Hwy 99 SW	Widen to 2-3 lanes, intersection modifications and urban improvements	\$2,930,000
23	US 12 & Elderberry/Old Hwy 99	Improve pedestrian right-of-way to decrease crossing times; implement a right-turn overlap phase for the Northbound approach	\$200,000
24	Old Hwy 99 from US 12 to Old Hwy 9	Develop a cross-section for Old Highway 99 that provides adequate vehicle capacity will providing separated space for bicyclists and pedestrians.	\$8,240,000

Project ID	Project Location	Project Description	Total Project Cost (2021 \$)
25	Old Hwy 99 at intersections of Sargent Rd and 201st Ave	Combine the Sargent Road and 201st intersections with Old Highway 99 with a roundabout.	\$3,480,000
26	Old Hwy 9 & Old Hwy 99	Construct a traffic signal or roundabout at the intersection	\$1,680,000
27	15th Ave NE & Draham St NE from Sleater Kinney Rd NE to Carpenter Rd NE	Phase I - widen road to 2-3 lanes, urban improvements, shoulders, and intersection improvements	\$8,000,000
28	Johnson Point Rd and Hawks Prairie Rd Intersection Improvements	Intersection improvements	\$4,000,000
29	South Bay Rd NE from 33rd Lane NE to Chehalis Western Trail	Widen to 2-3 lanes, intersection modifications and urban improvements	\$6,000,000
30	Marvin Road NE and 56th Ave NE Intersection	Widen to 2-3 lanes, shoulders, and intersection improvements	\$3,000,000
31	Delphi Rd SW from 62nd Ave SW to SR 101	Rural Mobility Improvements include widening, geometrics, shoulders, and turn lanes and if necessary	\$10,000,000
32	Mud Bay Rd NW and Evergreen Parkway NW Intersection	Intersection improvements at Evergreen Parkway Ramps and Mud Bay Rd	\$2,500,000
33	Sexton Dr NW Steamboat Island Rd NW to 32nd Ave NW	Widen to 2-3 lanes, intersection modifications and urban improvements	\$250,000
34	Bald Hill Rd SE from Smith Prairie SE to Clear Lake Rd SE	Rural Mobility Improvements include widening, geometrics, shoulders, and turn lanes if necessary	\$10,000,000
35	153rd Ave SE and Vail Rd SE Intersection Improvements	Intersection Improvements	\$2,000,000
36	Littlerock Rd & 113th Ave. SW Bridge and Intersection Improvements	Install left turn lane, lighting, replace Bridge L-5, realignment of 113th Ave SE	\$3,500,000
37	Vail Rd Phase 2 (153rd to 138th)	Rural Mobility Improvements include widening, geometrics, shoulders, and turn lanes if necessary	\$2,800,000



Project ID	Project Location	Project Description	Total Project Cost (2021 \$)
38	Vail Rd (138th to Bald Hill Rd)	Rural Mobility Improvements include widening, geometrics, shoulders, and turn lanes if necessary	\$960,338
Total			\$242,958,780

Figure 2: Impact Fee Project Map



COST ALLOCATION

Methodology

The County uses an impact fee methodology that distinguished between facility improvements that address existing deficiencies and those needed to serve new growth. For growth-related projects, this method assumes that traffic generated by future development is the primary reason for constructing improvement project(s). **Figure 3** diagrams the cost allocation process, which is described in the following sections.

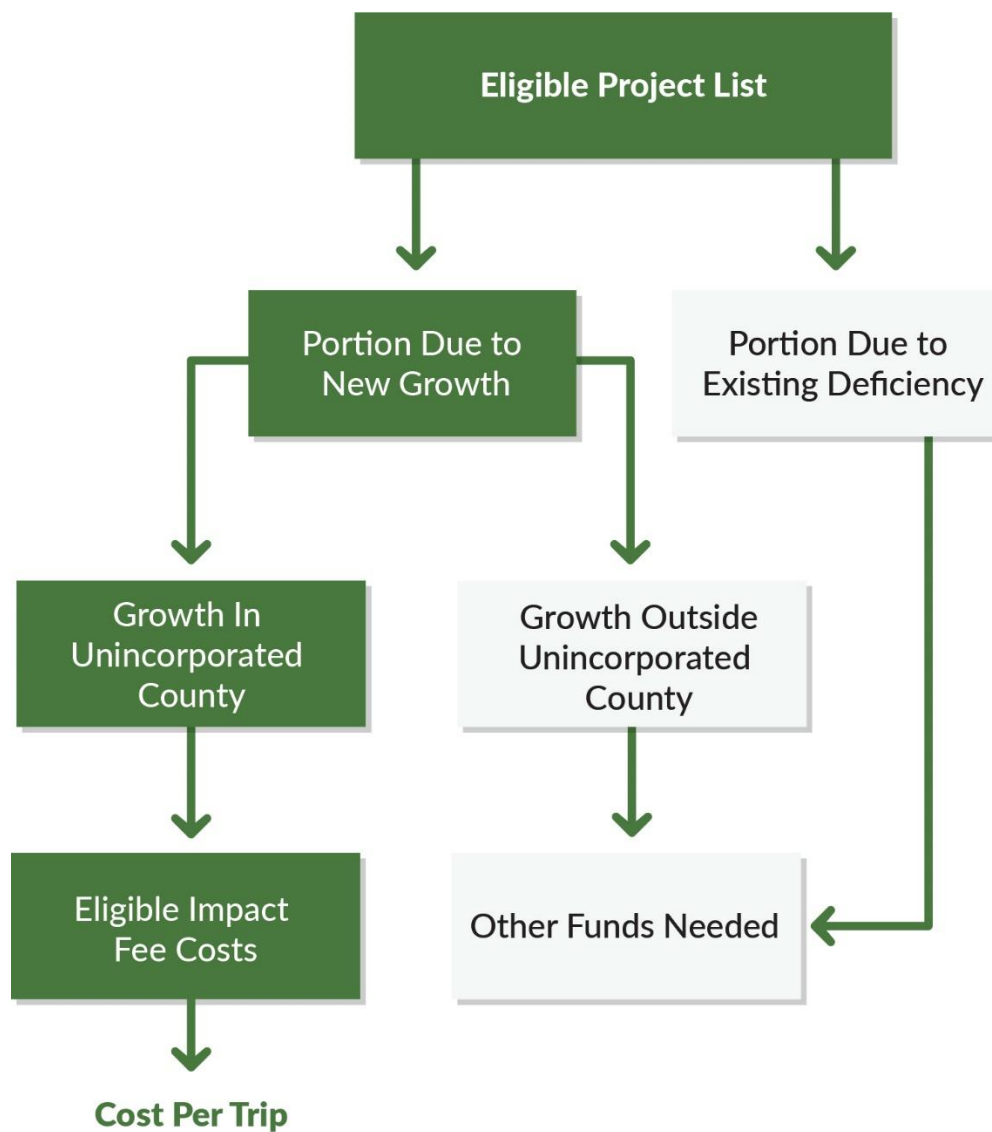


Figure 3: Impact Fee Cost Allocation Concept

Existing Deficiencies

RCW 82.02.050(4) (a) requires that the Capital Facilities Element of a jurisdiction's comprehensive plan identify "deficiencies in public facilities serving existing development." Under the GMA, future development cannot be held responsible for the portion of added roadway capacity needed to serve existing development.

To adequately assess both the extent of the existing roadway deficiencies and the magnitude of the future needs on arterial roadways, the County developed a standard evaluation criterion. A criterion was selected to be uniform, consistent, and easily applied to the available roadway traffic volume data.

The County chose to use a method that compares existing daily traffic to the current service threshold capacity of the facility. The service threshold capacities represent LOS C in rural areas and LOS D in urban areas. Specific capacities were developed based on the Highway Capacity Manual (HCM).¹ Thurston County roadway segment service threshold capacities are shown in **Table 2**. No project locations were found to exceed their service threshold capacities at a segment level.

Table 2: Roadway Segment Service Threshold Capacities

	Travel Lanes (each directions)	Service Threshold Capacities (PM Peak 2-Hour)	
		≤ 40 MPH	≥ 45 MPH
Urban (LOS D)	1	1,550	1,600
	2	3,150	3,250
Rural (LOS C)	1	1,400	1,450
	2	2,800	2,900

Similar intersection service threshold capacities were developed based on the number of vehicles passing through an intersection. The results were synthesized to provide service thresholds for signalized and unsignalized intersections shown in **Table 3**.

Table 3: Intersection Service Threshold Capacities

	Service Threshold Capacities (PM Peak 2-Hour per Approach Lane ¹)	
	Signalized	Unsignalized
Urban (LOS D)	900	500
Rural (LOS C)	720	400

¹ Highway Capacity Manual, 6th Edition.



1. Approach lanes only include 'through' approach lanes; they do not include any separate left or right turning lanes.

Next, the County needed to determine the "existing deficiency portion" (as opposed to the portion that would be attributable to new growth). Under the GMA, the County is responsible for financing the existing deficiency portion, but the County can charge new development for the remainder of the roadway improvement. The County can select from several approaches to proportionately allocate the cost. The Thurston County Impact Fee Program uses a method based on the amount of traffic exceeding the current capacity of the roadway under existing conditions. The formula for determining the existing deficiency percentage is as follows:

$$\text{Existing Deficiency Percentage} = \frac{\text{Existing Excess Traffic}}{\text{Existing Excess Traffic} + \text{New Traffic}}$$

$$= \frac{(\text{Existing Traffic} - \text{Service Threshold})}{(\text{Existing Traffic} - \text{Service Threshold}) + (\text{2040 Traffic} - \text{Existing Traffic})}$$

Table 4 summarizes the calculation for the two intersections with existing deficiencies.

Table 4: Intersection Projects - Existing Deficiency Calculation

Project ID	Project Location	Control Type	Service Threshold (Volume per Lane)	2015 PM Peak 2-hr Traffic per Lane	2040 PM Peak 2-hr Traffic	Existing Deficiency Percentage	Existing Deficiency Portion of Cost
3	Yelm Hwy and Meridian Rd Intersection Improvements	Unsignalized	500	598	1,062	17%	\$595,000
28	Johnson Point Rd and Hawks Prairie Rd Intersection Improvements	Unsignalized	400	588	830	44%	\$1,760,000
Total							\$2,355,000

Note: Existing deficiency percentages were calculated before volumes were rounded.

Travel Growth

For the purposes of this impact fee update, the Thurston Regional Planning Council (TRPC) provided the travel demand model for 2040, which includes expected growth in population and employment as allocated across the county. Using this travel demand model, growth in the unincorporated county is estimated to generate approximately 13,500 new PM peak hour vehicle trip ends. It is this growth in vehicle trips associated with unincorporated county development that forms the basis for the impact fee rates.

Service Areas

The analysis considered travel patterns for growth among different parts of the County, called service areas. The primary planning principle used to define service areas was to group areas with similar travel characteristics. Using this guidance, the Thurston County Transportation Impact Fee Program has divided the unincorporated county into six service areas, which include Urban Growth Areas (UGAs) that are geographically related. These service areas do not include areas where the County has no jurisdiction and thus cannot charge impact fees, such as incorporated cities, federal and tribal lands. The six county service areas are shown in **Figure 4** and include:

- Central UGAs (Olympia, Lacey, and Tumwater)
- East and East UGAs (Yelm and Rainier)
- South and South UGAs (Grand Mound, Bucoda, and Tenino)
- North
- Northwest
- West

Project Groups

In addition to the service areas, for purposes of travel demand modeling and apportioning costs for each project to specific service areas, seven project groups were developed. These groups do not necessarily align with the service areas but instead group projects that are proximate to each other and see relatively similar usage patterns. The project groups can also be seen in **Figure 4**.



Figure 4: Transportation Impact Fee Service Areas and Project Groups

Cost Allocation Results

The cost allocation process distributes the growth costs for each project based on the travel patterns within and outside the unincorporated County and among the service areas. The County's traffic model was used to perform a 'select link' assignment. A select link assignment provides origin and destination information for each vehicle trip traveling through projects on the impact fee project list. Trips that pass-through unincorporated Thurston County, but do not have any origins or destinations within the unincorporated County, were not allocated to County growth. Trips that start or end in unincorporated Thurston County were allocated 50 percent to County growth. Similarly, trips with both ends in the unincorporated County were fully attributed to County growth.

Figure 5 summarizes the cost allocation results. For discussion purposes, the dollar amounts shown in this figure and the following text are approximate values expressed in millions of dollars. The actual amounts used in the calculations are precise to a single dollar.

The total cost of the capacity projects on the impact fee project list is \$243 million, as shown in **Table 1**. Subtracting \$39 million in grant or other committed funds, \$4.5 million in collected impact fees, and \$2.5 million in existing deficiencies results in \$197 million as the 'growth share of costs'.

The \$197 million was then split into 'unincorporated county growth' and 'outside unincorporated county growth' components using the TRPC travel demand model. Using these data, the average percent of 'unincorporated county growth' equaled 46 percent. **Appendix A - Exhibit A-1** shows the details of this calculation. The 'unincorporated county growth' excludes all trips that pass through unincorporated Thurston County and 50 percent of the trips with one end in unincorporated Thurston County and the other end outside of the county or in a Thurston County city. The 46 percent applied to the \$197 million of needed funds yields an amount equal to \$90 million. This is the maximum allowable amount that can be charged to new development through this impact fee program over the next 20 years.



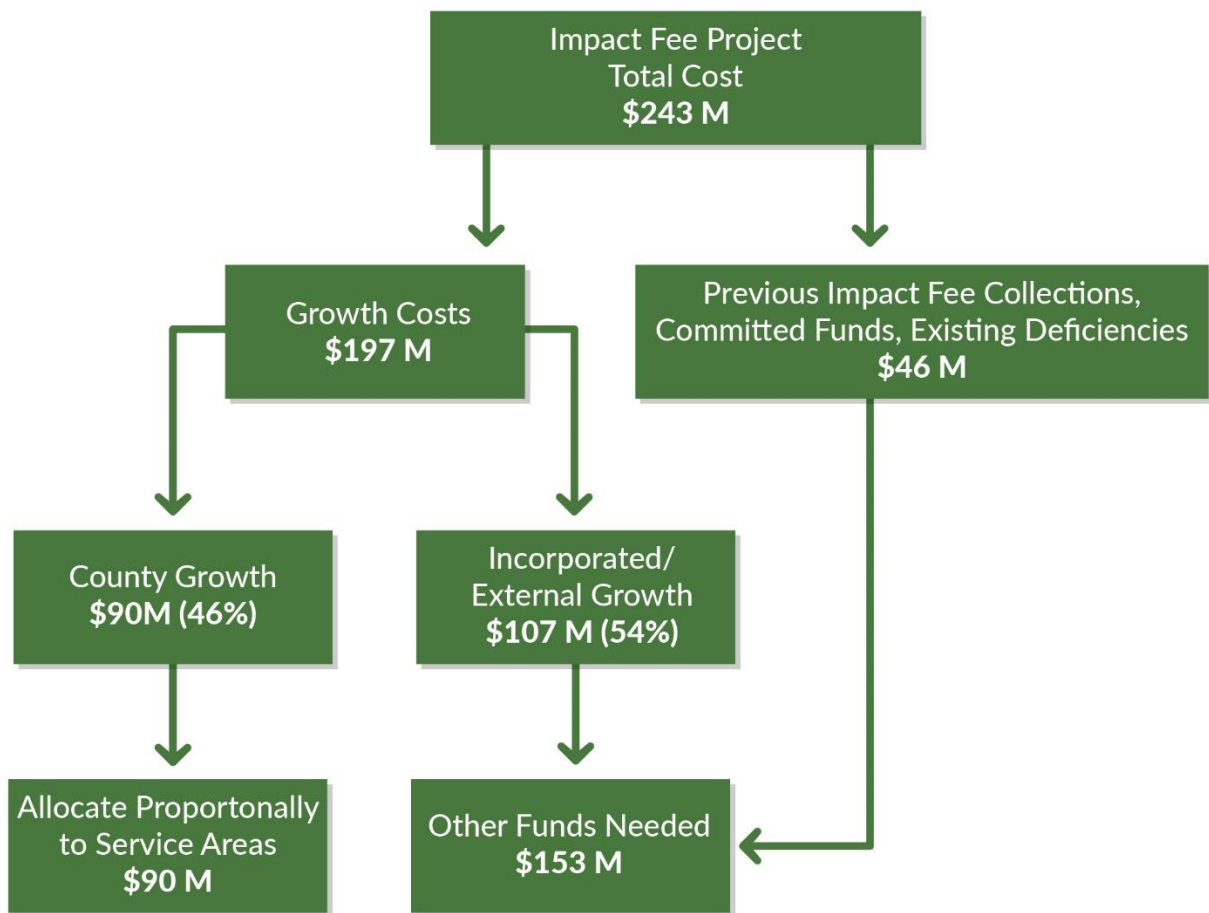
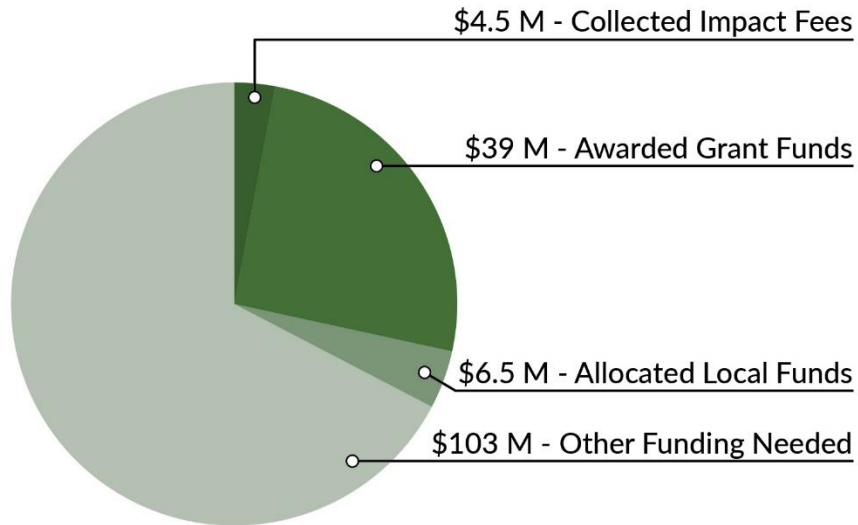


Figure 5: Impact Fee Cost Allocation

If the maximum allowable impact fees were implemented and collected, an additional \$153 million in other funds would be needed to cover the remaining costs. The County has already collected \$4.5 million in impact fees, been awarded grants for \$39 million, and allocated \$6.5 million of local funds towards these projects. Other County revenues, grants, and additional funding sources would comprise the remainder of the funding package, shown in the pie chart below.

Funds Needed = \$153 Million



The final step in the cost allocation process dealt with calculating the 'cost per new trip end' within each service area, derived by dividing the total eligible proportional project costs by the total number of new PM peak hour trip ends generated in the service area. This process is shown in **Table 5** and **Figure 6** below:

Table 5: Impact Fee Rate by Service Area

Service Area	Total Impact Fee Cost	PM Peak Hour Trip Ends	Impact Fee per PM Peak Hour Trip End
Northwest	\$3,870,149	613	\$6,318
West	\$2,066,233	471	\$4,390
South (Includes Grand Mound, Tenino, Bucoda UGAs)	\$25,376,131	2,565	\$9,894
East (Includes Yelm, Rainier UGAs)	\$12,592,748	2,278	\$5,528
North	\$2,434,505	551	\$4,418
Central UGAs (Olympia, Tumwater, Lacey UGAs)	\$43,894,923	7,017	\$6,256
Total	\$90,234,690	13,494	Average: \$6,687
Fehr & Peers, 2021.			



The cost per trip end for each service area represents the maximum allowable rate. The County may choose to reduce this rate across all service areas by a set percentage, so long as the percentage reduction is the same across all service areas.

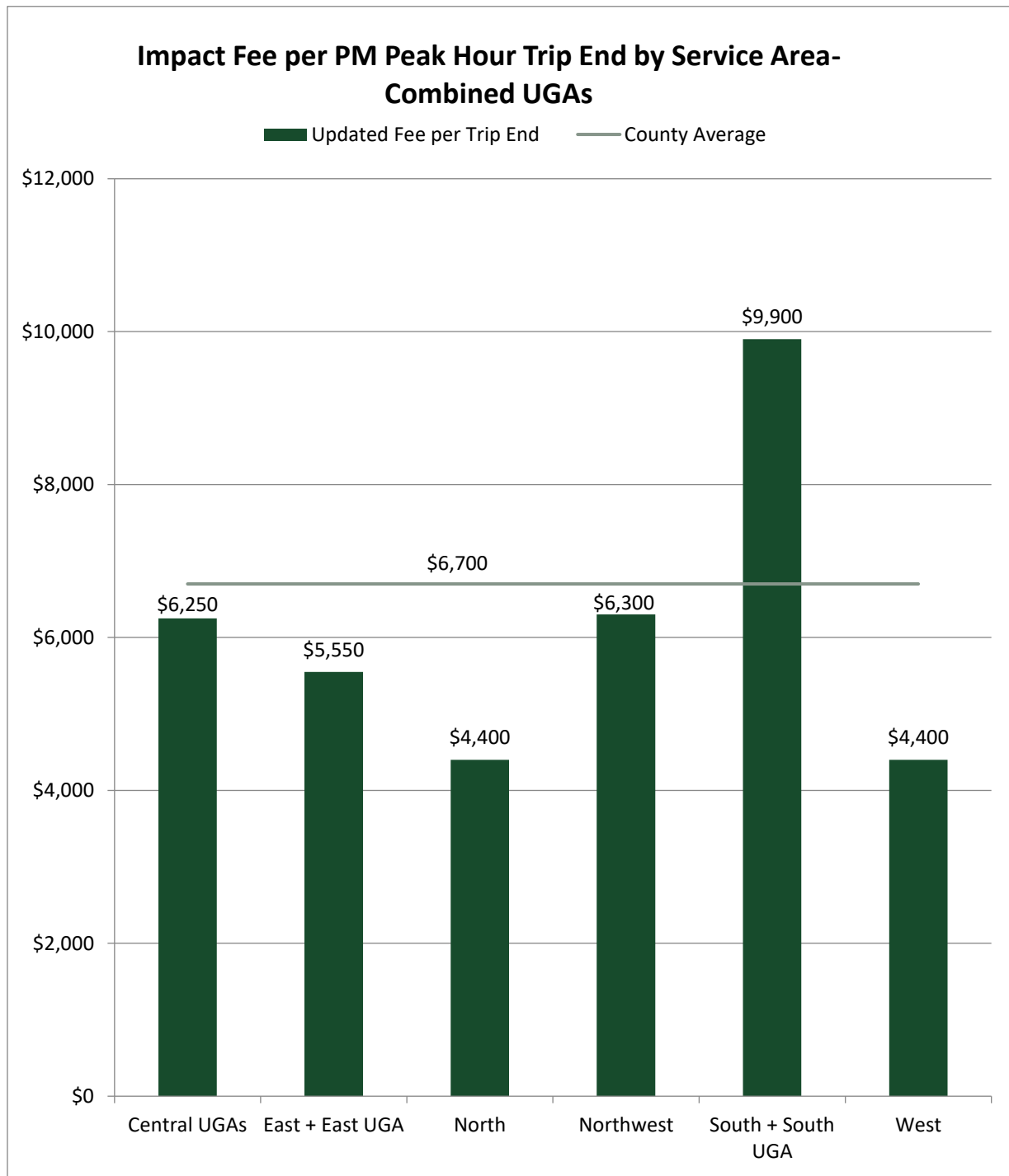


Figure 6: Impact Fee per PM Peak Hour Trip End by Service Area (Values Rounded)

IMPACT FEE SCHEDULE

The impact fee schedule consists of impact fee rates for various types of land uses within the unincorporated County. For ease of understanding by developers and administrative application, the impact fee rates are expressed in land use terms, such as cost per dwelling unit or cost per square foot.

The impact fee rate for a particular land use type was calculated by multiplying the 'cost per trip end' times the trip generation rate for that land use (see Chapter 3 for impact fee rate calculations by service area). The result of this calculation is a 'cost per land use unit', represented in the impact fee schedule as the 'impact fee rate'. The formula for calculating the impact fee rate is as follows:

$$\text{Impact Fee Rate} = \text{Cost per Trip End} \times \text{Trip Generation}$$

The trip generation portion of the formula is comprised of three components: basic trip rate, 'new' trip percentage, and trip length adjustment. The formula for calculating trip generation for each land use is as follows:

$$\text{Trip Generation} = \text{Basic Trip Rate (A)} \times \text{'New' Trip Percentage (B)} \times \text{Trip Length Adjustment (C)}$$

Each of these components is discussed below and shown in **Appendix B**.

Trip Generation Components

Basic Trip Rate (A)

Trip generation rates for each land use type were derived from the Institute of Transportation Engineers (ITE) *Trip Generation* (10th Edition). The rates are expressed as vehicle trips entering and leaving a property during the PM peak hour. Note that the ITE trip rates are based on different units of measure depending on the type of land use. For instance, residential trip rates are provided per dwelling unit, while commercial trip rates are provided per thousand square feet (ksf).

'New' Trip Percentage (B)

Trip generation rates represent the total traffic entering and leaving a property at the driveway points. For certain land uses (e.g., retail, fast food, gas stations), a substantial amount of this traffic is already passing by the property and merely turns into and out of the driveway. These pass-by trips do not constitute additional trips on the surrounding street system and therefore are deducted from the basic trip rate prior to calculating the impact fee. The resulting trips are considered "new" to the street system and are



therefore subject to the impact fee calculation. The “new” trip percentages are derived partially from ITE data and from available surveys conducted around the country.²

Trip Length Adjustment (C)

Another variable that affects traffic impacts is the length of the trip generated by a particular land use. The ‘cost per trip’ calculated in the impact fee program represents an average for all new trips generated within unincorporated Thurston County. However, specific land uses generate trips of different lengths. If a given trip length is shorter than the average, then its relative traffic impacts on the roadway system will be lower than average. Conversely, longer trips will impact a larger proportion of the transportation network. To account for these differences, an adjustment factor is used, calculated as the ratio between the trip length for a particular land use type and the ‘average’ trip length for the County. Trip length data were estimated using national survey results⁴. These national data showed average trip lengths of around 3.1 miles. The average trip length estimated for Thurston County is 3.8 miles, based upon the 2040 mix of land use types within the County. Because the relative difference in trip lengths among land uses is expected to be the same in unincorporated Thurston County as what has been measured nationally, trip length adjustments based on national data are reasonable to apply.

Schedule of Rates

Appendix B shows the impact fee schedule for each service area using the trip generation components and the maximum allowable cost per trip end. In the fee schedule, fees are shown as dollars per unit of development for the land use categories. The impact fee program is flexible in that if a use does not fit into one of the categories, an impact fee can be calculated based on the development’s projected trip generation. **Appendix C** defines each land use type.

Two examples (residential and office) of the impact fee rate calculation are shown below.

Use Local Data

If a land use code indicates that local data must be used, this is indicative of the ITE dataset having too few studies to rely on the trip generation rates included. In this case, a local study should be completed to review the trip generation for a similar existing land use within the same geographic context of a proposed project.

² Trip Generation Sources: ITE Trip Generation (8th Edition); ITE Trip Generation Handbook,(March 2001); Pinellas County (FL) Impact Fee Study (1991), Osceola County (FL), Alternative Traffic Generation Rate Study (2004), Polk County (FL) Transportation Impact Fee Study (2005).

The following example is for a single-family residential land use (ITE Land Use Code 210) in the Northwest service area.

$$\begin{aligned} \text{New Trip Rate} &= \text{PM Peak Hour Trip Generation} \times \text{Percent of New Trips} \\ &= 0.99 \text{ trip/dwelling} \times 100\% = 0.99 \text{ trip/dwelling} \end{aligned}$$

$$\begin{aligned} \text{Trip Length Adjustment} &= \text{Trip Length} \div \text{Average Trip Length} \\ &= 3.5 \text{ miles} \div 3.8 \text{ miles} = 0.921 \end{aligned}$$

$$\begin{aligned} \text{Impact Fee Rate} &= \text{New Trip Rate} \times \text{Trip Length Adjustment} \times \text{Average Cost per Trip End} \\ &= 0.99 \text{ trip/dwelling} \times 0.921 \times \$6,318 = \$5,761/\text{dwelling} \end{aligned}$$

The following example is for a 25,000 square foot (25 ksf) supermarket (ITE Land Use Code 850) in the Central UGA service area.

$$\begin{aligned} \text{New Trip Rate} &= \text{PM Peak Hour Trip Generation} \times \text{Percent of New Trips} \\ &= 9.24 \text{ trips/ksf} \times 75\% = 6.93 \text{ trips/ksf} \end{aligned}$$

$$\begin{aligned} \text{Trip Length Adjustment} &= \text{Trip Length} \div \text{Average Trip Length} \\ &= 2.1 \text{ miles} \div 3.8 \text{ miles} = 0.553 \end{aligned}$$

$$\begin{aligned} \text{Impact Fee Rate} &= \text{New Trip Rate} \times \text{Trip Length Adjustment} \times \text{Average Cost per Trip End} \\ &= 6.93 \frac{\text{trips}}{\text{ksf}} \times 0.553 \times \$6,256 \times \frac{1 \text{ ksf}}{1,000 \text{ sf}} = \$23.97/\text{sf} \end{aligned}$$

$$\begin{aligned} \text{Total Impact Fee} &= \text{Impact Fee Rate} \times \text{Size of Development} \\ &= \$23.97/\text{sf} \times 25,000 = \$599,370 \end{aligned}$$



Appendix A: Cost Allocation Results

The cost allocation results are summarized in this Appendix. **Exhibit A-1** illustrates how the impact fee project costs (shown in Table 1) were divided into growth-related costs attributable to the County. In order to determine this proportion, the County's travel demand model was used to identify the portion of trip-making associated with existing and growth-related traffic. A technique called 'select-link' analysis was used to isolate the vehicle trips using each of the impact fee projects. The first column of Exhibit A-1 shows several "project groups", which represent the grouping of impact fee projects used in the select link traffic forecasts. Each project group includes impact fee projects that are proximate to each other, representing similar traffic patterns.

Exhibit A-1: Cost Allocation by Project Group

Project Group	Total Project Cost	Existing Deficiency Portion	Committed Funding	Project Costs minus Deficiencies and Committed Funding	Percent of New Project Traffic due to Growth within Unincorporated County	Project Costs Attributable to Growth within Unincorporated County
1	\$100,500,000	\$595,000	\$10,413,346	\$89,491,654	45%	\$40,582,939
2	\$42,598,442	0	\$20,655,822	\$21,942,620	36%	\$7,810,425
3	\$46,850,000	0	\$1,906,420	\$44,943,580	52%	\$23,423,895
4	\$21,000,000	\$1,760,000	\$1,837,248	\$17,402,752	32%	\$5,509,357
5	\$12,750,000	0	\$3,134,578	\$9,615,422	56%	\$5,373,442
6	\$15,760,338	0	\$4,095,711	\$11,664,627	55%	\$6,429,744
7	\$3,500,000	0	\$1,819,460	\$1,680,540	66%	\$1,104,889
Total	\$242,958,780	\$2,355,000	\$43,862,585	\$196,741,195	46%	\$90,234,690

Note: See **Figure 4** for Project Group locations.

Fehr & Peers, 2021.



Appendix B:

Impact Fee Schedule

2021 Transportation Impact Fee Rate Schedule

												3.8	Northwest	West	South +	East + East	North	Central UGAs
Land Use	10th Edition Land Use	ITE Land Use Code	Unit of Measure	# of studies	Basic Trip Rate (10th)*	ITE Process	Pass-By Percentage	New Trip %	New Trip Rate	Avg.Trip Length	Trip Length Adjustment	Impact Fee Rate	Impact Fee Rate	Impact Fee Rate	Impact Fee Rate	Impact Fee Rate	Impact Fee Rate	
Cost Per Trip End												\$3,150	\$2,200	\$4,950	\$2,775	\$2,200	\$3,125	
Residential**																		
Single Family (Detached)	Multi-Family Housing (Low-Rise)	210	dwelling	190	0.99	Use Average		100%	0.99	3.50	0.92	\$2,872	\$2,006	\$4,514	\$2,530	\$2,006	\$2,850	
Accessory Dwelling Units		N/A	dwelling	N/A	0.50			100%	0.50	4.70	1.24	\$1,929	\$1,347	\$3,031	\$1,699	\$1,347	\$1,913	
Multi-Family		220, 221, 230, 233	dwelling	50	0.56	Use Average		100%	0.56	3.70	0.97	\$1,718	\$1,200	\$2,699	\$1,513	\$1,200	\$1,704	
Senior Housing		251	dwelling	30	0.3	Use Average		100%	0.30	2.80	0.74	\$696	\$486	\$1,094	\$613	\$486	\$691	
Mobile Home in MH Park		240	dwelling	1	0.46	Use Local Data		100%	0.46	2.80	0.74	\$1,068	\$746	\$1,678	\$941	\$746	\$1,059	
Commercial - Services																		
Drive-in Bank		912	sf/GFA	115	20.45	Use Average	35%	60%	12.27	1.50	0.39	\$15.26	\$10.66	\$23.98	\$13.44	\$10.66	\$15.14	
Hotel		310	room	28	0.60	Use Average		100%	0.60	4.00	1.05	\$1,989.47	\$1,389.47	\$3,126.32	\$1,752.63	\$1,389.47	\$1,973.69	
Motel		320	room	19	0.38	Use Average		100%	0.38	4.00	1.05	1260.00	880.00	1980.00	1110.00	880.00	1250.00	
Day Care Center		565	sf/GFA	90	11.12	Use Average	0%	75%	8.34	2.00	0.53	\$13.83	\$9.66	\$21.73	\$12.18	\$9.66	\$13.72	
Library		590	sf/GFA	9	8.16	Use Average	no data	75%	6.12	1.70	0.45	\$8.63	\$6.02	\$13.55	\$7.60	\$6.02	\$8.56	
Post Office		732	sf/GFA	14	11.21	Use Average	no data	75%	8.41	1.70	0.45	\$11.85	\$8.28	\$18.62	\$10.44	\$8.28	\$11.75	
Service Station		944	VFP	66	14.03	Use Average	42%	40%	5.61	1.70	0.45	\$7,908.49	\$5,523.39	\$12,427.63	\$6,967.00	\$5,523.39	\$7,845.72	
Service Station w/ minimart		945	sf/GFA	16	88.35	Use Average	56%	30%	26.51	1.70	0.45	\$37.35	\$26.09	\$58.70	\$32.91	\$26.09	\$37.06	
Auto Care Center		942	sf/GFA	6	3.11	Use Average	no data	70%	2.18	2.20	0.58	\$3.97	\$2.77	\$6.24	\$3.50	\$2.77	\$3.94	
Movie Theater		444, 445	seat	3	0.07	Use Local Data	no data	85%	0.06	2.30	0.61	\$113.44	\$79.23	\$178.27	\$99.94	\$79.23	\$112.54	
Health Club		492, 493	sf/GFA	8	3.45	Use Average	no data	75%	2.59	3.10	0.82	\$6.65	\$4.64	\$10.45	\$5.86	\$4.64	\$6.60	
Commercial - Institutional																		
Elementary School		520	sf/GFA	19	1.37	Use Average	no data	80%	1.10	1.70	0.45	\$1.55	\$1.08	\$2.43	\$1.36	\$1.08	\$1.53	
Middle/Jr High School		522	sf/GFA	9	1.19	Use Average	no data	80%	0.95	2.70	0.71	\$2.13	\$1.49	\$3.35	\$1.88	\$1.49	\$2.11	
High School		530	sf/GFA	21	0.97	Use Average	no data	80%	0.78	3.70	0.97	\$2.38	\$1.66	\$3.74	\$2.10	\$1.66	\$2.36	
Assisted Living, Nursing Home		254, 620	bed	9	0.26	Use Average	no data	100%	0.26	2.80	0.74	\$603.47	\$421.47	\$948.32	\$531.63	\$421.47	\$598.69	
Church		560	sf/GFA	13	0.49	Use Average	no data	100%	0.49	3.70	0.97	\$1.50	\$1.05	\$2.36	\$1.32	\$1.05	\$1.49	
Hospital		610	sf/GFA	19	0.97	Use Average	no data	80%	0.78	5.00	1.32	\$3.22	\$2.25	\$5.06	\$2.83	\$2.25	\$3.19	
Commercial - Restaurant																		
Restaurant	Quality Restaurant	931	sf/GFA	19	7.80	Use Average	44%	80%	6.24	3.40	0.89	\$17.59	\$12.28	\$27.64	\$15.49	\$12.28	\$17.45	
High Turnover Restaurant		932	sf/GFA	107	9.77	Use Average	43%	80%	7.82	2.30	0.61	\$14.90	\$10.41	\$23.42	\$13.13	\$10.41	\$14.78	
Fast Food Restaurant	Fast Food Restaurant w/drive thru	934	sf/GFA	185	32.67	Use Average	50%	50%	16.34	2.00	0.53	\$27.08	\$18.92	\$42.56	\$23.86	\$18.92	\$26.87	
Espresso w/drive thru	Coffee/Donut Shopp w/drive-thru	938	sf/GFA	4	83.33	Use Local Data	89%	20%	16.67	2.00	0.53	\$27.63	\$19.30	\$43.42	\$24.34	\$19.30	\$27.41	
Commercial - Retail Shopping																		
Shopping Center	Variety Store	820	sf/GLA	261	3.81	Use Average	34%	70%	2.67	2.10	0.55	\$4.64	\$3.24	\$7.30	\$4.09	\$3.24	\$4.61	
Supermarket		850	sf/GFA	73	9.24	Use Average	36%	75%	6.93	2.10	0.55	\$12.06	\$8.43	\$18.96	\$10.63	\$8.43	\$11.97	
Convenience Market		851	sf/GFA	39	49.11	Use Average	51%	45%	22.10	1.30	0.34	\$23.82	\$16.63	\$37.42	\$20.98	\$16.63	\$23.63	
Free Standing Discount Store		813, 815, 857, 863, 864	sf/GFA	57	4.83	Use Average	17%	70%		2.10	0.55	\$5.89	\$4.11	\$9.25	\$5.19	\$4.11	\$5.84	
						Use Average			3.38									
Hardware/Paint Store		816	sf/GFA	11	2.68	Use Average	26%	40%	1.07	1.70	0.45	\$1.51	\$1.06	\$2.37	\$1.33	\$1.06	\$1.50	
Specialty Retail Center		814	sf/GFA	25	6.84	Use Average	no data	50%	3.42	1.70	0.45	\$4.82	\$3.37	\$7.57	\$4.25	\$3.37	\$4.78	
Furniture Store		890	sf/GFA	26	0.52	Use Average	no data	60%	0.31	1.70	0.45	\$0.44	\$0.31	\$0.69	\$0.39	\$0.31	\$0.44	
Home Improvement Superstore		862	sq ft/GFA	63	2.33	Use Average	42%	70%	1.63	2.10	0.55	\$2.84	\$1.98	\$4.46	\$2.50	\$1.98	\$2.82	
Pharmacy(with Drive Through)		881	sq ft/GFA	38	10.29	Use Average	49%	50%	5.15	1.7	0.45	\$7.25	\$5.06	\$11.39	\$6.39	\$5.06	\$7.19	
Car Sales -New/ Used		841	sf/GFA	14	3.75	Use Average	no data	80%	3.00	4.60	1.21	\$11.44	\$7.99	\$17.98	\$10.08	\$7.99	\$11.35	
Commercial - Office																		
General Office		710, 715, 750	sf/GFA	32	1.15	Use Average	no data	90%	1.04	5.10	1.34	\$4.38	\$3.06	\$6.88	\$3.86	\$3.06	\$4.34	
Medical Office	Medical-Dental Office	720	sf/GFA	65	3.46	Use Average	no data	75%	2.60	4.80	1.26	\$10.33	\$7.21	\$16.23	\$9.10	\$7.21	\$10.24	
Industrial																		
Light Industry/Manufacturing	General Light Industrial	110, 140	sf/GFA	44	0.63	Use Average	no data	100%	0.63	5.10	1.34	\$2.66	\$1.86	\$4.19	\$2.35	\$1.86	\$2.64	
Heavy Industry	Not present in 10th Edition	120	sf/GFA			Use Local Data	no data	100%	0.00	5.10	1.34	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Industrial Park		130	sf/GFA	32	0.40	Use Average	no data	100%	0.40	5.10	1.34	\$1.69	\$1.18	\$2.66	\$1.49	\$1.18	\$1.68	
Mini-Warehouse/Storage		151	sf/GFA	16	0.17	Use Average	no data	100%	0.17	5.10	1.34	\$0.72	\$0.50	\$1.13	\$0.63	\$0.50	\$0.71	
Warehousing		150	sf/GFA	47	0.19	Use Average	no data	100%	0.19	5.10	1.34	\$0.80	\$0.56	\$1.26	\$0.71	\$0.56	\$0.80	

Notes:

* Basic trip rates are based on the ITE *Trip Generation* , 10th Edition.
** Low -income housing (as defined by RCW 82.02.060) is exempted from 80% of the regular impact fee rate, but must pay the remaining 20%.

Impact fee rate calculation is based upon the following methodology:
- Basic Trip Rate = PM Peak Hour Trip Generation (per unit of measure)

For land uses not specifically identified here trip generation rates could be derived from ITE or a special study by the applicant.

sf /GFA= Square feet Gross Floor Area; sf/GLA= Square Feet Gross Leasable Area; VFP= Vehicle Fueling Position

Appendix C:

Land Use Definitions

The following land use definitions are derived from the ITE *Trip Generation* (10th Edition). They have been modified as appropriate for Thurston County. Where multiple land use codes are listed, the code marked with an asterisk (*) was selected for use in the Impact Fee Schedule. Rates for other land uses were selected as indicated in the definitions.

Residential

Single Family: One or more detached housing units located on an individual lot. Also includes accessory dwelling units and duplexes. (ITE # 210)

Multi Family: A building or buildings designed to house three or more families living independently of each other. Includes apartments, condos, attached duplexes, and attached townhouses. Includes accessory dwelling units (separate structure), and single room occupancy, if additional parking provided. (ITE #s 220*, 221, 230, and 233)

Senior Housing: Residential units similar to apartments or condominiums restricted to senior citizens. (ITE # 251. Uses 50 percent of trip generation values used for ITE #s 220*, 221, 230, and 233)

Mobile Home (in Mobile Home Park): Trailers shipped, sited, and installed on permanent foundations within a mobile home park. (ITE # 240)

Commercial-Services

Drive-in Bank: A free-standing building, with or without a drive-up window, for the custody or exchange of money, and for facilitating the transmission of funds. (ITE # 912)

Hotel: A place of lodging providing sleeping accommodations. May include restaurants, cocktail lounges, meeting and banquet rooms, or convention facilities. (ITE # 310)

Motel: A place of lodging providing sleeping accommodations. Motels generally offer free on-site parking, little or no meeting space, and may have exterior corridors. (ITE # 320)

Day Care Center: A facility for the care of infant and preschool age children during the daytime hours. Generally, includes classrooms, offices, eating areas, and a playground. (ITE # 565)

Library: A public facility for the use, but not sale, of literary, musical, artistic, or reference materials. (ITE # 590)

Post Office: Houses service windows for mailing packages and letters, post office boxes, offices, vehicle storage areas, and sorting and distribution facilities for mail. (ITE # 732)



Service Station: A facility used for the sale of gasoline, oil, and lubricants. May include areas for servicing, repairing, and washing vehicles. (ITE # 944)

Service Station with Minimart: A facility which combines elements of a convenience store and a gas station. Convenience food items are sold along with gasoline and other car products; gas pumps are primarily or completely self-service. (ITE # 945)

Automobile Care Center: An automobile care center houses numerous businesses that provide automobile-related services, such as repair and servicing, stereo installation, and seat cover upholstery. (ITE # 942)

Movie Theater: Consists of audience seating, one or more screens and auditoriums, and a lobby and refreshment stand. Typically includes matinee showings. (ITE #s 444*, 445)

Health Club: Privately owned facilities that primarily focus on individual fitness or training. They generally offer exercise or dance classes, weightlifting, fitness and gymnastics equipment, spas, massage services, locker rooms and small restaurants, or juice/snack bars. These may also include ancillary facilities, such as swimming pools, whirlpools, saunas, and tennis. (ITE #s 492*, 493)

Commercial-Institutional

Elementary School: These are facilities of education serving students attending kindergarten through fifth or sixth grade. (ITE # 520)

Junior High School: These are facilities of education serving students who have completed elementary school and have not yet entered high school. (ITE #s 522)

High School: High Schools serve students who have completed middle or junior high school. (ITE # 530)

Assisted Living, Nursing Home: One or more multi-unit buildings designed for the elderly or those who are unable to live independently due to physical or mental handicap. Facilities may contain dining rooms, medical facilities, and recreational facilities. The primary function of a nursing home is to provide chronic or convalescent care for persons who by reason of illness or infirmity are unable to care for themselves. Applies to rest homes, chronic care, and convalescent centers. (ITE #s 254* and 620)

Church: A building providing public worship facilities. Generally houses as assembly hall or sanctuary, meeting rooms, classrooms, and occasionally dining facilities. (ITE # 560)

Hospital: A building or buildings designed for the medical, surgical diagnosis, treatment, and housing of persons under the care of doctors and nurses. Rest homes, nursing homes, convalescent homes, and clinics are not included. (ITE #610)

Commercial-Restaurant

Restaurant: An eating establishment, which sells prepared food or beverages and generally offers accommodations for consuming the food or beverage on the premises. Usually serves breakfast, lunch, and/or dinner; generally does not have a drive-up window. Includes bars/ taverns. (ITE # 931)

High Turnover Restaurant: A sit-down, full-service eating establishment with a turnover rate of approximately one hour or less. This type of restaurant is usually moderately priced and frequently belongs to a restaurant chain. Generally, these restaurants serve lunch and dinner; they may also be open for breakfast and are sometimes open 24 hours per day. (ITE # 932)

Fast Food Restaurant: An eating establishment that offers quick food service and a limited menu of items. Food is generally served in disposable wrappings or containers, and may be consumed inside or outside the restaurant building. Restaurants in this category have a drive-up window. (ITE # 934)

Espresso Drive Thru: A drive-up kiosk serving coffee and related beverages. No inside seating is provided and facilities are typically 200 square feet or smaller (ITE # 938; trip rates using local surveys*)

Commercial-Retail Shopping

Shopping Center: An integrated group of commercial establishments that is planned, developed, owned, or managed as a unit. On-site parking facilities are provided, and administrative office areas are usually included. In addition to the integrated unit of shops in one building or enclosed around a mall, include peripheral buildings located on the perimeter of the center adjacent to the streets and major access points. Supermarkets should typically be separated for calculation purposes from the rest of the shopping center. (ITE # 820)

Supermarket: Retail store (greater than 5,000 gsf) that sells a complete assortment of food, food preparation and wrapping materials, and household cleaning and servicing items. (ITE # 850)

Convenience Market: A use (less than 5,000 gsf) that combines retail food sales with fast foods or take-out food service; generally open long hours or 24 hours a day. (ITE # 851)

Free-Standing Discount Store: A free-standing store or warehouse with off-street parking. Usually offers centralized cashiering and a wide range of merchandise and/or food products. May include items sold in large quantities or bulk. Often is the only store on a site, but can be found in mutual operation with its own or other supermarkets, garden centers and service stations, or as part of community-sized shopping centers. Fred Meyer stores, Costco, and big box consumer electronic/computer/toy stores are examples of this land use. (ITE #s 813, 815*, 857, 863, and 864 - average of rates used)



Hardware/Paint Store: A small free-standing or attached store with off-street parking. Stores sell hardware, paint, and related materials. Storage areas are not included in the total gross floor area. (ITE # 816)

Specialty Retail Center: These retail centers are generally small strip shopping centers that contain a variety of retail shops and specialize in quality apparel; hard goods; and services, such as retail estate offices, dance studios, florists and small restaurants. (ITE # 814)

Furniture Store: Furniture stores specialize in the sale of furniture, and often, carpeting. The stores are generally large and include storage areas. (ITE # 890)

Home Improvement Superstore: A free-standing warehouse type facility (25,000 to 150,000 gsf) with off-street parking. Generally offers a variety of customer services (home improvements, lumber, tools, paint, lighting, wallpaper, kitchen and bathroom fixtures, lawn equipment, and garden equipment) and centralized cashiering. (ITE # 862)

Pharmacy (with drive-through window): A pharmacy which sells prescriptions and non-prescription drugs, cosmetics, toiletries, medications, stationery, personal care products, limited food products, and general merchandise. The drug stores may contain drive-through windows. (ITE # 881)

Car Sales (New and Used): Facilities are generally located as strip development along major arterial streets that already have a preponderance of commercial development. Generally included are auto services and parts sales along with a sometimes substantial used-car operation. Some dealerships also include leasing activities and truck sales and servicing. (ITE # 841)

Commercial-Office

General Office: An office building houses one or more tenants and is the location where affairs of a business, commercial or industrial organization, professional person or firm are conducted. The building or buildings may be limited to one tenant, either the owner or lessee, or contain a mixture of tenants including professional services, insurance companies, investment brokers, and company headquarters. Services such as a bank or savings and loan, a restaurant or cafeteria, miscellaneous retail facilities, and fitness facilities for building tenants may also be included. (ITE #s 710*, 715, and 750)

Medical Office: A facility which provides diagnoses and outpatient care on a routine basis but which is unable to provide prolonged in-house medical/surgical care. A medical office is generally operated by one or more private physicians or dentists. (ITE # 720)

Industrial

Light Industry, Manufacturing: Typical light industry uses are printing plants, material testing laboratories, communications and information technology, and computer hardware and software. Manufacturing facilities are areas where the primary activity is the conversion of raw materials or parts into finished products. Both light industrial and manufacturing uses generally also have offices and associated functions. (ITE #s 110* and 140)

Heavy Industry: These facilities usually have a high number of employees per industrial plant and are generally limited to the manufacturing of large items. (ITE # 120*)

Industrial Park: These areas are characterized by a mix of manufacturing, service, and warehouse facilities and may vary widely in the proportion of each type of use. Some facilities may be dominated by one or two industries, while others are highly diversified with a large number of small businesses. (ITE #130)

Mini-Warehouse: Buildings in which a number of storage units or vaults are rented for the storage of goods. Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point. (ITE # 151)

Warehousing: Facilities that are primarily devoted to the storage of materials, including vehicles. They may also include office and maintenance areas. (ITE # 150)

