

**COUNCIL BILL NO. 1491**

**RESOLUTION NO. 1194**

**A RESOLUTION SETTING THE AMOUNTS OF THE TRAFFIC IMPACT FEE (TIF), STORMWATER DRAINAGE SYSTEMS DEVELOPMENT CHARGE, ALTERNATIVE RATE REVIEW FEE, AND ALTERNATIVE PAYMENT REQUEST FEE IMPOSED BY ORDINANCE NO. 2111; AND ESTABLISHING AN EFFECTIVE DATE FOR IMPOSITION OF THE FEES.**

**WHEREAS, ORS 223.297 - 223.314, adopted in 1989, authorizes local governments to impose system development charge, and**

**WHEREAS, the City has developed methodologies to support the implementation of a Traffic Impact Fee and a Stormwater Drainage Systems Development Charge, and**

**WHEREAS, the City has adopted Ordinance No. 2111 establishing a Traffic Impact Fee and a Stormwater Drainage Systems Development Charge, and**

**WHEREAS, Ordinance No 2111 provides that the amounts of the Traffic Impact Fee and Stormwater Drainage Systems Development Charge shall be set by resolution, and**

**WHEREAS, Ordinance No. 2111 provides for the imposition of fees to be charged for the review of alternative rates and alternative payment requests, and**

**WHEREAS, Ordinance No. 2111 provides that the amounts of the fees to be charged for the review of alternative rates and alternative payment requests shall be set by resolution; NOW THEREFORE,**

**THE CITY OF WOODBURN RESOLVES AS FOLLOWS:**

**Section 1. TRAFFIC IMPACT FEE AMOUNTS.**

The schedule of Traffic Impact Fee (TIF) charges attached as Exhibit "A", and, by this reference, incorporated herein is hereby adopted to be imposed beginning on the effective date identified in Section 5 of this resolution. On each consecutive anniversary of the effective date for a period of five (5) years, the schedule of Traffic Impact Fee (TIF) charges shall be adjusted to reflect a one percent (1%) per year increase in the charges. For those land uses that are not specifically identified by the ITE land-use categories included in Exhibit "A", the City Engineer shall use the land-use category identified in Exhibit "A" that is most similar in trip generation. An applicant who does not agree with the City Engineer's decision may appeal this decision in accordance with Ordinance No. 2111 Section 3 (G).

**Section 2. STORMWATER DRAINAGE SYSTEM DEVELOPMENT CHARGE AMOUNTS.**

For all development except single-family residential development, the Stormwater Drainage System Development Charge shall be \$0.11 per square foot of impervious surface, to be calculated based on the total number of square feet of impervious surface included in the development. For single-family residential development, the fee shall be calculated at the rate of fifty-five dollars (\$55.00) for each five-hundred (500) square-foot increment of impervious surface. The schedule of Stormwater Drainage System Development Charges for single-family residential development attached as Exhibit "B" and, by this reference, incorporated herein is hereby adopted. Charges are to be imposed beginning on the effective date identified in Section 5 of this resolution.

**Section 3. ALTERNATIVE RATE REVIEW FEE.**

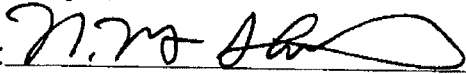
The minimum fee for review of an alternative rate calculation shall be two-hundred-and-fifty dollars (\$250), to be paid at the time the alternative rate calculation is submitted for review. If the City hires a consultant to assist in reviewing the information submitted, the cost of the consultant's review shall be shared equally by the City and the applicant, and the applicant shall pay this additional fee at the time the City decides whether or not to accept the alternative rate.

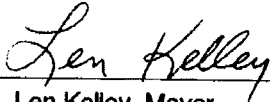
**Section 4. ALTERNATIVE PAYMENT REQUEST FEE.**

The fee for review of an alternative payment request shall be one-hundred dollars (\$100.00). This fee includes the cost of recording a lien against the property associated with the request.

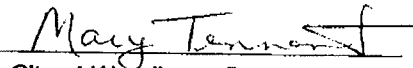
**Section 5. EFFECTIVE DATE.**

The effective date for imposition of the fees and charges identified in this resolution shall be January 1, 1994.

Approved as to Form:  9-9-93  
City Attorney Date

APPROVED:   
Len Kelley, Mayor

Passed by the Council	<u>September 13, 1993</u>
Submitted to the Mayor	<u>September 16, 1993</u>
Approved by the Mayor	<u>September 16, 1993</u>
Filed in the Office of the Recorder	<u>September 16, 1993</u>

ATTEST:   
City of Woodburn, Oregon

## EXHIBIT "A"

TRAFFIC IMPACT FEE PER AVERAGE DAILY TRIP  
(1/1/94 through 12/31/94)

<u>ITE LAND USE CODE/CATEGORY</u>	<u>maximum allowable TIF</u>	<u>TIF from 1/1/94 through 12/31/94</u>	<u>ITE Average Daily Trip Rate</u>	<u>TIF per Trip</u>
<b>RESIDENTIAL</b>				
210 Single Family Detached	\$3,020.20	\$755.05 / unit	9.55	\$79.06
220 Apartment	\$2,046.14	\$511.54 / unit	6.47	\$79.06
230 Condominium	\$1,853.23	\$463.31 / unit	5.86	\$79.06
240 Mobile Home (in park)	\$1,521.17	\$380.29 / unit	4.81	\$79.06
<b>RECREATIONAL</b>				
420 Marina	\$742.64	\$185.66 / berth	2.96	\$62.72
430 Golf Course	\$9,431.05	\$2,357.76 / hole	37.59	\$62.72
443 Movie Theater (Sit Down)	\$441.57	\$110.39 / seat	1.76	\$62.72
492 Racquet Club	\$4,300.30	\$1,075.07 / T.G.S.F.	17.14	\$62.72
<b>INSTITUTIONAL</b>				
510 Preschool	\$1,647.04	\$411.76 / student	4.65	\$88.55
520 Elementary School	\$386.08	\$96.52 / student	1.09	\$88.55
530 High School	\$488.80	\$122.20 / student	1.38	\$88.55
560 Church	\$2,240.07	\$560.02 / T.G.S.F.	9.32	\$60.09
565 Day Care Center	\$2,235.26	\$558.82 / student	4.65	\$120.18
590 Library	\$10,935.96	\$2,733.99 / T.G.S.F.	45.50	\$60.09
610 Hospital	\$4,033.09	\$1,008.27 / T.G.S.F.	16.78	\$60.09
620 Nursing Home	\$624.91	\$156.23 / bed	2.60	\$60.09
<b>BUSINESS &amp; COMMERCIAL</b>				
320 Hotel/Motel	\$2,556.59	\$639.15 / room	10.19	\$62.72
812 Building Materials/Lumber	\$5,863.21	\$1,465.80 / T.G.S.F.	30.56	\$47.96
815 Discount Stores	\$7,516.75	\$1,879.19 / T.G.L.S.F.	70.13	\$26.80
816 Hardware/Paint Stores	\$6,983.51	\$1,745.88 / T.G.S.F.	51.29	\$34.04
817 Retail Nursery	\$4,912.56	\$1,228.14 / T.G.S.F.	36.08	\$34.04
820 Shopping Center under 50,000 G.S.F.	\$14,476.13	\$3,619.03 / T.G.L.S.F.	167.59	\$21.59
821 Shopping Center 50,000 - 99,999 G.S.F.	\$10,550.32	\$2,637.58 / T.G.L.S.F.	91.65	\$28.78
822 Shopping Center 100,000 - 199,999 G.S.F.	\$10,673.39	\$2,668.35 / T.G.L.S.F.	70.67	\$37.76
823 Shopping Center 200,000 - 299,999 G.S.F.	\$8,553.26	\$2,138.32 / T.G.L.S.F.	54.50	\$39.24
824 Shopping Center 300,000 - 399,999 G.S.F.	\$7,869.68	\$1,967.42 / T.G.L.S.F.	46.81	\$42.03
825 Shopping Center 400,000 - 499,999 G.S.F.	\$7,301.94	\$1,825.49 / T.G.L.S.F.	42.02	\$43.44

NOTE: T.G.L.S.F. = Thousand Gross Leasable Square Feet  
T.G.S.F. = Thousand Gross Square Feet

## EXHIBIT "A"

TRAFFIC IMPACT FEE PER AVERAGE DAILY TRIP  
(1/1/94 through 12/31/94)

ITE LAND USE CODE/CATEGORY	maximum allowable TIF	TIF from 1/1/94 through 12/31/94	ITE Average Daily Trip Rate	TIF per Trip
<b>BUSINESS &amp; COMMERCIAL</b>				
826 Shopping Center 500,000 - 599,999 G.S.F.	\$7,566.62	\$1,891.66 / T.G.L.S.F.	38.65	\$48.94
827 Shopping Center 1,000,000 - 1,200,000 G.S.F.	\$5,493.47	\$1,373.37 / T.G.L.S.F.	32.09	\$42.80
828 Shopping Center Over 1,200,000 G.S.F.	\$4,759.20	\$1,189.80 / T.G.L.S.F.	30.69	\$38.77
832 Restaurant Sit-Down	\$27,926.48	\$6,981.62 / T.G.S.F.	205.36	\$34.00
833 Restaurant: Drive-Through	\$38,561.52	\$9,640.38 / T.G.S.F.	786.22	\$12.26
841 New Car Sales	\$9,191.96	\$2,297.99 / T.G.S.F.	47.91	\$47.96
844 Service Station	\$13,035.91	\$3,258.98 / pump	133.00	\$24.50
850 Supermarket	\$15,493.58	\$3,873.40 / T.G.S.F.	125.50	\$30.86
851 Convenience Market	\$40,504.17	\$10,126.04 / T.G.S.F.	737.99	\$13.72
870 Apparel	\$638.89	\$159.72 / T.G.S.F.	3.33	\$47.96
890 Furniture Store	\$832.67	\$208.17 / T.G.S.F.	4.34	\$47.96
911 Bank/Savings: Walk-in	\$26,977.29	\$6,744.32 / T.G.S.F.	140.61	\$47.96
912 Bank/Savings: Drive-In	\$50,882.91	\$12,720.73 / T.G.S.F.	265.21	\$47.96
<b>OFFICE</b>				
711 General Office Under 100,000 G.S.F.	\$7,970.03	\$1,992.51 / T.G.S.F.	16.58	\$120.18
712 General Office 100,000 - 199,999 G.S.F.	\$6,744.24	\$1,686.06 / T.G.S.F.	14.03	\$120.18
713 General Office 200,000 G.S.F. and over	\$5,696.31	\$1,424.08 / T.G.S.F.	11.85	\$120.18
720 Medical Office Building	\$16,425.57	\$4,106.39 / T.G.S.F.	34.17	\$120.18
760 Research Center	\$3,701.40	\$925.35 / T.G.S.F.	7.70	\$120.18
770 Business Park	\$6,907.68	\$1,726.92 / T.G.S.F.	14.37	\$120.18
<b>INDUSTRIAL</b>				
110 General Light Industrial	\$3,350.49	\$837.62 / T.G.S.F.	6.97	\$120.18
120 General Heavy Industrial	\$961.40	\$240.35 / T.G.S.F.	1.50	\$160.23
130 Industrial Park	\$4,467.32	\$1,116.83 / T.G.S.F.	6.97	\$160.23
140 Manufacturing	\$2,467.60	\$616.90 / T.G.S.F.	3.85	\$160.23
150 Warehouse	\$1,172.91	\$293.23 / T.G.S.F.	4.88	\$60.09
151 Mini-Warehouse	\$836.42	\$209.11 / T.G.S.F.	2.61	\$80.12
170 Utilities	\$339.70	\$84.92 / employee	1.06	\$80.12
880 Wholesale	\$1,617.56	\$404.39 / T.G.S.F.	6.73	\$60.09

NOTE: T.G.L.S.F. = Thousand Gross Leasable Square Feet  
T.G.S.F. = Thousand Gross Square Feet

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**EXHIBIT "B"**

**STORMWATER DRAINAGE SDC  
FOR SINGLE-FAMILY RESIDENTIAL DEVELOPMENT**

<b>Cost Per 500 Square Feet</b>	<b>X</b>	<b>Impervious Surface Area (Sq.Ft.)</b>	<b>=</b>	<b>SDC Per Dwelling Unit</b>
\$55.00		up to 500		\$55.00
\$55.00		501 to 1,000		\$110.00
\$55.00		1,001 to 1,500		\$165.00
\$55.00		1,501 to 2,000		\$220.00
\$55.00		2,001 to 2,500		\$275.00
\$55.00		2,501 to 3,000		\$330.00
\$55.00		more than 3,001		\$385.00 (+\$55.00 for each 500 sq.ft. over 3,500)

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**R E C E I V E D**

NOV 14 1995

MARION COUNTY ENGINEER

**CITY OF WOODBURN TRAFFIC IMPACT FEE  
AND STORMWATER DRAINAGE**

**System Development Charge Methodology Report**

June 30, 1993

Quality  
Government  
Service

associates

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CITY OF WOODBURN  
TRAFFIC IMPACT FEE & STORMWATER DRAINAGE  
System Development Charges Methodology Report

1.0 INTRODUCTION AND OVERVIEW

1.1 AUTHORITY AND BACKGROUND

In 1989, the State of Oregon adopted the Oregon Systems Development Act (ORS 223.297 - 223.314) to "provide a uniform framework for the imposition of system development charges by local governments." The statutes outline the types of charges that are considered to be System Development Charges (SDC's) and impose a variety of requirements on any government that has SDC's. These requirements include:

1. Setting forth a methodology for each SDC (to establish rate-making principles and costs).
2. Adopting a capital improvement program (to designate capital improvements that can be funded with SDC's).
3. Establishing an accounting and financial reporting system (to separately deposit and expend SDC's, and for annual reports of total revenues and capital projects that were funded).
4. Adopting procedures for public challenges of expenditures (to allow "interested citizens" to challenge expenditures up to 2 years after disbursement).
5. Limiting SDC's to five types of capital improvements (transportation, parks and recreation, water, sewer, and drainage).

In May, 1991, Don Ganer (in association with Henderson, Young and Company) was engaged to complete a review of the City of Woodburn's then-existing water and sewer connection fees and parks development fees for the purpose of updating the fees and bringing them into compliance with the requirements of ORS 223.297 - 223.314.

In July, 1991, Don Ganer presented to the City Council a study of System Development Charges (SDC's) for the City's water, sewer, and parks and recreation systems. The City subsequently approved the study and adopted an SDC ordinance which imposed SDC's for water, sewer, and parks and recreation facilities.

In March, 1993 the City engaged Don Ganer to develop a Traffic Impact Fee (TIF) and a Stormwater Drainage SDC. This report presents the methodologies used to develop the TIF and stormwater drainage SDC, and documents the calculation of SDC rates.

## 1.2. OVERVIEW

The following overview summarizes (A) the Traffic Impact Fee and (B) the Stormwater Drainage SDC.

### *A. Traffic Impact Fee (TIF)*

The City of Woodburn's SDC for transportation is referred to as the Traffic Impact Fee (TIF). It was developed using a standards-driven approach in order to allow the City the maximum flexibility in establishing the capital improvements necessary to handle its growth needs. The TIF is an "improvement fee" only and does not include a "reimbursement fee" component. It is designed to produce revenues to assist in the construction of improvements to City and State arterial and collector roads necessary to meet the needs of growth in the City. TIF revenues will be used exclusively for the purpose of constructing capacity-increasing improvements to maintain a Level of Service of no more than 6,000 average vehicles per day (for two lanes) for arterial and collector roads. The TIF was developed based on the costs of design, right-of-way acquisition, and construction; and does not include an operations or maintenance cost component. The TIF applies to all new development in the City including residential, commercial, institutional, and industrial construction.

### *B. Stormwater Drainage*

The Stormwater Drainage SDC is also a standards-driven SDC and was developed based on the current level of service (LOS). The City's existing stormwater drainage system was designed to manage stormwater quantity, and does not consider the quality of the stormwater entering the system. The City is planning to address the quality issue in the future and, at that time, the Stormwater Drainage SDC can be modified to include a quality component.

The SDC is an "improvement fee" only and does not include a "reimbursement fee" component. It is designed to produce revenues to assist in the construction of improvements to the City's stormwater drainage system necessary to meet the needs of growth in the City. Revenues will be used exclusively for the purpose of constructing capacity-increasing improvements to maintain the current LOS. The SDC was developed based on the replacement cost of existing facilities, and does not include an operations or maintenance cost component. The SDC applies to all new development in the City.

### 1.3 ORGANIZATION OF THE REPORT

The Traffic Impact Fee (TIF) is discussed in Section 2 of this report, and Section 3 addresses Stormwater Drainage facilities. Each section includes discussions of the standards, principles, data and analyses that form the foundation of the recommended SDC's; describe the formulas used to calculate the SDC's; and provide the SDC calculations for the City of Woodburn.

## 2.0 TRAFFIC IMPACT FEE (TIF)

### 2.1. STANDARDS, PRINCIPLES AND ANALYSES

Calculation of the Traffic Impact Fee (TIF) involves a variety of engineering standards, cost-benefit principles, and analysis of local data. This section of the methodology report:

- A. Discusses the differences between a "reimbursement fee" and an "improvement fee".
- B. Establishes the responsibility of the City for the road system,
- C. Discusses CIP-driven versus standards-driven approaches to developing the TIF,
- D. Identifies the standard level of service for the City roads,
- E. Describes credits against the TIF, and
- F. Establishes the basis for the rational nexus of benefits for the TIF.

#### *A. "Reimbursement fee" and "Improvement fee"*

The Oregon Systems Development Act provides for the imposition of two types of SDC's: (1) "reimbursement" fees, and (2) "improvement" fees. "Reimbursement" fees may be charged for the costs, including carrying costs, associated with capital improvements which are already constructed or are under construction, and may be charged if "excess" capacity is available to accommodate growth. "Improvement" fees may be charged for capital improvements that increase capacity available for new development, and may not be used for the construction of administrative office facilities that are more than an incidental part of other capital improvements.

The proposed TIF for the City of Woodburn is an "improvement fee" only and does not include a "reimbursement fee" component.

### *B. Responsibility for the Roads*

The major road system in the City of Woodburn consists of 27.4 miles of paved State and City arterial and collector roads. The City owns and maintains 18.9 miles (68.97%), while the State owns and maintains 8.5 miles (31.03%) of these roads. On future road projects, the City expects to be responsible for 100.00% of the cost of City-owned projects and, possibly, 10.00% of the cost of State-owned projects. Based on the existing mileage breakdowns, this equates to the City being responsible for funding 72.08% of needed future City and State collector and arterial road projects designed to meet the needs of growth in the City.

Developers generally are required to provide 100.00% of local roads (i.e., subdivision streets) at the time a new development is constructed, so local roads are not included in the TIF analysis.

### *C. CIP-Driven versus Standards-Driven Approach*

There are two alternative approaches to designing a methodology: CIP-driven or standards-driven. CIP-driven fees are based on a specific list of planned improvements, and the amount of the charge is determined by allocating the cost of the planned improvements among the projected charge-paying developments based on trip generation rates.

Standards-driven fees use a series of formulas to identify the amount of new travel that is typically generated on the road system by each type of new development, and the cost per mile of road required to accommodate new development.

The primary difference between the two approaches lies in the cost basis of each charge. The CIP-driven fee uses estimated costs of specific mileages of planned road projects, where the standards-driven fee uses the estimated cost of a typical mile of road.

This methodology uses the standards-driven approach because it allows the City to make changes to the list of planned capital improvements without altering the basis for the amount charged for the TIF, thus giving the City maximum flexibility to react to changes in growth patterns.

#### *D. Level of Service*

The Level of Service (LOS) for a specific road depends on a variety of factors, such as its functional classification, number of lanes, number of intersections per mile, directional travel, free flow speed, and traffic volume. For the purposes of this methodology, the traffic volume for City arterial and collector roads is used as the measure of the LOS. Based on a review of recent traffic counts for arterial and collector roads in the City of Woodburn, the average daily traffic volume is 6,000 vehicles per day (VPD). For the purposes of the TIF, the City cannot adopt a standard that is "higher" than this (i.e., fewer than 6,000 VPD) unless the City has a plan for improving this standard through the use of non-TIF revenues. Because no such plan exists or is contemplated at the present time, 6,000 VPD represents the standard for the level of service for City roads.

#### *E. Credits*

New development can receive two credits for expenditures that reduce the amount of the TIF. One credit is for future taxes or other revenues that development pays if such revenues are used to pay for growth's portion of road improvements, and the other credit is for contributions of land, construction, etc., in lieu of cash payments.

Currently, taxes and other City revenues are not used as a matter of City policy for road capacity improvements to serve new development. If the City implements a new gasoline tax or some other means of producing revenue to fund road improvements to serve new development, the City will not be required to provide a credit against the TIF unless the total revenues (from TIF and non-TIF sources) will exceed the cost per mile for each unit of development. A credit equal to the net present value of future payments which exceed this amount would then be required against the TIF.

For example, the cost of building new miles of arterial and collector roads to serve a single-family (detached) residence is \$3,020.20 (from Table 2.4). If a TIF of \$1,500 is charged, the City will not be required to provide a credit unless new revenues for capacity-increasing road improvements from non-TIF sources will exceed the inflation-adjusted equivalent of \$1,5120.20 (in current dollars) for each single family detached residential unit (over a period of twenty years). If non-TIF revenues are expected to surpass \$1,520.20 (adjusted for inflation), a credit equal to the net present value of expected excess revenues will be required.

The other potential credits against the TIF are for donations of off-site land or transportation improvements to City arterial and collector roads. State statutes allow a TIF-payer to have a TIF reduced if they construct a "qualified public improvement" which (1) is required as a condition of residential development approval, (2) is identified in the City's capital improvement plan, and (3) is not located on or contiguous to property that is the subject of residential development approval.

If a "qualified public improvement" is partially located on and partially located off property that is the subject of the residential development approval, the credit is limited to the cost of the portion of the improvement not located on or wholly contiguous to the property. The credit provided for the development may not exceed the amount of the improvement fee and can only be given for an improvement which is of the same type as that for which the improvement fee is charged.

The statutes also allow the City, if it so chooses, to (1) provide a greater credit than that required, and/or (2) provide a credit for a capital improvement not identified in the CIP, and/or (3) provide a share of the cost of an improvement by other means. Such arrangements must be made on a case by case basis for individual developments.



### *E. Nexus of Benefit*

The "nexus of benefit" principle requires a reasonable connection (1) between the need for authorized capital facilities and the growth from the TIF-paying development, and (2) between the expenditure of TIF revenues and the benefits received by the TIF-paying development. These two conditions limit where and when a TIF can be collected and used. Where possible, there should be a geographical relationship, but there is no specific limit on the distance between a TIF-paying development and a capital facility that is built with TIF revenues. Furthermore, the TIF revenues must be expended within a "reasonable" period of time, which is generally interpreted to mean within six (6) to nine (9) years from the date of collection.

At the time the City implements the TIF, the City is also required to adopt a Transportation Capital Improvements Plan (CIP) which includes a list of planned capacity-increasing improvements to arterial and collector roads in the City. The CIP will outline (1) the locations of proposed projects, (2) the estimated cost of each project, (3) the level of both TIF and non-TIF funding for each project, and (4) the estimated timing of each project. The information included in the CIP demonstrates the nexus of benefit between TIF-paying development and the benefits they will receive.

## 2.2 CALCULATION OF THE TRAFFIC IMPACT FEE

The City of Woodburn's Traffic Impact Fee (TIF) is calculated using a series of formulas which:

- a) identify the number of new trips expected from each type of land use,
- b) convert the number of new trips to new vehicle miles travelled,
- c) adjust the miles travelled to account only for the miles travelled on 100% of City and 10% of State arterial and collector roads in the City (excluding travel local [subdivision] roads),
- d) calculate the miles of City road improvements needed to serve the new vehicle miles travelled, and
- e) identify the TIF amounts at 100% of the cost per mile to construct additional roads.

### *A. Formula 1: Net New Trips (by Type of Land Use)*

The net new trips generated per day is calculated for each type of land use using the following formula:

$$1. \quad \frac{\text{Trip Rate}}{2} \quad \times \quad \text{Percent New Trips} \quad \times \quad \text{Peak Hour Factor} \quad = \quad \text{Net New Trips Generated}$$

The elements of the formula are as follows:

- a) divide the trip rate by 2 (in order to avoid "doubling" the TIF);
- b) multiply "a" by the percent of trips that are "new" trips for the land use (in order to avoid charging for "pass-by" trips); and
- c) multiply "b" by the factor (multiplier) that represents the portion of the trips that are generated during the peak traffic hours.

The primary data source for trip rates included in this methodology is Trip Generation (5th Edition) by the Institute of Transportation Engineers. Trip Generation contains rates for different land uses based on trip generation studies conducted nationwide and provides counts of trips generated by various types of land use. These counts include both *attracted and generated* trips. For example, the Average Weekday trip rates are 9.55 trips for a single family house, and 125.50 trips for a supermarket. Each of these trip rates counts all trips beginning *and* ending at each location. If a person were to leave home and drive to the supermarket, and then drive back home, the person would have made a total of two one-way trips; but each beginning and ending would be counted as a *separate* trip in the ITE Trip Generation manual, for a total of four trips. By dividing the ITE rates by 2, each trip is counted only once.

"New" trips are often based on the assumption that all trips from residential land uses are new trips (therefore, percentage = 100%), and all other land uses are evaluated to reflect the percentage of their trips that are "new" versus the remainder. No land use category has greater than 100% new trips, but some categories may have less (various retail categories range from 47% to 77% new trips). The percentages used to account for these trips in this methodology are based on an analysis of pass-by data included in Trip Generation (5th Edition).

Table 2.1 (pages 11 - 12) lists the number of net new trips generated for each land use category, using Formula 1. Columns 1 and 2 list the Land Use Categories and the Weekday Average Trip Rates (divided by 2), respectively, from Trip Generation. Column 3 identifies the percentage of new trips, and Column 4 indicates the factor (multiplier) that represents the portion of the trips that are generated during the peak traffic hours, assuming that a single-family house is the "average" ( i.e., factor = 1.0). Any land use with a factor less than 1.0 generates a smaller portion of its trips during peak hours than a house, and any factor greater than 1.0 generates a larger portion of its trips during peak hours than a house. Column 5 is the result of multiplying columns 2, 3, and 4 by each other, producing the net number of new trips generated per day.

TABLE 2.1  
NEW TRIPS GENERATED (DAILY)

(1) SITE LAND USE CODE/CATEGORY	(2) TRIP RATE / 2	(3) % NEW TRIPS	(4) PEAK HOUR FACTOR	(5) NEW TRIPS GENERATED
	x		x	=
<b>RESIDENTIAL</b>				
210 Single Family Detached	4.78	100.00%	1.00	4.78 / unit
220 Apartment	3.24	100.00%	1.00	3.24 / unit
230 Condominium	2.93	100.00%	1.00	2.93 / unit
240 Mobile Home (in park)	2.41	100.00%	1.00	2.41 / unit
<b>RECREATIONAL</b>				
420 Marina	1.48	100.00%	0.75	1.11 / berth
430 Golf Course	18.80	100.00%	0.75	14.10 / hole
443 Movie Theater (Sit Down)	0.88	100.00%	0.75	0.66 / seat
492 Racquet Club	8.57	100.00%	0.75	6.43 / T.G.S.F.
<b>INSTITUTIONAL</b>				
510 Preschool	2.33	100.00%	1.50	3.49 / student
520 Elementary School	0.55	100.00%	1.50	0.82 / student
530 High School	0.69	100.00%	1.50	1.04 / student
560 Church	4.66	100.00%	0.75	3.50 / T.G.S.F.
565 Day Care Center	2.33	100.00%	1.50	3.49 / student
590 Library	22.75	100.00%	0.75	17.06 / T.G.S.F.
610 Hospital	8.39	100.00%	0.75	6.29 / T.G.S.F.
620 Nursing Home	1.30	100.00%	0.75	0.98 / bed
<b>BUSINESS &amp; COMMERCIAL</b>				
320 Hotel/Motel	5.10	75.00%	1.00	3.82 / room
812 Building Materials/Lumber	15.28	75.00%	1.00	11.46 / T.G.S.F.
815 Discount Stores	35.07	59.04%	1.00	20.70 / T.G.L.S.F.
816 Hardware/Paint Stores	25.65	75.00%	1.00	19.23 / T.G.S.F.
817 Retail Nursery	18.04	75.00%	1.00	13.53 / T.G.S.F.
820 Shopping Center under 50,000 G.S.F.	83.80	47.58%	1.00	39.87 / T.G.L.S.F.
821 Shopping Center 50,000 - 99,999 G.S.F.	45.83	45.00%	1.00	20.62 / T.G.L.S.F.
822 Shopping Center 100,000 - 199,999 G.S.F.	35.34	59.04%	1.00	20.86 / T.G.L.S.F.
823 Shopping Center 200,000 - 299,999 G.S.F.	27.25	61.35%	1.00	16.72 / T.G.L.S.F.
824 Shopping Center 300,000 - 399,999 G.S.F.	23.41	65.72%	1.00	15.38 / T.G.L.S.F.
825 Shopping Center 400,000 - 499,999 G.S.F.	21.01	67.93%	1.00	14.27 / T.G.L.S.F.

NOTE: T.G.L.S.F. = Thousand Gross Leaseable Square Feet  
T.G.S.F. = Thousand Gross Square Feet

**TABLE 2.1**  
**NEW TRIPS GENERATED (DAILY)**

(1) SITE LAND USE CODE/CATEGORY	(2) TRIP RATE / 2	X	(3) % NEW TRIPS	X	(4) PEAK HOUR FACTOR	=	(5) NEW TRIPS GENERATED
<b>BUSINESS &amp; COMMERCIAL (cont'd)</b>							
826 Shopping Center 500,000 - 599,999 G.S.F	19.33		76.53%		1.00		14.79 / TG.L.S.F
827 Shopping Center 1,000,000 - 1,200,000 G.S.F	16.05		66.92%		1.00		10.74 / TG.L.S.F
828 Shopping Center Over 1,200,000 G.S.F	15.35		60.62%		1.00		9.30 / TG.L.S.F
832 Restaurant Sit-Down	102.68		75.00%		0.60		46.21 / TG.S.F
833 Restaurant: Drive-Through	393.11		53.85%		0.60		127.01 / TG.S.F
841 New Car Sales	23.96		75.00%		1.00		17.97 / TG.S.F
844 Service Station	66.50		76.63%		1.00		50.96 / pump
850 Supermarket	62.75		48.26%		1.00		30.28 / TG.S.F
851 Convenience Market	369.00		42.91%		1.00		158.34 / TG.S.F
870 Apparel	1.67		75.00%		1.00		1.25 / TG.S.F
890 Furniture Store	2.17		75.00%		1.00		1.63 / TG.S.F
911 Bank/Savings: Walk-in	70.31		75.00%		1.00		52.73 / TG.S.F
912 Bank/Savings: Drive-In	132.61		75.00%		1.00		99.45 / TG.S.F
<b>OFFICE</b>							
711 General Office Under 100,000 G.S.F	8.29		100.00%		1.50		12.44 / TG.S.F
712 General Office 100,000 - 199,999 G.S.F	7.02		100.00%		1.50		10.52 / TG.S.F
713 General Office 200,000 G.S.F and over	5.93		100.00%		1.50		8.89 / TG.S.F
720 Medical Office Building	17.09		100.00%		1.50		25.63 / TG.S.F
760 Research Center	3.85		100.00%		1.50		5.78 / TG.S.F
770 Business Park	7.19		100.00%		1.50		10.78 / TG.S.F
<b>INDUSTRIAL</b>							
110 General Light Industrial	3.49		100.00%		1.50		5.23 / TG.S.F
120 General Heavy Industrial	0.75		100.00%		2.00		1.50 / TG.S.F
130 Industrial Park	3.49		100.00%		2.00		6.97 / TG.S.F
140 Manufacturing	1.93		100.00%		2.00		3.85 / TG.S.F
150 Warehouse	2.44		100.00%		0.75		1.83 / TG.S.F
151 Mini-Warehouse	1.31		100.00%		1.00		1.31 / TG.S.F
170 Utilities	0.53		100.00%		1.00		0.53 / employee
860 Wholesale	3.37		100.00%		0.75		2.52 / TG.S.F

NOTE: TG.L.S.F = Thousand Gross Leasable Square Feet  
TG.S.F = Thousand Gross Square Feet

*B. Formula 2: New Travel Miles (by Type of Land Use)*

The net new travel miles generated per day is determined for each type of land use by multiplying the net new trips generated (from Formula 1) by the average trip length for each type of land use:

$$2. \quad \begin{array}{ccc} \text{Net New Trips} & \times & \text{Average} \\ \text{Generated} & & \text{Trip Length} \end{array} = \begin{array}{c} \text{New Travel Miles} \\ \text{per Day} \end{array}$$

The average trip length varies among different types of land uses; therefore, each land-use type has a separate calculation of Formula 2. For this methodology, the trip lengths for various land-use categories were developed based on data from surveys conducted for the U.S. Department of Transportation and published in the *"National Personal Transportation Study"* (1984), and trip length estimation concepts and methods recommended by James C. Nicholas, in *"The Calculation of Proportionate-Share Impact Fees"* (American Planning Association, 1988), and *"Development Impact Fee Policy and Administration"*, (American Planning Association, 1990).

Table 2.2 (pages 14 - 15) lists the total new travel miles per day on the road system for each type of development, as calculated using Formula 2. Column 1 repeats the ITE codes and land use categories, and Column 2 repeats the net new trips per day from the last column of Table 2.1. Column 3 presents the average length of each trip that is generated by each type of land use. As the result of multiplying the number of trips (Column 2) by the average miles per trip (Column 3), Column 4 displays the total new daily travel miles by each land use category.

TABLE 2.2  
NEW TRAVEL MILES PER DAY

(1) <u>ITE LAND USE CODE/CATEGORY</u>	(2) <u>NEW TRIPS GENERATED</u>	(3) <u>AVERAGE TRIP LENGTH</u>	(4) <u>NEW TRAVEL MILES/DAY</u>
<b>RESIDENTIAL</b>			
210 Single Family Detached	4.78	2.25	10.74 / unit
220 Apartment	3.24	2.25	7.28 / unit
230 Condominium	2.93	2.25	6.59 / unit
240 Mobile Home (in park)	2.41	2.25	5.41 / unit
<b>RECREATIONAL</b>			
420 Marina	1.11	2.38	2.64 / berth
430 Golf Course	14.10	2.38	33.55 / hole
443 Movie Theater (Sit Down)	0.66	2.38	1.57 / seat
492 Racquet Club	6.43	2.38	15.30 / T.G.S.F
<b>INSTITUTIONAL</b>			
510 Preschool	3.49	1.68	5.86 / student
520 Elementary School	0.82	1.68	1.37 / student
530 High School	1.04	1.68	1.74 / student
560 Church	3.50	2.28	7.97 / T.G.S.F
565 Day Care Center	3.49	2.28	7.95 / student
590 Library	17.06	2.28	38.90 / T.G.S.F
610 Hospital	6.29	2.28	14.35 / T.G.S.F
620 Nursing Home	0.98	2.28	2.22 / bed
<b>BUSINESS &amp; COMMERCIAL</b>			
320 Hotel/Motel	3.82	2.38	9.09 / room
812 Building Materials/Lumber	11.46	1.82	20.86 / T.G.S.F
815 Discount Stores	20.70	1.82	37.68 / T.G.L.S.F
816 Hardware/Paint Stores	19.23	1.82	35.01 / T.G.S.F
817 Retail Nursery	13.53	1.82	24.62 / T.G.S.F
820 Shopping Center under 50,000 G.S.F	39.87	1.82	72.56 / T.G.L.S.F
821 Shopping Center 50,000 - 99,999 G.S.F	20.62	1.82	37.53 / T.G.L.S.F
822 Shopping Center 100,000 - 199,999 G.S.F	20.86	1.82	37.97 / T.G.L.S.F
823 Shopping Center 200,000 - 299,999 G.S.F	16.72	1.82	30.43 / T.G.L.S.F
824 Shopping Center 300,000 - 399,999 G.S.F	15.38	1.82	27.99 / T.G.L.S.F
825 Shopping Center 400,000 - 499,999 G.S.F	14.27	1.82	25.98 / T.G.L.S.F

NOTE: T.G.L.S.F = Thousand Gross Leaseable Square Feet  
T.G.S.F = Thousand Gross Square Feet

TABLE 2.2  
NEW TRAVEL MILES PER DAY

(1) ITE LAND USE CODE/CATEGORY	(2) NEW TRIPS GENERATED	(3) AVERAGE TRIP LENGTH	(4) NEW TRAVEL MILES/DAY
<b>BUSINESS &amp; COMMERCIAL (cont'd)</b>			
826 Shopping Center 500,000 - 599,999 G.S.F	14.79	1.82	26.92 / T.G.L.S.F
827 Shopping Center 1,000,000 - 1,200,000 G.S.F	10.74	1.82	19.54 / T.G.L.S.F
828 Shopping Center Over 1,200,000 G.S.F	9.30	1.82	16.93 / T.G.L.S.F
832 Restaurant Sit-Down	46.21	2.15	99.34 / T.G.S.F
833 Restaurant: Drive-Through	127.01	1.08	137.17 / T.G.S.F
841 New Car Sales	17.97	1.82	32.70 / T.G.S.F
844 Service Station	50.96	0.91	46.37 / pump
850 Supermarket	30.28	1.82	55.12 / T.G.S.F
851 Convenience Market	158.34	0.91	144.09 / T.G.S.F
870 Apparel	1.25	1.82	2.27 / T.G.S.F
890 Furniture Store	1.63	1.82	2.96 / T.G.S.F
911 Bank/Savings: Walk-in	52.73	1.82	95.97 / T.G.S.F
912 Bank/Savings: Drive-In	99.45	1.82	181.01 / T.G.S.F
<b>OFFICE</b>			
711 General Office Under 100,000 G.S.F	12.44	2.28	28.35 / T.G.S.F
712 General Office 100,000 - 199,999 G.S.F	10.52	2.28	23.99 / T.G.S.F
713 General Office 200,000 G.S.F and over	8.89	2.28	20.26 / T.G.S.F
720 Medical Office Building	25.63	2.28	58.43 / T.G.S.F
760 Research Center	5.78	2.28	13.17 / T.G.S.F
770 Business Park	10.78	2.28	24.57 / T.G.S.F
<b>INDUSTRIAL</b>			
110 General Light Industrial	5.23	2.28	11.92 / T.G.S.F
120 General Heavy Industrial	1.50	2.28	3.42 / T.G.S.F
130 Industrial Park	6.97	2.28	15.89 / T.G.S.F
140 Manufacturing	3.85	2.28	8.78 / T.G.S.F
150 Warehouse	1.83	2.28	4.17 / T.G.S.F
151 Mini-Warehouse	1.31	2.28	2.98 / T.G.S.F
170 Utilities	0.53	2.28	1.21 / employee
860 Wholesale	2.52	2.28	5.75 / T.G.S.F

NOTE: T.G.L.S.F = Thousand Gross Leaseable Square Feet  
T.G.S.F = Thousand Gross Square Feet



*C. Formula 3: New Miles Needed*

The net new miles of road needed is calculated for each type of land use by multiplying the new travel miles per day (from Formula 2) by the percent of travel that will occur on the City and State arterials and collectors for which the City will be responsible for construction (TIF-funded roads).

$$3. \quad \begin{array}{l} \text{New Travel Miles} \\ \text{per Day} \end{array} \quad \times \quad \begin{array}{l} \text{Percent Travel on} \\ \text{TIF-funded roads} \end{array} \quad = \quad \begin{array}{l} \text{New Miles} \\ \text{Needed} \end{array}$$

In order to determine the number of miles of road needed to accommodate new travel on TIF-funded roads, an estimate of road capacity (vehicles per day) is needed. Based on current travel and traffic patterns for the City, the average vehicles per day on arterials and collectors is 6,000 vehicles. For purposes of the TIF, the City cannot use a level of service standard that is higher (i.e., fewer vehicles) than that which is currently provided unless there is a plan and a non-TIF funding source designated to pay for achieving the higher level of service. The City has no existing funding source available to pay for a higher level of service; therefore, the City has selected 6,000 vehicles per day as the level of service standard in developing the TIF.

Table 2.3 (pages 18 - 19) shows the miles needed for the City road system. Column 1 repeats the ITE codes and land use categories, and column 2 repeats the new travel miles per day from Table 2.2. Column 3 presents the percentage of the total miles that are attributable to arterials and collectors for which the City will be responsible. By isolating the miles travelled on these roads, the City of Woodburn avoids collecting a TIF for that portion of travel on State roads that will be funded by the State. The City owns and maintains 18.9 miles (68.97%), while the State owns and maintains 8.5 miles (31.03%) of these roads. On future road projects, the City expects to be responsible for 100.00% of the cost of City road projects and, possibly, 10% of the cost of State road projects. Based on the existing mileage breakdowns, this equates to the City being responsible for funding 72.08% of needed future City and State collector and arterial

road projects designed to meet the needs of growth in the City. The total new travel miles (from column 2) is multiplied by 72.08% in order to count only the miles on roads for which TIF-funding will be required.

Column 4 converts the new travel miles on City roads in column 3 to the fraction of a mile of road that will need to be constructed to accommodate the daily trips generated by each land use category, based on a level of service standard of 6,000 vehicles per day.

TABLE 2.3  
NEW MILES NEEDED

(1) ITE LAND USE CODE/CATEGORY	(2) NEW TRAVEL MILES/DAY X	(3) NEW MILES NEEDED @72.08%	(4) NEW MILES NEEDED @ 6,000 CAP
<b>RESIDENTIAL</b>			
210 Single Family Detached	10.74	7.74	0.001291 / unit
220 Apartment	7.28	5.25	0.000874 / unit
230 Condominium	6.59	4.75	0.000792 / unit
240 Mobile Home (in park)	5.41	3.90	0.000650 / unit
<b>RECREATIONAL</b>			
420 Marina	2.64	1.90	0.000317 / berth
430 Golf Course	33.55	24.18	0.004030 / hole
443 Movie Theater (Sit Down)	1.57	1.13	0.000189 / seat
492 Racquet Club	15.30	11.03	0.001838 / T.G.S.F
<b>INSTITUTIONAL</b>			
510 Preschool	5.86	4.22	0.000704 / student
520 Elementary School	1.37	0.99	0.000165 / student
530 High School	1.74	1.25	0.000209 / student
560 Church	7.97	5.74	0.000957 / T.G.S.F
565 Day Care Center	7.95	5.73	0.000955 / student
590 Library	38.90	28.04	0.004673 / T.G.S.F
610 Hospital	14.35	10.34	0.001724 / T.G.S.F
620 Nursing Home	2.22	1.60	0.000267 / bed
<b>BUSINESS &amp; COMMERCIAL</b>			
320 Hotel/Motel	9.09	6.56	0.001093 / room
812 Building Materials/Lumber	20.86	15.03	0.002506 / T.G.S.F
815 Discount Stores	37.68	27.16	0.004526 / T.G.L.S.F
816 Hardware/Paint Stores	35.01	25.23	0.004205 / T.G.S.F
817 Retail Nursery	24.62	17.75	0.002958 / T.G.S.F
820 Shopping Center under 50,000 G.S.F	72.56	52.30	0.008717 / T.G.L.S.F
821 Shopping Center 50,000 - 99,999 G.S.F	37.53	27.05	0.004509 / T.G.L.S.F
822 Shopping Center 100,000 - 199,999 G.S.F	37.97	27.37	0.004561 / T.G.L.S.F
823 Shopping Center 200,000 - 299,999 G.S.F	30.43	21.93	0.003655 / T.G.L.S.F
824 Shopping Center 300,000 - 399,999 G.S.F	27.99	20.18	0.003363 / T.G.L.S.F
825 Shopping Center 400,000 - 499,999 G.S.F	25.98	18.72	0.003120 / T.G.L.S.F

NOTE: T.G.L.S.F = Thousand Gross Leasable Square Feet  
T.G.S.F = Thousand Gross Square Feet

TABLE 2.3

## NEW MILES NEEDED

(1) ITE LAND USE CODE/CATEGORY	(2) NEW TRAVEL MILES/DAY X	(3) NEW MILES NEEDED @72.08%	(4) NEW MILES NEEDED @ 6,000 CAP
<b>BUSINESS &amp; COMMERCIAL (cont'd)</b>			
826 Shopping Center 500,000 - 599,999 G.S.F	26.92	19.40	0.003234 / T.G.L.S.F
827 Shopping Center 1,000,000 - 1,200,000 G.S.F	19.54	14.09	0.002348 / T.G.L.S.F
828 Shopping Center Over 1,200,000 G.S.F	16.93	12.20	0.002034 / T.G.L.S.F
832 Restaurant Sit-Down	99.34	71.61	0.011934 / T.G.S.F
833 Restaurant: Drive-Through	137.17	98.88	0.016479 / T.G.S.F
841 New Car Sales	32.70	23.57	0.003928 / T.G.S.F
844 Service Station	46.37	33.43	0.005571 / pump
850 Supermarket	55.12	39.73	0.006621 / T.G.S.F
851 Convenience Market	144.09	103.86	0.017309 / T.G.S.F
870 Apparel	2.27	1.64	0.000273 / T.G.S.F
890 Furniture Store	2.96	2.14	0.000356 / T.G.S.F
911 Bank/Savings: Walk-in	95.97	69.17	0.011529 / T.G.S.F
912 Bank/Savings: Drive-In	181.01	130.47	0.021745 / T.G.S.F
<b>OFFICE</b>			
711 General Office Under 100,000 G.S.F	28.35	20.44	0.003406 / T.G.S.F
712 General Office 100,000 - 199,999 G.S.F	23.99	17.29	0.002882 / T.G.S.F
713 General Office 200,000 G.S.F and over	20.26	14.61	0.002434 / T.G.S.F
720 Medical Office Building	58.43	42.12	0.007019 / T.G.S.F
760 Research Center	13.17	9.49	0.001582 / T.G.S.F
770 Business Park	24.57	17.71	0.002952 / T.G.S.F
<b>INDUSTRIAL</b>			
110 General Light Industrial	11.92	8.59	0.001432 / T.G.S.F
120 General Heavy Industrial	3.42	2.47	0.000411 / T.G.S.F
130 Industrial Park	15.89	11.45	0.001909 / T.G.S.F
140 Manufacturing	8.78	6.33	0.001055 / T.G.S.F
150 Warehouse	4.17	3.01	0.000501 / T.G.S.F
151 Mini-Warehouse	2.98	2.14	0.000357 / T.G.S.F
170 Utilities	1.21	0.87	0.000145 / employee
860 Wholesale	5.75	4.15	0.000691 / T.G.S.F

NOTE: T.G.L.S.F = Thousand Gross Leasable Square Feet  
T.G.S.F = Thousand Gross Square Feet

*D. Formula 4: Cost of New Miles (by Type of Land Use)*

The cost of the new miles of road needed is calculated for each type of land use by multiplying the new miles needed (from Formula 3) times the cost per mile of new roads:

$$4. \quad \begin{array}{l} \text{New Miles} \\ \text{Needed} \end{array} \quad \times \quad \begin{array}{l} \text{Cost per Mile} \\ \text{of Road} \end{array} \quad = \quad \begin{array}{l} \text{Cost of New} \\ \text{Miles Needed} \end{array}$$

The cost per mile of road includes the costs of right-of-way (land) acquisition, design, engineering, permitting, construction, and construction management. The cost per mile for new two-lane arterial and collector roads in the City of Woodburn is estimated at \$2,340,000.

Table 2.4 (pages 21 - 22) displays the cost of providing the length of road needed to serve the trips generated by each land use category. Column 1 repeats the ITE land use codes and categories. Column 2 repeats the fraction of a mile of new road that is needed to serve each land use category (as shown in Column 4 of Table 2.3).

The cost of each land use's fraction of a mile of road is shown in Column 3. The cost is calculated by multiplying the portion of a mile (Column 2) by the average cost per mile of road.

**TABLE 2.4**  
**COST OF NEW MILES NEEDED**

(1) <u>ITE LAND USE CODE/CATEGORY</u>	(2) <u>NEW MILES NEEDED @6,000 CAP</u>	(3) <u>COST OF NEW MILES @ \$2,340,000</u>
<b>RESIDENTIAL</b>		
210 Single Family Detached	0.001291	\$3,020.20 / unit
220 Apartment	0.000874	\$2,046.14 / unit
230 Condominium	0.000792	\$1,853.23 / unit
240 Mobile Home (in park)	0.000650	\$1,521.17 / unit
<b>RECREATIONAL</b>		
420 Marina	0.000317	\$742.64 / berth
430 Golf Course	0.004030	\$9,431.05 / hole
443 Movie Theater (Sit Down)	0.000189	\$441.57 / seat
492 Racquet Club	0.001838	\$4,300.30 / T.G.S.F
<b>INSTITUTIONAL</b>		
510 Preschool	0.000704	\$1,647.04 / student
520 Elementary School	0.000165	\$386.08 / student
530 High School	0.000209	\$488.80 / student
560 Church	0.000957	\$2,240.07 / T.G.S.F
565 Day Care Center	0.000955	\$2,235.26 / student
590 Library	0.004673	\$10,935.96 / T.G.S.F
610 Hospital	0.001724	\$4,033.09 / T.G.S.F
620 Nursing Home	0.000267	\$624.91 / bed
<b>BUSINESS &amp; COMMERCIAL</b>		
320 Hotel/Motel	0.001093	\$2,556.59 / room
812 Building Materials/Lumber	0.002506	\$5,863.21 / T.G.S.F
815 Discount Stores	0.004526	\$10,591.83 / T.G.L.S.F
816 Hardware/Paint Stores	0.004205	\$9,840.45 / T.G.S.F
817 Retail Nursery	0.002958	\$6,922.27 / T.G.S.F
820 Shopping Center under 50,000 G.S.F	0.008717	\$20,398.27 / T.G.L.S.F
821 Shopping Center 50,000 - 99,999 G.S.F	0.004509	\$10,550.32 / T.G.L.S.F
822 Shopping Center 100,000 - 199,999 G.S.F	0.004561	\$10,673.39 / T.G.L.S.F
823 Shopping Center 200,000 - 299,999 G.S.F	0.003655	\$8,553.26 / T.G.L.S.F
824 Shopping Center 300,000 - 399,999 G.S.F	0.003363	\$7,869.68 / T.G.L.S.F
825 Shopping Center 400,000 - 499,999 G.S.F	0.003120	\$7,301.94 / T.G.L.S.F

NOTE: T.G.L.S.F = Thousand Gross Leasable Square Feet  
T.G.S.F = Thousand Gross Square Feet

TABLE 2.4  
COST OF NEW MILES NEEDED

(1) <u>ITE LAND USE CODE/CATEGORY</u>	(2) <u>NEW MILES NEEDED @ 6.000 CAP</u>	(3) <u>COST OF NEW MILES @ \$2,340,000</u>
<b>BUSINESS &amp; COMMERCIAL (cont'd)</b>		
826 Shopping Center 500,000 - 599,999 G.S.F	0.003234	\$7,566.62 / T.G.L.S.F
827 Shopping Center 1,000,000 - 1,200,000 G.S.F	0.002348	\$5,493.47 / T.G.L.S.F
828 Shopping Center Over 1,200,000 G.S.F	0.002034	\$4,759.20 / T.G.L.S.F
832 Restaurant Sit-Down	0.011934	\$27,926.48 / T.G.S.F
833 Restaurant: Drive-Through	0.016479	\$38,561.52 / T.G.S.F
841 New Car Sales	0.003928	\$9,191.96 / T.G.S.F
844 Service Station	0.005571	\$13,035.91 / pump
850 Supermarket	0.006621	\$15,493.58 / T.G.S.F
851 Convenience Market	0.017309	\$40,504.17 / T.G.S.F
870 Apparel	0.000273	\$638.89 / T.G.S.F
890 Furniture Store	0.000356	\$832.67 / T.G.S.F
911 Bank/Savings: Walk-in	0.011529	\$26,977.29 / T.G.S.F
912 Bank/Savings: Drive-In	0.021745	\$50,882.91 / T.G.S.F
<b>OFFICE</b>		
711 General Office Under 100,000 G.S.F	0.003406	\$7,970.03 / T.G.S.F
712 General Office 100,000 - 199,999 G.S.F	0.002882	\$6,744.24 / T.G.S.F
713 General Office 200,000 G.S.F and over	0.002434	\$5,696.31 / T.G.S.F
720 Medical Office Building	0.007019	\$16,425.57 / T.G.S.F
760 Research Center	0.001582	\$3,701.40 / T.G.S.F
770 Business Park	0.002952	\$6,907.68 / T.G.S.F
<b>INDUSTRIAL</b>		
110 General Light Industrial	0.001432	\$3,350.49 / T.G.S.F
120 General Heavy Industrial	0.000411	\$961.40 / T.G.S.F
130 Industrial Park	0.001909	\$4,467.32 / T.G.S.F
140 Manufacturing	0.001055	\$2,467.60 / T.G.S.F
150 Warehouse	0.000501	\$1,172.91 / T.G.S.F
151 Mini-Warehouse	0.000357	\$836.42 / T.G.S.F
170 Utilities	0.000145	\$339.70 / employee
860 Wholesale	0.000691	\$1,617.56 / T.G.S.F

NOTE: T.G.L.S.F = Thousand Gross Leasable Square Feet  
T.G.S.F = Thousand Gross Square Feet

*E. Formula 5: Traffic Impact Fee (TIF) by Type of Land Use*

The Traffic Impact Fee (TIF) for each type of land use is determined by multiplying the cost of new miles needed (from Formula 4) by the percentage of these costs that the TIF will pay:

$$\begin{array}{rcccl} 5. & \text{Cost of New Lane-} & \times & \text{\% of Cost} & = & \text{Traffic} \\ & \text{Miles Needed} & & \text{Paid by TIF} & & \text{Impact Fee} \end{array}$$

This formula allows for the total cost of new miles to be split between the TIF and any other revenue sources that are to be used for capital projects that create additional capacity on City roads.

Table 2.5 (pages 24 - 25) shows the TIF for each land use category, based on having the TIF cover 100% of the cost of new miles of road. Column 1 repeats the ITE land use codes and categories. Column 2 repeats the cost of each land use's fraction of a mile of road (from Column 3 in Table 2.4). The TIF is calculated by multiplying the cost for each land use category's portion of a mile of road (Column 2) by the percentage of the cost to be paid by the TIF .



TABLE 2.5  
TRAFFIC IMPACT FEE BY LAND USE CATEGORY

(1) <u>ITE LAND USE CODE / CATEGORY</u>	(2) <u>COST OF NEW MILES @ \$2,340,000 PER MILE</u>	(3) <u>TIF @ 100% OF COST</u>
<b>RESIDENTIAL</b>		
210 Single Family Detached	\$3,020.20	\$3,020.20 / unit
220 Apartment	\$2,046.14	\$2,046.14 / unit
230 Condominium	\$1,853.23	\$1,853.23 / unit
240 Mobile Home (in park)	\$1,521.17	\$1,521.17 / unit
<b>RECREATIONAL</b>		
420 Marina	\$742.64	\$742.64 / berth
430 Golf Course	\$9,431.05	\$9,431.05 / hole
443 Movie Theater (Sit Down)	\$441.57	\$441.57 / seat
492 Racquet Club	\$4,300.30	\$4,300.30 / T.G.S.F
<b>INSTITUTIONAL</b>		
510 Preschool	\$1,647.04	\$1,647.04 / student
520 Elementary School	\$386.08	\$386.08 / student
530 High School	\$488.80	\$488.80 / student
560 Church	\$2,240.07	\$2,240.07 / T.G.S.F
565 Day Care Center	\$2,235.26	\$2,235.26 / student
590 Library	\$10,935.96	\$10,935.96 / T.G.S.F
610 Hospital	\$4,033.09	\$4,033.09 / T.G.S.F
620 Nursing Home	\$624.91	\$624.91 / bed
<b>BUSINESS &amp; COMMERCIAL</b>		
320 Hotel/Motel	\$2,556.59	\$2,556.59 / room
812 Building Materials/Lumber	\$5,863.21	\$5,863.21 / T.G.S.F
815 Discount Stores	\$7,516.75	\$7,516.75 / T.G.L.S.F
816 Hardware/Paint Stores	\$6,983.51	\$6,983.51 / T.G.S.F
817 Retail Nursery	\$4,912.56	\$4,912.56 / T.G.S.F
820 Shopping Center under 50,000 G.S.F	\$14,476.13	\$14,476.13 / T.G.L.S.F
821 Shopping Center 50,000 - 99,999 G.S.F	\$10,550.32	\$10,550.32 / T.G.L.S.F
822 Shopping Center 100,000 - 199,999 G.S.F	\$10,673.39	\$10,673.39 / T.G.L.S.F
823 Shopping Center 200,000 - 299,999 G.S.F	\$8,553.26	\$8,553.26 / T.G.L.S.F
824 Shopping Center 300,000 - 399,999 G.S.F	\$7,869.68	\$7,869.68 / T.G.L.S.F
825 Shopping Center 400,000 - 499,999 G.S.F	\$7,301.94	\$7,301.94 / T.G.L.S.F

NOTE: T.G.L.S.F = Thousand Gross Leasable Square Feet  
T.G.S.F = Thousand Gross Square Feet

TABLE 2.5  
TRAFFIC IMPACT FEE BY LAND USE CATEGORY

(1)	(2)	(3)
ITE LAND USE CODE/CATEGORY	COST OF NEW MILES @ \$2,340,000 PER MILE	TIF @ 100% OF COST
<b>BUSINESS &amp; COMMERCIAL (cont'd)</b>		
826 Shopping Center 500,000 - 599,999 G.S.F	\$7,566.62	\$7,566.62 / T.G.L.S.F
827 Shopping Center 1,000,000 - 1,200,000 G.S.F	\$5,493.47	\$5,493.47 / T.G.L.S.F
828 Shopping Center Over 1,200,000 G.S.F	\$4,759.20	\$4,759.20 / T.G.L.S.F
832 Restaurant Sit-Down	\$27,926.48	\$27,926.48 / T.G.S.F
833 Restaurant Drive-Through	\$38,561.52	\$38,561.52 / T.G.S.F
841 New Car Sales	\$9,191.96	\$9,191.96 / T.G.S.F
844 Service Station	\$13,035.91	\$13,035.91 / pump
850 Supermarket	\$15,493.58	\$15,493.58 / T.G.S.F
851 Convenience Market	\$40,504.17	\$40,504.17 / T.G.S.F
870 Apparel	\$638.89	\$638.89 / T.G.S.F
890 Furniture Store	\$832.67	\$832.67 / T.G.S.F
911 Bank/Savings: Walk-in	\$26,977.29	\$26,977.29 / T.G.S.F
912 Bank/Savings: Drive-In	\$50,882.91	\$50,882.91 / T.G.S.F
<b>OFFICE</b>		
711 General Office Under 100,000 G.S.F	\$7,970.03	\$7,970.03 / T.G.S.F
712 General Office 100,000 - 199,999 G.S.F	\$6,744.24	\$6,744.24 / T.G.S.F
713 General Office 200,000 G.S.F and over	\$5,696.31	\$5,696.31 / T.G.S.F
720 Medical Office Building	\$16,425.57	\$16,425.57 / T.G.S.F
760 Research Center	\$3,701.40	\$3,701.40 / T.G.S.F
770 Business Park	\$6,907.68	\$6,907.68 / T.G.S.F
<b>INDUSTRIAL</b>		
110 General Light Industrial	\$3,350.49	\$3,350.49 / T.G.S.F
120 General Heavy Industrial	\$961.40	\$961.40 / T.G.S.F
130 Industrial Park	\$4,467.32	\$4,467.32 / T.G.S.F
140 Manufacturing	\$2,467.60	\$2,467.60 / T.G.S.F
150 Warehouse	\$1,172.91	\$1,172.91 / T.G.S.F
151 Mini-Warehouse	\$836.42	\$836.42 / T.G.S.F
170 Utilities	\$339.70	\$339.70 / employee
860 Wholesale	\$1,617.56	\$1,617.56 / T.G.S.F

NOTE: T.G.L.S.F = Thousand Gross Leaseable Square Feet  
T.G.S.F = Thousand Gross Square Feet

### 3.0 STORMWATER DRAINAGE SYSTEM DEVELOPMENT CHARGE

#### 3.1. STANDARDS, PRINCIPLES, DATA AND ANALYSES

This section presents the standards for levels of service, cost-benefit principles, cost data, and analyses that are needed to calculate the SDC for stormwater drainage facilities. In particular, this section of the report:

- A. Discusses CIP-driven versus standards-driven approaches to developing the SDC,
- B. Summarizes the methodology of developing the Stormwater Drainage SDC,
- C. Analyzes credits for other revenue sources, and
- D. Establishes the rational nexus of benefit for the SDC.

#### *A. CIP-driven versus Standards-Driven approach*

There are two alternative approaches used in developing SDC's: (A) CIP-driven and (B) standards-driven. CIP-driven SDC's are based on a specific list of planned capital improvements, and the amount of the SDC is determined by allocating that portion of the cost of the planned improvements that can be attributed to growth among the projected developments that will be paying SDC's. While this approach ties the amount of the SDC to specific capital improvement projects, it is also subject to obsolescence because the basis for the charge changes as the list of planned capital improvements is updated.

Standards-driven SDC's are based on uniform standards for levels of service. These standards may be selected by either (1) determining the level of service provided to current development and calculating an SDC to maintain this level of service, or (2) identifying an alternative level of service for new development (either higher or lower than the current level) and calculating the SDC based on the alternative level of service.

The selected level of service is then used to define the type, number, and size of required facilities. The amount of the SDC is determined by multiplying the standard by the estimated cost per unit (i.e., pipe, catch basins, etc.) of facility.

#### *B. Methodology used to develop the SDC*

The Stormwater Drainage SDC is based on the replacement cost of existing facilities at the current level of service (LOS). The current LOS is the standard on which the SDC is based. The City's existing stormwater drainage system was designed to manage stormwater based on the quantity to be removed, and does not consider the quality of the stormwater entering the system. The City is planning to address the quality issue in the near future and, at that time, the Stormwater Drainage SDC can be modified to include a quality component.

#### *C Credits for other revenues*

New development can receive two credits for expenditures that reduce the amount of the Stormwater Drainage SDC. One credit is for future taxes or other revenues that development pays if such revenues are used to pay for growth's portion of stormwater drainage improvements, and the other credit is for contributions of land, construction, etc., in lieu of cash payments.

If the level of the City's SDC is sufficient to meet 100% of the needs of growth (i.e. if the SDC-rate adopted by the City equals 100% of the cost per square-foot of impervious surface identified in Table 3.4 of this methodology report), the City must give credit to new development for any future taxes or any other payments that will be made by new development that will be used for expansion of the stormwater drainage system in the City.

The other potential credits against the SDC are for donations of off-site land or improvements to the City's stormwater drainage system. State statutes allow an SDC-payer to have the SDC reduced if they construct a "qualified public improvement" which (1) is required as a condition of residential development approval, (2) is identified in the City's capital improvement plan, and (3) is not located on or contiguous to property that is the subject of residential development approval. If a "qualified public improvement" is partially located on and partially located off property that is the subject of the residential development approval, the credit is limited to the cost of the portion of the improvement not located on or wholly contiguous to the property. The credit provided for the development may not exceed the amount of the improvement fee and can only be given for an improvement which is of the same type as that for which the improvement fee is charged.

The statutes also allow the City, if it so chooses, to (1) provide a greater credit than that required, and/or (2) provide a credit for a capital improvement not identified in the CIP, and/or (3) provide a share of the cost of an improvement by other means. Such arrangements must be made on a case by case basis for individual developments.

#### *D. Nexus of Benefit*

The "rational nexus of benefit" principle requires a reasonable connection (1) between the need for new stormwater drainage facilities and growth from SDC-paying development, and (2) between the expenditure of SDC revenues and the benefits received by SDC-paying development. At the time the City implements the Stormwater Drainage SDC, the City will also adopt a Stormwater Drainage Capital Improvements Plan (CIP) which includes planned capacity-increasing improvements to stormwater drainage facilities in the City. Because the SDC is an "improvement fee" and includes no reimbursement component, the CIP provides the nexus of benefit between the SDC-paying development and the benefit to be received.

### 3.2. CALCULATION OF STORMWATER DRAINAGE FACILITIES SDC

The City's Stormwater Drainage SDC is calculated using a series of formulas which:

- a) determine the total area of impervious surface in the City,
- b) identify the current level of service (LOS) for each component of the system,
- c) compute the facilities cost per square foot of impervious surface, and
- d) calculate the SDC rate per square foot of impervious surface.

#### *A. Formula 1: Impervious Surface Area*

The SDC is based on capital costs per square foot of impervious surface and is charged based on the number of square feet of impervious surface for each new unit of development. To determine the current number of square feet of impervious surface in the City, coefficients were selected for various land uses and were multiplied by the amount of impervious surface for that land use. The results are shown in Table 3.1.

$$1. \quad \begin{array}{c} \text{Total Area by} \\ \text{Land Use} \end{array} \quad \times \quad \begin{array}{c} \text{Impervious Surface} \\ \text{Coefficient} \end{array} = \begin{array}{c} \text{Impervious Surface} \\ \text{by Land Use} \end{array}$$

TABLE 3.1

#### IMPERVIOUS SURFACE AREA

<u>Land Use</u>	<u>1993 Estimated Total Acres In Use</u>	<u>Impervious Surface Coefficient (%)</u>	<u>1993 Estimated Square Feet of Impervious Surface</u>
Single-Family Residential	1,115	0.35	16,993,160
Multi-Family Residential	180	0.70	5,473,586
Commercial	248	0.80	8,626,904
Industrial	237	0.80	8,258,931
Public Right-of-Way	378	0.60	9,879,408
Miscellaneous (Public)	<u>199</u>	0.20	<u>1,737,646</u>
<b>Totals</b>	<b>1,979 (acres)</b>		<b>50,969,636 (sq. ft.)</b>

<sup>1</sup>The square feet of impervious surface is calculated by multiplying the total acres times the impervious surface coefficient, then multiplying the result times 43,560 (number of square feet in one acre).

**B. Formula 2: Level of Service (LOS) Standard**

The Stormwater Drainage SDC is designed to insure that the current level of service (LOS) is maintained for both present and future residents of the City. The LOS standard is calculated by dividing the number of units of each component of the stormwater drainage system by the total area of impervious surface (from Formula 1, Table 3.1) as shown in Table 3.2.

$$\begin{array}{rclcl}
 2. & \text{Units of} & + & \text{Area of} & = & \text{LOS Standard} \\
 & \text{System Component} & & \text{Impervious Surface} & & \text{Per Component.}
 \end{array}$$

Table 3.2 lists the major components of the City of Woodburn's Stormwater Drainage System. For each component, the table displays the number of units currently in place, and the City's current level of service (LOS) standard.

**TABLE 3.2**

**LEVEL OF SERVICE (LOS) STANDARD PER COMPONENT**

<u>Component (unit)</u>	<u>Current Quantity</u>	<u><sup>1</sup>Standard (Current) LOS Per Square Foot of Impervious Surface</u>
52" Pipe (feet)	3,548	0.0000696
48" Pipe (feet)	5,912	0.0001160
30" Pipe (feet)	7,095	0.0001392
27" Pipe (feet)	9,460	0.0001856
24" Pipe (feet)	20,102	0.0003944
18" Pipe (feet)	7,982	0.0001566
16" Pipe (feet)	10,642	0.0002088
12" Pipe (feet)	43,752	0.0008584
10" Pipe (feet)	54,099	0.0010614
8" Pipe (feet)	62,968	0.0012354
Manholes (each)	364	0.0000071
Catch Basins (each)	1,502	0.0000295
Inlets (each)	1,198	0.0000235
Open Channels (cu. yd.)	9,621	0.0001888

<sup>1</sup> The Level of Service per square foot of impervious surface was calculated by dividing the current quantity of each component by the estimated number of square feet of impervious surface in the City of Woodburn from Table 3.1 (50,969,636) for 1993.

*C. Formula 3: Stormwater Drainage Facilities Standard Cost per Square Foot of Impervious Surface*

The cost per square foot of impervious surface for each component of the stormwater drainage system is determined by multiplying the current quantity of each component by the current cost per unit:

$$\begin{array}{rclcl}
 3. & \text{Current Quantity} & \times & \text{Current Cost} & = & \text{Standard Cost} \\
 & \text{Per Component} & & \text{Per Unit} & & \text{Per Component}
 \end{array}$$

Table 3.3 presents the calculation of cost per square foot of impervious surface for individual system components, and the total standard cost per square foot of impervious surface, based on the current level of service (LOS).

**TABLE 3.3**  
**SYSTEM COMPONENT COST PER SQUARE FOOT OF IMPERVIOUS SURFACE**

<u>Component (unit of measure)</u>	<u>Standard (Current) LOS Per Square Foot of Impervious Surface</u>	<u>Current Cost Per Unit</u>	<u><sup>1</sup>Standard Cost Per Square Foot of Impervious Surface</u>
52" Pipe (feet)	0.0000696	\$162.51	0.0113
48" Pipe (feet)	0.0001160	\$67.96	0.0079
30" Pipe (feet)	0.0001392	\$37.47	0.0052
27" Pipe (feet)	0.0001856	\$33.42	0.0062
24" Pipe (feet)	0.0003944	\$27.82	0.0110
18" Pipe (feet)	0.0001566	\$18.15	0.0028
16" Pipe (feet)	0.0002088	\$15.71	0.0033
12" Pipe (feet)	0.0008584	\$11.54	0.0099
10" Pipe (feet)	0.0010614	\$10.35	0.0110
8" Pipe (feet)	0.0012354	\$7.46	0.0092
Manholes (each)	0.0000071	\$2,000.00	0.0143
Catch Basins (each)	0.0000295	\$340.00	0.0100
Inlets (each)	0.0000235	\$300.00	0.0071
Open Channels (cu. yd.)	0.0001888	\$5.00	0.0009

**Total Standard Cost Per Square Foot of Impervious Surface** **\$0.11**

<sup>1</sup> Standard Cost Per Square Foot of Impervious Surface is the estimated replacement cost of existing capital facilities per square foot of impervious surface.



*D. Formula 4: Adjustment for Credits for Future Payments*

If the City incurs bonded debt or commits future tax revenues to fund capacity-increasing stormwater drainage facilities, a credit for future tax payments may be necessary. The amount of the credit will be equal to the net present value (NPV) of future payments per square foot of impervious surface.

$$4. \quad \begin{array}{l} \text{Net Present Value} \\ \text{of Future Payments} \end{array} = \begin{array}{l} \text{Credit Per} \\ \text{Square Foot} \end{array}$$

The City has no outstanding bonds or other obligations for which future taxes or payments are to be made, so no credits calculation is necessary at this time.

*E. Formula 5: Calculation of SDC Rate*

The standard cost per square foot of impervious surface is reduced by the amount of the credit to determine the net SDC charge per square foot of impervious surface:

$$4. \quad \begin{array}{l} \text{Standard Cost Per} \\ \text{Square Foot} \end{array} - \begin{array}{l} \text{Credit Per} \\ \text{Square Foot} \end{array} = \begin{array}{l} \text{Net SDC Charge} \\ \text{Per Square Foot} \end{array}$$

Because no credit calculation is necessary, the Stormwater Drainage SDC is equal to the standard cost per square foot of impervious surface. These calculations are shown in Table 3.4.

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TABLE 3.4

STORMWATER DRAINAGE SDC

Standard Cost Per <u>Square Foot</u>	-	<u>Credit Per</u> <u>Square Foot</u>	=	<u>Net SDC Per</u> <u>Square Foot</u>
\$0.11		0		\$0.11

<sup>2</sup> Net SDC Per Square Foot is the dollar amount required for each new square foot of impervious surface to maintain the current level of surface.

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*E. SDC for Single-Family Dwelling Units*

The SDC for single-family dwelling units is calculated in five hundred (500) square foot increments, with a charge of \$55 incurred for each 500 square feet of impervious surface. Table 3.5 provides example calculations for single-family dwelling units.

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TABLE 3.5

STORMWATER DRAINAGE SDC FOR SINGLE-FAMILY DWELLINGS

<u>Cost Per 500 Square Feet</u>	X	<u>Impervious Surface Area (Sq.Ft.)</u>	=	<u>SDC Per Dwelling Unit</u>
\$55.00		1,501 to 2,000		\$220.00
\$55.00		2,001 to 2,500		\$275.00
\$55.00		2,501 to 3,000		\$330.00
\$55.00		more than 3,001		\$385.00 + \$55.00 per each 500 sq.ft. over 3,500

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