Rates in Effect July 1, 2016

NOTE: Please refer to interim trip rates currently being applied by staff.
(Located in the "SDC Rates per Use Code" section of www.eugene-or.gov/SDC)

System Development Charge Methodologies

Appendix B Excerpt
(Transportation System Details)

As adopted per Resolution No. 4900 (Effective May 7, 2007)
And as amended per

Administrative Order 58-07-08-F
(Effective August 20, 2007); and

Administrative Order 58-08-02-F
(Effective July 1, 2009); and

Resolution No. 4929
(Effective July 1, 2008); and

Resolution No. 4943
(Effective July 1, 2008); and

Administrative Order 58-09-08-F
(Effective July 1, 2009); and

Resolution Nos. 4977 & 4991
(Effective January 1, 2010); and

Resolution No. 4998
(Effective April 1, 2010); and

Administrative Order 58-11-01-F
(Effective June 1, 2011); and

Administrative Order 58-11-01-F
(Effective June 1, 2011); and

Resolution No. 5031
(Effective June 1, 2011); and

Administrative Order 58-11-12-F
(Effective January 1, 2012); and

Administrative Order 58-13-08-F
(Effective July 1, 2013); and

Resolution No. 5092
(Effective July 1, 2013); and

Resolution No. 5100
(Effective March 1, 2014); and

Administrative Order 58-14-08-F
(Effective July 1, 2014); and

Administrative Order 58-15-17-F
(Effective July 1, 2015)

Administrative Order 58-16-14-F
(Effective July 1, 2016)

Appendix B

Transportation System Charge Detail

1.0 Transportation SDC Methodology

The transportation SDC methodology is based on a level of service (LOS) approach, and consists of a street component and an off-street bicycle path component. The street component is a combination of improvement and reimbursement fees.

Development of the SDC under the LOS methodology includes the following basic steps:

- Determine SDC cost basis
- Define system capacity
- Calculate the unit cost of capacity
- Develop SDC rate schedule

These steps are discussed below for the street and bicycle components. Related information is displayed in Figures 2 and 3.

1.1 Street Component

1.1.1 Formula

The street component is determined based on the average cost per lane mile of the arterial and collector street system and the estimated lane miles required by an average trip, given a specified level of service. The SDC calculation under a LOS approach is represented by the following formulas

Cost per Trip (street) =

Average Cost Per Lane Mile of Street System X Average Lane Miles Per Trip

1.1.2 Step 1 – Determine SDC Cost Basis

The cost basis is the average cost of constructing a lane mile in the arterial and collector street system. The average cost per lane mile is based on a Replacement Cost New valuation, whereby all facilities are valued in terms of current year dollars, thus capturing any inflationary impacts, as well as changes in market conditions since original construction of assets. In calculating the average cost per lane mile in the transportation system, the following cost components are considered:

- Collector and Arterial Streets
  - Non-assessable Linear Construction Costs
  - Intersection Construction Costs
  - Traffic Signal Costs

- Street Light Costs
- Bridge and Other Structure Construction Costs

Cost basis assumptions and related factors are listed in Table 4. Specific system valuation calculations for these cost components are reflected in Table 5. Because new development trips will be served by a combination of existing and new facilities, and because the costs of new and existing facilities vary according to prevailing design standards and policies, the average cost per lane mile is calculated based on a weighted average of existing and projected new lane mile costs. The weighting between the existing system average cost and the new system cost is based on new development's projected utilization of existing system capacity versus new capacity-oriented improvements.

This weighted average cost basis approach also supports the development of separate Reimbursement and Improvement SDCs. Oregon SDC law allows local governments to charge an improvement SDC, a reimbursement SDC, or a combination of the two. The Improvement fee is intended to recover the costs of future capacity improvements needed to serve new development, while the Reimbursement fee relates to the costs of existing facilities that provide capacity for growth.

In determining the appropriate weighting of the existing system and future system costs to be used in the development of the cost basis, projected vehicle trips generated by growth were modeled and separated into 2 categories:

- Trips that conduct their travel <u>entirely</u> on the <u>existing</u> Eugene arterial and collector network (existing system); and
- Trips that rely on projected SDC-funded future improvement during their travel on the Eugene arterial and collector network (future system).

Modeling and analysis of the future trips using this approach results in a split of 40 percent existing system trips and 60 percent future system trips. These percentages are applied to the average costs per lane mile of the existing and future systems respectively to determine the weighted average cost per lane mile of the street system (see Table 5).

The formula for developing the street component cost basis is as follows:

SDC Cost Basis =

Avg. Cost Per Lane Mile (existing system) X Capacity % (existing system) +

Avg. Cost per Lane Mile (future system) X Capacity % (future system)

Table 5 details the calculation of the average cost per lane mile by component for the existing and future systems. The development of separate costs for existing and new capacity allows for changes in building standards, system configuration, assessable construction costs, and other assumptions between the existing and planned systems to be captured in the cost basis. In developing the average

costs for the existing versus future system, the following factors were among those considered:

- The average number of lanes per mile of arterial and collector street
- Typical street width
- The assessable and non-assessable percent of linear street cross-section costs
- The density of components (e.g., bridges, street lights, traffic signals) per lane mile
- Typical features included in streets, given changes in design standards.

1.1.3 Step 2 – Determine System Capacity

Street system capacity is measured by the average number of lane miles per trip. The average lane miles per trip is calculated as follows:

$$\text{Average Lane Miles Per One-Way Trip} = \frac{\textit{(Average Trip Length in miles (ATL) X0.5)}}{\textit{Capacity Per Lane Mile}}$$

The system-wide average trip length (ATL) used in the SDC calculation is based on the miles traveled by an average one-way trip on the arterial and collector network in the Eugene Urban Growth Boundary (UGB). This figure is determined by first determining the current or base year average vehicle trip length for all PM peak hour (4-6 p.m.) trips with one trip end in the Eugene UGB on Eugene's arterial and collector streets. The average trip length is divided in half because trips are charged according to Institute of Transportation Engineers' (ITE) trip generation rates which are expressed as trip ends, accounting for both trips entering and leaving a development. The origin of a trip pays for one-half of the ATL while the destination pays for the other half.

Capacity per lane mile is determined by the community's adopted level of service standard. The Eugene-Springfield Metropolitan Area General Plan adopted transportation level of service standard of accepting LOS D but avoiding LOS E correlates to the border between LOS D and E. This defines capacity as the number of vehicles that can be accommodated on a given roadway segment at the border between level of service D and E.

1.1.4 Step 3 – Determine Unit Cost of Capacity

The street component unit cost of capacity is calculated as follows:

Cost per Trip (Unit cost of Capacity) =

Average Cost Per Lane Mile of Street System (Cost Basis) X

Average Lane Miles Per Trip (Capacity Requirements)

The total street SDC is allocated between the reimbursement and improvement fees as follows:

Reimbursement SDC =

Cost per Trip (existing system) X Capacity % (existing system)

Improvement SDC =

Cost per Trip (future system) X Capacity % (future system)

1.2 Off-Street Bicycle Path Component

1.2.1 Formula

The off-street bicycle path component is determined based on the average cost of off-street bicycle path per person and the estimated vehicle trips per person. The SDC calculation under a LOS approach is represented by the following formulas:

$$\text{Cost per Trip} = \frac{\textit{Average Off-Street Bicycle Path Cost Per Person}}{\textit{Average Vehicle Trips per Person}}$$

1.2.2 Step 1 – Determine SDC cost basis

The off-street bicycle path component of the SDC is based on maintaining an existing standard number of miles of path per thousand persons. The cost per mile of off-street bicycle path is added to the cost per mile for off-street bicycle path lighting and the total is divided by the population to derive a per person cost.

- Off-Street Bicycle Paths
  - Path Construction Costs
  - Path Light Costs

1.2.3 Step 2 – Determine System Capacity

Off-street bicycle capacity is defined as the average vehicle trips per person. Based on path inventory and population data, the average vehicle trips per person is 0.895. In order to provide a uniform basis for the SDC, per capita is converted to per vehicle trip using the average number of vehicle trips per person.

1.2.4 Step 3 – Determine Unit Cost of Capacity

The off-street bicycle component unit cost of capacity is calculated as follows:

Cost per Trip (unit cost of capacity) =

Average Off-Street Bicycle Path Cost Per Person (cost basis) X

Average Vehicle Trips per Person (system capacity)

Because the current standard level of service is based on current inventory and population, no “excess” bike path capacity is considered to exist, so the entire fee is characterized as an improvement fee.

1.3 SDC Rate Schedule

1.3.1 Formula

The transportation SDC for an individual development is based on the total cost per trip (including the street and bike components) and the number of trips attributable to a particular development. This calculation is as follows:

Cost per Trip X Number of Development Trips = SDC for Development *where:*

Cost per Trip =

(Cost per Trip (street) + Cost per Trip (bicycle), and

Number of Development Trips =

Trip Generation Rate X Pass-by Adjustment X Nodal Development Adjustment X Development Size

1.3.2 Assigned Trip Generation Rates

The standard practice in the transportation industry is to use Institute of Transportation Engineers (ITE) trip generation rates to ultimately determine the SDCs *for individual* developments. ITE trip rates by land use are based on studies from around the country, and in the absence of local data, represent the best available source of trip data for specific land uses.

Pass-by trip adjustments to ITE trip rates have been applied to the ITE trip rates. Also referred to as *linked* trips or *trip chaining*, pass-by trips refer to trips that occur when a motorist is already on the roadway (as in the case of a traveler stopping by a fast food restaurant on the way home from work.) In this case, the motorist making a stop while "passing by" is counted as a trip generated by the restaurant, but it does not represent a new trip on the roadway.

Pass-by adjustments are provided only when three or more studies as reported in the ITE manual have established an average range for percent of pass-by trips for a particular use category contained in the Table 3. If the minimum number of studies is not available, no pass-by adjustment is assigned. An applicant may choose to submit a request for an alternative pass-by adjustment through the Alternate Calculation method.

Except when the City Transportation engineer has approved an applicant's election to use the Alternate Calculation method or an alternative pass-by adjustment, the City Transportation Engineer shall apply the description that most nearly describes the type of development proposed ITE trip rates by land use as published in Table 3 to determine the trip rate to be assigned to the proposed development. A transportation trip rate may be assigned by the City Transportation Engineer should a proposed use not be accurately represented by one of the published transportation use codes. In addition, trip rates for published use codes may be alternatively assigned as best available information in the case that a revised ITE trip rate is published prior to an administrative modification to the Transportation Trip Rate Table (Table 3).

1.3.3 Alternate Trip Generation Calculation

Prior to the issuance of a permit requiring payment of Transportation SDCs, an applicant may elect to use the Alternate Calculation method of determining the trip generation for the type of development proposed, as provided here. This election must be by written application to the City Transportation Engineer, must be accompanied with payment or the agreement to pay the transportation SDC using the Standard Calculation and must be approved by the City Transportation Engineer. Issuance of a final certificate of occupancy for the development will be contingent on a final decision by the City Transportation Engineer on the Alternate Calculation submitted for review. In the absence of the City Transportation Engineer's approval of the applicant's election to use an Alternate Calculation, the Standard Calculation shall be used. All calculations shall be based on the p.m. peak hour traffic on the adjacent street for a general type of development similar to the proposal and not on the p.m. peak hour traffic on the development site.

1.3.3.1 Existing Traffic Study Standards

If an applicant provides previously performed traffic studies that meet the standards in this paragraph and have been approved by the City Transportation Engineer, the trip rate based upon those studies may be used to calculate the transportation SDC. Except that the studies may come from geographic locations other than those listed in 1.3.3.3.3, the studies shall meet the standards set in paragraph 1.3.3.3 and shall not be more than ten years old.

1.3.3.2 Independent Traffic Study

If an applicant does not want to use the trip generation rates in 1.3.2 or to have the rate determined under paragraph 3.2.1, with the prior written approval of the City Transportation Engineer by complying with the standards in paragraph 3.2.3 below the applicant may conduct an independent survey of the proposed development's trip generation rate.

1.3.3.3 Transportation Traffic Study Criteria

To be used to calculate the Transportation SDC for a proposed development under this paragraph 1.3.3, a transportation study must meet the following standards unless the City Transportation Engineer modifies them because of unique circumstances:

1.3.3.3.1 Qualifications of Study

The completed study must be stamped by either a licensed civil engineer qualified to conduct traffic studies or a licensed transportation engineer, who has been approved by the City Transportation Engineer.

1.3.3.3.2 Development Specifications

The study shall be based upon what a typical development like the one proposed will generate in trips at build-out an when in full use

and production, rather than upon the specific proposed development.

1.3.3.3.3 Specifications for Number of Sites

A minimum of five local sites with comparable land use shall be proposed for the study and approved by the City Transportation Engineer. If, in the sole discretion of the City Transportation Engineer, there are insufficient local sites, the City Transportation Engineer will consider alternate sites within the states of Idaho, Oregon or Washington. The sites shall have land uses that are of comparable general description to that proposed upon build-out**.**

1.3.3.3.4 Specifications for Traffic Study Design

The traffic study shall be designed in accordance with the methodology described in the Institute of Transportation Engineers Trip Generation Manual, current edition.

1.3.3.3.5 Specifications for Description and Drawings

The request to use the alternate calculation shall include a detailed description and drawing of the proposed development site, a description and drawing of each sampling site, a description of why these sites are representative of the impact likely to be generated by the proposed development and such other information as may be required by the City Transportation Engineer.

1.3.3.3.6 Specifications for Report Format

The completed report of the study shall be in a form approved by the City Transportation Engineer and upon its completion shall be submitted to the City Transportation Engineer for approval.

1.3.3.4 Approval & Outcome of Alternate Calculation Traffic Study

The City Transportation Engineer may approve, approve with conditions, or reject the trip generation rate calculated in a report prepared under paragraph 1.3.3 hereof. Upon approval the trip rate for the proposed development shall be used to calculate the transportation SDC. In the event that the Alternate Calculation results in a transportation SDC less than the Standard Calculation, upon approval of the Alternate Calculation by the City Transportation Engineer, the City shall refund the excess transportation SDC collected to the applicant or reduce the amount the applicant agreed to pay. If the approved Alternate Calculation results in a transportation SDC greater than the Standard Calculation, the applicant shall pay the underage to the City or modify the agreement to pay to include the underage. In the event the applicant fails to promptly pay the underage to the City or to promptly modify the agreement to pay, the City may suspend the permit for the development until payment is made or the agreement to pay is modified to include the underage.

1.3.4 Nodal Development Adjustments

The General Plan (Metro Plan) recognizes the plan designation of "Nodal Development Area (Nodes)". The intent of this designation is to establish areas for mixed-use, pedestrian-friendly development that will reduce reliance on the automobile. There is evidence that shows that this type of development can result in reduced automobile trip generation rates. Furthermore, the Oregon *Transportation Planning Rule* (TPR), in OAR 660-012-0060(5) states in part that:

> . . . local governments shall give full credit for potential reduction in vehicle trips for uses located in mixed-use, pedestrian-friendly centers . . .

and,

> . . . local governments shall assume that uses located within a mixed-use, pedestrian-friendly center, or neighborhood, will generate 10% fewer daily and peak hour trips than are specified in available published estimates, such as those provided by the Institute of Transportation Engineers (ITE) Trip Generation Manual. . .

Based on this information, the City will apply a ten percent reduction in the street (auto-related) component of the transportation SDC to approved development types in designated Nodal Development Areas.

F I G U R E 3

Transportation System
Off-Street Bicycle Paths

Level of Service

Miles of off-street bicycle paths per person

Impact Measurement
Ave. trips per person

System Value

Non-assessable construction cost per mile of off-street bicycle path

Formula

Cost of Service (Per person)

Miles of bicycle paths per person **X** Cost per mile = Cost per person

Formula

Cost of Service (Per Trip)

$$\frac{\text{Cost per person}}{\text{Trips per person}} = \text{Cost per trip}$$

F I G U R E 2

Transportation System Streets

Level of Service
Border of LOS D & LOS E
per Metro Area Plan

Impact Measurement
Lane miles used per
trip at adopted LOS

System Value

Non-assessable
construction cost
per lane mile of collector &
arterial street system

Formula

Cost of Service (Per Trip)

Ave. cost per lane mile of system X Ave. lane miles per trip
= Cost per Trip

T A B L E 3

Transportation Trip Rates

See next page for continuation of table and additional information regarding application of these trip rates.
(Definitions of use codes are located in Appendix A)

Eugene Trans Use Code	Description	Unit of Measure	Trip Rate	% Pass-by**	Adjusted Trip Rate
30	TRUCK TERMINAL	PER TGSF	0.82	0%	0.82
90	PARK & RIDE LOT WITH BUS SERVICE	PER ACRE	43.75	0%	43.75
100	INDUSTRIAL	PER TGSF	0.95	0%	0.95
140	MANUFACTURING	PER TGSF	0.74	0%	0.74
150	WAREHOUSING	PER TGSF	0.51	0%	0.51
151	MINI WAREHOUSE	PER TGSF	0.26	0%	0.26
170	UTILITIES	PER TGSF	0.49	0%	0.49
200	OTHER RESIDENTIAL	PER DU	0.58	0%	0.58
210	SINGLE FAMILY DWELLING / DUPLEX	PER DU	1.01	0%	1.01
250	SENIOR HOUSING DEVELOPMENT - MULTI-UNIT	PER DU	0.19	0%	0.19
251	SENIOR HOUSING DEVELOPMENT - DETACHED UNITS	PER DU	0.23	0%	0.23
252	SENIOR ASSISTED LIVING DEVELOPMENT- MULTI-UNIT	PER DU	0.17	0%	0.17
310	HOTEL	PER ROOM	0.71	0%	0.71
320	MOTEL	PER ROOM	0.58	0%	0.58
411	CITY PARK	PER ACRE	1.59	0%	1.59
430	GOLF COURSE	PER ACRE	0.30	0%	0.30
435	MULTIPURPOSE RECREATIONAL FACILITY	PER ACRE	5.77	0%	5.77
443	MOVIE THEATRE	PER TGSF	3.80	0%	3.80
473	CASINO/VIDEO LOTTERY ESTABLISHMENT	PER TGSF	13.43	0%	13.43
490	RACQUET/HANDBALL SPORTS FACILITIES	PER COURT	3.86	0%	3.86
493	HEALTH CLUB	PER TGSF	4.30	0%	4.30
494	BOWLING ALLEY	PER TGSF	3.54	0%	3.54
495	RECREATIONAL COMMUNITY CENTER	PER TGSF	1.75	0%	1.75
520	ELEMENTARY SCHOOL	PER TGSF	3.12	0%	3.12
521	PRIVATE SCHOOL (K-12)	PER TGSF	5.50	0%	5.50
522	MIDDLE SCHOOL/JUNIOR HIGH SCHOOL	PER TGSF	1.23	0%	1.23
530	HIGH SCHOOL	PER TGSF	1.02	0%	1.02
540	JUNIOR/COMMUNITY COLLEGE	PER TGSF	1.66	0%	1.66
550	UNIVERSITY/COLLEGE	PER STUDENT***	0.21	0%	0.21
560	CHURCH	PER TGSF	0.66	0%	0.66
565A	CHILD DAY CARE CENTER	PER TGSF			6.01
565B	ADULT DAY CARE CENTER	PER TGSF			2.64
566	CEMETERY	PER ACRE	0.84	0%	0.84
590	LIBRARY	PER TGSF	7.09	0%	7.09
591	LODGE/FRATERNAL ORGANIZATION	PER MEMBER	0.03	0%	0.03
610	HOSPITAL	PER TGSF	0.92	0%	0.92
620	NURSING HOME	PER TGSF	0.17	0%	0.17
630	CLINIC	PER TGSF	5.18	0%	5.18
700	SINGLE/MULTI TENANT OFFICE BLDG	PER TGSF	1.51	0%	1.51
720	MEDICAL-DENTAL OFFICE	PER TGSF	3.66	0%	3.66
731	DEPARTMENT OF MOTOR VEHICLES	PER TGSF	17.09	0%	17.09
733	GOVERNMENT OFFICE COMPLEX	PER TGSF	2.86	0%	2.86
760	RESEARCH & DEVELOPMENT CENTER	PER TGSF	1.08	0%	1.08
770	BUSINESS PARK	PER TGSF	1.29	0%	1.29
800	DISCOUNT STORE	PER TGSF	4.13	0%	4.13
812	BUILDING MATERIALS & LUMBER STORE	PER TGSF	4.04	0%	4.04
814	SPECIALTY RETAIL CENTER & OTHER	PER TSFGLA	2.59	0%	2.59
816	HARDWARE/PAINT STORE	PER TGSF	4.42	0%	4.42
817	NURSERY (GARDEN CENTER)	PER TGSF	3.80	0%	3.80

NOTE: TGSF = Thousand Gross Square Feet
TSFGLA = Thousand Square Feet Gross Leasable Area
DU = Dwelling Unit

** Percentage based on "minimum studies" criteria whereas the ITE 6th edition trip rate is used in the absence of 3 or more available studies (with pass-by adjustments applied) published in the ITE 5th edition.

*** For instructional facilities only, otherwise choose use code that best fits the proposed development type.

Eugene Trans Use Code	Description	Unit of Measure	Trip Rate	% Pass-by**	Adjusted Trip Rate
820A	SHOPPING CENTER < 25,000 Sq.Ft.	PER TSFGLA	12.21	60%	4.88
820B	SHOPPING CENTER > 25,000 TO 99,000 Sq.Ft.	PER TSFGLA	7.80	50%	3.90
820C	SHOPPING CENTER > 100,000 < 199,000 Sq.Ft.	PER TSFGLA	5.62	40%	3.37
820D	SHOPPING CENTER > 200,000 < 399,999 Sq.Ft.	PER TSFGLA	4.32	35%	2.81
820E	SHOPPING CENTER > 400,000 < 599,999 Sq.Ft.	PER TSFGLA	3.63	30%	2.54
820F	SHOPPING CENTER > 600,000 < 999,999 Sq.Ft.	PER TSFGLA	3.10	20%	2.48
820G	SHOPPING CENTER > 1,000,000 Sq.Ft.	PER TSFGLA	2.70	10%	2.43
823	FACTORY OUTLET CENTER	PER TGSF	2.29	0%	2.29
830	HIGHER TURNOVER REST, INCL TAVERN/BAR/COFFEE ESTBL.	PER TGSF	11.03	20%	8.82
831	LOWER TURNOVER RESTAURANT	PER TGSF	7.49	0%	7.49
834	FAST FOOD RESTAURANT	PER TGSF	33.48	45%	18.41
837	QUICK LUBRICATION VEHICLE STOP	PER SERV.POS.	5.19	0%	5.19
840	AUTO CARE CENTER	PER TSFGLA	3.38	0%	3.38
841	NEW CAR SALES	PER TGSF	2.80	0%	2.80
843	AUTOMOBILE PARTS SALES	PER TGSF	5.98	0%	5.98
844	GASOLINE/SERVICE STATION	PER VEH.FUEL.POS.	14.56	55%	6.55
845	GASOLINE/SERVICE STATION W/CONVENIENCE MKT	PER VEH.FUEL.POS.	13.43	55%	6.04
847	SELF SERVICE CAR WASH	PER STALL	5.79	0%	5.79
848	TIRE STORE	PER TGSF	4.12	0%	4.12
850	SUPERMARKET	PER TGSF	11.31	35%	7.35
851	CONVENIENCE MARKET (open 24 hours)	PER TGSF	53.73	65%	18.81
852	CONVENIENCE MARKET (open ~ 15-16 hours)	PER TGSF	34.57	60%	13.83
860	WHOLESALE FOODS DISTRIBUTOR	PER TGSF	0.21	0%	0.21
861	DISCOUNT MEMBERSHIP CLUB	PER TGSF	3.80	0%	3.80
862	HOME IMPROVEMENT SUPERSTORE	PER TGSF	2.87	0%	2.87
863	ELECTRONICS SUPERSTORE	PER TGSF	4.50	0%	4.50
864	TOY/CHILDREN'S SUPERSTORE	PER TGSF	4.99	0%	4.99
870	APPAREL STORE	PER TGSF	3.83	0%	3.83
880	PHARMACY/DRUGSTORE W/OUT DRIVE THRU WINDOW	PER TGSF	7.63	0%	7.63
881	PHARMACY/DRUGSTORE WITH DRIVE THRU WINDOW	PER TGSF	10.40	0%	10.40
890	FURNITURE STORE	PER TGSF	0.45	0%	0.45
895	VIDEO ARCADE	PER TGSF	10.64	0%	10.64
896	VIDEO RENTAL STORE	PER TGSF	13.60	0%	13.6
911	WALK-IN BANK	PER TGSF	33.15	0%	33.15
912	DRIVE-IN BANK	PER TGSF	54.77	45%	30.12

NOTE: TGSF = Thousand Gross Square Feet
TSFGLA = Thousand Square Feet Gross Leasable Area
DU = Dwelling Unit
SERV. POS. = Service Position
VEH. FUEL POS. = Vehicle Fueling Position

** Percentage based on "minimum studies" criteria whereas the ITE 6th edition trip rate is used in the absence of 3 or more available studies (with pass-by adjustments applied) published in the ITE 5th edition.

*** For instructional facilities only, otherwise choose use code that best fits the proposed development type.

Extraordinary Users: In the event that a development may generate more than 500 weekday peak PM hour trips, the City Transportation Engineer may require that the Owner(s) enter into an agreement with the City to review the development's impact at such time the development is in full use in order to provide the final basis of the transportation SDC fee.

City-Assigned Transportation Trip Rates: A transportation trip rate may be assigned by the City Transportation Engineer should a proposed use not be accurately represented by one of the published transportation use codes.

Event-Based Development Use: A transportation trip rate may be assigned by the City Transportation Engineer should a proposed use be oriented to intermittent peak events as opposed to typical on-going weekly use. The Owner(s) may also choose to request an alternative calculation method and submit documentation that meets criteria provided per this appendix, Section 1.3.3.

TABLE 4
Transportation System Valuation Assumptions

TRANSPORTATION SYSTEM VALUATION ASSUMPTIONS

Note that these assumptions are used to establish a base line of level of service (i.e. number of system components per linear mile or per lane mile) for both the existing and future arterial & collector street systems upon which the unit cost of capacity is based (Table 5). If base line assumptions are the same between systems, then it is assumed that future sysem components will increase proportionately to those in the existing system.

ASSUMPTIONS		REIMBURSEMENT Fee Level of Service Analysis - Existing System	IMPROVEMENT Fee Level of Service Analysis - Future System	How Valuation Assumptions are Used in Transportation SDC Analysis
Arterial / Collectors	GENERAL	* Average vehicle trip length for trips with at least one trip end in Eugene urban growth boundary = 4.59 miles	* Average vehicle trip length for trips with at least one trip end in Eugene urban growth boundary = 4.59 miles	Used to develop the average one-way trip length on the arterial & collector street system.
		* Eugene trip end peak vehicle miles; percentage on Eugene's arterial and collector streets = 39%	* Eugene trip end peak vehicle miles; percentage on Eugene's arterial and collector streets = 39%	
		* Eugene average one way trip length for arterials and collectors = 0.8888 miles per trip	* Eugene average one way trip length for arterials and collectors = 0.8888 miles per trip	When divided by number of vehicles per hour (capacity), is used to equate a cost per lane mile to a cost per trip.
		* Average number of lanes per mile of arterials and collectors = 2.62	* Average number of lanes per mile of arterials and collectors = 2.62	Used to equate a cost per linear mile to a cost per lane mile (when divided into a cost per linear mile).
		* Total lane miles of arterial and collector system, excluding turn lanes = 363.89 miles	* Total lane miles of arterial and collector system, excluding turn lanes = 363.89 miles	When divided into a total cost of projects on the system, will yield an average total project cost per lane mile.
		* Percent of system by lane mile: Major Arterial = 11%; Minor Arterial = 55% Major Collector = 18%; Neighborhood Collector = 16%	* Percent of system by lane mile: Major Arterial = 11%; Minor Arterial = 55% Major Collector = 18%; Neighborhood Collector = 16%	Used to develop a weighted average (proportionate to the amount of lane miles of each street type) of overall cost per linear mile.
		* Allocation to reimbursement fee, % of new development trips using existing system only = 40%	* Allocation to improvement fee, % of new development trips using future system components = 60%	Used to allocate reimbursement and improvement fees resulting in a weighted average total cost per trip.
		* Level of service = D	* Level of service = D	When divided into number of miles per trip, is used to equate a cost per lane mile to a cost per trip.
		* Capacity per lane mile = 675	* Capacity per lane mile = 675	
	TYPICAL STREET CROSS-SECTION	* Typical street width: Major Arterial = 65 feet; Minor Arterial = 43 feet Major Collector = 38 feet; Neighborhood Collector = 33 feet	* Typical street width: Major Arterial = 81 feet; Minor Arterial = 52 feet Major Collector = 38 feet; Neighborhood Collector = 31.5 feet	Used to develop cost analyses for linear mile of street section for existing and future arterial and collector street systems.
		* Assessable % of average construction costs = 70.1% Non-assessable % of average construction costs = 29.9%	* Assessable % of average construction costs = 45.2% Non-assessable % of average construction costs = 54.8%	Used to determine those portions of total system cost per linear mile attributable to assessable versus non-assessable
	INTERSECTION	* Cost is based on linear foot unit cost and average number of intersections per lane mile	* Cost is based on linear foot unit cost and average number of intersections per lane mile	Used to develop cost analyses for intersections per linear mile for existing and future arterial and collector street systems.
		* Assumes typical spacing of intersections in the existing system.	* Assumes typical spacing of intersections in the future system.	
	TRAFFIC SIGNAL	* Includes City signalized intersections plus half of joint with state	* Includes City signalized intersections plus half of joint with state	Used to develop cost analyses for signals per linear mile for existing and future arterial and collector street systems.
		* City signalized intersections = 162	* City signalized intersections = 162	
		* Joint with state signalized intersections = 60	* Joint with state signalized intersections = 60	
		* Eugene equivalent signalized intersections = 192	* Eugene equivalent signalized intersections = 192	
		* Includes all equivalent signals in the existing system	* Reduces signals to account for downtown grid (-31)	
		* Signalized intersections per lane mile = 0.5276	* Signalized intersections per lane mile = 0.5276	Equates signal cost per intersection to signal cost per lane mile.
		* No adjusted signalized intersections per lane mile	* Adjusted signalized intersections per lane mile = 0.4479	
	STREET LIGHT	* Street lights per street mile: Major Arterial = 70; Minor Arterial = 35; Major Collector = 35; Neighborhood Collector = 37	* Street lights per street mile: Major Arterial = 70; Minor Arterial = 35; Major Collector = 35; Neighborhood Collector = 37	Used to develop cost analyses for street lights per linear mile for existing and future arterial and collector street systems.
	BRIDGE & OTHER STRUCTURE	* Based on replacement cost new	* Based on replacement cost new	Used to develop cost analyses for structures per linear mile for existing and future arterial and collector street systems.
		* Based on inventory of bridge system	* Based on inventory of bridge system	
		* Excludes local street system bridges	* Excludes local street system bridges	
		* Includes City-funded portion Ferry Street Bridge	* Includes City-funded portion of a major bridge	
		* Includes all short-span bridges	* Includes half of short-span bridges	
PROJECT MGT		* Engineering and administration costs = 25%	* Engineering and administration costs = 25%	Factored into total system cost per lane mile, to determine total project-related design & administration in final cost per lane mile.
OFF-STREET BICYCLE PATH		* No bike path reimbursement fee proposed	* 1998 population = 133,460	Used to develop per-capita analyses of off-street bike paths.
			* Vehicle trips per person = 0.895	Equates cost per person to cost per trip.
			* Paths per 1,000 persons = 0.2098 * Lighting per 1000 persons = 0.1005 * Miles of off-street bicycle paths = 28.00 * Average number of lights per mile of path = 40 * Number of miles of lighted path = 9.7	Used to develop cost analysis for off street bike paths per mile.

TRANSPORTATION SYSTEM DEVELOPMENT CHARGE ANALYSIS

TRANSPORTATION COST COMPONENTS	REIMBURSEMENT Fee Level of Service Analysis Costs - EXISTING System Major Arterials	Minor Arterials	Major Collectors	Neighborhood Collectors	System Average	IMPROVEMENT Fee Level of Service Analysis Costs - FUTURE System Major Arterials	Minor Arterials	Major Collectors	Neighborhood Collectors	System Average
Arterial / Collectors										
NON-ASSESSABLE STREET SECTION COSTS										
Total street section cost per linear mile	$3,815,381	$2,641,231	$1,385,871	$1,448,938		$5,016,047	$3,433,601	$1,532,931	$1,666,483	
Average street section cost per linear mile					$2,353,656					$2,982,811
Average assessable section cost per linear mile	(($3,815,381 * .11) + ($2,641,231 * .55) + ($1,385,871* .18) + ($1,448,938 * .16))				$1,649,913	(($5,016,047 * .11) + $3,433,601 * .55) + $1,532,931 * .18) + ($1,666,483 * .16))				$1,348,230
Average non-assessable section cost per linear mile	($2,353,656 * .701)				$703,743	($2,982,811* .452)				$1,634,580
Average assessable section cost per lane mile	($2,353,656* .299)				$787,172	($2,982,811 * .548)				$643,240
Average non-assessable section cost per lane mile	((($1,649,913 / 2.62 lanes per mile) * 1.25 eng costs)				$335,755	((($1,348,230 / 2.62 lanes per mile) * 1.25 eng costs)				$779,857
	(($703,743 / 2.62 lanes per mile) * 1.25 eng costs)					(($1,634,240 / 2.62 lanes per mile) * 1.25 eng costs)				
INTERSECTION COSTS										
Total intersection cost per linear mile	$563,895	$346,064	$213,909	$201,085		$776,174	$358,180	$269,953	$235,849	
Average intersection cost per linear mile					$323,041					$368,705
Average intersection cost per lane mile	(($563,895 * .11) + ($346,064* .55) + ($213,909* .18) + ($201,085* .16)				$154,123	((($776,174* .11) + ($358,180 * .55) + ($269,953 * .18) + ($235,849 * .16)				$175,909
	(($323,041 / 2.62 lanes per mile) * 1.25 eng costs)					(($368,705 / 2.62 lanes per mile) * 1.25 eng costs)				
TRAFFIC SIGNAL COSTS										
Average signal cost per intersection					$338,924					$338,924
Average signal cost per lane mile					$178,816					$151,804
	($338,924 * 0.5276 unadjusted signalized intersections per lane mile)					($338,924 * 0.4479 adjusted signalized intersections per lane mile)				
STREET LIGHT COSTS										
Total street light cost per linear mile	$608,838	$304,420	$304,420	$211,522		$608,838	$304,420	$304,420	$211,522	
Average street light cost per linear mile					$323,042					$323,042
Average street light cost per lane mile	($608,838 * .11) + $304,420 * .55) + ($304,420 * .18) + ($211,522 * .16)				$154,123	($608,838 * .11) + $304,420 * .55) + ($304,420 * .18) + ($211,522 * .16)				$154,123
Average street light cost per trip	(($323,042 / 2.62 lanes per mile) * 1.25 eng costs)				$202.94	(($323,042 / 2.62 lanes per mile) * 1.25 eng costs)				$202.94
	((0.8888 * / 675) * $154,123)					((0.8888 / 675) * $154,123)				
BRIDGE & OTHER STRUCTURE COSTS										
Past projects, Replacement Cost New (RCN)					$114,281,036					$57,140,520
Past Ferry Street Bridge & related overpass costs	($128,850,698 RCN bridge inventory - $14,569,663 local streets) (FSB cost estimated to be 20% of ODOT RCN)				$17,252,571	(($128,850,698 RCN bridge inventory - $14,569,663 local streets) * 1/2 short span) (FSB cost estimated to be 20% of ODOT RCN)				$17,252,571
Total costs for past projects					$164,417,009					$92,991,364
Average bridge & other structure cost per lane mile	((($114,281,036+ $17,252,571) * 1.25 eng costs)				$451,832	((($57,140,520 + $17,252,571) * 1.25 eng costs)				$255,548
	($164,417,009 / 363.89 total Arterial/Collector linear miles)					($92,991,364 / 363.89 total Arterial/Collector linear miles)				
OFF-STREET BICYCLE PATH COSTS										
Average path lighting cost per mile										$158,699
Average path section cost per mile										$509,713
Cost per person, path lighting	No bike path reimbursement component proposed.									$19.94
Cost per person, path section						(((0.1005 / 1,000) * $158,699 * 1.25 eng costs)				$133.67
Total off-street bicycle path cost per trip						(((0.2098 / 1,000) * $509,713) * 1.25 eng costs) Improvement Fee (100% allocation for bike path component)*				$171.63
						(($19.94 + $133.67) / 0.895 trips per person)				
SUMMARY OF ALL TRANSPORTATION SYSTEM SDC COMPONENTS										
Non-assessable street section cost per lane mile					$335,755					$779,857
Intersection cost per lane mile					$154,123					$175,909
Traffic signal cost per lane mile					$178,816					$151,804
Street light cost per lane mile					$154,123					$154,123
Bridge & other structure cost per lane mile					$451,832					$255,548
Total non-assessable street system cost per lane mile					$1,274,649					$1,517,241
Total non-assessable street system cost per trip					$1,678.38					$1,997.81
[(ave. one-way trip length on street system / number of vehicles per hour) x (capacity per lane mile x total cost per lane mile of street system) + ave. street light cost per trip)]	((0.8888 / 675) * $1,274,649)					((0.8888 / 675) * $1,517,241)				
Total allocated cost per trip	Reimbursement Fee (40% allocation for street component)*				$671.35	Improvement Fee (60% allocation for street component)*				$1,198.69
Total off-street bicycle path cost per trip	($1,678.38 * .40)				$0.00	($1,997.81 * .60)				$171.63
Total Cost per Trip per Street System Fee Component					$671.35					$1,370.32

*Overall transportation SDC revenue split is 67% (Improvement) & 33% (Reimbursement).

TOTAL TRANSPORTATION COST PER TRIP (REIMBURSEMENT FEE + IMPROVEMENT FEE) = $671.35 + $1,370.32 = $2,041.67

TABLE 5

Transportation System Development Charge Analysis