METHODOLOGY REPORT

MCMINNVILLE TRANSPORTATION SYSTEMS DEVELOPMENT CHARGE

FINAL REPORT

PREPARED FOR:

CITY OF MCMINNVILLE

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BACKGROUND

As noted in the City's Transportation System Plan (TSP), adopted in May 2010, McMinnville's population is expected to grow from about 32,000 to more than 46,000 by year 2023 (44% growth). Much of the City's population (and housing) growth is expected in the west, southwest, northwest and north areas of the city.

According to the adopted TSP, the City's transportation system is likely ill-suited to accommodate the full impact of future traffic generated by growth. By 2023, traffic congestion on many of McMinnville's major east-west routes will present a challenge. Baker Creek Road, 2nd Street, Fellows Street and Old Sheridan Road will all experience higher levels of congestion; as will sections of Highway 99W, especially in the south end of the city. The TSP includes specific street upgrades to full urban standards, referred to as "Complete Streets," in order to safely and efficiently accommodate growth in these key corridors Also of note, future travel demand on the Three Mile Spur across the Yamhill River is estimated to exceed capacity. In many cases future traffic congestion is directional. For example, most of the east-west routes serving West McMinnville are congested in the westbound direction during the P.M. peak hour.

Adopted within the TSP is a multi-modal Capital Improvements Plan (CIP) which includes long-range transportation improvements for auto, bicycle and pedestrian facilities along McMinnville's street system. The CIP lists the multi-modal user benefits, estimated costs and potential funding partnerships for each of the projects listed in the TSP. It also notes those projects that may be eligible for system development charge funding. Further information regarding SDC's is provided in the sections that follow.

PURPOSE OF THE MCMINNVILLE TRANSPORTATION SDC STUDY

To meet the needs of McMinnville's residents the City has commissioned this transportation systems development charge (SDC) study. The study is to update the current transportation SDC by: (1) affirming a revised and updated list of capital improvements – termed "growth-related transportation needs" - assimilated from the adopted TSP, including cost escalations where needed; (2) affirm McMinnville's development trends and forecast of growth, measured by "new trips" generated by growth, translated for further reference with the ITE Trip Generation Manual, 9th Edition; (3) affirm an effective methodology, complete with appropriate adjustments and credits based on sound public policy and consistent with the Oregon Revised Statutes; and (4) incorporate policy-maker recommendations on the level of transportation SDC funding.

The intent of McMinnville's transportation SDC is to help the City of McMinnville fund a portion of the multi-modal transportation system needs, as outlined in the City's TSP.

SUMMARY OF PLANS

The McMinnville Transportation System Plan (2010), including the Capital Improvements Plan, were reviewed as part of the McMinnville Transportation SDC study. This section summarizes each.

MCMINNVILLE TRANSPORTATION SYSTEM PLAN

The McMinnville TSP is a multi-modal plan that includes recommended projects and strategies to manage growth and meet the City's transportation needs over the next twenty years and beyond. The Plan identifies "complete street" projects to improve safety and add important auto/truck, bicycle and pedestrian facilities along key routes, and promote utilization and enhancement of the existing transportation system through better management techniques.

McMinnville initiated its TSP effort in 2005 to address statewide planning requirements. The purpose of the TSP is to identify a multi-modal plan that serve's the City's long-range land use plan for growth. The TSP is for the 2003-2023 planning period. In the course of development the McMinnville TSP was purposefully designed to address statewide planning requirements. Given the city's limited transportation network options, the TSP process and outcomes aligned with the emerging Complete Street paradigm shift in transportation planning.

McMinnville's TSP recommends the completion of several of the City's major arteries and other streets by means of additional traffic turn lanes, traffic signals, bicycle facilities, sidewalks and curb ramps so that all travelers have a safe means to move about the City. The City's main arteries have already been laid out in terms of general alignment. Options for new routes are severely limited, given the many natural and man-made constraints in and around the McMinnville Urban Growth Boundary (UGB) area.

In 2006 and 2007 the City worked with the Oregon Department of Transportation (ODOT) to prepare a travel demand model for the McMinnville urban area. The model enables the City to test the impact of future scenarios in a more detailed examination of future traffic demand on McMinnville's major streets. The TSP study also included a comprehensive evaluation of all aspects of the transportation system, including street, transit, pedestrian, bicycle and freight mobility (trucking and rail).

POLICIES

Relevant to the McMinnville transportation SDC are a set of TSP policies and technical criteria that establish level of service (LOS) standards and financial planning. The LOS standards were used within the McMinnville TSP process to measure the street system performance and identify needed future improvements. The following section highlights the goal, objective and policy most relevant to the McMinnville Transportation SDC regarding LOS.

MCMINNVILLE COMPREHENSIVE PLAN GOAL:

To encourage development of a transportation system that provides for the coordinated movement of people and freight in a safe and efficient manner.

TSP COMPLETE STREETS:

The safety and convenience of all users of the transportation system including pedestrians, bicyclists, transit users, freight, and motor vehicle drivers shall be accommodated and balanced in all types of transportation and development projects and through all phases of a project so that even the most vulnerable

McMinnville residents – children, elderly, and persons with disabilities – can travel safely within the public right of way.

TSP CONNECTIVITY & CIRCULATION:

The vehicle, pedestrian, transit, and bicycle circulation systems shall be designed to connect major activity centers in the McMinnville planning area, increase the overall accessibility of downtown and other centers, as well as provide access to neighborhood residential, shopping and industrial areas, and McMinnville's parks and schools.

TSP CONNECTIVITY & CIRCULATION:

The construction of transportation facilities in the McMinnville planning area shall be timed to coincide with community needs, and shall be implemented so as to minimize impacts on existing development. Prioritization of improvements should consider the City's level of service standards.

TSP LEVEL OF SERVICE:

The Mobility Standard for all local (city) intersections and streets shall be a volume/capacity ratio of .90 (Level of Service D).

LEVEL OF SERVICE "D" DEFINITION

LOS "D" – Level of Service "D" cannot be described by speed alone as this is the point at which driver begin to experience frustration even though there can be efficient traffic operations. The traffic V/C ratio is between 0.801 to 0.9. The upper limits of LOS "D" are where the roadway or intersection is approaching capacity. The intersection is basically operating at capacity. Average delay is in the range of 25.1 to 40.0 seconds per vehicle. As v/c approaches 0.9, this value generally indicate less effective traffic progression and longer signal cycle lengths. Groups of vehicles sometimes wait through more than one green signal at this point.

The McMinnville TSP also includes a Funding and Capital Improvements Plan element that identifies the City's funding needs and relevant and applicable funding sources. Transportation SDC's were identified as one of many sources to continue funding transportation capacity improvement projects.

MCMINNVILLE CAPITAL IMPROVEMENTS PLAN (CIP)

The City of McMinnville has developed its long-range, transportation Capital Improvements Plan (CIP) as part of the TSP, adopted in 2010. The CIP projects are categorized by type: Complete Street, System Management, Bicycle System, Pedestrian System and ODOT Project Coordination. Projects are further defined by the McMinnville user "need" and "benefit." Both the planning-level cost estimate and rough funding responsibility are noted. Exhibit 1 summarizes the McMinnville transportation CIP.

Exhibit 1: McMinnville Transportation Capital Improvements Plan

CAPITAL IMPROVEMENT PROJECTS					USER										PARTNERSHIP						
					Need						Benefit				City						
Street	From	To	Traffic Signals New	Traffic Signals Modify / Replace	Safety	Capacity	Access	Operations	Freight	Auto	Pedestrian	Bicycle	Transit	General	SDC	Private	Grant	County	State
Complete Streets																			
2nd Street	Adams	Cowls		2	◆	◆	◆	◆		◆				◆	◆		◆		
5th Street	Hwy 99W	Lafayette	4	1	◆	◆	◆	◆		◆				◆	◆				◆
Baker Creek	North Baker	Hill Rd	1		◆	◆	◆	◆	◆	◆				◆	◆				◆
Booth Bend Road	Hwy 99W	School Site			◆	◆	◆	◆	◆	◆				◆	◆	◆			◆
North Baker Street	24th Street	Bumett			◆	◆	◆	◆		◆				◆	◆			◆	
Hill Road - North	2nd Street	Baker Cr Rd			◆	◆	◆	◆		◆				◆	◆			◆	
Hill Road - South	Alexandria	2nd Street			◆	◆	◆	◆		◆				◆	◆			◆	
Old Sheridan Road	Cypress	Hwy 99W	1		◆	◆	◆	◆		◆				◆	◆			◆	
Riverside Drive	Hwy 99W	RR Crossing			◆	◆	◆	◆	◆	◆				◆	◆				
3rd Street Streetscape				1	◆		◆	◆						◆			◆		
Systems Management																			
Central Traffic Signal System Control Hwy 99W & central city			Noted above/ below		◆	◆		◆	◆	◆					◆		◆		◆
Bicycle System																			
Bike Lane Signing/Striping		System			◆	◆	◆	◆				◆		◆			◆		
Bike "Sharrow" Signing/Striping		System			◆	◆	◆	◆				◆		◆			◆		
Pedestrian System																			
1st and 2nd Street Pedestrian Crossings	1st	Johnson	1		◆	◆	◆	◆						◆		◆	◆		
Curb Ramp Program		System			◆	◆	◆	◆								◆	◆		
New Priority Sidewalks		System			◆	◆	◆	◆								◆	◆		
											Primary								
											Secondary								
		Current State Transportation Improvement Program?																	
ODOT Program Coordination																			
Hwy 99W/McDonald & McDaniel Signal Replacement				yes	◆	◆	◆	◆	◆										◆
Yamhill River Bridge Replacement				no	◆	◆	◆	◆	◆										◆
Adams/Baker One-Way Couplet (Hwy 99W) Reconstruction				no	◆	◆	◆	◆	◆								◆		◆
Highway 18/99W South Interchange Access Management Plan				no	◆	◆	◆	◆	◆							◆			◆
Replacement Signals				no	◆	◆	◆	◆	◆							◆			◆
Highway 18 Corridor Plan (Collector Street Only)				no	◆	◆	◆	◆	◆							◆			

TRAFFIC FORECAST METHODOLOGY

The model traffic forecasts used for evaluation and calculation of the SDC are derived from the results of the modeling efforts conducted as part of the McMinnville Transportation System Plan.

This section summarizes the methodology and assumptions used to develop future travel demand forecasts for the McMinnville Urban Growth Boundary (UGB) area, for the 20-year period beginning in 2003. A 2003-2023 planning horizon was chosen for consistency with the McMinnville Growth Management and Urbanization Plan, and as directed by DLCD staff. The chapter also includes an analysis of the impact of growth on traffic operations at selected intersections within the McMinnville urban area.

The two major components for estimating travel demand in the McMinnville Travel Demand Model are local housing and employment. The 2000 U.S. Census and McMinnville's Comprehensive Plan are the base resources of identifying year 2003 population and housing. The Land Use Plan and the McMinnville Growth Management and Urbanization Plan were used to estimate city-wide housing (by low, medium and high density type) and population growth for year 2023, and localized allocation of new housing.

ODOT's Travel Demand Model was used to estimate year 2003 and 2023 design hour volumes, which generally reflect the PM peak hour. The PM peak hour varies within the city, depending on location and adjacent land use. A city-wide weighted average reveals that the typical peak hour occurs in McMinnville between 5:00 and 6:00 pm, on an average weekday. Based on year 2003 housing and employment data, the Travel Demand Model estimates vehicular traffic on area highways and arterial and collector streets.

2023 PM PEAK HOUR TRAFFIC ESTIMATES

ODOT's 2023 Travel Demand Model estimates future travel conditions in the McMinnville area based on two principles:

(1) local demographics, reflected by the growth in housing and employment within McMinnville's UGB, and

(2) relatively no change to the vehicle trip generation rates and trip distribution patterns of McMinnville residents and commuters.

Future volumes are expected to be highest on Highways 18 and 99W, with considerable growth also on McMinnville's minor arterial network. These traffic conditions assume that no major street capacity improvements or new connections are constructed in the McMinnville UGB area during the planning period.

In order to establish a 2011-2030 planning horizon for SDC methodological calculations, a consistent growth rate was originally applied to the 2003-2023 travel demand model to estimate the number of new, P.M. peak hour vehicle trips. Between 2011 and 2030 it is expected that 8,066 new P.M. peak hour vehicle trips will be generated by new land development within the McMinnville UGB, based on the original McMinnville TSP methodology.

IMPACTS OF GROWTH

FUTURE LAND USE GROWTH ASSUMPTIONS

In accordance with McMinnville's TSP, the city's population was originally estimated to reach slightly over 46,000 by 2023, a 44% growth from year 2010. Much of the City's population (and housing) growth is expected in the west, southwest, northwest and north areas of the city.

Base year employment data was provided by Economic Opportunity Analysis (EOA) and categorized by major type. City-wide and localized allocation of future employment growth was identified for the McMinnville UGB based on the McMinnville Growth Management and Urbanization Plan. McMinnville's employment is expected to grow by 61%, from about 12,200 to more than 19,600 for the 2003-2023 planning horizon.

The McMinnville TSP includes more detailed summary of land use growth assumptions, methods and findings.

REVISED POPULATION GROWTH ESTIMATES

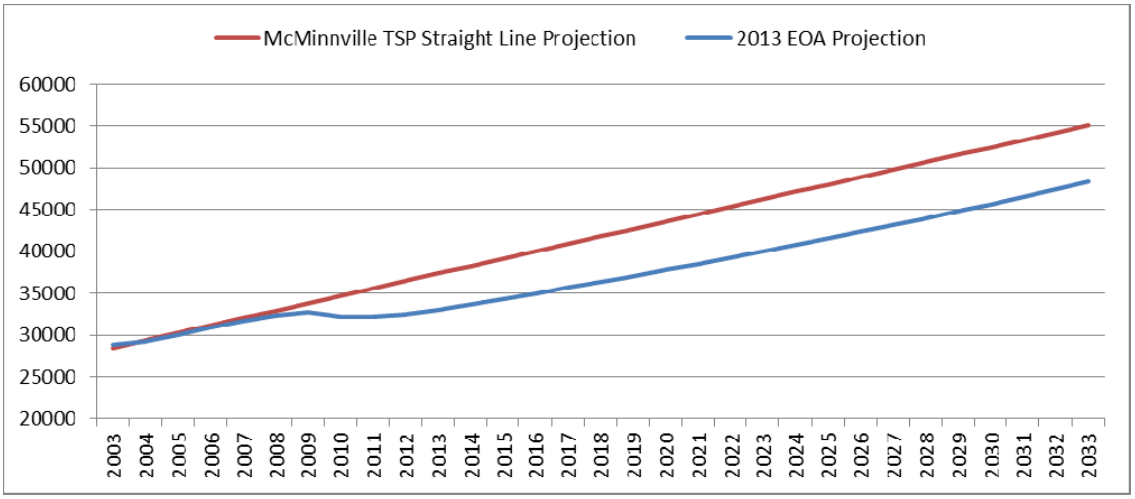
Following adoption of the McMinnville TSP, further study of McMinnville's population growth trends was completed in 2013, as part of an updated EOA assessment1. As shown in Exhibit 2, the EOA findings project a slightly lower population growth trend for the 2013-2033 planning horizon. The revised population growth projection is incorporated in the McMinnville TSDC.

REVISED VEHICLE TRIP GROWTH ESTIMATES

The EOA population projection equates to a slightly lower estimate of 7,230 new, P.M. peak hour vehicle trips.

[1] *City of McMinnville Economic Opportunities Analysis*, E.D. Hovee & Company LLC, Public Review Draft, August 2013.

Exhibit 2: Comparative Population Growth Trends – McMinnville, Oregon



SUMMARY OF PROJECT COSTS AND SDC-ELIGIBILITY

ESTABLISH PROJECT COSTS

The City's TSP and transportation CIP identifying future capital improvements were originally based on 2008 dollars. For the purposes of the McMinnville SDC analysis, all Transportation SDC-eligible project costs have been prepared in 2012 dollars, based on the Engineering News Record cost index for 2008-2012.

SDC-ELIGIBLE PROJECTS

This section defines the steps taken to define and refine the range of multi-modal transportation system capacity improvements eligible for SDC funding in the McMinnville UGB.

STREET CAPACITY IMPROVEMENT PROJECTS

The McMinnville Transportation SDC list of eligible projects is based on the City's TSP and broad description to widen or upgrade City arterial and collector streets as complete streets. Generalized, planning-level unit costs are applied to each plan project to estimate a total cost. Adjustments to project termini, necessary traffic control measures, street standard (widths) and unit costs were discussed and confirmed with City Staff as part of the TSP preparation. The projects typically include added street width for additional turn lanes on approaches, plus needed new traffic signal control, sometimes requiring additional rights-of-way.

INTERSECTION LOS ANALYSIS

Intersection levels of service were calculated for P.M. peak hour (typically around 4:30-5:30 PM) existing (2006) and the future (2023) traffic conditions. The analysis of existing conditions was conducted assuming existing intersection traffic control, intersection geometry, and signal phasing (where signalized). The analysis of future conditions was conducted assuming existing geometry and traffic control, along with the forecasted traffic volumes.

The results of the existing and future LOS analyses are summarized in the McMinnville TSP. McMinnville's LOS policy threshold was

used to determine acceptable intersection operations performance based on the volume-to-capacity (v/c) ratio of 0.902 for signalized and unsignalized intersections alike. The 0.90 v/c policy standard provides a cushion to accommodate fluctuations in peak hour volumes and is consistent with other communities throughout the region.

The analysis of existing conditions (2006) indicated that no critical intersections within the described TSP project corridors exceed the 0.90 v/c standard; one intersection was within the LOS "D" range (0.801 – 0.9), the Westbound Ramp & Highway 99 with a v/c at 0.82. The intersection of 2nd Street & Adams (Hwy 99) is approaching the LOS "D" threshold with a v/c at 0.64.

By 2023, seven intersections warrant some level of capacity improvements to resolve future traffic "deficiencies" that do not exist today. As summarized in Appendix A, these capacity improvements include signalization and widening of the intersection approaches in accordance with the City of McMinnville's street functional classification and design standards. For unsignalized intersections a signal warrant analysis was conducted to validate new traffic signal capacity improvements.

TRANSPORTATION SDC-ELIGIBLE PROJECT LIST

The 2008 CIP transportation improvement costs were inflated to 2012 dollars based on the Engineering News Record (ENR) cost index.

SDC-eligible project list is summarized in Table 1. As shown, the SDC-eligible projects within McMinnville's adopted TSP are based on the following criteria:

1. **TSP Complete Street Upgrades** are projects that are needed to serve future growth and where the following SDC-funding eligibility includes:

    (a) 100% of needed new traffic signal control (if applicable),

    (b) 100% of needed new right-of-way, and

    (c) 33% of the cost to reconstruct the existing street, equivalent to the new third travel lane needed for left-turn lane capacity needs.

    TSP Complete Street Upgrade projects include North Baker Street, Hill Road (south of Second Street) and Riverside Drive

2. **TSP Street Capacity Improvement** projects are needed to serve future growth when either one or more intersections are determined to operate at or over the City's performance measure and policy (see TSP, Chapter 3) in the future (by 2023), but not under existing conditions (2006).

    100 % of these TSP/CIP Street Capacity Improvement projects are eligible for SDC funding as they provide the needed street and traffic control capacity to serve the travel demand exclusive to new growth within the TSP planning horizon.

[2] *City of McMinnville Transportation System Plan*, Appendix A, Amended 2010.

The Street Capacity projects include (as listed in Table 1):

- Baker Creek Road
- Booth Bend Road
- Hill Road (north)
- Old Sheridan Road

3. **TSP Street Signal System Improvements** are needed to serve future growth as one or more signalized intersections along Highway 99W require additional system connectivity to help ensure the City's performance measure and policy (see TSP, Chapter 3) is met in the future (by 2023), conditions not currently experienced in 2006.

   100 % of the TSP/CIP Street Signal System Improvement project is eligible for SDC funding as it provides the needed system-wide traffic control capacity to serve the travel demand exclusive to new growth within the TSP planning horizon.

4. **Highway 99W/18 South Interchange Area** capacity projects include both city street and state highway travel lane and new or replaced traffic signal control equipment to serve future growth. Findings were identified in a separate study for ODOT and the City of McMinnville, cited as such and adopted in the City's TSP and determined as future capacity improvements needed to address operational performance measures and policy as outlined in the Oregon Highway Plan.

   100% of the Highway 99W/18 South Interchange Area capacity improvement projects are eligible for SDC funding as they provide the needed street and traffic control capacity to serve the travel demand exclusive to new growth within the TSP planning horizon.

5. **Highway 18 Corridor Plan Collector Street** capacity project provides needed local collector street capacity in tandem with the full grade separation of Highway 18 as identified and adopted in the TSP. Findings were identified in a separate study by ODOT, cited as such and confirmed in the City's TSP and determined as future capacity improvements needed to address operational performance measures and policy as outlined in the Oregon Highway Plan.

   100% of the Highway 18 Corridor Collector Street project is eligible for SDC funding as it provides the needed street and traffic control capacity to serve the travel demand exclusive to new growth within the TSP planning horizon.

The total SDC-eligible project costs are estimated at slightly more than $26.1 million. The City currently has about $1.53 million in SDC reserves with unspecified project dedication. Subtracting the current SDC reserve from the total SDC-eligible costs results in a total of $24.6 million (rounded) in SDC-eligible costs towards transportation capacity improvements.

Table 1: SDC-Eligible Project List

CAPITAL IMPROVEMENT PROJECTS	COST	Critical Intersection V/C		Deficiency		SDC -ELIGIBILITY		
Street	rounded to nearest $500	2006	2023	2006	2023	Critical Intersection Capacity	Complete Streets	SDC-Eligible Costs (2012 $'s)
Complete Streets								
2nd Street	$1,181,700	0.64		x				
5th Street	$1,296,400	0.43	0.55	x				
Baker Creek	$446,000	0.26	1.01		x	100%		$446,000
Booth Bend Road	$3,070,000	0.2	1.01		x	100%		$3,070,000
North Baker Street	$863,700				x		Added 3rd Lane	$361,200
Hill Road - North	$6,266,500	0.26	1.01		x	100%		$6,266,500
Hill Road - South	$3,674,300				x		Added 3rd Lane	$1,661,800
Old Sheridan Road	$2,554,500	0.07	1.16		x	100%		$2,554,500
Riverside Drive	$3,135,800				x		Added 3rd Lane	$1,018,500
3rd Street Streetscape	$2,504,500			x				
Systems Management								
Central Traffic Signal System Control	$689,800	0.78	0.97		x	100%		$689,800
Bicycle System								
Bike Lane Signing/Striping	$255,800			na				
Bike "Sharrow" Signing/Striping	$336,100			na				
Pedestrian System								
1st and 2nd Street Pedestrian Crossings	$1,073,400			na				
Curb Ramp Program	$1,901,300			na				
New Priority Sidewalks	$6,910,500			na				
	$36,160,300					Subtotal		**$16,068,300**
ODOT Program Coordination								
Hwy 99W/McDonald & McDaniel Signal Replacement	funded							
Yamhill River Bridge Replacement	$9,455,700							
Adams/Baker One-Way Couplet (Hwy 99W) Reconstruc	$803,400							
Highway 18/99W South Interchange Access Manageme	$2,922,000					100%		$2,922,000
	$430,900	0.82	3.25		x	100%		$430,900
Highway 18 Corridor Plan (Collector Street Only)	$6,685,300					100%		**$6,685,300**
						Subtotal		**$10,038,200**
	Grand Total							**$26,106,500**
	Less SDC Account Balance							**$1,534,100**
	TOTAL SDC-Eligible Costs							**$24,572,400**

UNIT COST METHODOLOGY

ITE TRIP GENERATION RATE STUDY UPDATE

The ITE Trip Generation Manual has recently been updated to include more current and accurate trip generation rate data for use in McMinnville's Transportation SDC calculations.

Appendix B summarizes discussion of the ITE Trip Generation, 9th Edition[3] trip rates and pass-by trip rate adjustment factors, and ITE Trip Generation Handbook, 3rd Edition[4] recommended definition and use of diverted-link trips.

TRANSPORTATION SDC METHODOLOGY

The McMinnville Transportation SDC is calculated by dividing the total cost of SDC-related transportation improvements by the number of anticipated future, new, one-way P.M. peak hour trips, adjusted for pass-by trip and trip length characteristics, resulting in a Transportation SDC cost per new, one-way, P.M. peak hour trip.

POLICY DECISIONS

SDC FUNDING LEVEL OPTIONS

Various transportation SDC funding options are available to the City to update their transportation SDC. For the purposes of comparison, a summary of other Oregon city transportation SDC's (in 2012 dollars) are provided for typical, new land use developments:

- One single-family residence
- 100-unit multi-family apartment complex
- 1,200 ft2 bank
- 6,000 ft2 fast-food restaurant
- 120,000 ft2 grocery store
- 20,000 ft2 general office building

For each of the transportation SDC funding level options identified for McMinnville, the TSP and CIP list of fully-eligible SDC costs were assumed (a maximum of $24.6 million).

Two different SDC funding level options are defined based on available data:

- **Current** Current TSDC rates as established and adopted in 2014, equates to a TSDC funding of the CIP at approximately $ 9.82 million.
- **Proposed** TSDC towards an increase in the funding of the CIP at almost $15.8 million.

NOTE: At the November 2014 general election, the City of McMinnville passed a $24 million general obligation bond measure to construct street improvement and repair projects. The measure included funding for two projects on the SDC eligible project list – Hill Road North ($6,266,500) and Old Sheridan Road ($2,554,500). If those project costs are removed from the total of $24.6-million (rounded) in SDC-eligible costs shown on Table 1, the remaining amount is $15.8-million (rounded).

Exhibit 3 summarizes the two TSDC funding level options, illustrating both the TSDC for a new single-family home and the total TSDC revenue estimated for the 20-year planning horizon.

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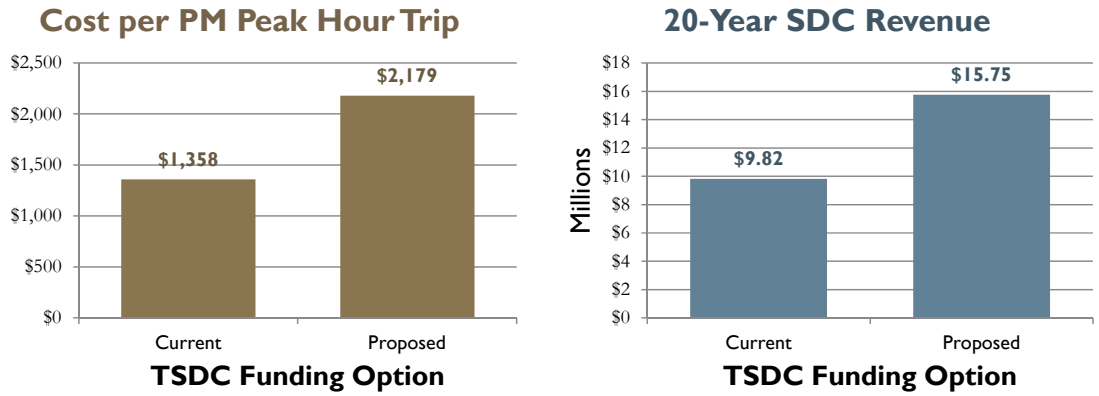
3 *Institute of Transportation Engineers. Trip Generation Manual, 9th Edition, 2012.*

4 *Institute of Transportation Engineers. Trip Generation Handbook, 3rd Edition, 2014.*

Exhibit 3: Funding Options, TSDC Per New PM Peak Hour Trip and Projected Revenue



Exhibits 4-9 compare McMinnville's current and the proposed TSDC funding level options to other Oregon cities for the specific land use types as noted.

Exhibit 4: TSDC – Single-Family Home

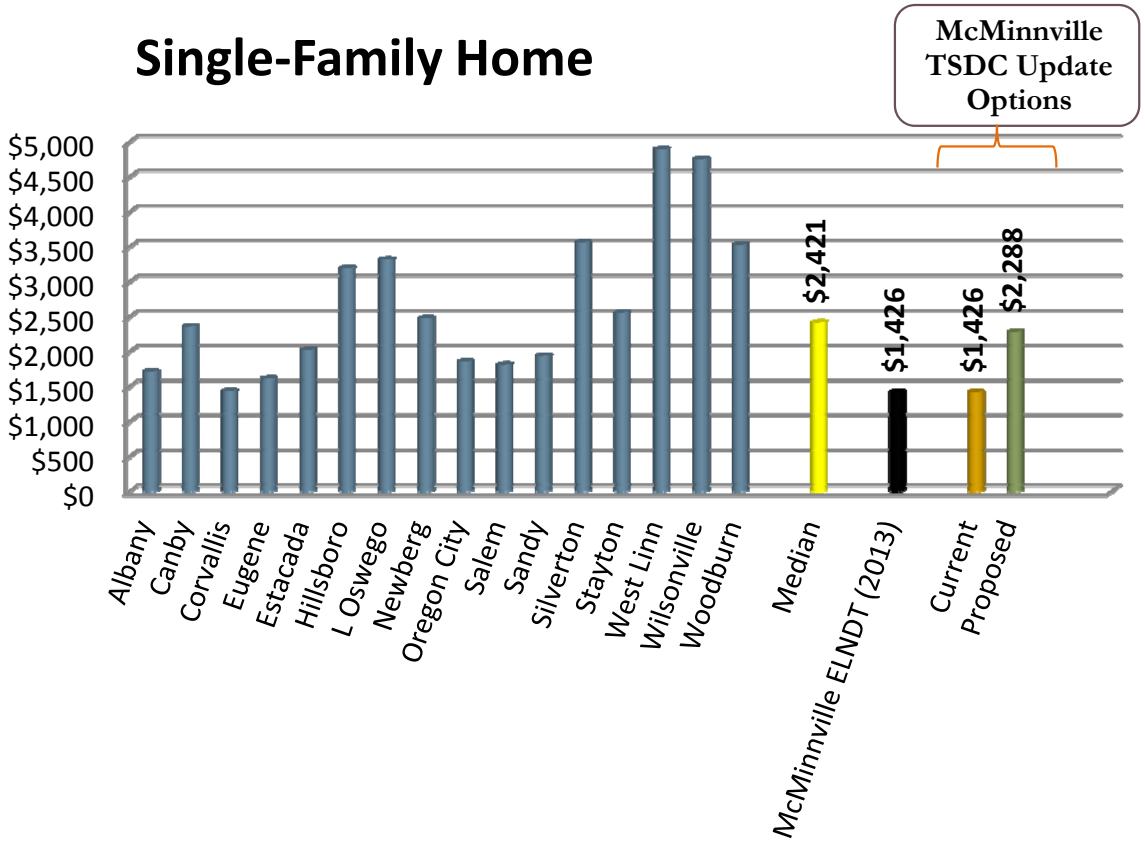


Exhibit 5: TSDC – Multi-Family Apartments (100)

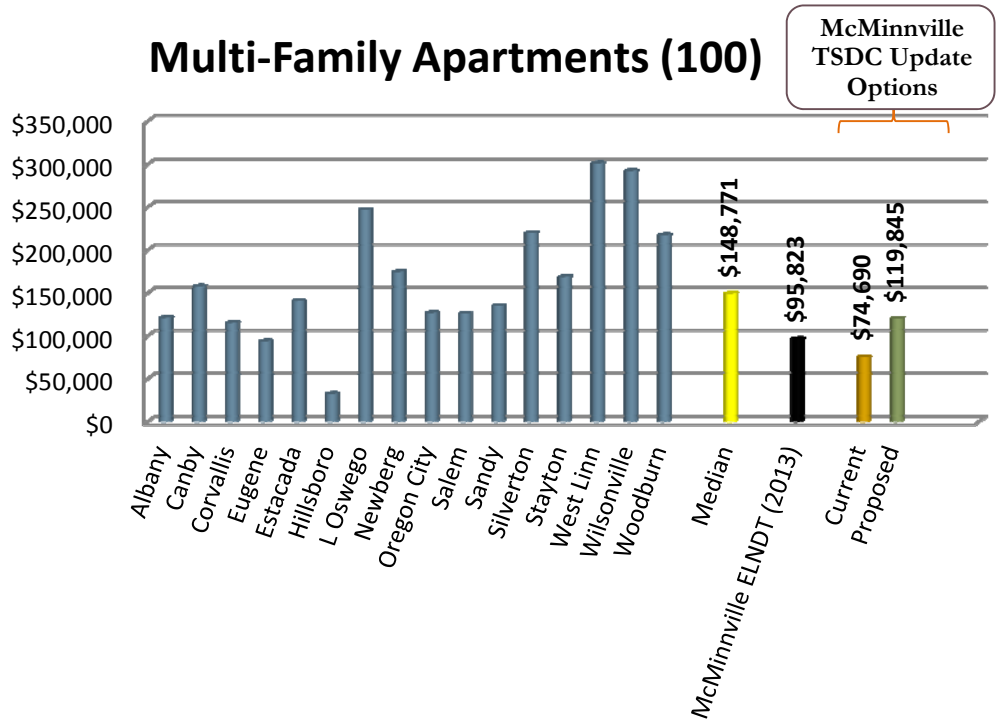


Exhibit 6: TSDC – Bank (1,200 sq.ft. GLA)

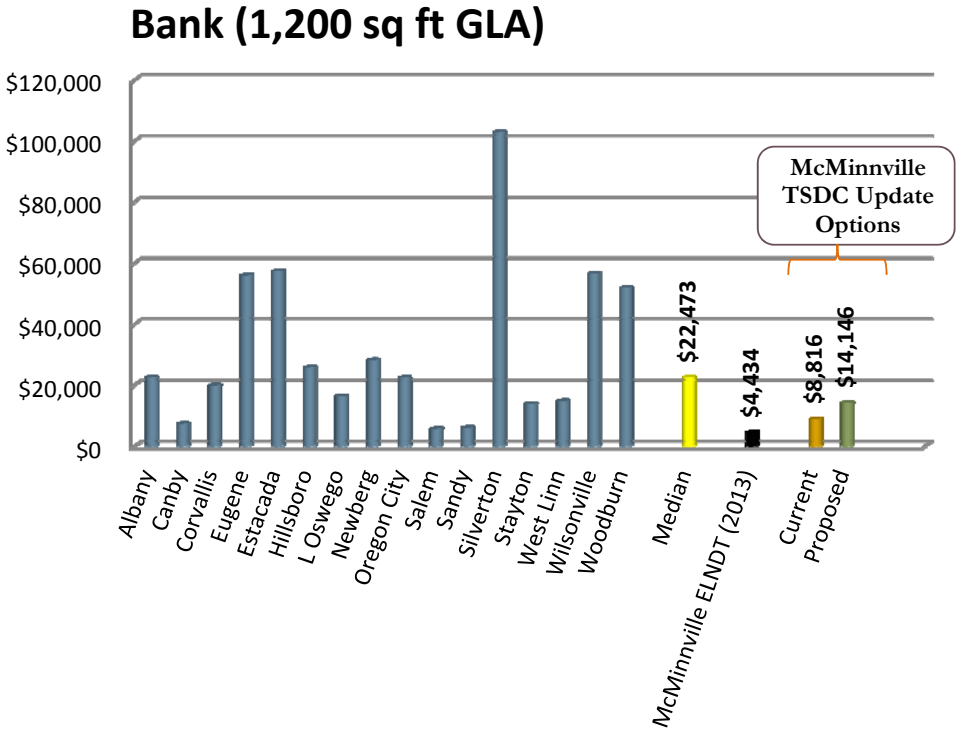


Exhibit 7: TSDC – Fast Food Restaurant (6,000 sq.ft. GLA)

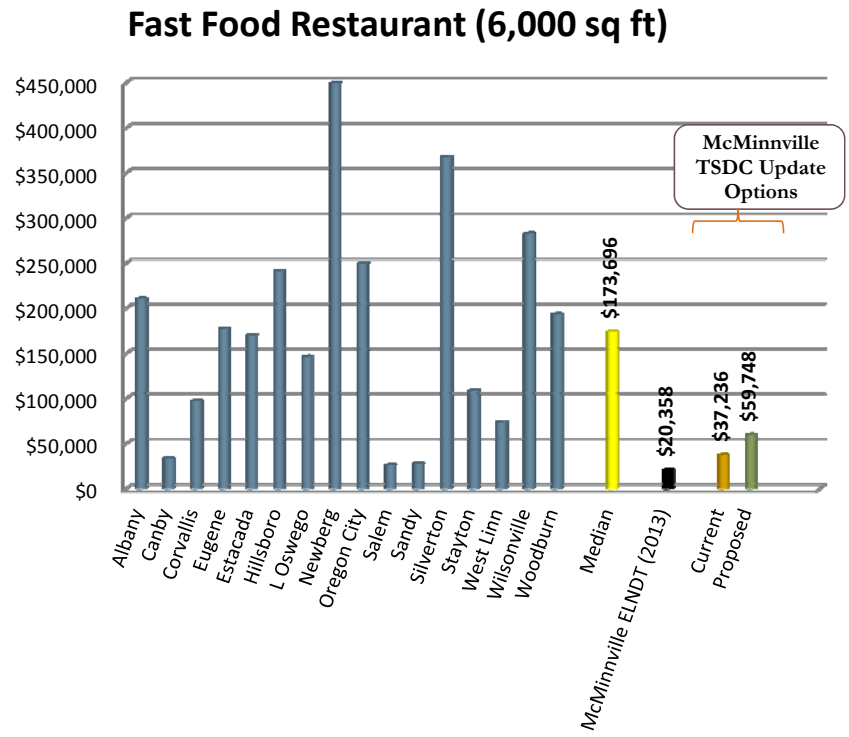


Exhibit 8: TSDC – Grocery Store (120,000 sq.ft. GLA)

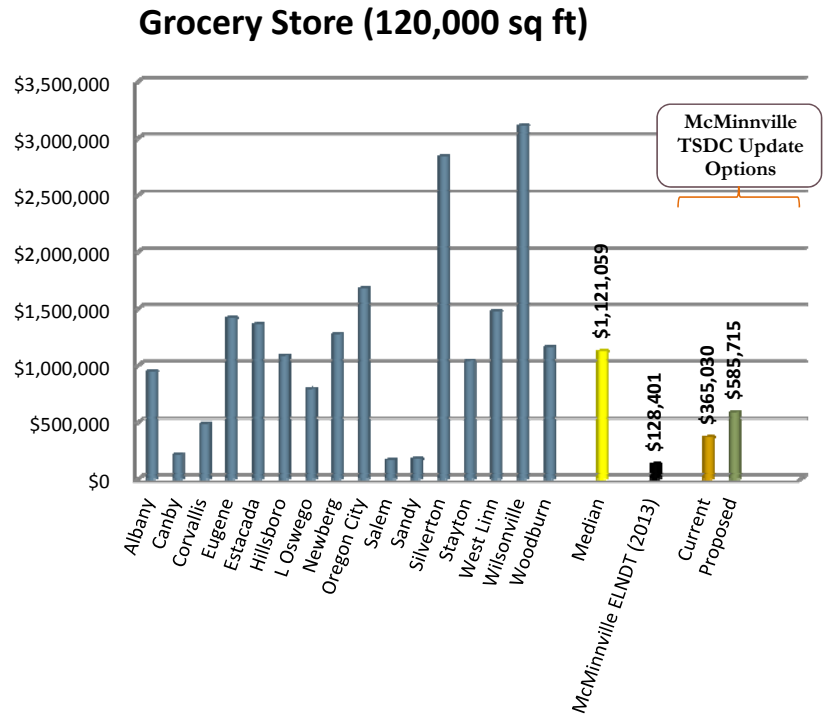
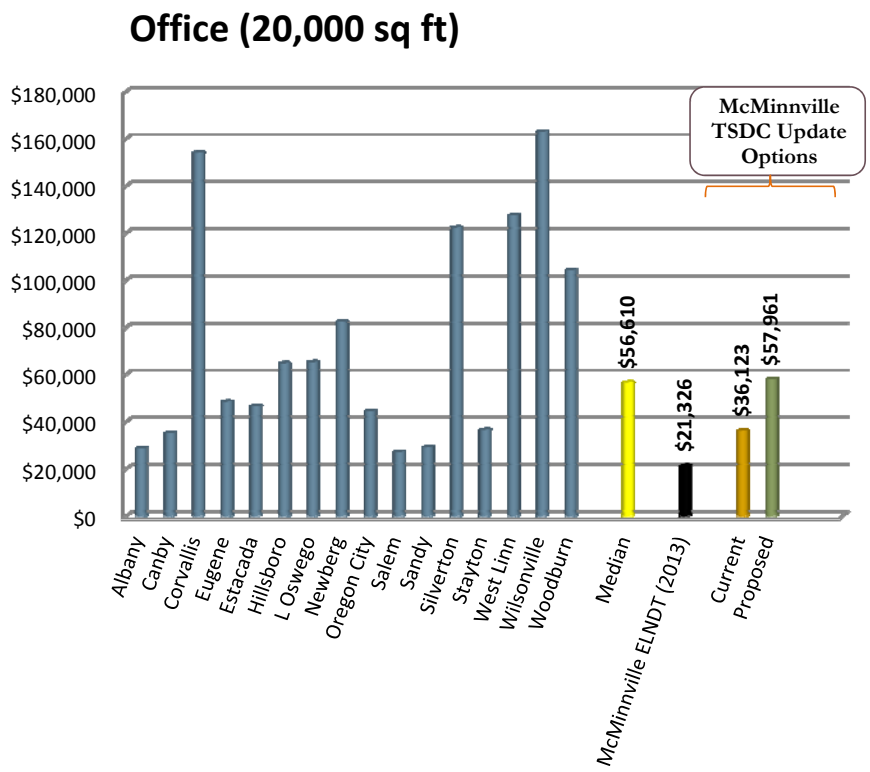


Exhibit 9: TSDC – Office (20,000 sq.ft. GLA)



FINDINGS

McMinnville's current transportation SDC is well below the average of other Oregon cities, especially for non-residential uses where the combined daily trip rates and adjustment factors (especially trip length adjustment factors are applied). Salem, Canby and Sandy have similar methodology structure and adjustment factors, other Oregon cities do not.

NOTE: At its May 26, 2015 meeting and public hearing, the McMinnville City Council adopted the Proposed SDC transportation funding level of $15.8 million over twenty years, equaling a cost per new P.M. peak hour trip of $2,179.

NEXUS

The Transportation SDC unit cost is calculated based on the updated forecast of new (2003-2023), one-way P.M. peak hour trips. The nexus of McMinnville's transportation SDC is calculated by dividing the total cost (2012 dollars) of Transportation SDC-eligible improvements by the number of new, one-way P.M. peak hour trips, resulting in a cost per new P.M. peak hour trip.

MCMINNVILLE SDC SCHEDULE

Exhibit 10 summarizes the McMinnville Transportation SDC Schedule for those land uses listed by the ITE Trip Generation Manual, 9th Edition.

Exhibit 10: TSDC Rate Table (reflective of Council Adoption)

Council Adopted May 2015		
	TSDC Revenue	$15,751,400
	New PM Peak Trips	7,230
	TSDC/New PM Peak Trip	**$2,179**

McMinnville TSDC Schedule - 2015

Land Use Category - ITE 9th Edition	Notes	ITE Land Use Code	ITE Average PM Peak Hour Trip Rate [1]	Unit*	Pass-By Trip Reduction Factor ** [2]	Net New Trip Rate [3]	Trip Length Adjustment Factor [4]	Net New Trips [5]	# Units	TSDC per New Trip
RESIDENTIAL										
Single-Family Detached Housing	3	210	1.00	Dwelling Unit	1.00	1.00	1.05	1.05	1	**$2,288**
Apartment	3	220	0.62	Dwelling Unit	1.00	0.62	0.89	0.55	1	**$1,198**
Low-Rise Apartment (1-2 Floors)	3	221	0.58	Occupied Dwelling Unit	1.00	0.58	0.89	0.52	1	**$1,133**
Mid-Rise Apartment	3	223	0.39	Dwelling Unit	1.00	0.39	0.89	0.35	1	**$763**
Residential Condominium/Townhouse	3	230	0.52	Dwelling Unit	1.00	0.52	0.89	0.46	1	**$1,002**
Mobile Home Park	3	240	0.59	Occupied Dwelling Unit	1.00	0.59	0.75	0.44	1	**$959**
Senior Adult Housing-Detached	3	251	0.27	Dwelling Unit	1.00	0.27	0.54	0.15	1	**$327**
Senior Adult Housing-Attached	3	252	0.25	Dwelling Unit	1.00	0.25	0.54	0.14	1	**$305**
Congregate Care Facility	1	253	0.17	Dwelling Unit	1.00	0.17	0.54	0.09	1	**$196**
Assisted Living		254	0.22	Bed	1.00	0.22	0.54	0.12	1	**$261**
Continuing Care Retirement Community	3	255	0.16	Unit	1.00	0.16	0.54	0.09	1	**$196**
Recreational Homes	1	260	0.26	Dwelling Unit	1.00	0.26	0.54	0.14	1	**$305**
INSTITUTIONAL										
City Park	1	411	3.50	Acre	1.00	3.50	1.00	3.50	1	**$7,627**
Water Slide Park	1	414	0.28	Parking Space	1.00	0.28	1.00	0.28	1	**$610**
Campground/Recreational Vehicle Park	1	416	0.98	Acre	1.00	0.98	1.00	0.98	1	**$2,135**
Golf Course	1	430	0.30	Acre	1.00	0.30	1.00	0.30	1	**$654**
Multipurpose Recreational Facility	1	435	3.58	1,000 sf GFA	1.00	3.58	1.00	3.58	1	**$7,801**
Bowling Alley	1	437	1.71	1,000 sf GFA	1.00	1.71	0.85	1.45	1	**$3,160**
Movie Theater with Matinee	1	444	0.80	1,000 sf GFA	1.00	0.80	0.85	0.68	1	**$1,482**
Multiplex Movie Theater		445	4.91	1,000 sf GFA	1.00	4.91	0.85	4.17	1	**$9,086**
Casino/Video Lottery Establishment		473	13.43	1,000 sf GFA	1.00	13.43	1.00	13.43	1	**$29,264**
Amusement Park	1	480	3.95	Acre	1.00	3.95	1.00	3.95	1	**$8,607**
Soccer Complex	1	488	17.70	Field	1.00	17.70	0.85	15.05	1	**$32,794**
Tennis Courts	1	490	3.88	Tennis Court	1.00	3.88	0.85	3.30	1	**$7,191**
Racket/Tennis Club	1	491	0.06	1,000 sf GFA	1.00	0.06	0.85	0.05	1	**$109**
Health/Fitness Club	1, 3	492	3.53	1,000 sf GFA	1.00	3.53	0.85	3.00	1	**$6,537**
Athletic Club	1, 3	493	5.96	1,000 sf GFA	1.00	5.96	0.85	5.07	1	**$11,048**
Recreational Community Center		495	2.74	1,000 sf GFA	1.00	2.74	0.85	2.33	1	**$5,077**
Elementary School		520	1.21	1,000 sf GFA	1.00	1.21	0.66	0.80	1	**$1,743**
Middle School/Junior High School		522	1.19	1,000 sf GFA	1.00	1.19	0.66	0.79	1	**$1,721**
Private School (K-8)	3	534	0.60	Student	1.00	0.60	0.66	0.40	1	**$872**
Private School (K-12)	1	536	0.17	Student	1.00	0.17	0.66	0.11	1	**$240**
High School		530	0.97	1,000 sf GFA	1.00	0.97	0.66	0.64	1	**$1,395**
Junior/Community College	1	536	2.54	1,000 sf GFA	1.00	2.54	0.66	1.68	1	**$3,661**
University/College	3	550	0.17	Student	1.00	0.17	0.66	0.11	1	**$240**
Church	3	560	0.55	1,000 sf GFA	1.00	0.55	0.68	0.37	1	**$806**
Day Care Center		565	12.34	1,000 sf GFA	1.00	12.34	0.68	8.39	1	**$18,282**
Museum	1	580	0.18	1,000 sf GFA	1.00	0.18	1.00	0.18	1	**$392**
Library	3	590	7.30	1,000 sf GFA	1.00	7.30	0.57	4.16	1	**$9,065**
Hospital	3	610	0.93	1,000 sf GFA	1.00	0.93	0.79	0.73	1	**$1,591**
Nursing Home	1	620	0.74	1,000 sf GFA	1.00	0.74	0.46	0.34	1	**$741**

TSDC Rate Table (reflective of Council Adoption) - continued

McMinnville TSDC Schedule - 2015

Adopted May 2015

Land Use Category - ITE 9th Edition	Notes	ITE Land Use Code	ITE Average PM Peak Hour Trip Rate [1]	Unit*	Pass-By Trip Reduction Factor ** [2]	Net New Trip Rate [3]	Trip Length Adjustment Factor [4]	Net New Trips [5]	# Units	TSDC per New Trip
BUSINESS & COMMERCIAL										
Hotel		310	0.60	Room	1.00	0.60	0.90	0.54	1	$1,177
All Suites Hotel	1	311	0.40	Room	1.00	0.40	0.90	0.36	1	$784
Motel	3	320	0.47	Room	1.00	0.47	0.90	0.42	1	$915
Resort Hotel		330	0.42	Room	1.00	0.42	1.00	0.42	1	$915
Tractor Supply Store	2(a)	810	1.40	1,000 sf GFA	0.75	1.05	1.00	1.05	1	$2,288
Construction Equipment Rental	1, 2(a)	811	0.99	1,000 sf GFA	0.75	0.74	1.00	0.74	1	$1,612
Building Materials and Lumber Store	2(a)	812	4.49	1,000 sf GFA	0.75	3.37	1.00	3.37	1	$7,343
Free-Standing Discount Superstore		813	4.35	1,000 sf GFA	0.72	3.13	0.38	1.19	1	$2,593
Variety Store	2(b)	814	6.82	1,000 sf GLA	0.66	4.50	0.59	2.66	1	$5,796
Free-Standing Discount Store		815	4.98	1,000 sf GFA	0.83	4.13	0.38	1.57	1	$3,421
Hardware/Paint Store	3	816	4.84	1,000 sf GFA	0.74	3.58	0.49	1.75	1	$3,813
Nursery (Garden Center)	2(a)	817	3.80	1,000 sf GFA	0.72	2.74	1.06	2.90	1	$6,319
Nursery (Wholesale)	2(a)	818	5.17	1,000 sf GFA	0.72	3.72	1.06	3.95	1	$8,607
Shopping Center	3	820	3.71	1,000 sf GLA	0.66	2.45	0.59	1.44	1	$3,138
Factory Outlet Center	2(b), 3	823	2.29	1,000 sf GFA	0.66	1.51	1.00	1.51	1	$3,290
Specialty Retail Center	1, 2(b)	826	2.71	1,000 sf GLA	0.66	1.79	0.59	1.06	1	$2,310
Automobile Sales	2(a), 3	841	2.62	1,000 sf GFA	0.75	1.97	0.81	1.59	1	$3,465
Recreational Vehicle Sales	1, 2(a)	842	2.54	1,000 sf GFA	0.75	1.91	0.81	1.54	1	$3,356
Automobile Parts Sales	1,3	843	5.98	1,000 sf GFA	0.57	3.41	0.63	2.15	1	$4,685
Tire Store		848	4.15	1,000 sf GFA	0.72	2.99	0.63	1.88	1	$4,097
Tire Superstore	2(e)	849	2.11	1,000 sf GFA	0.72	1.52	0.63	0.96	1	$2,092
Supermarket	3	850	9.48	1,000 sf GFA	0.64	6.07	0.37	2.24	1	$4,881
Convenience Market (Open 24 Hours)		851	52.41	1,000 sf GFA	0.39	20.44	0.37	7.56	1	$16,473
Convenience Market (Open 15-16 Hours)	1, 2(i)	852	34.57	1,000 sf GFA	0.39	13.48	0.37	4.99	1	$10,873
Convenience Market with Gasoline Pumps		853	19.07	Vehicle Fueling Position	0.34	6.48	0.37	2.40	1	$5,230
Discount Supermarket	3	854	8.34	1,000 sf GFA	0.77	6.42	0.37	2.38	1	$5,186
Discount Club	2(f)	857	4.18	1,000 sf GFA	0.77	3.22	0.74	2.38	1	$5,186
Wholesale Market	1	860	0.88	1,000 sf GFA	0.64	0.56	0.37	0.21	1	$458
Sporting Goods Superstore	1, 3	861	1.84	1,000 sf GFA	0.52	0.96	0.49	0.47	1	$1,024
Home Improvement Superstore		862	2.33	1,000 sf GFA	0.52	1.21	0.49	0.59	1	$1,286
Electronic Superstore	1	863	4.50	1,000 sf GFA	0.60	2.70	0.49	1.32	1	$2,876
Toy/Children's Superstore	1, 2(b)	864	4.99	1,000 sf GFA	0.66	3.29	0.49	1.61	1	$3,508
Baby Superstore	1, 2(b)	865	1.81	1,000 sf GFA	0.66	1.19	0.49	0.59	1	$1,286
Pet Supply Superstore	1, 2(b)	866	3.38	1,000 sf GFA	0.66	2.23	0.49	1.09	1	$2,375
Office Supply Superstore	1, 2(b)	867	3.40	1,000 sf GFA	0.66	2.24	0.49	1.10	1	$2,397
Book Superstore	1, 2(b)	868	15.82	1,000 sf GFA	0.66	10.44	0.49	5.12	1	$11,156
Discount Home Furnishings Superstore	2(b)	869	1.57	1,000 sf GFA	0.66	1.04	0.49	0.51	1	$1,111
Department Store	2(b)	875	1.87	1,000 sf GFA	0.66	1.23	0.59	0.73	1	$1,591
Apparel Store	2(b)	876	3.83	1,000 sf GFA	0.66	2.53	0.59	1.49	1	$3,247
Pharmacy/Drug Store without Drive-Through		880	8.40	1,000 sf GFA	0.47	3.95	0.37	1.46	1	$3,181
Pharmacy/Drug Store with Drive-Through		881	9.91	1,000 sf GFA	0.51	5.05	0.37	1.87	1	$4,075
Furniture Store		890	0.45	1,000 sf GFA	0.47	0.21	1.06	0.22	1	$479
Video Rental Store	2(d), 3	896	13.60	1,000 sf GFA	0.66	8.98	0.28	2.51	1	$5,469
Walk-in Bank	1, 2(d)	911	12.13	1,000 sf GFA	0.53	6.43	0.42	2.70	1	$5,883
Drive-in Bank		912	24.30	1,000 sf GFA	0.53	12.88	0.42	5.41	1	$11,788

TSDC Rate Table (reflective of Council Adoption) – continued

McMinnville TSDC Schedule - 2015

Adopted May 2015

Land Use Category - ITE 9th Edition	Notes	ITE Land Use Code	ITE Average PM Peak Hour Trip Rate	Unit*	Pass-By Trip Reduction Factor **	Net New Trip Rate	Trip Length Adjustment Factor	Net New Trips	# Units	TSDC per New Trip
			[1]		[2]	[3]	[4]	[5]		
BUSINESS & COMMERCIAL										
Hair Salon	1, 2(d)	918	1.45	1,000 sf GFA	0.53	0.77	0.42	0.32	1	$697
Copy, Print and Express Ship Store	1, 2(b)	867	7.41	1,000 sf GFA	0.66	4.89	0.49	2.40	1	$5,230
Quality Restaurant		931	7.49	1,000 sf GFA	0.56	4.19	0.54	2.26	1	$4,925
High Turnover (Sit-Down) Restaurant		932	9.85	1,000 sf GFA	0.57	5.61	0.52	2.92	1	$6,363
Fast Food Restaurant without Drive-Through	1, 2(g)	933	26.15	1,000 sf GFA	0.50	13.08	0.28	3.66	1	$7,975
Fast Food Restaurant with Drive-Through		934	32.65	1,000 sf GFA	0.50	16.33	0.28	4.57	1	$9,958
Fast Food Restaurant with Drive-Through, No Indoor Seating		935	44.99	1,000 sf GFA	0.50	22.50	0.28	6.30	1	$13,728
Coffee/Donut Shop without Drive-Through		936	40.75	1,000 sf GFA	0.50	20.38	0.28	5.71	1	$12,442
Coffee/Donut Shop with Drive-Through		937	42.80	1,000 sf GFA	0.50	21.40	0.28	5.99	1	$13,052
Coffee/Donut Shop with Drive-Through, No Indoor Seating	1	938	0.75	1,000 sf GFA	0.50	0.38	0.28	0.11	1	$240
Bread/Donut/Bagel Shop without Drive-Through	1	939	28.00	1,000 sf GFA	0.50	14.00	0.28	3.92	1	$8,542
Bread/Donut/Bagel Shop with Drive-Through	1	940	18.99	1,000 sf GFA	0.50	9.50	0.28	2.66	1	$5,796
Quick Lubrication Vehicle Shop	2(c)	941	5.19	Servicing Position	0.57	2.96	0.58	1.72	1	$3,748
Automobile Care Center	1, 2(c), 3	942	3.38	1,000 sf GLA	0.57	1.93	0.63	1.21	1	$2,637
Gasoline/Service Station		944	13.87	Vehicle Fueling Position	0.58	8.04	0.26	2.09	1	$4,554
Gasoline/Service Station w/ Convenience Market		945	13.51	Vehicle Fueling Position	0.44	5.94	0.26	1.55	1	$3,377
Gasoline/Service Station w/ Convenience Market & Car Wash	2(h)	946	13.86	Vehicle Fueling Position	0.44	6.10	0.26	1.59	1	$3,465
Self-Service Car Wash	2(d)	947	5.54	Wash Stall	0.53	2.94	0.63	1.85	1	$4,031
Automated Car Wash	1, 2(d)	948	41.00	Wash Stall	0.53	21.73	0.63	13.69	1	$29,831
OFFICE										
Clinic	1	630	5.18	1,000 sf GFA	1.00	5.18	0.89	4.61	1	$10,045
General Office Building	3	710	1.49	1,000 sf GFA	1.00	1.49	0.89	1.33	20	$57,961
Corporate Headquarters Building	3	714	1.41	1,000 sf GFA	1.00	1.41	0.89	1.25	1	$2,724
Single Tenant Office Building	3	715	1.74	1,000 sf GFA	1.00	1.74	0.89	1.55	1	$3,377
Medical-Dental Office Building	3	720	3.57	1,000 sf GFA	1.00	3.57	0.89	3.18	1	$6,929
Government Office Building	1	730	1.21	1,000 sf GFA	1.00	1.21	0.89	1.08	1	$2,353
State Motor Vehicle Department		731	17.09	1,000 sf GFA	1.00	17.09	0.89	15.21	1	$33,143
United States Post Office		732	11.12	1,000 sf GFA	1.00	11.12	0.57	6.34	1	$13,815
Government Office Complex	1	733	2.85	1,000 sf GFA	1.00	2.85	0.89	2.54	1	$5,535
Office Park	3	750	1.48	1,000 sf GFA	1.00	1.48	0.89	1.32	1	$2,876
Research and Development Center	3	760	1.07	1,000 sf GFA	1.00	1.07	0.89	0.95	1	$2,070
Business Park	3	770	1.26	1,000 sf GFA	1.00	1.26	0.89	1.12	1	$2,440
INDUSTRIAL										
General Light Industrial	3	110	0.97	1,000 sf GFA	1.00	0.97	1.37	1.33	1	$2,898
General Heavy Industrial	1	120	0.68	Employee	1.00	0.68	1.37	0.93	1	$2,026
Industrial Park	3	130	0.85	1,000 sf GFA	1.00	0.85	1.37	1.16	1	$2,528
Manufacturing	3	140	0.73	1,000 sf GFA	1.00	0.73	1.37	1.00	1	$2,179
Warehousing	3	150	0.32	1,000 sf GFA	1.00	0.32	1.37	0.44	1	$959
Mini-Warehouse		151	0.26	1,000 sf GFA	1.00	0.26	0.54	0.14	1	$305
Utilities	1	170	0.76	1,000 sf GFA	1.00	0.76	1.37	1.04	1	$2,266

TSDC Rate Table (reflective of Council Adoption) – continued

McMinnville TSDC Schedule - 2015

* Abbreviations include: GFA = Gross Floor Area, sf = square feet, and GLA = Gross Leasable Area

** The Pass-By Trip Reduction Factor reduces the Average Trip Rate based on average Pass-By trip percentages published in the *ITE Trip Generation Handbook* (2nd Edition, 2004).

NET NEW TRIP RATE CALCULATION:	ITE Trip Rate (1)	X	Pass-By Reduction Factor (2)	=	Net New Trip Rate (3)		
SDC CALCULATION:	Net New Trip Rate (3)	X	Trip Length Adjustment Factor (4)	=	Net New Trips (5)		
	Net New Trips (5)	X	# Units (6)	X	TSDC/New PM Peak Trip	=	SDC

NOTES:

(1) *Trip Generation* (9th Edition, 2012) has less than 6 studies supporting this average rate. Applicants are strongly encouraged to conduct, at their own expense, independent trip generation studies in support of their application.

(2) No pass-by rates are available. Pass-by rates were estimated from other similar uses.

Code	Land Use	Pass-By Trip Reduction Factor
2 (a)	No Data Available 25% Estimated Pass-by	**0.75**
2 (b)	Shopping Center (850)	**0.66**
2 (c)	Auto Parts Sales (843)	**0.57**
2 (d)	Bank/Drive-In (912)	**0.53**
2 (e)	Tire Store (848)	**0.72**
2 (f)	Discount Supermarket (854)	**0.77**
2 (g)	Fast Food Restaurant with Drive-Through (934)	**0.50**
2 (h)	Gasoline/Service Station w/ Convenience Market (945)	**0.44**
2 (i)	Convenience Market (24 Hr) (851)	**0.39**

(3) Alternatively, the PM peak hour trip regression equation in *Trip Generation* can be used instead of the average trip rate identified in the table. However the equation must be used according to the instructions in *Trip Generation.*

(4) 'P.M. Peak Hour of the Generator' rates applied.

Trip Length Data Source: Lake County Florida, Transportation Impact Fee Study, 2007.

ADMINISTRATION

EXCEPTIONS

Oregon law requires that provisions be included in the McMinnville SDC for alternative methodologies to calculate the trip generation for use in the calculation of the SDC. These provisions are needed in case standard trip generation rates and adjustment factors included in the SDC do not adequately reflect the true trip generation characteristics of a particular land use development.

CREDITS

Credits (see "credits" in Definition of Terms) against the calculated SDC will be given for the cost of qualified public improvements, in whole or in part, identified on the McMinnville Transportation CIP as summarized in Exhibit 1, and SDC-Eligible Project List (Table 1). The value of right of way owned by the applicant will be included in the cost of an improvement eligible for credit if the cost of right of way is included in the project cost which is part of the SDC costs. Costs not included in the calculation of the SDC shall not be eligible for SDC credit.

TDM CREDITS

Credits may be given for developments that implement transportation demand management (TDM) plans designed to reduce generated trips. The proponent of the development must declare an intention to apply for TDM trip reduction and McMinnville Transportation SDC credit as part of the building permit application. The TDM plan must be prepared by a transportation planning or engineering professional recognized by the Public Works Director as being proficient in TDM programs.

Credits for TDM trip reductions will be limited to a maximum of 15 percent of the SDC charge calculated without TDM credits. TDM plans must include an annual reporting plan that will document the amount of trip reduction that is actually achieved. The amount of the maximum TDM credit shall be placed in a separate account (TDM credit account) and shall be held there for two years, until the actual amount of any TDM credits can be calculated, based on the development proponent's annual reports. Following receipt of the second annual report on TDM trip reduction from the project proponent, the amount of the TDM credit shall be determined by the Public Works Director. Funds held in the special TDM credit account will be either reimbursed tot eh developer (in whole or in part) or transferred to the regular transportation SDC account, in the event of non-performance.

MONITORING

The McMinnville Transportation SDC will require annual monitoring to assure that the project needs and estimated project costs are current. It is anticipated that the SDC program will need to be updated every year employing cost index escalation in accordance with the Engineering News Record.

APPENDIX A

TRANSPORTATION LOS ANALYSIS

Weekday PM Peak Hour LOS: Summary of Critical Intersections & Comparison to 2006

Intersection	2006 Existing			2023 Future			2023 Future + Improvements		
	LOS[1]	Delay[2]	V/C[3] or WM[4]	LOS	Delay	V/C or WM	LOS	Delay	V/C or WM
1. Hwy 99/LaFayette Ave	C	25.5	0.77	C	23.9	0.80			
2. Hwy 99/McDaniel Ln	B	14.2	0.62	A	9.9	0.54			
3. Hwy 99/McDonald Ln	C	29.2	0.59	C	30.0	0.65			
4. Hwy 99-NE Evans St/Baker Crk Rd	B	13.3	0.62	B	19.6	0.81			
5. 19th St/Hwy 99	B	12.6	0.56	A	9.7	0.56			
6. 12th St/Adams (Hwy 99)	B	11.3	0.78	C	31.1	0.97	C	21.7	0.90
16. Old Sheridan Rd/Baker (Hwy 99)	C	34.1	0.72	F	155.2	1.52	D	40.5	0.95
17. WB Ramp/Hwy 99	E	38.9	0.82/WB	F	>200	3.25/WB			
21. NW Baker Creek Rd/Baker St	A	9.2	0.43	B	13.4	0.55			
22. 19th St/Baker St	B	12.3	0.53	C	16.5	0.60			
29. NW Baker Creek Rd/Hill Rd	B	11.9	0.26/NB	F	72.5	1.01/NB	A	7.3	0.45
31. 2nd St/Hill Ave	B	15.0	0.13/EBT-L	E	39.4	0.79/WB	A	5.9	0.35
34. Cypress St/SW Old Sheridan Rd	C	16.0	0.07/NBL	F	>200	1.16/NBL	A	8.1	0.53
43. 13th St/LaFayette Ave	B	12.5	0.60	B	17.0	0.79			
47. OR 18/Norton Ln	B	19.7	0.53	E	63.3	1.02			

1. Level of service, based on 2000 Highway Capacity Manual methodology.
2. Average delay in seconds per vehicle.
3. Volume-to-capacity ratio reported for signalized intersections.
4. Worst movement reported for unsignalized intersections.

Assumed Improvements

6. 12th St/Adams (Hwy 99)	Re-stripe Adams with separate left-turn, through and through-right-turn lanes
16. Old Sheridan Rd/Baker (Hwy 99)	Added through- and turn-lanes per Highway 18/99W South Interchange Access Management Plan
29. New traffic signal	
31. New traffic signal	
34. New traffic signal	

APPENDIX B

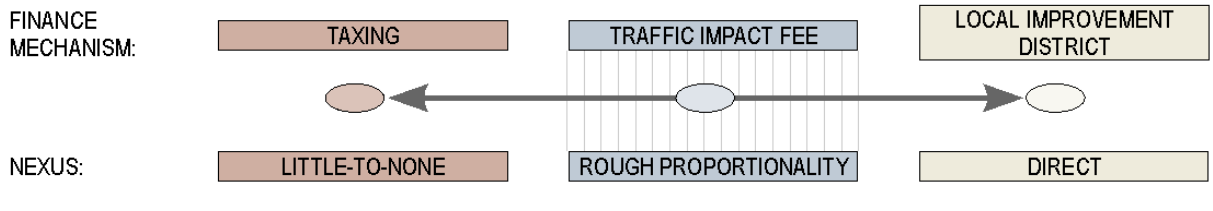
TRIP GENERATION MANUAL, 9TH EDITION – TRIP RATES AND ADJUSTMENT FACTORS

Introduction and Background

Systems development charges (SDCs), like traffic impact fees (TIFs), are a means to help pay for new transportation system improvements that are needed to serve new development. The underlying legal and public policy principles for these fees are that they be fair and equitable, providing for a rational nexus, a connection established between new development and the new or expanded transportation facilities required to accommodate that development. According to the U.S. Supreme Court, the amount of the fee must be "roughly proportional" to the amount of impact created by the development, but the fee does not have to be mathematically precise (Dolan v. City of Tigard). As shown in **Figure** B-1, the defining rational nexus varies greatly between the transportation financing mechanisms.

Figure B-1

Rational Nexus and the Range of Transportation Financing Mechanisms



Consistent with best practices throughout the United States, the approach to providing rough proportionality includes the use of standardized trip generation data from the Institute of Transportation Engineers (ITE). The data in ITE's *Trip Generation Manual* is used by virtually every jurisdiction that charges SDCs or traffic impact fees (TIFs).

The use of ITE's trip generation data allows every jurisdiction to use a uniform set of data that is reasonably robust in its depiction of the trips generated by dozens of different land uses. The ITE data also provides the development community with stability and predictability in estimating the trips it will generate. This saves the developer the time and expense of customized traffic studies, and avoids the unpredictability of such studies.

This section provides a summary discussion of SDC methodological issues pertaining to **trip generation rates** and **adjustment factors**. Eventually, McMinnville's revised SDC methodology and Ordinance will include direct citation of the *ITE Trip Generation Manual, 9th Edition* (2012) and the *ITE Trip Generation Handbook, An ITE Recommended Practice* (March 2001), both resources published by the Institute of Transportation Engineers. The trip rate data reported by ITE, by land use category, were derived from actual measurements of driveway traffic taken at individual land use sites. These data are cited and used to estimate trip generation in many traffic impact studies.

As noted by ITE, there are instances when the site-generated traffic is different from the amount of new traffic added to the street system by the trip generator. Many retail uses, as example, attract a portion of their trips from traffic passing their site on the way from an origin to another destination. Known as "pass-by" trips, these retail trips do note really add new traffic to the adjacent system, so ITE reports their rates for factual use in traffic studies. Many SDC methodologies use pass-by trip rate adjustments to account for this activity, resulting in slightly lower rates for retail commercial uses.

ITE also further distinguishes the non-pass-by trips into *primary* and *diverted linked* trips. *Primary* trips are defined by ITE as trips made for the specific purpose of visiting the generator. The stop at the generator is the primary reason for the trip. *Diverted link* trips are defined by ITE as trips that are attracted from the traffic volume on

roadways within the vicinity of the generator but that require a diversion from the roadway to another roadway to gain access to the site. Diverted link trips add traffic to streets adjacent to the site, but may not add traffic to the area's major travel routes. ITE further cautions that diverted link trips should be treated similarly to *primary* trips…" but constitute no new increase on a macroscopic scale."

Some SDC methodologies include adjustment factors that combine pass-by and diverted-linked trip characteristics into a single trip rate adjustment factor.

Recommendations

Fitted Curve and Average Trip Generation Rates

For many of the land use categories reports, the ITE Trip Generation Manual provides both average trip generation rates (daily and peak hour rates) as well as equations based on a best-fit curve between data points (the strength of the curve equations often varies depending on the number of independent traffic studies completed). Several land use categories reported in ITE exhibit trip generation characteristics that change significantly based on the size of the development.

Like other jurisdictions, it is recommended that McMinnville use the ITE average trip generation rate data, rather than the curved data sets that are also reported in ITE. A single, average rate best defines *rough proportionality* as part of the *rational nexus*, and is more practically administered during plan review and the determination of the SDC.

Trip Rate Adjustments

For consistency with ITE's recommended practices it is recommend that McMinnville consider using only *pass-by* trip rate adjustments in the SDC methodology. As noted in the ITE Trip Generation Handbook, trip-making is broken down into two major categories: Pass-By trips and Non-Pass-By trips. Further, ITE reports that "in some traffic impact study applications it is necessary to further subdivide Non-Pass-By trips into primary trips and *diverted-linked* trips."

The ITE Trip Generation Handbook further reports a series of cautions in Section 5.3. High correlation indices for *pass-by* trip rate data are reported difficult to obtain because of the inherent variability in surveyed site characteristics. Analysts are specifically cautioned in the use of *pass-by* and *diverted-linked* trip data. *Diverted-linked* trips are noted as "clearly different" than *pass-by* trips, as *diverted-linked* trips "add trips to the adjacent roads at a proposed site, but *may not* add trips to nearby major highways or freeways." Notwithstanding this caution, the ITE Trip Generation Handbook readily reports for *pass-by* trip rates, the strength of data correlation and average pass-by trip rate for specific land uses (mostly commercial land uses) in Chapter 5. See Tables 5.1-5.26 and Figures 5.3-5.15. [*Note: The average pass-by trip rates will be used to develop the McMinnville SDC Pass-by Trip Adjustment Factor.]*

However, the ITE Trip Generation Handbook does not similarly and consistently report *diverted-linked* trips, as there are no average *diverted-linked* trip data summaries, similar to the average *pass-by* trip rate, for each commercial use. This is due to the variation in data collected/surveyed, where the range of studies did not consistently quantify the trip types into *primary*, *non-pass-by*, *diverted–linked* and *pass-by* trip classes. The ITE Trip Generation Handbook specifically notes that:

> "*diverted linked* trips are often difficult to identify" and "Therefore, *diverted linked* trips should be treated similarly to primary trips, unless: (1) all three (primary, pass-by and diverted Linked) categories are being analyzed and processed separately, and (2) the travel routes for diverted linked trips can be clearly established."

Granted, and in concurrence with the ITE Trip Generation Handbook that, *diverted-linked* trips add traffic to streets adjacent to a site but may not add traffic to an area's major travel routes. As ITE notes,

> "Overall, diverted linked trips represent a change in local area travel patterns but constitute no new increase on a *macroscopic* scale.

> Within the immediate study area, diverted linked trips do represent additional traffic on individual streets and should be analyzed that way."

But there are a number of substantive issues that cloud the ability to accurately quantify *diverted-linked* trips for ready application in an SDC methodology and policy, as *diverted-linked* trips are unique to specific uses, their location within and relationship to the surrounding area development (type and mix), their orientation and proximity to major streets (and highways and freeways), and their proximity to competitors. So, quantifying *diverted-linked* trips is difficult, and has not been accomplished, consistently and comprehensively as readily reported within the ITE Trip Generation Handbook.

For adequate use of *diverted-linked* trip data in McMinnville's SDC methodology the following consistent summary statistics (and perhaps others) would need to be quantified for each of the commercial land uses within the ITE Trip Generation Handbook:

- ✓ Average trip rate.
- ✓ Average trip length.
- ✓ Relationship to and within area land use density and mix.
- ✓ Relationship to the proximity of major transportation facilities and competitors.

As the ITE Trip Generation Handbook does not provide these data, use of selective *diverted-linked* trip data in McMinnville's SDC methodology is untenable. It is recommended that McMinnville withhold *diverted-linked* trips from any trip generation adjustment factor, and leave the subject to the discretion of the Applicant considering a challenge to the SDC. The ITE Trip Generation Handbook manual (see Section 5.5) provides specific guidance to collect pass-by and *diverted-linked* trips data and should be followed when an Applicant wishes to challenge the SDC trip rate adjustment methodology.