

# Transportation Impact Fee Rate Study Update



Prepared for:  
City of Gig Harbor

December 2018

SE17-0522

**FEHR PEERS**  
Improving Communities Since 1985



## Table of Contents

<b>CHAPTER 1: INTRODUCTION .....</b>	<b>1</b>
Transportation Impact Fee Structure.....	1
<b>CHAPTER 2: TRANSPORTATION IMPACT FEE PROJECT LIST.....</b>	<b>2</b>
<b>CHAPTER 3: COST ALLOCATION.....</b>	<b>6</b>
Transportation Deficiencies .....	6
Travel Growth .....	7
Cost Allocation Results .....	7
<b>CHAPTER 4 – TRANSPORTATION IMPACT FEE SCHEDULE .....</b>	<b>11</b>
Pass-by Trip Adjustment.....	11

## Exhibits

- Deficiency Calculation
- Cost Allocation Results

## List of Figures

Figure 1: Steps to Develop a Transportation Impact Fee Program .....	1
Figure 2: Transportation Impact Fee Projects .....	5
Figure 3: Transportation Impact Fee Cost Allocation Concept .....	6
Figure 4: Impact Fee Cost Allocation Results .....	8
Figure 5: Transportation Impact Fee Cost Allocation Results .....	9

## List of Tables

Table 1: List of Transportation Capacity Projects.....	3
Table 2: Gig Harbor Land Use Growth .....	7
Exhibit A: Transportation Deficiency Calculation.....	13
Exhibit B: List of Transportation Capacity Projects.....	15

## CHAPTER 1: INTRODUCTION

The City of Gig Harbor developed its current transportation impact fee program in 2007. Since implementation, the City has used its transportation impact fee program to fund projects like the Harbor Hill Extension and enhancing intersections to better accommodate development pressures. As of fall 2018, the City is in the process of updating its Comprehensive Plan Transportation Element to accommodate growth anticipated through 2030.

To reflect the new project list, as well as updated assumptions around future growth, the City is also updating its transportation impact fee program. This rate study documents the updated program, including a new cost per PM peak hour trip rate, which will serve as the basis for the City's transportation impact fees moving forward.

### TRANSPORTATION IMPACT FEE STRUCTURE

The key steps involved in the impact fee process are shown in **Figure 1**. Steps include developing a list of roadway system improvements that are eligible for inclusion in in impact fee program; identifying the portion of those projects' costs that are related to accommodating future growth; and calculating a cost per trip rate by spreading eligible growth-related costs over the growth in trips anticipated over the life of the impact fee program. Each step is described in more detail in subsequent sections of this report.

**Figure 1: Steps to Develop a Transportation Impact Fee Program**



## CHAPTER 2: TRANSPORTATION 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 roadways, 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 (new streets, additional lanes, widening, signalization, new sidewalks and bike lanes).

As part of the City's 2018 Transportation Element Update and 2018 TIP Update, the City identified projects needed to maintain the adopted Level of Service (LOS) standards and support planned growth. These capacity-improving capital projects form the basis for the City's impact fee project list.

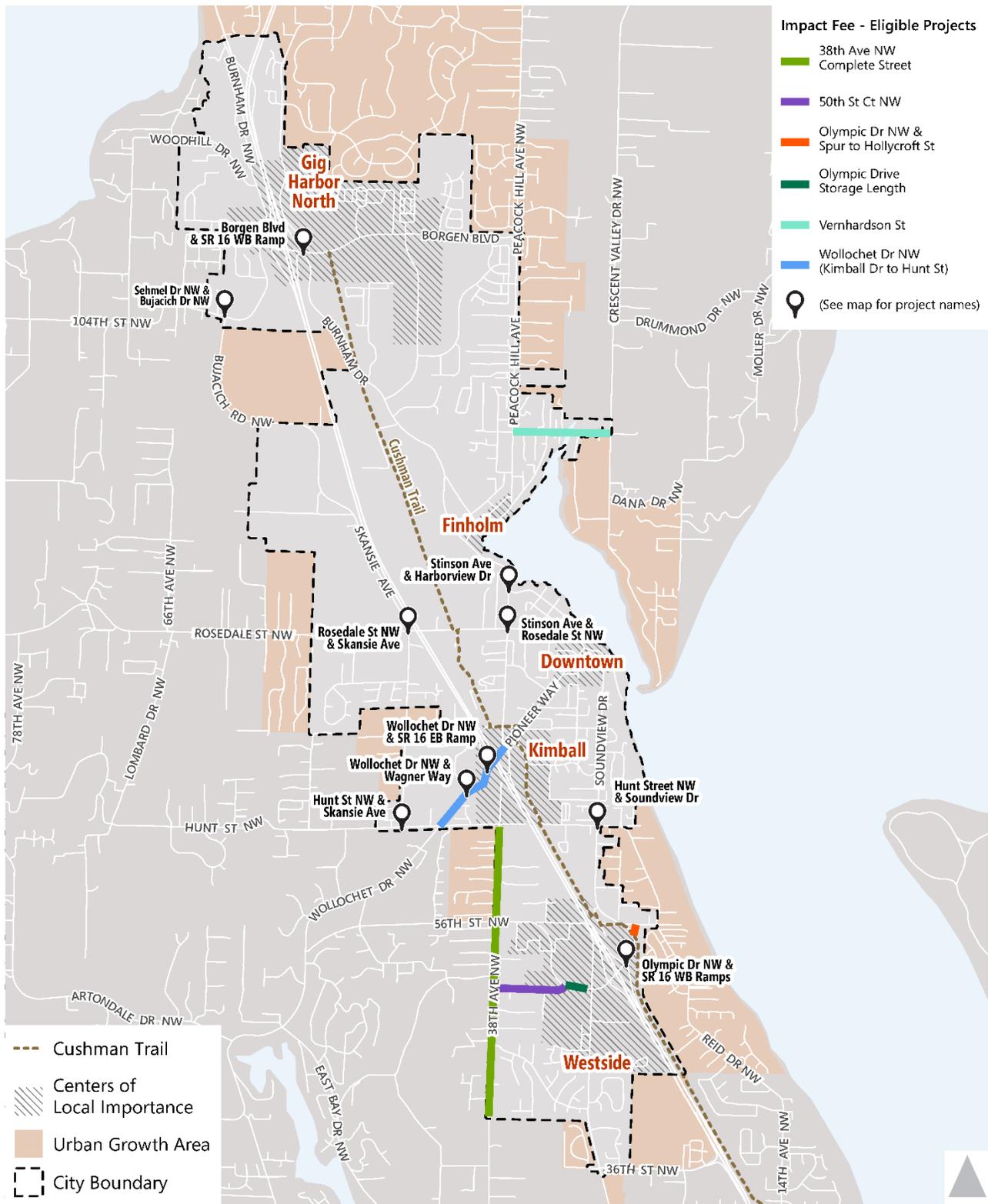
The resulting project list, shown in **Table 1**, includes 16 projects with a total cost of \$52.5M. These projects are also shown in **Figure 2**.

**TABLE 1: LIST OF TRANSPORTATION CAPACITY PROJECTS**

Number	Project	Description	Total Cost (2018\$)
1	Stinson Avenue & Rosedale Street	New roundabout or other appropriate intersection improvements.	\$600,000
2	Borgen Boulevard & SR 16 WB Ramp	Investigate installing meters at interchange roundabout for eastbound traffic. Further study needed on safety and effectiveness.	\$700,000
3	50th Street Court NW	From Olympic Drive NW to 38th Avenue NW, construct a new 2-lane roadway with sidewalks on one or both sides of street, street illumination, on-street parking, and associated storm water and/or LID improvements. This will include replacing the undersized cross culvert.	\$3,400,000
4	Hunt Street NW & Soundview Drive	Intersection improvements (traffic signal or roundabout) and non-motorized improvements, such as crosswalks.	\$1,000,000
5	Stinson Avenue & Harborview Drive	Add a roundabout (or other appropriate improvement) and crosswalks at this T-intersection to improve operations for all users.	\$1,800,000
6	Wollochet Drive NW & Wagner Way	New traffic signal or roundabout.	\$925,000
7	Olympic Drive NW & SR 16 Ramp Terminal Intersections	Signal phasing and channelization.	\$1,400,000
8	Vernhardson Street	Provide the following improvements from Peacock Hill Avenue to Crescent Valley Drive NW: <ul style="list-style-type: none"> <li>• Pavement restoration and/or overlay</li> <li>• Storm sewer infrastructure</li> <li>• Curbs and gutters</li> <li>• Sidewalk(s)</li> <li>• Bicycle lanes</li> <li>• Improved crossing treatment at N Harborview Drive</li> </ul>	\$3,750,000
9	Olympic Drive NW & Spur to Hollycroft Street	Convert from 2-way traffic to 1-way northbound and add angled parking.	\$550,000
10	Rosedale Street NW & Skansie Avenue	Widen to add left-turn lane on east approach.	\$2,200,000
11	Wollochet Drive NW & SR 16 EB Ramp	Add southbound right-turn lane on SR 16 off-ramp.	\$400,000

Number	Project	Description	Total Cost (2018\$)
12	Wollochet Drive NW (Kimball Drive to Hunt Street NW)	Reconfigure interchange: <ul style="list-style-type: none"> <li>• Widen roadway from Hunt Street to Kimball to provide 11 foot motor vehicle lanes, bicycle lanes, sidewalks, landscaping, and illumination on both sides of the roadway.</li> <li>• Add sidewalks over SR 16 and improved pedestrian crossings.</li> <li>• Potentially reconfigure ramps to improve efficiency.</li> </ul>	\$18,000,000
13	Hunt Street NW & Skansie Avenue	New roundabout or other appropriate intersection improvements.	\$1,500,000
14	38th Avenue NW Complete Street	From City limits to Hunt Street, redesign the street to include: 2-3 lanes with turn pockets, bicycle lanes, sidewalks on one side of the roadway, a landscaped buffer next to the sidewalk, curbs and gutters as necessary, sewer and storm improvements, provisions for future lighting, and/or other improvements as deemed necessary.	\$15,000,000
15	Olympic Drive Storage Length	Extend right turn storage length on Olympic Drive (west of Point Fosdick) to 50th Street Court NW.	\$750,000
16	Sehmel Drive NW & Bujacich Road NW	Add left turn lane on Bujacich Road NW by rechannelizing the northbound approach.	\$500,000
			<b>Total \$52,475,000</b>

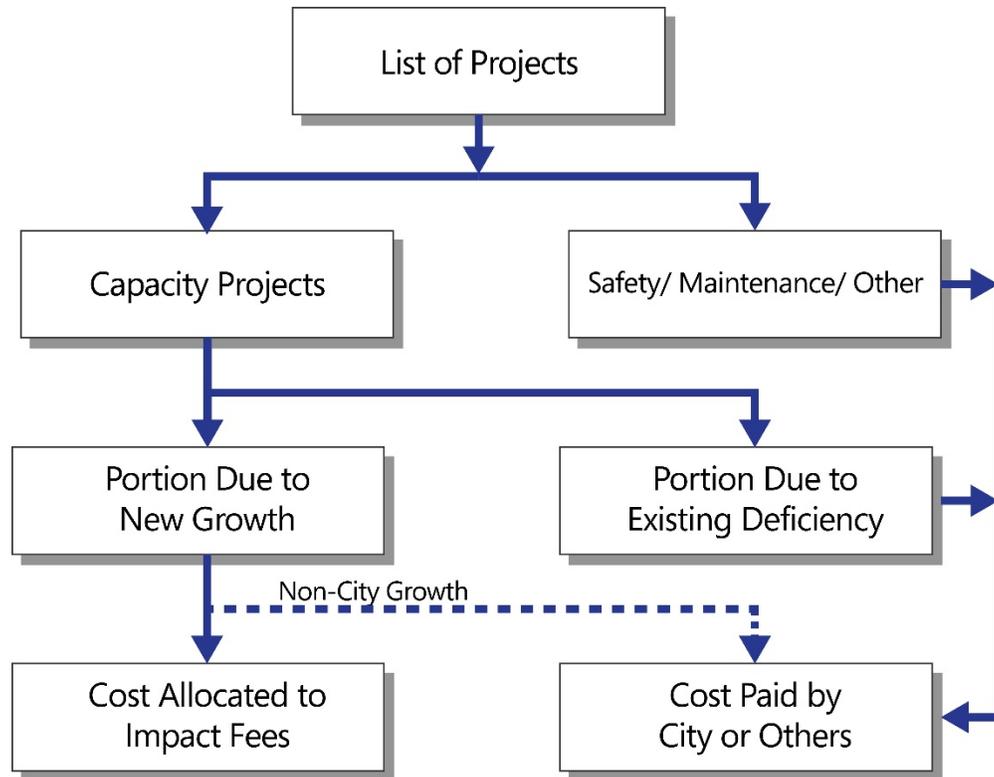
Figure 2: Transportation Impact Fee Projects



## CHAPTER 3: COST ALLOCATION

The City used an impact fee methodology that distinguishes between facility improvements that address existing deficiencies and those needed to serve new growth. **Figure 3** diagrams the process.

**Figure 3: Transportation Impact Fee Cost Allocation Concept**



### TRANSPORTATION 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." Future development cannot be held responsible for the portion of added roadway capacity needed to serve existing development.

The City's 2018 Transportation Element establishes a LOS standard that is based on intersection delay. Most intersections are considered deficient if average delay is below LOS D for arterials and collectors, However, some streets are permitted to function at higher levels of delay during the PM peak period. In recognition of other considerations that may impact mobility, such as cost, right of way, and impact on other modes, LOS E is acceptable at the Burnham/Borgen/Canterwood/SR 16 roundabout. Similarly, LOS F is considered acceptable in the "Harbor Area", which includes Harborview Drive, North Harborview Drive, and portions of

other streets near the waterfront. As shown in **Exhibit A**, three of the intersections on the project list currently exceed the City’s LOS standard.

## TRAVEL GROWTH

Information from the City’s 2018 Comprehensive Plan was used to evaluate the growth in Gig Harbor population and employment. **Table 2** summarizes land uses in Gig Harbor, in terms of households and commercial square footage for the years 2018 and 2030.

Using these land use forecasts and the Gig Harbor travel model as modified for the Gig Harbor Comprehensive Plan, it is estimated that 3,837 new PM peak hour vehicle trip ends would be generated within the City during the 12-year period. This growth in vehicle trip ends was used to calculate the impact fee rates.

**TABLE 2: GIG HARBOR LAND USE GROWTH**

	<b>2018</b>	<b>2030</b>	<b>Growth</b>	<b>% Growth</b>
Households	4,221	6,093	1,872	44%
Retail	2,818	4,536	1,718	61%

Source: City of Gig Harbor, 2018; Fehr & Peers, 2018

## COST ALLOCATION RESULTS

The cost allocation process distributed the growth costs for each project based upon the travel patterns between the different geographic areas within and outside the City limits. The Gig Harbor travel demand model was used for this analysis. A “flow bundle” assignment procedure provided the origin and destination information for each vehicle trip traveling through an impact fee project location. Trips with an origin and destination inside of the City of Gig Harbor are considered internal trips and are counted at a rate of 100%. Trips with an origin inside and a destination outside of Gig Harbor, or vice versa, are counted at a rate of 50%. Trips that pass through Gig Harbor, but do not have any origins or destinations internal to Gig Harbor, were not allocated to Gig Harbor growth.

As shown in **Figure 4**, the impact fees would constitute 37 percent of the total \$52.5 million cost of the improvement projects. Previous impact fee funds collected would contribute 3 percent. City matching funds, new grants, and other sources would contribute the remaining 60 percent of the total project costs.

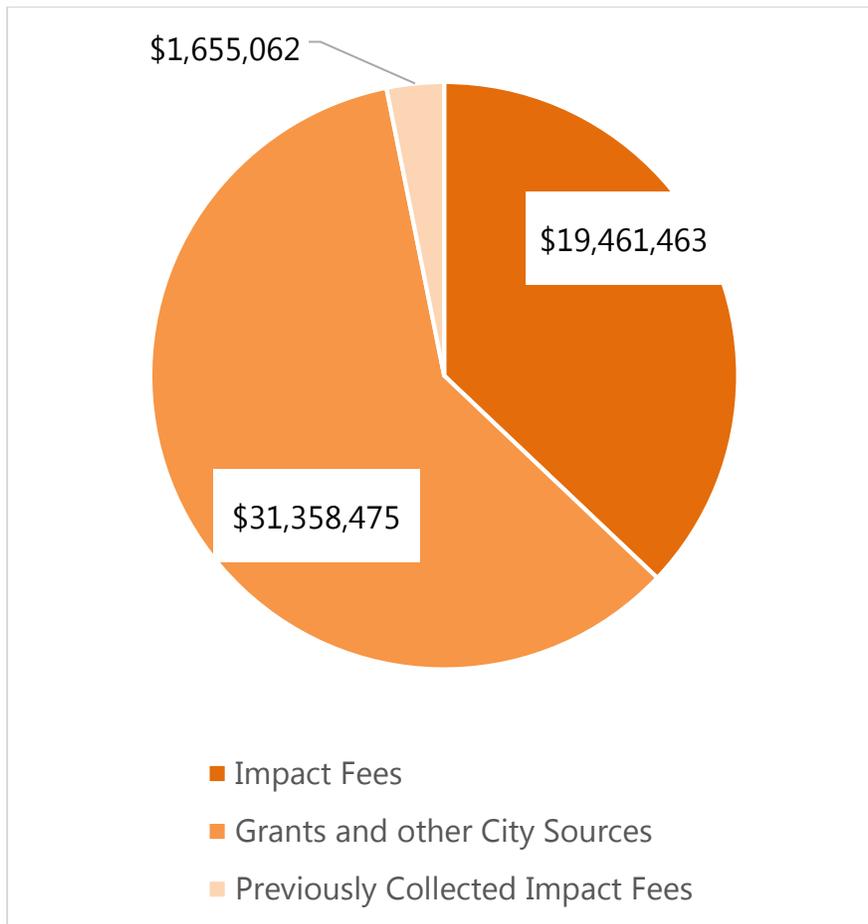


The final step in the cost allocation process dealt with calculating the "cost per new trip end" within Gig Harbor, derived by dividing the total eligible project cost by the total number of new PM peak hour trips generated in Gig Harbor between 2018 and 2030.

The analysis produced the following results:

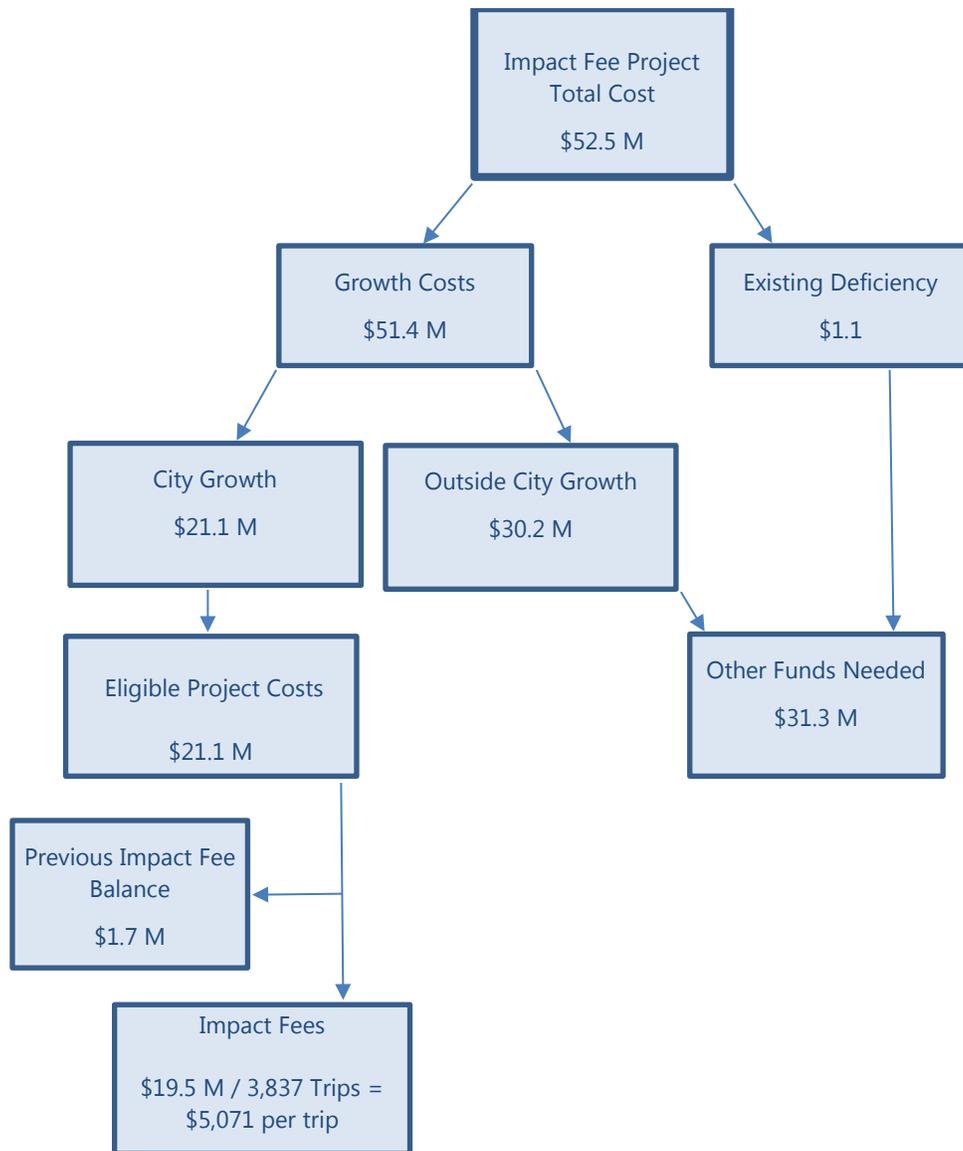
Impact fee costs	\$19,461,463
New PM peak hour trip ends	÷ 3,837
Cost per new trip end	<hr/> = \$5,071

**Figure 4: Impact Fee Cost Allocation Results**



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

**Figure 5: Transportation Impact Fee Cost Allocation Results**



The total cost of the projects on the list is \$52.5 million, as previously shown in Table 1. This was divided into growth costs and existing deficiencies; existing deficiencies account for \$1.1 million, approximately 2% of total project costs. The growth costs were further divided into 'City growth' and 'outside City growth'

components using the Gig Harbor travel demand model. The details of these calculations are shown in **Exhibits A and B**.

Using this data, the average percent of City growth responsibility equaled 37%. The City growth percentage, applied to the \$52.5 million project list, yielded an amount equal to \$19.5 million to be funded using impact fees (previously collected impact fees totaling \$1.7 million were also considered in the calculations). The remaining \$31.4 million would be expected to be obtained from City funds, grants or other outside sources.

## ANNUAL ADJUSTMENTS TO COST PER TRIP RATE

The above section demonstrates the justification for Gig Harbor in setting a cost per PM peak hour trip rate of \$5,071 per trip, as calculated in December 2018. Beginning January 1, 2020, and annually on January 1 thereafter, transportation impact fees shall be adjusted for inflation utilizing the Federal Highway Administration (FHWA) average of the prior rolling five year construction code index. The transportation impact fees shall not be adjusted for inflation should the construction code index remain unchanged. This rolling average allows Gig Harbor's transportation impact fee rate to more closely track fluctuations in construction costs over time.

## CHAPTER 4 – TRANSPORTATION IMPACT FEE SCHEDULE

The City's transportation impact fee program will be based on a "cost per trip end" to reflect differences in trip-making characteristics for a variety of land use types within the City. It is assumed that trip generation rates for each land use type will be derived from the Institute of Transportation Engineers (ITE) *Trip Generation* (10<sup>th</sup> Edition). The rates are expressed as vehicle trips entering and leaving a property during the PM peak hour. Development will be required to submit the PM peak hour trip generation, as estimated by ITE *Trip Generation* (10<sup>th</sup> Edition). Fees will be assessed by multiplying this PM peak hour vehicle trip generation rate by the \$5,071 per PM peak hour trip recommended in this rate study.

### PASS-BY TRIP ADJUSTMENT

The trip generation rates reported by ITE represent total traffic entering and leaving a property at the driveway points. For certain land uses (e.g., general retail), 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 significantly impact the surrounding street system and could therefore be subtracted out prior to calculating the impact fee. The resulting trips would be considered "new" to the street system and subject to the transportation impact fee calculation. The "new" trip percentages should be derived by ITE data<sup>1</sup> or from available surveys conducted around the country. Pass-by trip reductions would be subject to approval by the City engineer or designee.

---

<sup>1</sup> Trip Generation Sources: ITE *Trip Generation* (10<sup>th</sup> Edition); ITE *Trip Generation Handbook: An ITE Proposed Recommended Practice* (2017)



# **EXHIBIT A**

## **DEFICIENCY CALCULATION**

**Exhibit A** illustrates the intersection deficiency analysis, which considered intersections that are not currently meeting the City’s LOS standard. For each of these intersections, the project team compared three data points:

- A. The seconds of delay allowed at the intersection, per the LOS standard
- B. The seconds of delay currently observed at the intersection
- C. The seconds of delay modeled at the intersection once the impact fee project is in place

The project team compared the change in delay required to meet the LOS standard (B minus A) to the total change in delay achieved by the project (C minus A) to identify the share of each project’s cost that would go to remedying existing deficiencies. This cost was then subtracted from overall project costs to identify the portion of project costs that could accommodate future growth.

**EXHIBIT A: TRANSPORTATION DEFICIENCY CALCULATION**

	Intersection	Delay Standard <sup>1</sup>	LOS Standard	Existing Delay	Existing LOS	2030 LOS w/ Improvements	2030 Delay	Deficient %
4	Hunt Street NW & Soundview Dr/64th St NW	55	D	196.2	F	C	23.2	82%
6	Wollochet Drive NW & Wagner Way	55	D	66.3	F	A	4.1	18%
9	Olympic Drive NW & Spur to Hollycroft Street NW	35	D	44.7	E	N/A (intersection removed)	0	25%

1. LOS D is 55 seconds for signalized intersections, 35 seconds for stop-controlled intersections.

Source: City of Gig Harbor Comprehensive Plan, Fehr & Peers 2018



# **EXHIBIT B**

## **COST ALLOCATION RESULTS**

**Exhibit B** illustrates how the impact fee project costs (shown in Table 1) were divided into growth-related costs attributable to the City. To determine this proportion, the share of each project’s cost that would go to remedying existing deficiencies was subtracted from the project’s cost, leaving the remainder as the share of costs needed to accommodate future growth (more detail on this step is provided in Exhibit A). Next, the Gig Harbor travel demand model was used to identify the portion of trip-making associated with growth within Gig Harbor. A technique called “flow bundle” analysis was used to isolate the vehicle trips using each of the impact fee projects. After the percentage of Gig Harbor trips and external trips were calculated, the cost of each project was multiplied by the percent of new traffic due to growth within the City. This, as well as the sum of the results, can be seen in Exhibit B.

**EXHIBIT B: LIST OF TRANSPORTATION CAPACITY PROJECTS**

#	Project	Total Cost	Share of Costs to Accommodate Growth	Percent New Gig Harbor Trips	Project Costs Allowable for Impact Fees
1	Stinson Avenue & Rosedale Street	\$600,000	100%	35.1%	\$210,600
2	Borgen Boulevard & SR 16 WB Ramp	\$700,000	100%	33.8%	\$236,936
3	50th Street Court NW	\$3,400,000	100%	47.2%	\$1,604,800
4	Hunt Street NW & Soundview Drive	\$1,000,000	18%	49.5%	\$91,094
5	Stinson Avenue & Harborview Drive	\$1,800,000	100%	35.1%	\$631,800
6	Wollochet Drive NW & Wagner Way	\$925,000	82%	34.6%	\$261,906
7	Olympic Drive NW & SR 16 Ramp Terminal Intersections	\$1,400,000	100%	50.0%	\$700,000
8	Vernhardson Street	\$3,750,000	100%	33.8%	\$1,267,500
9	Olympic Drive NW & Spur to Hollycroft Street	\$550,000	75%	50.0%	\$206,989
10	Rosedale Street NW & Skansie Avenue	\$2,200,000	100%	50.0%	\$1,100,000
11	Wollochet Drive NW & SR 16 EB Ramp	\$400,000	100%	34.6%	\$138,400

**EXHIBIT B: LIST OF TRANSPORTATION CAPACITY PROJECTS**

#	Project	Total Cost	Share of Costs to Accommodate Growth	Percent New Gig Harbor Trips	Project Costs Allowable for Impact Fees
12	Wollochet Drive NW (Kimball Drive to Hunt Street NW)	\$18,000,000	100%	34.6%	\$6,228,000
13	Hunt Street NW & Skansie Avenue	\$1,500,000	100%	49.5%	\$742,500
14	38th Avenue NW Complete Street	\$15,000,000	100%	47.2%	\$7,080,000
15	Olympic Drive Storage Length	\$750,000	100%	50.0%	\$400,000
16	Sehmel Drive NW & Bujacich Road NW	\$500,000	100%	48.2%	\$241,000
<b>Total</b>		<b>\$52.5M</b>	<b>98%</b>	<b>40%</b>	<b>\$21.1M</b> (includes \$1.7M in previously collected fees)

Source: City of Gig Harbor Project List, Gig Harbor Travel Demand Model, Fehr & Peers 2018