



**RURAL ROADS TRANSPORTATION
SYSTEM DEVELOPMENT CHARGES
METHODOLOGY REPORT**

as adopted
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MARION COUNTY

Rural Roads Transportation System Development Charges Methodology Report

1.0 INTRODUCTION

In July 1998, the Marion County Department of Public Works published a 20-year Rural Transportation System Plan (draft). The Plan includes a review of issues relevant to the rural transportation system, identifies goals and objectives, provides an inventory of transportation facilities and their condition, projects future population and traffic impacts on the system, outlines existing and future roadway system needs and discusses alternative strategies for meeting these needs, recommends improvements and policies, suggests a financing plan, and identifies long term issues.

The Plan recommends consideration of System Development Charges (SDC's) as a source of funding for identified needs. SDC's are one-time fees paid by new development to help pay a portion of the costs of capital facilities that serve growth. Oregon local governments are authorized to enact SDC's for transportation, water, wastewater (sewer), stormwater drainage, and parks and recreation facilities.

The County has previously implemented transportation SDC's within the urban growth boundaries of the cities of Silverton, Woodburn, Salem, and Keizer. and engaged Don Ganer & Associates to develop a Transportation SDC methodology for the rural unincorporated areas of Marion County. This report presents the methodology used to develop a Rural Roads Transportation SDC for roads in rural unincorporated areas of the County that are not included within the urban growth boundaries (UGB's) where transportation SDC's have already been adopted. Section 2.0 presents authority and background information including (1) legislative authority for SDC's; (2) an explanation of "improvement fee" and "reimbursement fee" SDC's; (3) requirements and options for credits, exemptions and discounts; (4) guiding concepts for SDC's and (5) alternative methodology approaches. The methodology used to develop the Rural Roads Transportation SDC is discussed in Section 3.0, and the rate calculations are included in Section 4.0.

2.0 AUTHORITY AND BACKGROUND INFORMATION

A. Legislative Authority

While SDC's have been in use in Oregon since the mid-1970's, State legislation regarding SDC's was not adopted until 1989, when the Oregon Systems Development Act (ORS 223.297 - 223.314) was passed. The purpose of this Act was to "...provide a uniform framework for the imposition of system development charges...". In 1993, SB 122 was passed to include additional statutory provisions. Together, these pieces of legislation require local governments to:

- Enact SDC's by ordinance or resolution;
- develop a methodology outlining how the SDC's were developed;
- adopt a Capital Improvement Program (CIP) to designate capital improvements that can be funded with "improvement fee" SDC revenues;
- provide credit against the amount of the SDC for the construction of "qualified public improvements";
- separately account for and report receipt and expenditure of SDC revenues;
- develop procedures for challenging expenditures; and
- use SDC revenues only for capital expenditures (operations and maintenance uses are prohibited).

B. "Improvement fee" and "Reimbursement fee" SDC's

The Oregon Systems Development Act provides for the imposition of two types of SDC's: (1) "improvement fee" SDC's, and (2) "reimbursement fee" SDC's. "Improvement fee" SDC's may be charged for new capital improvements that will increase capacity, with revenues used only for capital improvements identified in a required Capital Improvement Program (CIP). The County's existing transportation SDC's collected within the Salem/Keizer, Silverton, and Woodburn UGB's are all "improvement fee" SDC's.

"Reimbursement fee" SDC's may be charged for the costs of existing capital facilities if "excess capacity" is available to accommodate growth. Revenues from "reimbursement fee" SDC's may be used on *any* capital improvement project, including major repairs, upgrades, or renovations. Capital improvements funded with "reimbursement fee" SDC's do not need to increase capacity.

C. Requirements and Options for Credits, Exemptions, and Discounts

(1) Credits

A credit is a reduction in the amount of the SDC for a specific development. The Oregon SDC Act requires that credit be allowed for the construction of a "qualified public improvement" which (1) is required as a condition of development approval, (2) is identified in the CIP, and (3) either is not located on or contiguous to property that is the subject of development approval, or is located on or contiguous to such property and is required to be built larger or with greater capacity than is necessary for the particular development project.

The credit for a qualified public improvement may only be applied against an SDC for the same type of improvement (e.g., a transportation improvement can only be used for a credit for a transportation SDC), and may be granted only for the cost of that portion of an improvement which exceeds the minimum standard facility size or capacity needed to serve the particular project. For multi-phase projects, any excess credit may be applied against SDC's that accrue in subsequent phases of the original development project.

For "reimbursement fee" SDC's, credit must also be given for future property tax payments, such as repayment of bonded indebtedness, used to fund the "excess capacity" facilities for which the reimbursement fee SDC is charged.

In addition to these required credits, the County may, if it so chooses, provide a greater credit, establish a system providing for the transferability of credits, provide a credit for a capital improvement not identified in the capital improvement plan, or provide a share of the cost of an improvement by other means. Marion County's existing transportation SDC's provide credits only for "qualified public improvements".

(2) Exemptions

The County may "exempt" specific types of development from the requirement to pay SDC's. Exemptions reduce SDC revenues and, therefore, they either increase the need for funding from other sources, such as bonds, or reduce/delay the completion of transportation projects. Each of the County's existing transportation SDC's provides the same exemptions as are provided by the adjacent City.

(3) Discounts

For "improvement fee" SDC's, the County may "discount" the amount of the SDC by reducing the portion of growth-related improvements to be funded with SDC's. A discount in the amount of an "improvement fee" SDC may also be applied on a pro-rata basis to any identified deficiencies to be funded from non-SDC sources. Because discounts reduce SDC revenues, they increase the amounts that must come from other sources, such as bonds, that may be needed to meet Level of Service requirements. The County's existing transportation SDC's do not provide discounts.

For "reimbursement fee" SDC's, the County may "discount" the amount of the SDC by reducing the portion of "extra-capacity" facilities for which the reimbursement fee SDC will be collected, or by making other adjustments in the fee. Discounting "reimbursement fee" SDC's reduces revenues available for general capital improvements.

D. Guiding Concepts

In addition to the requirements of the Oregon SDC Act and SB 122, court cases from Oregon and other states provide additional guidance for the methodology to be used in developing SDC's.

(1) "Essential Nexus" Requirement

In a 1987 case, *Nollan v. California Coastal Commission*, the U.S. Supreme Court established that government agencies must show that an "essential nexus" (e.g. reasonable connection) exists between a project's impacts and any dedication requirements. For SDC's the "essential nexus" requirement means there must be a reasonable connection between the nature of the development and the facilities for which the SDC's are charged. For transportation SDC's the essential nexus is met for any development that connects to the transportation system.

(2) "Rough Proportionality" Requirement

In its landmark 1994 decision in *Dolan v. City of Tigard*, the U.S. Supreme Court cited the requirement for "rough proportionality" between the requirements placed on a developer by government and the impacts of the development. Case law is conflicting on the question of whether *Dolan* applies to SDC's. However, to avoid controversy, the Rural Roads Transportation SDC is structured so that the *Dolan* test is satisfied. The concept of rough proportionality is applied by insuring that new growth is not required to pay an amount beyond a level "roughly proportionate" to the new development's impacts on facilities through the use of nationally recognized standards for levels-of-service and trip generation.

E. Alternative Methodology Approaches

There are three basic approaches used to develop SDC's; "standards-driven", "improvements-driven", and "combination/hybrid".

(1) Standards-Driven Approach

The "standards-driven" approach is based on the application of level-of-service (LOS) standards (i.e., A, B, C, etc.) for facilities. Facility capacity is determined by applying the LOS Standards to the projected future use of the facilities. SDC-eligible amounts are calculated based on the costs or value of capacity needed or available to serve growth. The "standards-driven" approach may be used to develop "improvement fee" SDC's and/or "reimbursement fee" SDC's, and works best where LOS Standards have been identified and/or adopted as part of a comprehensive plan or facilities master planning process.

(2) Improvements-Driven Approach

The "improvements-driven" approach is based on a specific list of planned capacity-increasing capital improvements. The portion of each project that is attributable to growth is determined, and the SDC-funded costs are calculated by dividing the total costs of growth-related projects by the projected increase in units of facility use (i.e., trips, persons, etc.). This approach may be used to develop "improvement fee" SDC's, and works best where a detailed project list has been developed and the benefits of projects can be apportioned between growth and current residents.

(3) Combination/Hybrid Approach

The combination/hybrid-approach includes elements of both the "improvements-driven" and "standards-driven" approaches. LOS standards are used to develop a list of planned capacity-increasing projects. The growth-related portions of projects can then be used as the basis for determining the SDC-funded costs. This approach may be applied in developing "improvement fee" SDC's and works best where a list of capacity needs has not recently been developed and where sufficient data is available to identify levels-of-service.

3.0 RURAL ROADS TRANSPORTATION SDC METHODOLOGY

A. SDC Basis and Justification

The *Marion County Rural Transportation System Plan* (Plan) identifies anticipated transportation system capacity and facility needs for a 20-year period. Road capacity standards (standards-driven approach), applied to the projected volumes on all rural County roads indicate that most are expected to be under capacity in 20 years, and that "excess capacity" is available to serve new development. Many of the improvements identified in the Plan are for safety, repair and replacement projects, and few are for capacity needs, so an "improvement fee" SDC is not needed.

Because "excess capacity" is available, a "reimbursement fee" SDC may be collected for the portion of excess capacity that will be used by new development. The methodology used for the County's Rural Roads Transportation SDC is for a "reimbursement fee" only and establishes the required "essential nexus" between a project's impacts and the SDC through the use of trip generation data for specific land uses. Developed by the Institute of Transportation Engineers (ITE) and published in *Trip Generation* (6th Ed., 1997), the number of new motor vehicle trips generated by each new development can be estimated. The SDC to be paid by new development meets the "rough proportionality" requirement because it is based on the extent of the impact of each specific development on the transportation facilities for which the SDC is charged. The Rural Roads Transportation SDC is based on the impacts of new trips, and the SDC rates are calculated based on the specific impact (e.g. new trips) a development is expected to have on the County's rural roads.

B. Population and Future Traffic Projections

The population of Marion County is expected to reach 358,421¹ people in the year 2020, growing by nearly 85,000 residents. While much of this growth will occur in urban areas, traffic volumes are expected to increase on nearly every rural road over the next 20 years.

¹ Forecast developed by Marion County Planning and included in Table 1 of the Coordinated Population Projection Staff Report, September 1, 1998

The County's rural roads network includes a total of approximately 990 miles of roadways, including 780 miles of paved roads and 210 miles of gravel roads. Each road segment is classified into one of five functional classifications (e.g., Local, Minor Collector, Major Collector, Arterial, and Principal Arterial), based on the character of service it is intended to provide for the overall transportation system. Marion County has a total of 401.97 miles of paved rural roads which are classified as either arterials or collectors, with the remainder either classified as "local" or surfaced with gravel. While local roads make up a large portion of the system, they serve relatively small traffic volumes and have been excluded from the development of this reimbursement fee SDC. Gravel roads classified as either collectors or arterials do not meet the County's minimum road design standards and have also been excluded from the SDC calculations.

Marion County's computerized transportation model has been used to identify roadway segments that could possibly experience unacceptable levels-of-service. For those segments where modeling data is not available, an estimate that motor vehicle traffic will increase by an average of 2% per year has been used. 5.56 miles of the County's paved rural collector and arterial road segments currently exceed the average daily traffic (ADT) volume capacity limit at the level-of-service (LOS) C standard, and an additional 23.68 miles may not meet the LOS "C" standard in the year 2015. Road segments that will fall below LOS "C" standard by 2015 are not considered to have excess capacity available to serve growth, and are excluded from calculation of the reimbursement fee SDC.

C. Facilities Included in the SDC

A total of 372.73 miles of the County's rural arterial and collector roads currently have excess capacity and are expected to provide service at LOS "C" or higher in 2015. The current (1995) and estimated change in the daily volume of traffic for each of these paved rural arterial and collector road segments is included in the Appendix (Marion County Paved Rural Arterial and Collector Road Segments).

4.0 CALCULATION OF THE RURAL ROADS TRANSPORTATION SDC

The Marion County Rural Roads Transportation SDC is calculated using a series of formulas which, when completed, result in the SDC rates for each type of new development. These formulas:

- 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 traveled,
- c) adjust the miles traveled to account only for the miles traveled on the County's rural road system (excluding travel on City/Urban/State/Interstate roads),
- d) calculate the miles of County road improvements used to serve the new vehicle miles traveled,
- e) identify the cost per mile of rural County arterial and collector roads, and
- f) calculate the reimbursement fee SDC rate for each type of land-use.

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:

$$1. \quad \begin{array}{c} \text{ITE} \\ \text{Trip Rate} \end{array} \quad \times \quad \begin{array}{c} \text{Percent} \\ \text{New Trips} \end{array} \quad = \quad \begin{array}{c} \text{Net New Trips} \\ \text{Generated} \end{array}$$

The primary data source for trip rates included in this methodology is Trip Generation (6th Edition) by the Institute of Transportation Engineers (ITE). Trip Generation contains rates for different land uses based on trip generation studies conducted nationwide, and provides the base data of unadjusted counts of trips generated by various types of land use.

The trip rates included in Trip Generation are based on all traffic entering or leaving a primary location, and do not account for diverted "linked" trips or trips by traffic that is passing by and interrupts a "primary" trip between two other locations. These "pass-by" and "linked" trips are not "new" because they would occur regardless of development activity. "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 (which are "pass-by" trips). No land use category has greater than 100% new trips, but some categories may have less (i.e., various retail categories range from 47% to 77% new trips). The percentages used to account for pass-by trips in this methodology are based on an analysis of pass-by data included in Trip Generation (5th Edition).

Table 4.1 (pages 11 - 15) lists the number of new trips generated for each land use category, using Formula 3. Column 1 lists land use categories and their ITE code numbers. Column 2 contains either the Weekday Average or Weekday PM Peak Trip Rate from Trip Generation. Column 3 identifies the percentage of trips that are new, as opposed to *pass-by* or *linked* trips. Column 4 is the result of multiplying columns 2 and 3 by each other, producing the number of new trips generated per day by each land use category.

TABLE 4.1**NET NEW TRIPS**

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(1)	(2)	(3)	(4)	
	ITE Weekday	%	Number of	
	Average	New	New Trips	Unit of Measure
<u>ITE LAND USE CODE/CATEGORY</u>	<u>Trip Rate</u>	<u>Trips</u>		
RESIDENTIAL				
210 Single Family Detached	9.57	100%	9.57	/dwelling unit
220 Apartment	6.63	100%	6.63	/dwelling unit
230 Residential Condominium/Townhouse	5.86	100%	5.86	/dwelling unit
240 Manufactured Housing (in Park)	4.81	100%	4.81	/dwelling unit
270 Residential Planned Unit Development	2.93	100%	2.93	/dwelling unit
RECREATIONAL				
411 City Park	1.59	100%	1.59	/acre
412 County Park	2.28	100%	2.28	/acre
416 Campground/RV Park (b)	0.39	77%	0.30	/camp site
420 Marina	2.96	100%	2.96	/berth
430 Golf Course	35.74	100%	35.74	/hole
432 Golf Driving Range (b)	1.25	100%	1.25	/tee
435 Multipurpose Recreation Facility	90.38	100%	90.38	/facility
443 Movie Theater w/out matinee	220.00	100%	220.00	/screen
444 Movie Theater w/matinee	89.48	100%	89.48	/screen
473 Casino/Video Poker/Lottery (b)	13.43	100%	13.43	/T.S.F.G.F.A.
480 Amusement/Theme Park	75.76	100%	75.76	/acre
491 Tennis Courts	31.04	100%	31.04	/court
492 Racquet Club	40.53	100%	40.53	/court
494 Bowling Alley	33.33	100%	33.33	/lane
495 Recreational Community Center	22.88	100%	22.88	/ T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.1**NET NEW TRIPS**

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(1)	(2)	(3)	(4)	
	ITE Weekday	%	Number of	
	Average	New	New Trips	Unit of Measure
<u>ITE LAND USE CODE/CATEGORY</u>	<u>Trip Rate</u>	<u>Trips</u>		
INSTITUTIONAL/MEDICAL				
501 Military Base	1.78	100%	1.78	/employee
520 Elementary School	1.02	100%	1.02	/student
522 Middle/Junior High School	1.45	100%	1.45	/student
530 High School	1.79	100%	1.79	/student
540 Junior/Community College	1.54	100%	1.54	/student
550 University/College	2.38	100%	2.38	/student
560 Church	9.11	100%	9.11	/T.S.F.G.F.A.
565 Day Care Center/Preschool	4.52	100%	4.52	/student
590 Library	54.00	100%	54.00	/T.S.F.G.F.A.
610 Hospital	11.77	100%	11.77	/bed
620 Nursing Home	2.61	100%	2.61	/bed
630 Clinic	31.45	100%	31.45	/T.S.F.G.F.A.
COMMERCIAL/SERVICES				
310 Hotel/Motel	8.23	77%	6.34	/room
812 Building Materials/Lumber	39.71	77%	30.58	/T.S.F.G.F.A.
813 Free-Standing Discount Superstore				
With Groceries	46.96	49%	23.01	/T.S.F.G.F.A.
814 Specialty Retail Center	40.67	77%	31.32	/T.S.F.G.F.A.
815 Free-Standing Discount Stores				
Without Groceries	56.63	49%	27.75	/T.S.F.G.F.A.
816 Hardware/Paint Stores	51.29	77%	39.49	/T.S.F.G.F.A.
817 Nursery/Garden Center	36.08	77%	27.78	/T.S.F.G.F.A.
820 Shopping Center	42.92	49%	21.03	/T.S.F.G.F.A.
823 Factory Outlet Center	26.59	49%	13.03	/T.S.F.G.F.A.

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TABLE 4.1**NET NEW TRIPS**

page 3 of 5

(1)	(2)	(3)	(4)	
	ITE Weekday	%		
	Average	New	Number of	
ITE LAND USE CODE/CATEGORY	Trip Rate	Trips	New Trips	Unit of Measure
COMMERCIAL/SERVICES (continued)				
831 Quality Restaurant (not a chain)	89.95	77%	69.26	/T.S.F.G.F.A.
832 High Turnover, Sit-Down Restaurant (chain or stand alone)	130.34	54%	70.38	/T.S.F.G.F.A.
833 Fast Food Restaurant (No Drive-Thru)	716.00	27%	193.32	/T.S.F.G.F.A.
834 Fast Food Restaurant (With Drive-Thru)	496.12	27%	133.95	/T.S.F.G.F.A.
836 Drinking Place/Bar (b)	11.54	54%	6.23	/T.S.F.G.F.A.
837 Quick Lubrication Vehicle Shop	40.00	54%	21.60	/Service Stall
840 Automobile Service Center (b)	4.01	77%	3.09	/T.S.F.G.F.A.
841 New Car Sales	37.50	77%	28.88	/T.S.F.G.F.A.
844 Gasoline/Service Station (no Market or Car Wash)	168.56	49%	82.59	/V.F.P.
845 Gasoline/Service Station (With Conv. Market)	162.78	49%	79.76	/V.F.P.
846 Gasoline/Service Station (With Conv. Market and Car Wash)	152.84	49%	74.89	/V.F.P.
848 Tire Store	24.87	77%	19.15	/T.S.F.G.F.A.
850 Supermarket	111.51	48%	53.52	/T.S.F.G.F.A.
851 Conv. Market (24 hour)	737.99	43%	317.34	/T.S.F.G.F.A.
853 Conv. Market With Fuel Pump	542.60	43%	233.32	/V.F.P.
860 Wholesale Market	6.73	77%	5.18	/T.S.F.G.F.A.
861 Discount Club	41.80	77%	32.19	/T.S.F.G.F.A.
862 Home Improvement Superstore	35.05	77%	26.99	/T.S.F.G.F.A.
863 Electronics Superstore	45.04	77%	34.68	/T.S.F.G.F.A.
864 Toy/Children's Superstore (b)	4.99	77%	3.84	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

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TABLE 4.1
NET NEW TRIPS

page 4 of 5

(1)	(2)	(3)	(4)	
	ITE Weekday Average	%	Number of	
ITE LAND USE CODE/CATEGORY	Trip Rate	New Trips	New Trips	Unit of Measure
COMMERCIAL/SERVICES (continued)				
870 Apparel Store (b)	3.83	54%	2.07	/T.S.F.G.F.A.
880 Pharmacy/Drugstore				
Without Drive-Thru Window	90.06	49%	44.13	/T.S.F.G.F.A.
881 Pharmacy/Drugstore				
With Drive-Thru Window	88.16	49%	43.20	/T.S.F.G.F.A.
890 Furniture Store	5.06	77%	3.90	/T.S.F.G.F.A.
895 Video Arcade (b)	56.81	49%	27.84	/T.S.F.G.F.A.
896 Video Rental Store (b)	31.54	49%	15.45	/T.S.F.G.F.A.
911 Bank/Savings: Walk-in	156.48	85%	133.01	/T.S.F.G.F.A.
912 Bank/Savings: Drive-In	265.21	85%	225.43	/T.S.F.G.F.A.
OFFICE				
710 General Office Building	11.01	100%	11.01	/T.S.F.G.F.A.
714 Corporate Headquarters Building	7.72	100%	7.72	/T.S.F.G.F.A.
715 Single Tenant Office Building	11.57	100%	11.57	/T.S.F.G.F.A.
720 Medical-Dental Office Building	36.13	100%	36.13	/T.S.F.G.F.A.
730 Government Office Building	68.93	100%	68.93	/T.S.F.G.F.A.
731 State Motor Vehicles Dept.	166.02	100%	166.02	/T.S.F.G.F.A.
732 U.S. Post Office	108.19	100%	108.19	/T.S.F.G.F.A.
750 Office Park	11.42	100%	11.42	/T.S.F.G.F.A.
760 Research and Development Center	8.11	100%	8.11	/T.S.F.G.F.A.
770 Business Park	12.76	100%	12.76	/T.S.F.G.F.A.

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TABLE 4.1
NET NEW TRIPS

(1)	(2)	(3)	(4)	
	ITE Weekday	%		
	Average	New	Number of	
ITE LAND USE CODE/CATEGORY	Trip Rate	Trips	New Trips	Unit of Measure
PORT/INDUSTRIAL				
030 Truck Terminals	9.85	100%	9.85	/T.S.F.G.F.A.
090 Park and Ride Lot With Bus Service	4.50	100%	4.50	/Parking Space
093 Light Rail Transit Station w/Parking	2.51	100%	2.51	/Parking Space
110 General Light Industrial	6.97	100%	6.97	/T.S.F.G.F.A.
120 General Heavy Industrial	1.50	100%	1.50	/T.S.F.G.F.A.
130 Industrial Park	6.96	100%	6.96	/T.S.F.G.F.A.
140 Manufacturing	3.82	100%	3.82	/T.S.F.G.F.A.
150 Warehouse	4.96	100%	4.96	/T.S.F.G.F.A.
151 Mini-Warehouse	2.50	100%	2.50	/T.S.F.G.F.A.
170 Utilities (b)	0.49	100%	0.49	/T.S.F.G.F.A.

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(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

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:

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

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, rural trip length data from surveys conducted for the U.S. Department of Transportation and published in the *"National Personal Transportation Study"* (1984) was used to establish the base trip length of 9.7 miles.

The base length was then adjusted for various types of trips using 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 4.2 (pages 17 - 21) 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 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 4.2**NEW TRAVEL MILES**

page 1 of 5

(1)	(2)	(3)	(4)	
	ITE Weekday	Factored	New	
	Average	Trip	Travel	
<u>ITE LAND USE CODE/CATEGORY</u>	<u>Trip Rate</u>	<u>Length</u>	<u>Miles</u>	<u>Unit of Measure</u>
RESIDENTIAL				
210 Single Family Detached	9.57	9.70	92.83	/dwelling unit
220 Apartment	6.63	9.70	64.31	/dwelling unit
230 Residential Condominium/Townhouse	5.86	9.70	56.84	/dwelling unit
240 Manufactured Housing (in Park)	4.81	9.70	46.66	/dwelling unit
270 Residential Planned Unit Development	2.93	9.70	28.42	/dwelling unit
RECREATIONAL				
411 City Park	1.59	9.70	15.42	/acre
412 County Park	2.28	9.70	22.12	/acre
416 Campground/RV Park (b)	0.30	4.75	1.43	/camp site
420 Marina	2.96	8.83	26.13	/berth
430 Golf Course	35.74	8.83	315.48	/hole
432 Golf Driving Range (b)	1.25	8.83	11.03	/tee
435 Multipurpose Recreation Facility	90.38	4.95	447.11	/facility
443 Movie Theater w/ out matinee	220.00	4.46	981.64	/screen
444 Movie Theater w/ matinee	89.48	4.46	399.26	/screen
473 Casino/Video Poker/Lottery (b)	13.43	4.95	66.44	/T.S.F.G.F.A.
480 Amusement/Theme Park	75.76	4.95	374.78	/acre
491 Tennis Courts	31.04	4.95	153.55	/court
492 Racquet Club	40.53	4.95	200.50	/court
494 Bowling Alley	33.33	4.95	164.88	/lane
495 Recreational Community Center	22.88	4.95	113.19	/ T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.2**NEW TRAVEL MILES**

page 2 of 5

(1)	(2)	(3)	(4)	
	ITE Weekday	Factored	New	
	Average	Trip	Travel	
ITE LAND USE CODE/CATEGORY	Trip Rate	Length	Miles	Unit of Measure
INSTITUTIONAL/MEDICAL				
501 Military Base	1.78	9.70	17.27	/employee
520 Elementary School	1.02	10.48	10.69	/student
522 Middle/Junior High School	1.45	10.48	15.19	/student
530 High School	1.79	10.48	18.75	/student
540 Junior/Community College	1.54	10.48	16.13	/student
550 University/College	2.38	10.48	24.93	/student
560 Church	9.11	10.48	95.44	/T.S.F.G.F.A.
565 Day Care Center/Preschool	4.52	2.23	10.08	/student
590 Library	54.00	4.75	256.66	/T.S.F.G.F.A.
610 Hospital	11.77	9.21	108.46	/bed
620 Nursing Home	2.61	9.21	24.05	/bed
630 Clinic	31.45	9.21	289.81	/T.S.F.G.F.A.
COMMERCIAL/SERVICES				
310 Hotel/Motel	6.34	4.75	30.13	/room
812 Building Materials/Lumber	30.58	4.75	145.35	/T.S.F.G.F.A.
813 Free-Standing Discount Superstore				
With Groceries	23.01	4.75	109.37	/T.S.F.G.F.A.
814 Specialty Retail Center	31.32	4.75	148.86	/T.S.F.G.F.A.
815 Free-Standing Discount Stores				
Without Groceries	27.75	4.75	131.90	/T.S.F.G.F.A.
816 Hardware/Paint Stores	39.49	4.75	187.70	/T.S.F.G.F.A.
817 Nursery/Garden Center	27.78	4.75	132.04	/T.S.F.G.F.A.
820 Shopping Center	21.03	4.75	99.96	/T.S.F.G.F.A.
823 Factory Outlet Center	13.03	10.48	136.50	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.2**NEW TRAVEL MILES**

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(1)	(2)	(3)	(4)	
	ITE Weekday Average	Factored Trip	New Travel	
ITE LAND USE CODE/CATEGORY	Trip Rate	Length	Miles	Unit of Measure
COMMERCIAL/SERVICES (continued)				
831 Quality Restaurant (not a chain)	69.26	4.75	329.19	/T.S.F.G.F.A.
832 High Turnover, Sit-Down Restaurant (chain or stand alone)	70.38	4.75	334.52	/T.S.F.G.F.A.
833 Fast Food Restaurant (No Drive-Thru)	193.32	2.81	543.81	/T.S.F.G.F.A.
834 Fast Food Restaurant (With Drive-Thru)	133.95	2.81	376.80	/T.S.F.G.F.A.
836 Drinking Place/Bar (b)	6.23	2.81	17.52	/T.S.F.G.F.A.
837 Quick Lubrication Vehicle Shop	21.60	5.82	125.71	/Service Stall
840 Automobile Service Center (b)	3.09	5.82	17.98	/T.S.F.G.F.A.
841 New Car Sales	28.88	5.82	168.08	/T.S.F.G.F.A.
844 Gasoline/Service Station (no Market or Car Wash)	82.59	2.81	232.33	/V.F.P.
845 Gasoline/Service Station (With Conv. Market)	79.76	2.81	224.36	/V.F.P.
846 Gasoline/Service Station (With Conv. Market and Car Wash)	74.89	2.81	210.67	/V.F.P.
848 Tire Store	19.15	5.82	111.45	/T.S.F.G.F.A.
850 Supermarket	53.52	4.75	254.38	/T.S.F.G.F.A.
851 Conv. Market (24 hour)	317.34	2.81	892.68	/T.S.F.G.F.A.
853 Conv. Market With Fuel Pump	233.32	2.81	656.33	/V.F.P.
860 Wholesale Market	5.18	4.75	24.62	/T.S.F.G.F.A.
861 Discount Club	32.19	4.75	153.00	/T.S.F.G.F.A.
862 Home Improvement Superstore	26.99	4.75	128.28	/T.S.F.G.F.A.
863 Electronics Superstore	34.68	4.75	164.83	/T.S.F.G.F.A.
864 Toy/Children's Superstore (b)	3.84	4.75	18.25	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A. = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.2**NEW TRAVEL MILES**

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(1)	(2)	(3)	(4)	
	ITE Weekday	Factored	New	
	Average	Trip	Travel	
ITE LAND USE CODE/CATEGORY	Trip Rate	Length	Miles	Unit of Measure
COMMERCIAL/SERVICES (continued)				
870 Apparel Store (b)	2.07	4.75	9.84	/T.S.F.G.F.A.
880 Pharmacy/Drugstore				
Without Drive-Thru Window	44.13	4.75	209.75	/T.S.F.G.F.A.
881 Pharmacy/Drugstore				
With Drive-Thru Window	43.20	4.75	205.33	/T.S.F.G.F.A.
890 Furniture Store	3.90	4.75	18.54	/T.S.F.G.F.A.
895 Video Arcade (b)	27.84	4.75	132.32	/T.S.F.G.F.A.
896 Video Rental Store (b)	15.45	4.75	73.43	/T.S.F.G.F.A.
911 Bank/Savings: Walk-in	133.01	2.81	374.16	/T.S.F.G.F.A.
912 Bank/Savings: Drive-In	225.43	2.81	634.13	/T.S.F.G.F.A.
OFFICE				
710 General Office Building	11.01	6.30	69.42	/T.S.F.G.F.A.
714 Corporate Headquarters Building	7.72	6.30	48.67	/T.S.F.G.F.A.
715 Single Tenant Office Building	11.57	6.30	72.95	/T.S.F.G.F.A.
720 Medical-Dental Office Building	36.13	5.14	185.74	/T.S.F.G.F.A.
730 Government Office Building	68.93	9.31	641.88	/T.S.F.G.F.A.
731 State Motor Vehicles Dept.	166.02	9.31	1545.98	/T.S.F.G.F.A.
732 U.S. Post Office	108.19	9.31	1007.47	/T.S.F.G.F.A.
750 Office Park	11.42	6.50	74.22	/T.S.F.G.F.A.
760 Research and Development Center	8.11	6.50	52.71	/T.S.F.G.F.A.
770 Business Park	12.76	6.50	82.93	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.2

NEW TRAVEL MILES

page 5 of 5

(1)	(2)	(3)	(4)	
	ITE Weekday	Factored	New	
	Average	Trip	Travel	
ITE LAND USE CODE/CATEGORY	Trip Rate	Length	Miles	Unit of Measure
PORT/INDUSTRIAL				
030 Truck Terminals	9.85	10.86	107.01	/T.S.F.G.F.A.
090 Park and Ride Lot With Bus Service	4.50	10.86	48.89	/Parking Space
093 Light Rail Transit Station w/Parking	2.51	10.86	27.27	/Parking Space
110 General Light Industrial	6.97	10.86	75.72	/T.S.F.G.F.A.
120 General Heavy Industrial	1.50	10.86	16.30	/T.S.F.G.F.A.
130 Industrial Park	6.96	10.86	75.61	/T.S.F.G.F.A.
140 Manufacturing	3.82	10.86	41.50	/T.S.F.G.F.A.
150 Warehouse	4.96	10.86	53.89	/T.S.F.G.F.A.
151 Mini-Warehouse	2.50	4.56	11.40	/T.S.F.G.F.A.
170 Utilities (b)	0.49	9.70	4.75	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

C. Formula 3: Road Miles Used Per Unit (by Type of Land Use)

The net miles of road used to serve each new unit of development 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 is expected to occur on the County's rural arterial and collector roads.

$$3. \quad \begin{array}{c} \text{New Travel Miles} \\ \text{per Day} \end{array} \quad \times \quad \begin{array}{c} \text{Percent Travel} \\ \text{on Rural Roads} \end{array} \quad = \quad \begin{array}{c} \text{Road Miles} \\ \text{Used} \end{array}$$

In order to determine the number of miles of road used to accommodate new travel on County roads, an estimate of road capacity (vehicles per day) is needed. Marion County has adopted Level of Service (LOS) "C" as the County's standard for road capacity. The 372.73 miles of County arterial and collector roads with excess capacity have total capacity at LOS "C" of 2,425,556 vehicles per day. Dividing this total by the number of miles results in an average of 6,508 vehicles per day for each mile of roadway.

Table 4.3 (pages 23 - 27) shows the miles used on County arterial and collector roads with excess capacity. Column 1 repeats the ITE codes and land use categories, and column 2 repeats the new travel miles per day from Table 2. Column 3 presents the portion of the total miles of travel each day within the rural, unincorporated area that are attributable to County arterial and collector roads with excess capacity. By isolating the miles traveled on these roads, as opposed to State roads, local roads, or others, the County avoids collecting development charges for roads that do not have excess capacity. An estimate of 25% has been applied to account for rural travel that occurs on these roads, versus all others in the unincorporated area. The total new travel miles (from column 2) is multiplied by 25% in order to count only the miles on these County roads.

Column 4 converts the new travel miles on the County arterial and collector roads with excess capacity (in column 3) to the fraction of a mile of road that will accommodate the daily trips generated by each land use category. In Marion County, the average mile of road can handle 6,508 vehicles per day at LOS "C"; therefore, the new travel miles (column 3) is divided by 6,508 to determine the road miles used for each land use category.

TABLE 4.3**ROAD MILES USED**

page 1 of 5

(1)	(2)	(3)	(4)	
		New Miles on	Miles	
	New	Rural County	Used @	
	Travel	Roads @	6,508	
ITE LAND USE CODE/CATEGORY	Miles	25%	Capacity	Unit of Measure
RESIDENTIAL				
210 Single Family Detached	92.83	23.21	0.003566	/dwelling unit
220 Apartment	64.31	16.08	0.002470	/dwelling unit
230 Residential Condominium/Townhouse	56.84	14.21	0.002184	/dwelling unit
240 Manufactured Housing (in Park)	46.66	11.66	0.001792	/dwelling unit
270 Residential Planned Unit Development	28.42	7.11	0.001092	/dwelling unit
RECREATIONAL				
411 City Park	15.42	3.86	0.000592	/acre
412 County Park	22.12	5.53	0.000850	/acre
416 Campground/RV Park (b)	1.43	0.36	0.000055	/camp site
420 Marina	26.13	6.53	0.001004	/berth
430 Golf Course	315.48	78.87	0.012119	/hole
432 Golf Driving Range (b)	11.03	2.76	0.000424	/tee
435 Multipurpose Recreation Facility	447.11	111.78	0.017175	/facility
443 Movie Theater w/ out matinee	981.64	245.41	0.037709	/screen
444 Movie Theater w/ matinee	399.26	99.81	0.015337	/screen
473 Casino/Video Poker/Lottery (b)	66.44	16.61	0.002552	/T.S.F.G.F.A.
480 Amusement/Theme Park	374.78	93.70	0.014397	/acre
491 Tennis Courts	153.55	38.39	0.005899	/court
492 Racquet Club	200.50	50.13	0.007702	/court
494 Bowling Alley	164.88	41.22	0.006334	/ lane
495 Recreational Community Center	113.19	28.30	0.004348	/ T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.3

ROAD MILES USED

page 2 of 5

(1)	(2)	(3)	(4)	
		New Miles on	Miles	
	New	Rural County	Used @	
	Travel	Roads @	6,508	
ITE LAND USE CODE/CATEGORY	Miles	25%	Capacity	Unit of Measure
INSTITUTIONAL/MEDICAL				
501 Military Base	17.27	4.32	0.000663	/employee
520 Elementary School	10.69	2.67	0.000410	/student
522 Middle/Junior High School	15.19	3.80	0.000584	/student
530 High School	18.75	4.69	0.000720	/student
540 Junior/Community College	16.13	4.03	0.000620	/student
550 University/College	24.93	6.23	0.000958	/student
560 Church	95.44	23.86	0.003666	/T.S.F.G.F.A.
565 Day Care Center/Preschool	10.08	2.52	0.000387	/student
590 Library	256.66	64.17	0.009859	/T.S.F.G.F.A.
610 Hospital	108.46	27.12	0.004166	/bed
620 Nursing Home	24.05	6.01	0.000924	/bed
630 Clinic	289.81	72.45	0.011133	/T.S.F.G.F.A.
COMMERCIAL/SERVICES				
310 Hotel/Motel	30.13	7.53	0.001158	/room
812 Building Materials/Lumber	145.35	36.34	0.005583	/T.S.F.G.F.A.
813 Free-Standing Discount Superstore With Groceries	109.37	27.34	0.004201	/T.S.F.G.F.A.
814 Specialty Retail Center	148.86	37.22	0.005718	/T.S.F.G.F.A.
815 Free-Standing Discount Stores Without Groceries	131.90	32.97	0.005067	/T.S.F.G.F.A.
816 Hardware/Paint Stores	187.70	46.92	0.007210	/T.S.F.G.F.A.
817 Nursery/Garden Center	132.04	33.01	0.005072	/T.S.F.G.F.A.
820 Shopping Center	99.96	24.99	0.003840	/T.S.F.G.F.A.
823 Factory Outlet Center	136.50	34.13	0.005244	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.3**ROAD MILES USED**

page 3 of 5

(1)	(2)	(3)	(4)	
		New Miles on	Miles	
	New	Rural County	Used @	
	Travel	Roads @	6,508	
ITE LAND USE CODE/CATEGORY	Miles	25%	Capacity	Unit of Measure
COMMERCIAL/SERVICES (continued)				
831 Quality Restaurant (not a chain)	329.19	82.30	0.012646	/T.S.F.G.F.A.
832 High Turnover, Sit-Down Restaurant (chain or stand alone)	334.52	83.63	0.012850	/T.S.F.G.F.A.
833 Fast Food Restaurant (No Drive-Thru)	543.81	135.95	0.020890	/T.S.F.G.F.A.
834 Fast Food Restaurant (With Drive-Thru)	376.80	94.20	0.014475	/T.S.F.G.F.A.
836 Drinking Place/Bar (b)	17.52	4.38	0.000673	/T.S.F.G.F.A.
837 Quick Lubrication Vehicle Shop	125.71	31.43	0.004829	/Service Stall
840 Automobile Service Center (b)	17.98	4.50	0.000691	/T.S.F.G.F.A.
841 New Car Sales	168.08	42.02	0.006457	/T.S.F.G.F.A.
844 Gasoline/Service Station (no Market or Car Wash)	232.33	58.08	0.008925	/V.F.P.
845 Gasoline/Service Station (With Conv. Market)	224.36	56.09	0.008619	/V.F.P.
846 Gasoline/Service Station (With Conv. Market and Car Wash)	210.67	52.67	0.008093	/V.F.P.
848 Tire Store	111.45	27.86	0.004281	/T.S.F.G.F.A.
850 Supermarket	254.38	63.60	0.009772	/T.S.F.G.F.A.
851 Conv. Market (24 hour)	892.68	223.17	0.034292	/T.S.F.G.F.A.
853 Conv. Market With Fuel Pump	656.33	164.08	0.025212	/V.F.P.
860 Wholesale Market	24.62	6.16	0.000946	/T.S.F.G.F.A.
861 Discount Club	153.00	38.25	0.005877	/T.S.F.G.F.A.
862 Home Improvement Superstore	128.28	32.07	0.004928	/T.S.F.G.F.A.
863 Electronics Superstore	164.83	41.21	0.006332	/T.S.F.G.F.A.
864 Toy/Children's Superstore (b)	18.25	4.56	0.000701	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.3**ROAD MILES USED**

page 4 of 5

(1)	(2)	(3)	(4)	
		New Miles on	Miles	
	New	Rural County	Used @	
	Travel	Roads @	6,508	
ITE LAND USE CODE/CATEGORY	Miles	25%	Capacity	Unit of Measure
COMMERCIAL/SERVICES (continued)				
870 Apparel Store (b)	9.84	2.46	0.000378	/T.S.F.G.F.A.
880 Pharmacy/Drugstore Without Drive-Thru Window	209.75	52.44	0.008057	/T.S.F.G.F.A.
881 Pharmacy/Drugstore With Drive-Thru Window	205.33	51.33	0.007888	/T.S.F.G.F.A.
890 Furniture Store	18.54	4.63	0.000712	/T.S.F.G.F.A.
895 Video Arcade (b)	132.32	33.08	0.005083	/T.S.F.G.F.A.
896 Video Rental Store (b)	73.43	18.36	0.002821	/T.S.F.G.F.A.
911 Bank/Savings: Walk-in	374.16	93.54	0.014373	/T.S.F.G.F.A.
912 Bank/Savings: Drive-In	634.13	158.53	0.024360	/T.S.F.G.F.A.
OFFICE				
710 General Office Building	69.42	17.35	0.002667	/T.S.F.G.F.A.
714 Corporate Headquarters Building	48.67	12.17	0.001870	/T.S.F.G.F.A.
715 Single Tenant Office Building	72.95	18.24	0.002802	/T.S.F.G.F.A.
720 Medical-Dental Office Building	185.74	46.44	0.007135	/T.S.F.G.F.A.
730 Government Office Building	641.88	160.47	0.024657	/T.S.F.G.F.A.
731 State Motor Vehicles Dept.	1545.98	386.49	0.059388	/T.S.F.G.F.A.
732 U.S. Post Office	1007.47	251.87	0.038701	/T.S.F.G.F.A.
750 Office Park	74.22	18.55	0.002851	/T.S.F.G.F.A.
760 Research and Development Center	52.71	13.18	0.002025	/T.S.F.G.F.A.
770 Business Park	82.93	20.73	0.003186	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A. = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.3

ROAD MILES USED

(1)	(2)	(3)	(4)	
		New Miles on	Miles	
	New	Rural County	Used @	
	Travel	Roads @	5,975 6,500	
ITE LAND USE CODE/CATEGORY	Miles	25%	Capacity	Unit of Measure
PORT/INDUSTRIAL				
030 Truck Terminals	107.01	26.75	0.004477	/T.S.F.G.F.A.
090 Park and Ride Lot With Bus Service	48.89	12.22	0.002046	/Parking Space
093 Light Rail Transit Station w/Parking	27.27	6.82	0.001141	/Parking Space
110 General Light Industrial	75.72	18.93	0.003168	/T.S.F.G.F.A.
120 General Heavy Industrial	16.30	4.07	0.000682	/T.S.F.G.F.A.
130 Industrial Park	75.61	18.90	0.003164	/T.S.F.G.F.A.
140 Manufacturing	41.50	10.38	0.001736	/T.S.F.G.F.A.
150 Warehouse	53.89	13.47	0.002255	/T.S.F.G.F.A.
151 Mini-Warehouse	11.40	2.85	0.000477	/T.S.F.G.F.A.
170 Utilities (b)	4.75	1.19	0.000199	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

D. Formula 4: Rural Roads Transportation SDC (by Type of Land Use)

The Rural Roads SDC for each type of land use is determined by first multiplying the road miles used (from Formula 3) by the cost per mile of road, and then factoring this amount by any discounts that may be applied:

$$4. \quad \begin{array}{ccccccc} \text{Road Miles} & \times & \text{Cost per Mile} & \times & \text{Percentage} & = & \text{Rural Roads} \\ \text{Used} & & \text{of Road} & & \text{Discount Factor} & & \text{SDC} \end{array}$$

The value of each road segment was estimated considering both its type and condition. Right-of-way costs were based on sixty (60) foot widths and estimated at \$1.125M per mile for the rural roads. Construction costs were estimated by discounting the current construction cost per linear foot (\$121 for collectors, \$126 for arterials) depending on the condition of each road segment ("very good" = 0.90, "good" = 0.75, "fair" = 0.50, "poor" and "very poor" = 0.00). For those road segments where the condition was not available in the inventory, a default of "fair" (0.50) was assigned. Based on an analysis of the County's arterial and collector roads with excess capacity, the average cost of a mile of road is estimated at \$1,604,703.

Table 4.4 (pages 29 - 32) shows the Rural Roads SDC for each land use category. Column 1 repeats the ITE land use codes and categories. Column 2 repeats the fraction of a mile of road that is used for each land use category (as shown in Column 4 of Table 3). Column 3 shows the road cost for each unit of development, by type of land use.

The Rural Roads SDC is calculated by multiplying the road cost (Column 3) by the percentage of that cost to be collected by the SDC. A percentage factor of 25.71% has been applied to the road cost so that the SDC rate for a single-family house is set at the same level as is charged in the unincorporated area within the Salem/Keizer UGB. The resulting SDC rates are displayed in Column 4.

TABLE 4.4**RURAL ROADS TRANSPORTATION SDC**

page 1 of 5

(1)	(2)	(3)	(4)	
	Miles Used	Rural Roads	Rural Roads	
	Per Unit	Cost/Mile @	SDC @	
ITE LAND USE CODE/CATEGORY	New Development	\$1,604,703	25.71%	Unit of Measure
RESIDENTIAL				
210 Single Family Detached	0.003566	\$5,722	\$1,471	/dwelling unit
220 Apartment	0.002470	\$3,964	\$1,019	/dwelling unit
230 Residential Condominium/Townhouse	0.002184	\$3,504	\$901	/dwelling unit
240 Manufactured Housing (in Park)	0.001792	\$2,876	\$739	/dwelling unit
270 Residential Planned Unit Development	0.001092	\$1,752	\$450	/dwelling unit
RECREATIONAL				
411 City Park	0.000592	\$951	\$244	/acre
412 County Park	0.000850	\$1,363	\$351	/acre
416 Campground/RV Park (b)	0.000055	\$88	\$23	/camp site
420 Marina	0.001004	\$1,611	\$414	/berth
430 Golf Course	0.012119	\$19,447	\$5,000	/hole
432 Golf Driving Range (b)	0.000424	\$680	\$175	/tee
435 Multipurpose Recreation Facility	0.017175	\$27,561	\$7,086	/facility
443 Movie Theater w/ out matinee	0.037709	\$60,512	\$15,558	/screen
444 Movie Theater w/ matinee	0.015337	\$24,612	\$6,328	/screen
473 Casino/Video Poker/Lottery (b)	0.002552	\$4,095	\$1,053	/T.S.F.G.F.A.
480 Amusement/Theme Park	0.014397	\$23,103	\$5,940	/acre
491 Tennis Courts	0.005899	\$9,466	\$2,434	/court
492 Racquet Club	0.007702	\$12,360	\$3,178	/court
494 Bowling Alley	0.006334	\$10,164	\$2,613	/lane
495 Recreational Community Center	0.004348	\$6,977	\$1,794	/ T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.4**RURAL ROADS TRANSPORTATION SDC**

page 2 of 5

(1)	(2)	(3)	(4)	
	Miles Used	Rural Roads	Rural Roads	
	Unit of	Cost/Mile @	SDC @	
ITE LAND USE CODE/CATEGORY	New Development	\$1,604,703	25.71%	Unit of Measure
INSTITUTIONAL/MEDICAL				
501 Military Base	0.000663	\$1,064	\$274	/employee
520 Elementary School	0.000410	\$659	\$169	/student
522 Middle/Junior High School	0.000584	\$936	\$241	/student
530 High School	0.000720	\$1,156	\$297	/student
540 Junior/Community College	0.000620	\$994	\$256	/student
550 University/College	0.000958	\$1,537	\$395	/student
560 Church	0.003666	\$5,883	\$1,513	/T.S.F.G.F.A.
565 Day Care Center/Preschool	0.000387	\$622	\$160	/student
590 Library	0.009859	\$15,822	\$4,068	/T.S.F.G.F.A.
610 Hospital	0.004166	\$6,686	\$1,719	/bed
620 Nursing Home	0.000924	\$1,483	\$381	/bed
630 Clinic	0.011133	\$17,865	\$4,593	/T.S.F.G.F.A.
COMMERCIAL/SERVICES				
310 Hotel/Motel	0.001158	\$1,858	\$478	/room
812 Building Materials/Lumber	0.005583	\$8,960	\$2,304	/T.S.F.G.F.A.
813 Free-Standing Discount Superstore				
With Groceries	0.004201	\$6,742	\$1,733	/T.S.F.G.F.A.
814 Specialty Retail Center	0.005718	\$9,176	\$2,359	/T.S.F.G.F.A.
815 Free-Standing Discount Stores				
Without Groceries	0.005067	\$8,131	\$2,090	/T.S.F.G.F.A.
816 Hardware/Paint Stores	0.007210	\$11,570	\$2,975	/T.S.F.G.F.A.
817 Nursery/Garden Center	0.005072	\$8,139	\$2,093	/T.S.F.G.F.A.
820 Shopping Center	0.003840	\$6,162	\$1,584	/T.S.F.G.F.A.
823 Factory Outlet Center	0.005244	\$8,414	\$2,163	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.4**RURAL ROADS TRANSPORTATION SDC**

page 3 of 5

(1)	(2)	(3)	(4)	
	Miles Used	Rural Roads	Rural Roads	
	Unit of	Cost/Mile @	SDC @	
ITE LAND USE CODE/CATEGORY	New Development	\$1,604,703	25.71%	Unit of Measure
COMMERCIAL/SERVICES (continued)				
831 Quality Restaurant (not a chain)	0.012646	\$20,293	\$5,217	/T.S.F.G.F.A.
832 High Turnover, Sit-Down Restaurant (chain or stand alone)	0.012850	\$20,621	\$5,302	/T.S.F.G.F.A.
833 Fast Food Restaurant (No Drive-Thru)	0.020890	\$33,522	\$8,619	/T.S.F.G.F.A.
834 Fast Food Restaurant (With Drive-Thru)	0.014475	\$23,227	\$5,972	/T.S.F.G.F.A.
836 Drinking Place/Bar (b)	0.000673	\$1,080	\$278	/T.S.F.G.F.A.
837 Quick Lubrication Vehicle Shop	0.004829	\$7,749	\$1,992	/Service Stall
840 Automobile Service Center (b)	0.000691	\$1,109	\$285	/T.S.F.G.F.A.
841 New Car Sales	0.006457	\$10,361	\$2,664	/T.S.F.G.F.A.
844 Gasoline/Service Station (no Market or Car Wash)	0.008925	\$14,321	\$3,682	/V.F.P.
845 Gasoline/Service Station (With Conv. Market)	0.008619	\$13,831	\$3,556	/V.F.P.
846 Gasoline/Service Station (With Conv. Market and Car Wash)	0.008093	\$12,986	\$3,339	/V.F.P.
848 Tire Store	0.004281	\$6,870	\$1,766	/T.S.F.G.F.A.
850 Supermarket	0.009772	\$15,681	\$4,032	/T.S.F.G.F.A.
851 Conv. Market (24 hour)	0.034292	\$55,028	\$14,148	/T.S.F.G.F.A.
853 Conv. Market With Fuel Pump	0.025212	\$40,458	\$10,402	/V.F.P.
860 Wholesale Market	0.000946	\$1,518	\$390	/T.S.F.G.F.A.
861 Discount Club	0.005877	\$9,431	\$2,425	/T.S.F.G.F.A.
862 Home Improvement Superstore	0.004928	\$7,908	\$2,033	/T.S.F.G.F.A.
863 Electronics Superstore	0.006332	\$10,161	\$2,612	/T.S.F.G.F.A.
864 Toy/Children's Superstore (b)	0.000701	\$1,125	\$289	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

T.S.F.G.F.A = Thousand Square Feet Gross Floor Area

T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.

TABLE 4.4**RURAL ROADS TRANSPORTATION SDC**

page 4 of 5

(1)	(2)	(3)	(4)	
	Miles Used	Rural Roads	Rural Roads	
	Unit of	Cost/Mile @	SDC @	
ITE LAND USE CODE/CATEGORY	New Development	\$1,604,703	25.71%	Unit of Measure
COMMERCIAL/SERVICES (continued)				
870 Apparel Store (b)	0.000378	\$606	\$156	/T.S.F.G.F.A.
880 Pharmacy/Drugstore				
Without Drive-Thru Window	0.008057	\$12,930	\$3,324	/T.S.F.G.F.A.
881 Pharmacy/Drugstore				
With Drive-Thru Window	0.007888	\$12,657	\$3,254	/T.S.F.G.F.A.
890 Furniture Store	0.000712	\$1,143	\$294	/T.S.F.G.F.A.
895 Video Arcade (b)	0.005083	\$8,157	\$2,097	/T.S.F.G.F.A.
896 Video Rental Store (b)	0.002821	\$4,527	\$1,164	/T.S.F.G.F.A.
911 Bank/Savings: Walk-in	0.014373	\$23,064	\$5,930	/T.S.F.G.F.A.
912 Bank/Savings: Drive-In	0.024360	\$39,090	\$10,050	/T.S.F.G.F.A.
OFFICE				
710 General Office Building	0.002667	\$4,279	\$1,100	/T.S.F.G.F.A.
714 Corporate Headquarters Building	0.001870	\$3,000	\$771	/T.S.F.G.F.A.
715 Single Tenant Office Building	0.002802	\$4,497	\$1,156	/T.S.F.G.F.A.
720 Medical-Dental Office Building	0.007135	\$11,450	\$2,944	/T.S.F.G.F.A.
730 Government Office Building	0.024657	\$39,567	\$10,173	/T.S.F.G.F.A.
731 State Motor Vehicles Dept.	0.059388	\$95,299	\$24,501	/T.S.F.G.F.A.
732 U.S. Post Office	0.038701	\$62,104	\$15,967	/T.S.F.G.F.A.
750 Office Park	0.002851	\$4,575	\$1,176	/T.S.F.G.F.A.
760 Research and Development Center	0.002025	\$3,249	\$835	/T.S.F.G.F.A.
770 Business Park	0.003186	\$5,112	\$1,314	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

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T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

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TABLE 4.4**RURAL ROADS TRANSPORTATION SDC**

page 5 of 5

(1)	(2)	(3)	(4)	
	Miles Used	Rural Roads	Rural Roads	
	Unit of	Cost/Mile @	SDC @	
ITE LAND USE CODE/CATEGORY	New Development	\$1,604,703	25.71%	Unit of Measure
PORT/INDUSTRIAL				
030 Truck Terminals	0.004477	\$7,185	\$1,847	/T.S.F.G.F.A.
090 Park and Ride Lot With Bus Service	0.002046	\$3,282	\$844	/Parking Space
093 Light Rail Transit Station w/Parking	0.001141	\$1,831	\$471	/Parking Space
110 General Light Industrial	0.003168	\$5,084	\$1,307	/T.S.F.G.F.A.
120 General Heavy Industrial	0.000682	\$1,094	\$281	/T.S.F.G.F.A.
130 Industrial Park	0.003164	\$5,077	\$1,305	/T.S.F.G.F.A.
140 Manufacturing	0.001736	\$2,786	\$716	/T.S.F.G.F.A.
150 Warehouse	0.002255	\$3,618	\$930	/T.S.F.G.F.A.
151 Mini-Warehouse	0.000477	\$765	\$197	/T.S.F.G.F.A.
170 Utilities (b)	0.000199	\$319	\$82	/T.S.F.G.F.A.

(a) Abbreviations used in "Unit of Measure" column:

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T.S.F.G.L.A. = Thousand Square Feet Gross Leasable Area

V.F.P. = Vehicle Fueling Pump

(b) The trip rate shown is the p.m. peak hour trip generation rate, because there is no average daily trip rate.