Transportation Systems
Development Charge: Methodology

for the

Marion County Transportation Systems Development Charge Study

Salem Urban Area

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INTRODUCTION

Background

In November 1993, the Salem City Council directed city staff to develop a transportation systems development charge (TSDC) to help fund identified transportation system deficiencies created by future growth. Marion County had independently retained a contract with Don Ganer and Associates in December 1993 to investigate the feasibility of SDC alternatives and to review the draft city TSDC (See Appendix A). Based on Ganer and Associates recommendations, county staff, following direction by the Marion County Board of Commissioners, began development of a County TSDC study to develop a TSDC methodology similar and consistent with the City of Salem. In August of 1994, Kittelson and Associates, Inc. was retained by Marion County to assist in the development of the County TSDC methodology.

The City of Salem has developed ***The Salem Transportation Plan*** (Reference 1) that outlines future transportation needs for the City and unincorporated areas within the Urban Growth Boundary. Long-range travel projections used in the Salem Transportation Plan have recently been updated, based on 2015 population and employment projections prepared by the Mid-Willamette Valley Council of Governments. As input to this study, the long-range travel model was refined by Kittelson & Associates (Reference 3) and was used to re-estimate future travel demand in the Salem Urban area for the year 2015. The model was also used to re-estimate existing travel demand for the Salem Urban Area. The revised future project needs are described in a Technical Memorandum prepared for Marion County by Kittelson & Associates in 1994 (Reference 2). The purpose of this Methodology Report is to describe the methodology for implementing a TSDC to fund a portion of the needed transportation projects over the period 1994 to 2015 in the unincorporated area of Marion County inside the Salem Urban Growth Boundary (UGB).

Consistency With State Law

ORS 223.297 through 223.314 establishes a uniform framework for governmental units to impose systems development charges to pay for capital improvements, including facilities or assets used for transportation. Such charges may be assessed or collected "at the time of increased usage of a capital improvement or issuance of a development permit, building permit or connection to the capital improvement." ORS 223.299(4)(a). The statute allows imposition of systems development charges for costs associated with capital improvements to be constructed ("improvement fees") and capital improvements already constructed or under construction ("reimbursement fees"). ORS 223.304. The statute also provides for credits against fees for the construction of qualified public improvements. ORS 223.304 (3), (4).

As relevant to the County's proposed TSDC, ORS 223.307(2) authorizes improvement fees on new development to help cover the costs of capacity increasing capital improvements. Under ORS 223.309(1), such improvements must be identified in a capital improvement plan, public facilities plan, transportation master plan or similar plan which lists the capital improvements which may be funded with improvement fee revenues and the estimated cost and timing for each improvement. Consistent with ORS 223.307(2), the capital improvements identified in this report are limited to those which are capacity increasing. Their inclusion in a plan as defined in ORS 223.309(1) assures compliance with that requirement of the statute.

Under ORS 223.304(2), improvement fees must be established by ordinance or resolution setting forth a methodology that considers the costs of projected capital improvements needed to increase the capacity of the

systems to which the fee is related. The statute requires no specific methodology. However, there must be a rational basis for the charge, i.e. the costs imposed on development must reasonably relate to the impacts created by the development and the overall costs of the improvements. Here, the City of Salem and Marion County propose to use a methodology based on the number of trips generated by a type of development and the average trip length for that development. Because this methodology reasonably provides for the fair and equitable distribution of costs, it satisfies the requirements of state law.

NEEDED IMPROVEMENTS

Types of Future Deficiencies

The revised future travel forecast for the Salem urban area indicates that there are a number of projects that will be needed by 2015 to provide sufficient roadway capacity (Capacity Improvement Projects) to accommodate future travel demand. These projects include the installation of 28 traffic signals. Other capacity improvement projects consist of street widening and new streets. New streets and street widenings provide more traffic lanes, resulting in a transportation system that can accommodate higher travel demand (additional capacity). New traffic signals will be required, when traffic signal warrants are met, to efficiently and safely accommodate projected travel demand at intersections of collectors and arterials.

In addition to roadway improvement projects, there are other projects that will be needed to bring collector and minor arterials up to "urban standards". These projects would include widening, curbs/gutters, storm drainage systems, sidewalks, and bicycle facilities, and are needed for the transportation system to adequately accommodate future growth. The revised projects include street standard upgrades within the Currently Developed Area (CDA) and street standard upgrades outside the CDA.

These projects are fully described in a technical memorandum prepared for Marion County by Kittelson & Associates (Reference 2). A tabulation of projects needed is included as Appendix B to this document.

Estimated Improvement Costs

Improvement costs are those capital costs that will be required to construct the projects identified in the updated Salem Transportation Plan (Reference 1). These projects are listed in Appendix B of this document and the estimated improvement costs (and cost estimating methodology) are included in Technical Memorandum 2 (Reference 2). *Improvement fees* are the systems development charges imposed on new development to help fund the growth related projects identified in the updated Salem Transportation Plan. *Improvement fees* imposed on new development are used to provide a portion of the funding required for project *improvement costs.*

The Marion County TSDC includes improvement fees, but does not include reimbursement fees. Improvement fees are systems development charges that are applied to improvement costs associated with capital improvements to be constructed. Reimbursement fees are systems development charges applied to improvement costs for capital improvements already constructed or under construction, and are not pertinent for this discussion.

To comply with Oregon Law, only a portion of the roadway improvement costs are eligible for funding through an TSDC program. Improvement costs to maintain or improve the structure of the existing roadway that do not provide significant capacity increases are not eligible for funding through the TSDC. As previously stated, improvement fees are authorized under Oregon law to help cover the costs of capacity increasing capital

improvements, identified in a capital improvement plan, public facilities plan, transportation master plan, or similar plan. On capacity projects, all costs associated with the widening or for a new street are included in the TSDC except for the value of the existing pavement section. The portion of the improvement cost associated with upgrading the existing roadway was not included as an TSDC cost item. For the street standards upgrade projects within the CDA, estimates of the percentage use of pedestrian/bicycle facilities provided by the improvement by non-local trips were made for each project. These percentages were used to determine the portion of the total project cost to be included in the TSDC. For street standards projects outside the CDA, it was assumed that the TSDC would pay for only the additional right of way and structural depth of pavement involved in providing a collector or minor arterial in lieu of a local street. According to City of Salem street standards, this would include an additional eight feet of right of way and added depth and width of pavement. Tabulations of these costs are included in the appendix of this document. Cost estimating methodology is documented in a technical memorandum prepared for Marion County by Kittelson & Associates (Reference 4). The cost estimates were prepared in 1994 dollars. For use in the TSDC calculations, these project costs were converted to 1999 dollars, using a 4 percent annual (compounded) rate of increase. These 1999 costs were used in the TSDC to provide stability in the charges over a period of five years. Thus, the cost per generated trip will likely be constant over the next 5 years, avoiding rate change each year.

The Marion County TSDC program will generate funds from improvement fees that will be used to partially fund improvement projects that provide additional roadway capacity. As discussed below, the improvement fees are based on the estimated number of daily trips generated by new development, resulting in an improvement fee that is fair and equitable. Thus, the program is in compliance with Oregon law.

Decision Packages Considered

Marion County has used a variety of means for funding transportation improvements in the past including assessment districts, national forest state-shared road user funds, motor fuel taxes, grants, and various state and federal funding sources.

Future roadway deficiencies, identified in the updated Salem Transportation Plan (Reference 1) were divided into several categories, or *deficiency components*. The categories were based on the type of improvement project (capacity improvements, street upgrades, traffic signals); functional classification (arterials, collectors); geographic location (inside or outside the Currently Developed Area (CDA); and whether or not bond funding would be used for some improvement projects. The *deficiency components* used are shown as column headings on Figure 1.

Figure 1 shows how the future deficiency components were combined into the eight optional decision packages that were considered by the City of Salem and Marion County for development of the TSDC. As shown in Table 1, each of the 8 options would result in a different dollar amount to be funded through the TSDC, with different levels of charges for development within the City and Marion County (inside the Salem UGB). Using a new single-family home as an indicator, the TSDC charges would range from a high of $3,400 to a low of $900 per single family dwelling unit. The options summarized in Table 1 are in order of decreasing cost for a new single-family home. Appendix B provides a more detailed summary of costs for the eight optional decision packages.

	STREET CAPACITY			STREET STANDARD UPGRADES		
SDC OPTIONS	All Street Capacity Improvements	Street Capacity Improvements Less Bond Fundable Projects	New Traffic Signals	Street Standard Upgrades Inside CDA	Street Standard Upgrades Inside CDA Less Bond Fundable Projects	Street Standard Upgrades Outside CDA
1	●		●	●		●
2		●	●		●	●
3		▲	●		▲	▲
4		●	●			●
5	●		●			
6		●	●		●	
7						●
8					●	

CDA: Currently Developed Area ● Arterials and Collectors ▲ Arterials Only

SDC OPTIONS - ELIGIBLE PROJECTS

JULY 1994

FIGURE 1

Table 1
Summary of Decision Packages and Estimated Costs

Decision Package	Description	Estimated Costs[1] Total	SDC	Bond	Other[4]	SDC Percent of Total
1	Street Capacity Improvements[2]	128,750	76,690		52,060	60%
	St. Std. Upgrades Inside CDA	151,720	49,630		102,090	33%
	St. Std. Upgrades Outside CDA	170,200	56,270		113,930	33%
	TOTAL - DECISION PACKAGE 1	450,670	182,590		268,080	41%
2	Street Capacity Impvts.[2][3]	128,750	22,200	54,490	52,060	17%
	St. Std. Upgrades Inside CDA[3]	151,720	45,710	3,920	102,090	30%
	St. Std. Upgrades Outside CDA	170,200	56,270		113,930	33%
	TOTAL - DECISION PACKAGE 2	450,670	124,180	58,410	268,080	28%
3[5]	Street Capacity Impvts.[2][3]	120,350	21,750	51,770	46,830	17%
	St. Std. Upgrades Inside CDA[3]	75,090	23,440	3,920	47,730	31%
	St. Std. Upgrades Outside CDA	102,180	41,110		61,070	40%
	Non-SDC St. Impvts.[3]	153,050		2,720	150,330	
	TOTAL - DECISION PACKAGE 3	450,670	86,300	58,410	305,960	19%
4	Street Capacity Impvts.[2][3]	128,750	22,200	54,490	52,060	17%
	St. Std. Upgrades Outside CDA	170,200	56,270		113,930	33%
	Non-SDC Upgrades Inside CDA	151,720		3,920	147,800	
	TOTAL - DECISION PACKAGE 4	450,670	78,470	58,410	313,790	17%
5	Street Capacity Impvts.[2]	128,750	76,690		52,060	60%
	Non-SDC Upgrades Inside CDA[3]	151,720		3,920	147,800	
	Non-SDC Upgrades Outside CDA	170,200			170,200	
	TOTAL - DECISION PACKAGE 5	450,670	76,690	3,920	370,060	17%
6	Street Capacity Impvts.[2][3]	128,750	22,200	54,490	52,060	17%
	St. Std. Upgrades Inside CDA[3]	151,720	45,710	3,920	102,090	30%
	Non-SDC Upgrades Outside CDA	170,200			170,200	
	TOTAL - DECISION PACKAGE 6	450,670	67,910	58,410	324,350	15%
7	St. Std. Upgrades Outside CDA	170,200	56,270		113,930	33%
	Non-SDC Street Capacity Impvts.[2][3]	128,750		54,490	74,260	
	Non-SDC Upgrades Inside CDA[3]	151,720		3,920	147,800	
	TOTAL - DECISION PACKAGE 7	450,670	56,270	58,410	335,990	12%
8	St. Std. Upgrades Inside CDA[3]	151,720	45,710	3,920	102,090	30%
	Non-SDC Street Capacity Impvts.[3]	128,750		54,490	74,260	
	Non-SDC Upgrades Outside CDA	170,200			170,200	
	TOTAL - DECISION PACKAGE 8	450,670	45,710	58,410	346,550	10%

[1]In thousands of 1999 dollars.
[2]Including new traffic signals.
[3]Less bond projects.
[4]Other revenue sources may include local gasoline tax, regional gasoline tax, additional bonds, developer contributions, etc.
[5]Decision Package 3 includes only arterials. All other decision packages include arterials and collectors.

DEFINITION OF TERMS

Average Weekday ITE Trip Rate: The average number of daily weekday (Monday through Friday) one-way trips that have been observed at specified land uses and reported to the Institute of Transportation Engineers or the San Diego Association of Governments.

Measurement Unit: The parameter that is used to measure the size of the development proposed. The number of measurement units multiplied by the Average Weekday ITE Trip Rate (per unit of measurement) results in the estimated number of weekday trips generated by the proposed development, prior to adjustments for Trip Length and Linked Trips (see definitions for these adjustments).

Equivalent Length New Daily Trips: The number of estimated new daily trips that will be generated by projected new development anticipated by 2015, adjusted to account for different average trip lengths and different proportions of linked trips.

Equivalent Length New Daily Trip Adjustment Factors: Factors used to adjust the Average Weekday ITE Trip Rate to account for different average trip lengths of trips generated by various types of development and for trips made for multiple purposes.

Trip Length Factor: The factor used to adjust the Average Weekday ITE Trip Rate for variation in the average trip length of the type of development under consideration to be equivalent to the average trip length of a Single Family Detached residential unit.

Linked Trip Factor: The factor used to adjust the Average Weekday ITE Trip Rate for trips with multiple purposes with respect to the type of development under consideration.

Transportation Demand Management (TDM): A program of actions taken by public and/or private interests to reduce the volume of traffic (especially vehicles) during peak traffic periods. TDM includes such actions as transit system enhancements, increased ridesharing, constrained parking (low supply and/or high costs), flexible working hours/days, telecommuting, and similar actions.

Transportation Deficiencies: Insufficient roadway capacity on arterials and collectors to accommodate projected travel demand (year 2015) and arterial and collector roadways that do not meet City of Salem urban street standards, resulting in safety deficiencies.

Decision Packages: Alternative programs that include various types and geographic locations of projects needed to mitigate transportation deficiencies over the planning period to year 2015.

Currently Developed Area: An area, defined by the City of Salem, that includes portions of the City of Salem and the unincorporated area in the vicinity of the City of Salem, that are considered to be developed as "urban areas".

Street Capacity Improvements: Arterial and collector street segments or intersections where current capacity will not accommodate projected 2015 travel demands at an acceptable level of service. Projects to mitigate deficiencies include: street widenings, new streets, new traffic signals, etc.

Street Standards Upgrades: Arterial and collector street segments or intersections that do not meet City of Salem adopted street standards. Projects to mitigate deficiencies include: right of way, street widening, storm drainage, curbs/gutters, sidewalks, street lighting, and bicycle facilities.

Exceptions: Allowances for alternative methodologies that may be used for trip generation estimates by proponents of developments.

Credits: Deductions from the Transportation SDC given to finance portions of qualified public improvement projects included in the TSDC, or for proponents of developments as compensation for actions to reduce vehicle trip generation (see TDM credits below).

Improvement Costs: Capital costs required to construct projects identified in the updated Salem Transportation Plan.

Improvement Fees: Systems development charges imposed on new developments to help fund projects identified in the updated Salem Transportation Plan.

TRANSPORTATION SDC UNIT COST

Introduction

The Marion County TSDC has been developed to provide fairness and equity among the various types of development that are likely to occur by 2015. To reach this goal, the Marion County TSDC methodology recognizes that the number of trips generated and the average length of these trips varies by type of land use. For example, trips generated by residential uses are longer (on average) that those generated by retail developments. Since the residential-generated trips produce more vehicle-miles of travel (1 vehicle - mile = 1 vehicle making a trip 1.0 miles in length) than retail trips, it is logical to have a higher improvement fee per residential trip than per retail trip. Thus a "Trip Length Factor" has been incorporated into the Marion County TSDC to "equalize" the trips for various land uses. It has also been shown that some types of land use (retail, for example) attract trips from the traffic that is already passing the retail site. For example, the motorist that is going home from work that stops enroute to buy groceries. In this instance, a trip is "generated" by the retail use, but adds no new vehicle-miles of travel to the roadway system. This type of trip is known as a "linked trip". A "Linked Trip Factor" has been used to account for this difference in new trip generation versus total trip generation. When the basic trip generation rates (i.e., trips per dwelling unit) is adjusted by the trip length factor and the linked trip factor and applied to the new development, the resulting number of new generated trips are called *Equivalent Length New Daily Trips* (ELNDT). The ELNDT are used as the basis for the Marion County TSDC. Examples of the calculation of ELNDT for three typical development projects are included on Page 19 of this document.

Methodology

To develop the Marion County transportation systems development charge, the travel demand forecasting model for city-wide planning was utilized. The first step in the process was to remove all external to external trips[1] contained within the model for both existing and year 2015 conditions. The travel demand forecasting model was

[1]Trips passing through the Salem area that both begin and end outside the Urban Growth Boundary.

used to estimate the number of existing and year 2015 daily trips generated within the Salem UGB (both incorporated and unincorporated land, but excluding the City of Keizer). The difference between the number of future and existing daily trips represents an estimate of the total number of new daily trips that will be generated within the Salem UGB (excluding Keizer) by new development. Since the TSDC is based on trips generated by new development, the number of new trips divided into the estimated improvement costs results in the dollar cost per new trip generated. Thus, the existing trip generation was subtracted from the year 2015 trip generation to arrive at the estimated number of *Equivalent Length New Daily Trips* on the system for year 2015. Inherent in the travel demand forecasting model is the type of developable land uses (per adopted Salem Comprehensive Plan), varying trip lengths by trip purpose, and the effect of linked-trips. The comparison of year 2015 and existing trip generation, shows that a total of 510,000 additional *Equivalent Length New Daily Trips* will be generated by 2015 within the Salem UGB.

Trip Generation Adjustments

As mentioned previously, inherent in the travel demand forecasting model is the type of trip by land use and effect of linked trips and varying lengths of trips. The methodology used to determine the transportation system development charge fee in the Salem urban area is consistent with the *equivalent length new trips* concept. This methodology uses the best available trip generation, trip length, and linked trip information. Data based on studies conducted in Sarasota, Florida[2], were used in order to assure a statistically reliable sample for application of the Marion County TSDC. The Sarasota study is the only comprehensive study available that provides a broad enough base to assure a statistically reliable sample. While the actual average trip lengths, by type of land use, may not be the same for the Salem urban area, it is believed that the relative difference in trip length (for different land uses) will be the same as found in Sarasota. Again, the adjustments for different trip lengths and for linked trips were made to make the Marion County TSDC as fair and equitable as reasonably possible, while maintaining a relatively simple calculation of the improvement fees.

For example, if the length of a trip generated by a furniture store is 49 percent of the length of a residential-generated trip in Sarasota, it is likely that in the Salem urban area the furniture store trip length will also be 49 percent of the residential-generated trip length. Even though the actual trip lengths may be different (Sarasota versus Salem), the relationship between the two trip lengths will be the same. Thus, the adjustment factors from Sarasota can reliably be used in the Salem urban area.

The travel data upon which the traffic impact fee is based uses average trip length for each major land use category. As described above, the relationships among these trip lengths are based upon studies conducted in Sarasota, Florida. Recognizing that travel generated by Salem urban area land uses is not made entirely within the UGB, these average trip lengths do not differentiate between the mileage that is spent upon the Salem urban area road system and the mileage that is spent either outside the UGB or on Oregon state highways within Salem. It is reasonable to assume that the relationship between trip lengths for each land use, as based on total trip length, are relatively the same as trip lengths for each land use on Salem urban area roadways. Thus, the methodology used in the determination of the traffic impact fee for a specific development provides a reasonable basis for equitably determining the relative impact of each land use category.

Trip generation rates for each of the land use categories were adjusted using trip generation rates reported in Trip Generation, Fifth Edition (published by the Institute of Transportation Engineers, 1991). Appendix C lists these

[2]Sarasota County: Sarasota County Road Impact Fee Ordinance, Technical Report, September, 1991.

trip generation rates and the adjustment factors used to determine the *equivalent length new daily trip* generation rate for each general land use category listed in the ITE Trip Generation Manual.

Exceptions

Oregon law requires that provisions be included in the TSDC for alternative methodologies to calculate the trip generation (ELNDT) for use in calculation of improvement fees. These provisions are needed in case standard trip generation rates, trip length factors, or linked trip factors included in the TSDC do not adequately reflect the true trip generation characteristics of a particular land use development. These provisions also provide an approach for project proponents that believe their development does not generate trips in the same way as described in the TSDC.

Exceptions to the Marion County TSDC include:

1. Those uses, or combinations of uses, that are not specifically identified in Appendix C (ITE *Trip Generation, Fifth Edition*, 1991; and San Diego Traffic Generators, 1993), shall be categorized by the City of Salem as the use (or uses) identified in Appendix C that is most similar in trip generation; or,

2. In the event trip rates calculated by the Institute of Transportation Engineers are felt to inadequately reflect an individual development's trips, the Marion County Public Works Director will consider, at the applicant's expense, traffic generation studies performed by a transportation professional recognized by the Public Works Director, as being proficient in traffic generation analysis, to show traffic data in the calculation of TSDC's. The Public Works Director shall set standards for the traffic generation studies, and may accept, reject, or require revisions to the proposed study methodology and/or the transportation planning professional conducting the study. Such standards may include the following:

    - The trip generation survey shall include at least 3 sites that have development similar to the proposed development, of which at least one site must be within the Salem Urban Growth Boundary, unless otherwise specified by the Public Works Director. An average (mean) of the trip generation rates of the 3 study sites shall be used for the proposed development.

    - Any adjustments in the **Trip Length Factor** shall be based on surveys made within the Salem Urban Growth Boundary, unless approved in advance by the Public Works Director. If such surveys are made outside the Salem Urban Growth Boundary, the survey must include the trip length for home-based trips as well as for the type of development proposed.

    - Any adjustments to the **Linked Trip Factor** shall be based on surveys made within the Salem Urban Growth Boundary, unless approved in advance by the Public Works Director. The survey questions used to determine pass-by trips shall be reviewed and approved by the Public Works Director prior to its use in the survey.

Where the ITE average daily trip rate is based on less than five studies or the fitted relationship based on the unit employed in ITE *Trip Generation, Fifth Edition* (1991) exhibits an R^2 (correlation) less than 0.70, the applicant

is strongly encouraged to submit, at the applicant's expense, the traffic generation studies noted above. In Appendix C, these two cases are noted for each of the land uses cited.

Credits

Credits (see "Credits" in Definition of Terms) against the calculated TSDC will be given for the cost of qualified public improvements, in whole or in part, identified on the "Transportation Systems Development Charge Project Schedule". The value of right of way owned by the applicant will be included in the costs of an improvement eligible for credit if the cost of right of way is included in the project cost which is part of the TSDC costs. Costs not included in the calculation of the SDC shall *not* be eligible for TSDC credit. Except that the City of Salem may agree that certain costs may, in fact, represent "system" costs that will be considered for addition to TSDC-eligible costs during the next TSDC update. If those "non-eligible" costs are subsequently changed to become TSDC eligible, credit will be given in a form of a reimbursement of a portion of the TSDC improvement fees.

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 TSDC credit as a 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 TSDC 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 improvement fee 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 to the developer (in whole or in part) or transferred to the regular transportation TSDC account, in the event of non-performance. No further action will be taken on TDM credits following this reimbursement and/or transfer of TDM credit funds.

An example of how the TDM Credits would be applied follows for a 180,000 square foot general office building:

Equivalent Length New Daily Trip (ELNDT) =

	Number Units	*	Trip Rate	*	Trip Length Factor	*	Linked Trip Factor	=	Total Trips (ELNDT)
General Office	180	*	14.03	*	0.65	*	1.00	=	1,642

Transportation System Development Charge (TSDC) =

	ELNDT	*	$/ELNDT	=	SDC
General Office	1,642	*	154	=	$252,868

The developer declares his or her intentions to pursue TDM credits at application for building permit and submits an "approved" TDM plan. Fifteen percent of the TSDC charge (0.15 x $252,868 = $37,930) is placed in the TDM fund of the TSDC and the remaining $214,938 is placed in the County's Extra Capacity Facilities Fund Transportation Account. Two years after project occupancy the project proponent submits the second annual TDM plan report to the Public Works Director (PWD). The PWD determines that the TDM plan has resulted in a 9 percent reduction in vehicle trips. Thus, 9 percent of the total TSDC (0.09 x $252,868 = $22,758) is reimbursed to the project proponent from the TDM fund of the TSDC. The remaining amount of the TDM credit account ($37,930 - $22,758 = $15,172) is transferred to the regular Extra Capacity Facilities Fund Transportation Account. At this point, the TDM transaction is complete.

Monitoring

The TSDC program will require monitoring to assure that the project needs and estimated project costs are current. Because long-range forecasts of population and employment may not be realized, as projected, it is necessary to monitor the TSDC program and to update it when conditions require. Projects will need to be added or deleted from the plan and costs for building the projects are likely to increase for the portion of the planning period between 1999 and 2015. In addition, the plan should be extended to include needs in years beyond 2015 (i.e. in year 2000, the program period should extend to 2020). It is anticipated that the TSDC program will need to be updated at least every five years; however, interim updates may also be required if large changes in assumptions are detected. Changes in the TSDC program will require a public hearing.

ADMINISTRATION

Fee Collection

The TSDC will be collected from the applicant at the time the building permits are issued or the applicant may defer payment by using the Bancroft approach. Marion County reserves the right to re-determine the TSDC at the time the development is approved for occupancy to assure that the appropriate land use designation was used as the basis for the TSDC.

Separation of Funds

The TSDC receipts shall be placed in the County's Extra Capacity Facilities Fund Transportation Account and shall be segregated by accounting practices from all other TSDC funds received by the County. Funds collected that may qualify for TDM credits also shall be segregated from all other TSDC funds received by the County.

Payment

Funds collected through the TSDC Program and any interest earned on these funds must be used only for projects specifically included in the currently adopted TSDC Program. TSDC funds can be used only for designated components of the project (pavement, curb/gutter, sidewalk, etc.) and only in the proportions shown in the currently adopted TSDC Program.

Exceptions

If any of the exceptions, described in the "Exceptions" subsection of the TSDC Unit Cost section of this report, are pursued by the applicant, their approval shall be at the discretion of the Marion County Public Works Director.

Credits

If any of the credits, described in the "Credits" or "TDM Credits" subsections of the TSDC Unit Cost section of this report, are pursued by the applicant, their approval shall be at the discretion of the Marion County Public Works Director.

RECOMMENDATIONS

A total of eight optional "decision packages" were developed for consideration for adoption as the Marion County Transportation Systems Development Charge (TSDC). These decision packages were discussed in previous sections of this report and in Technical Memorandum 6 (references). The optional packages were discussed with City of Salem staff, Marion County and the City of Salem TSDC Advisory Committee.

Several key considerations were kept in mind as the optional packages were being evaluated. These include:

- The TSDC must be consistent with State law.
- The TSDC charges to new development must be commensurate with similar fees being charged in other Oregon cities so that development is not discouraged from coming to the Salem urban area.
- The TSDC should follow a philosophy similar to the already adopted water and sewer systems development charges assessed in the Salem area: that of 1) basing the TSDC on some measurement of "consumption"; 2) using the TSDC improvement fees to fund projects identified through an adopted facilities plan (i.e. Salem Transportation Plan) and 3) providing facilities necessary for opening up areas for future growth.

City and Consultant staffs presented the eight decision packages to the City of Salem TSDC Advisory Committee and solicited individual member's comments as well as any convictions that they had about the eight optional packages. Following these presentations/discussions, County staff selected Decision Package 4 for further analysis, and directed the consultant to prepare TSDC cost estimates for development for this option, as well as several comparisons in order to better understand the impacts that implementation of Decision Package 4 might have on future development in the Salem urban area. Those projects that are identified for TSDC funding are illustrated in Figure 2 and listed in Appendix C.

Based upon a thorough review of the eight decision packages, Marion County staff selected Decision Package 4 as the recommendation to take forward to the Marion County Board of Commissioners for consideration. City staff selected Decision Package 4 for the following reasons:

1. It is legally defensible under the provisions of ORS 223.297 through 223.314

2. It fell close to the average of similar transportation charges being levied by other communities within Oregon and Washington, and hence was not seen as an impediment to growth decisions;

3. It assumed that those transportation improvements which were seen as being of community-wide benefit would continue to be funded through future bond issues;

4. It facilitated the County's ability to respond to the central concern voiced by many regarding the need for traffic signals and for capacity improvements to accommodate transportation demand expected to be generated by new growth;

5. Upgrading streets to City standard outside the CDA would facilitate the accommodation of new growth and improve public safety.

6. Decision Package 4 is the most consistent with current methodology used for the City's transportation, sewer and water SDCs, in that it provides for facilities necessary for opening up areas for future growth.

Unit Cost Methodology

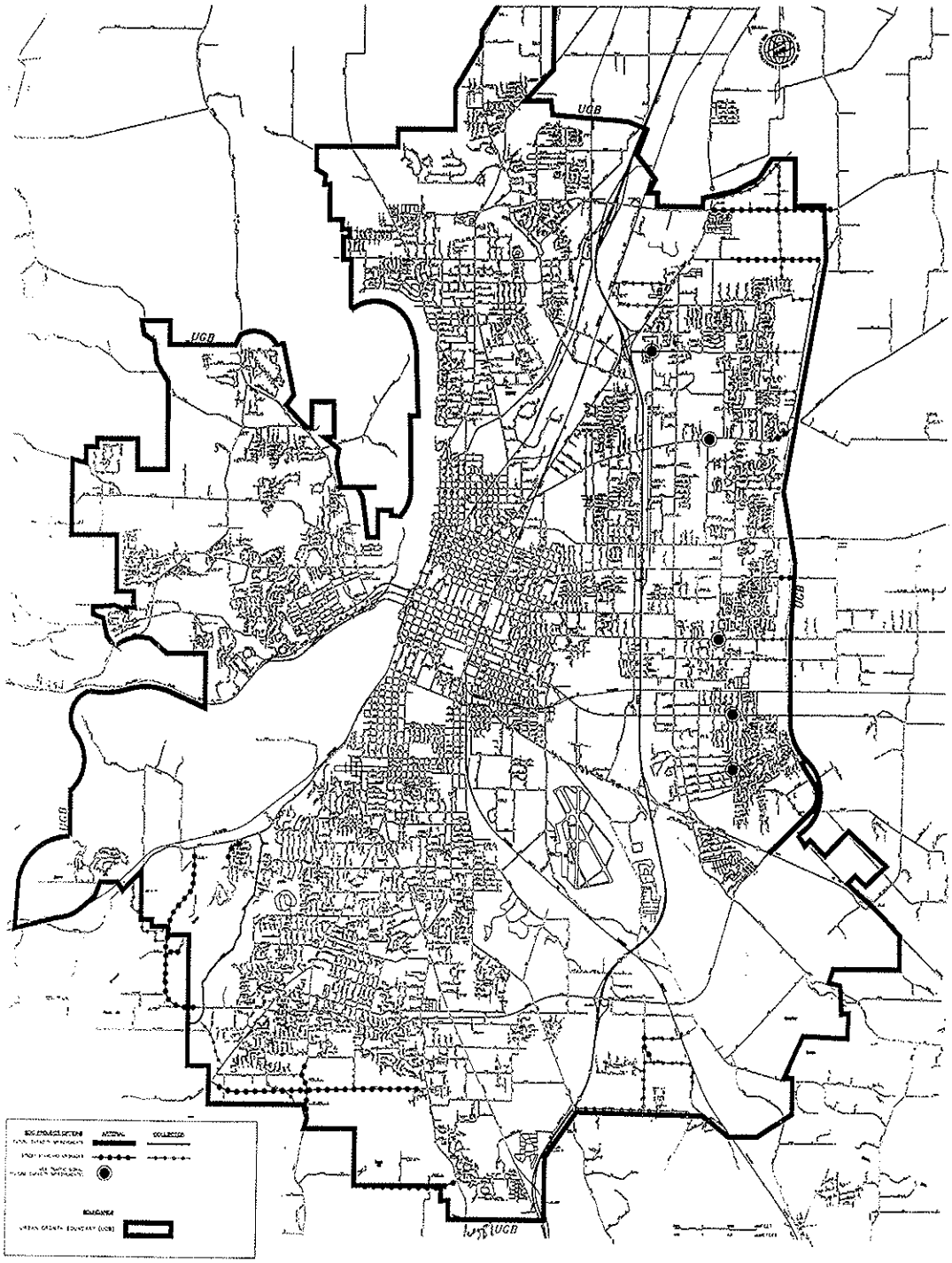
The Marion County and City of Salem TSDC's are calculated by dividing the total cost of TSDC-related collector and arterial transportation improvements ($78.47 million) by the number of anticipated future, region-wide *Equivalent Length New Daily Trips* (510,000), resulting in a SDC cost of $154 per *Equivalent Length New Daily Trip*. The Marion County TSDC unit cost per trip is summarized in Table 2.

Table 2
TSDC Unit Cost

TSDC-Related Transportation Improvement Costs	New Daily Trips	Cost/* Daily Trip
$78,470,000	510,000	**$154**

* Rounded to nearest whole number.

MARION COUNTY TRANSPORTATION SYSTEM IMPROVEMENT NEEDS



MARION COUNTY TRANSPORTATION SYSTEMS DEVELOPMENT CHARGE STUDY

FIGURE 2

Marion County TSDC Calculation

The Marion County TSDC is applicable to all new land development between the Salem and Keizer city limits and the UGB, and is calculated at **$154** per *equivalent length new daily trip.* The Trip Generation, Fifth Edition (published by the Institute of Transportation Engineers, 1991) and San Diego Traffic Generators (published by the San Diego Association of Governments, 1993) are to be used for all TSDC calculations. Tabulations of trip generation rates, trip length factors and linked trip factors for various land uses are found in Appendix C.

Typical TSDC Charge/Comparison to Other Jurisdictions

Table 3 identifies the proposed Marion County TSDC fee, as applied to various land use developments such as single-family and multi-family homes, commercial shopping centers (100,000 sq. ft.), fast food restaurants (3,000 sq. ft.), and industrial centers (100,00 sq. ft.). Table 3 also compares the proposed Marion County TSDC rates with other TSDC or Transportation Impact Fee (TIF) rates in other Oregon jurisdictions. Example calculations of the TSDC for typical Salem area development projects are included in the "Example Calculations" section of this report (page 18).

Proportion of Total Funding Needs

Assuming that all collector and arterial street capacity improvements and upgrades outside the CDA are included in the City of Salem and Marion County TSDCs, the Salem area-wide TSDC is estimated to generated approximately $78,470,000 (17 percent) of the total $450,670,000 funding required to complete all the necessary projects over the next twenty years. Figure 2 compares the estimated TSDC funding to the total required funding.

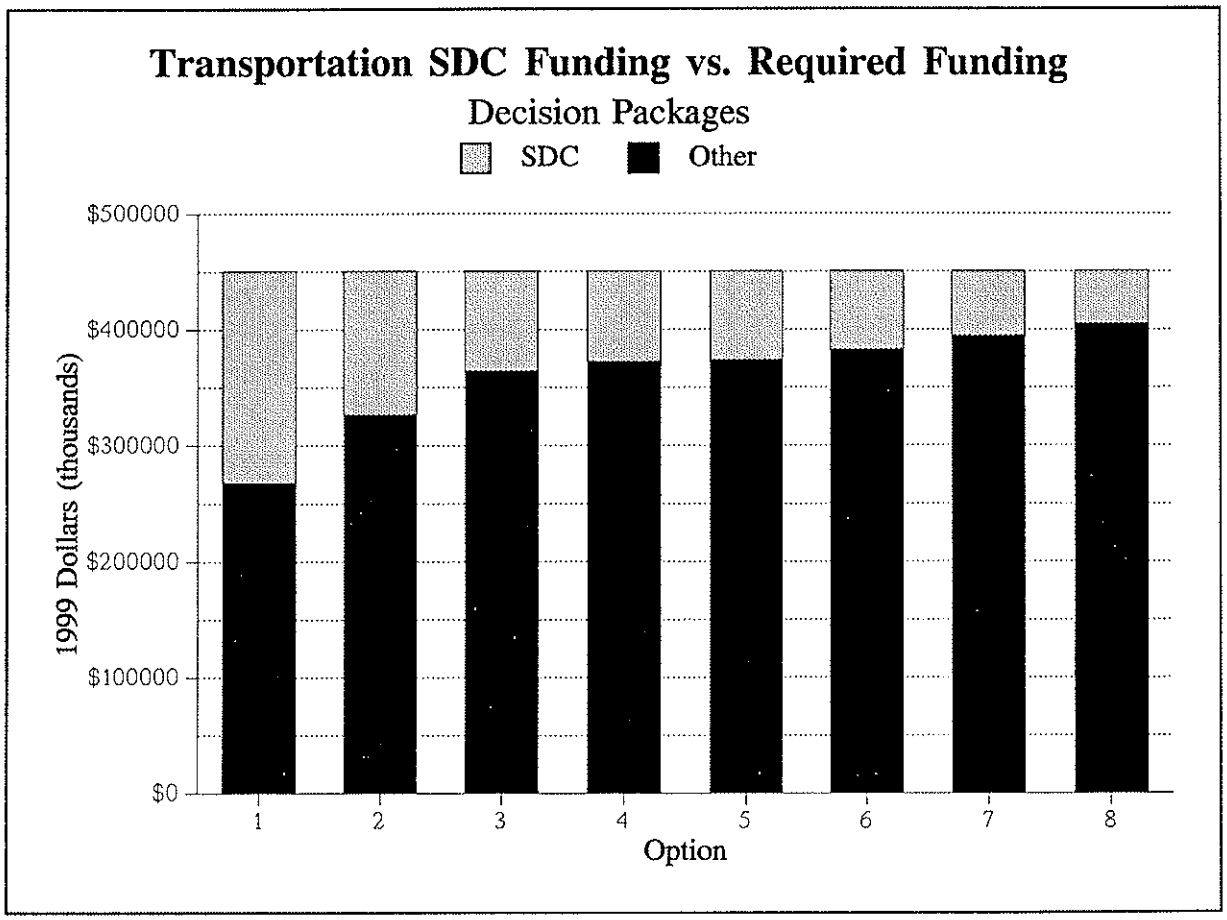
Table 3
Recommended Transportation Systems Development Charge
(Decision Package No. 4)

Typical Development	Marion County TSDC (1999 dollars)
Single-Family (LDR) Dwelling Unit	$1,470
Multi-Family (MDR) Dwelling Unit	$965
Retail 100,000 sq ft	$225,550
Fast Food 3,000 sq ft	$16,670
Industrial 100,000 sq ft	$120,220

Other Jurisdictions[A] (1999 dollars)							
Typical Development	Clackamas County	Washington County	West Linn[B]	Wilsonville	Newberg	Lake Oswego	Oregon City
Single Family Dwelling Unit	$1,430	$1,520	$ 950 (City) $3,200 (FDA)	$2,190	$1,200	$1,660	$1,210
Multi-Family Dwelling Unit	$1,000	$1,020	$ 650 (City) $2,180 (FDA)	$1,560	$ 810	$1,000	$800
Retail (100,000 sq ft)	$544,450	$282,140	$368,200 (City) $1,236,500 (FDA)	$428,340	$216,950	$1,160,040[C]	$239,340
Fast Food (3,000 sq ft)	$49,280	$12,700	$11,050 (City) $37,100 (FDA)	N/A	$13,670	$311,280[C]	N/A
Industrial (100,000 sq ft)	$114,350	$112,170	N/A	N/A	$98,250	$114,420	N/A

N/A Not Available
[A] All fee amounts have been rounded to nearest $10.
[B] West Linn has one fee structure for the city proper and another for the Future Development Area (FDA).
[C] Assumes no reduction for pass-by and trip length.

Figure 3



Estimated TSDC Revenue Generation

An assessment of TSDC revenue generation was estimated based upon the size and type of developable lands within the Salem UGB (Less Keizer) for residential, commercial and industrial use as identified and adopted in the Salem Area Comprehensive Plan. More specific land development types were defined to determine the 20-year trip generation potential, of developable lands. TSDC revenue was then calculated based on the annual capacity of developable lands for each of the specific land development types. These revenues are based on the TSDC Decision Package 4 fee while using the trip generation rates and adjustment factors summarized in Appendix C.

Table 4 summarizes the TSDC revenue projection based on the capacity of land development as identified in the Salem Area Comprehensive Plan. As shown in Table 4, if present growth trends continue, revenues of approximately $4 million per year could be generated by anticipated growth within the UGB to fund eligible transportation projects. It is estimated that within present unincorporated Marion County

approximately $1 - $1.5 million[3] TSDC revenue could be generated annually. Over a 20-year time frame land development could generate over $79 million in TSDC revenues, which would fund the TSDC qualified public improvements identified under Decision Package 4.

[3]Don Ganer and Associates, June 14, 1994

Table 4
Salem Area TSDC Forecasted Revenue
Annual Development to Fund Decision Package 4 TSDC
Total Capacity (Salem Area Comprehensive Plan)

Number of Developments	Size of Development	Annual TSDC Revenue (millions)
Residential		
10	100 - unit single family sub-division	$ 1.47
2	155 - unit apartment complex	.30
	Sub-Total	**$ 1.77**
Commercial		
1	53,000 sq. ft. GFA office building (or 1 - 212,000 sq. ft. GFA office building every 4 years)	$ .09
2	"big box" stores (at 150,000 sq. ft. GFA/store)	.80
1	hardware store (assume 50,000 sq. ft. GFA)	.14
1	auto parts store (assume 15,000 sq. ft. GFA)	.03
2	fast food restaurants (assume 3,000 sq. ft. GFA/restaurant)	.03
	Sub-Total	**$ 1.09**
Industrial		
3	100,000 sq. ft. GFA light industrial sites	$ .36
2	75,000 sq. ft. GFA manufacturing facilities	.10
1	50,000 sq. ft. GFA warehouse/distribution center	.04
1	500,000 sq. ft. GFA industrial park	.60
	Sub-Total	**$ 1.10**
	TOTAL	**$ 3.96**
		x 20 Years
	TSDC 20 - YEAR REVENUE	**$79,200,000.00**

Conclusion

The recommended Marion County Transportation Systems Development Charge (TSDC) provides a fair and equitable method of generating revenues from growth-related projects. The methodology provides for an improvement fee based on the portions of future roadway improvement projects that are needed to accommodate future travel demand associated with new land use development. The improvement fees are allocated to anticipated future development based on the relative level of future travel demand generated by different types of projects (residential, commercial, industrial, etc.). Thus the recommended TSDC is in compliance with State law. The TSDC follows a philosophy similar to the already adopted water and sewer systems development charges, in that it helps provide transportation facilities necessary for opening up areas for future growth. The improvement fees to be paid by different types of future development are commensurate with TSDC improvement fees in other Oregon jurisdictions, such that they will not discourage future development from locating in the Salem area.

It is important to note that the recommended TSDC will not pay for all forecasted transportation needs over the 20-year period to 2015. There will still be a need for the County to make important policy decisions regarding how to fund the balance of projected future transportation needs. The proposed TSDC, however, represents an equitable foundation for a total transportation funding package.

Example Calculations

1. Residential development consisting of 100 single family detached units and 20 multi-family attached units.

Equivalent Length New Daily Trip (ELNDT) =

	Number Units	*	Trip Rate	*	Trip Length Factor	*	Linked Trip Factor	=	Total Trips (ELNDT)
Single Family	100	*	9.55	*	1.00	*	1.00	=	955
Multi-Family	20	*	6.47	*	0.97	*	1.00	=	126
Total									**1,081**

Transportation System Development Charge (TSDC) =

	ELNDT	*	$/ELNDT	=	TSDC
Single Family	955	*	154	=	$147,070
Multi-Family	126	*	154	=	$19,405
Total					**$166,475**

2. Shopping center consisting of 250,000 square feet of gross leasable area

Equivalent Length New Daily Trip (ELNDT) =

	Number Units (1,000 s.f.)	*	Trip Rate	*	Trip Length Factor	*	Linked Trip Factor	=	Total Trips (ELNDT)
Shopping Center	250	*	46.33	*	0.49	*	0.67	=	3,803

Transportation System Development Charge (TSDC) =

	ELNDT	*	$/ELNDT	=	TSDC
Shopping Center	3,803	*	154	=	$585,590

3. Light industrial development with 100,000 square feet of gross floor area.

Equivalent Length New Daily Trips (ELNDT) =

	Number Units (1,000 s.f.)	*	Trip Rate	*	Trip Length Factor	*	Linked Trip Factor	=	Total Trips (ELNDT)
Light Industrial	100	*	6.97	*	1.12	*	1.00	=	781

Transportation System Development Charge (TSDC) =

	ELNDT	*	$/ELNDT	=	TSDC
Light Industrial	781	*	154	=	$120,275

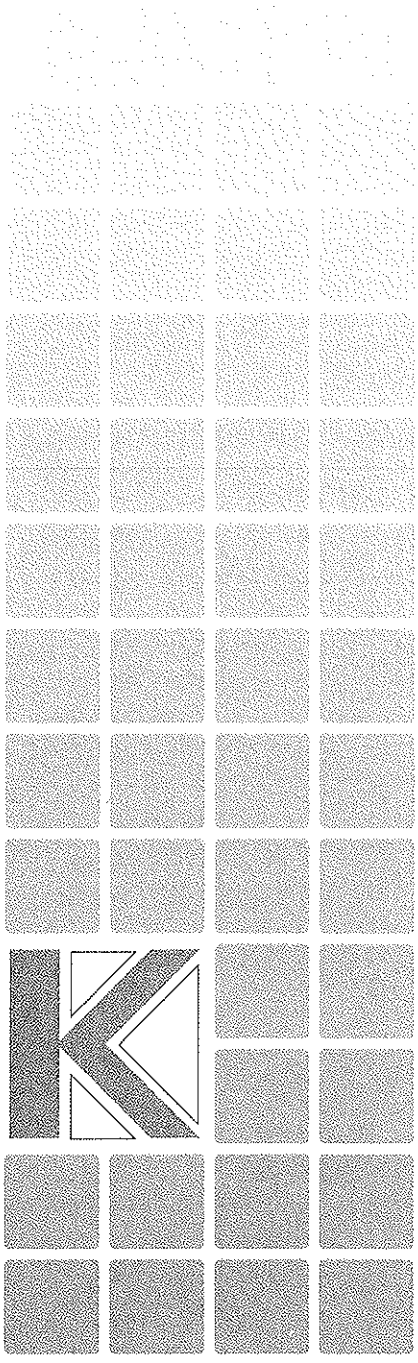
References

1. City of Salem, *Salem Area Transportation Plan*

2. Kittelson & Associates, Inc., and W&H Pacific, Inc., *City of Salem, Transportation Systems Improvement Plan and Financing Study, Technical Memorandum No. 2*, 1994.

3. Kittelson & Associates, Inc., and W&H Pacific, Inc., *City of Salem, Transportation Systems Improvement Plan and Financing Study, Technical Report - Salem Area Travel Model Conversion, QRSII to EMME/2*, 1994.

Appendix A



Don
Ganer &
Associates

15418 N.W. White Fox Drive
Beaverton, Oregon 97006
(503) 690-8981
FAX: 645-8543

June 14, 1994

Mr. Bob Hansen, Director
Marion County Department of Public Works
220 High Street N.E., Suite 300
Salem, Oregon 97301

Dear Bob:

As you requested, I have performed an analysis of the annual revenues Marion County might receive if you decide to enact a Transportation System Development Charge (SDC) in the unincorporated area within the Salem-Keizer urban growth boundary (UGB). I estimate that annual revenues of between $1,125,263 and $1,687,895 can be expected, depending on the level of building activity that occurs. The remainder of this letter explains the methodology used to arrive at these estimates.

METHODOLOGY

My analysis is based on a review of building permits issued by Marion County during 1992, 1993, and 1994 (2 months) for four categories of building activity including (1) single family residential, (2) multi-family residential, (3)manufactured housing residential, and (4) commercial/industrial new construction. The total number of permits issued each year for each category was compiled, and a sample of permits was selected to estimate the percentage of permits issued within the UGB for each category. The sample was also used to estimate the average SDC per unit that may be expected for commercial/industrial building activity. Hypothetical SDC rates (borrowed from Clackamas County) were then applied to Marion County's permit volumes at 80%, 100%, and 120% of the annual average to develop the following revenue estimates.

Type of Building Activity	Hypothetical SDC Rate/Unit	Avg. Units/Yr. Within UGB	Potential Revenue @ 80% Avg.	Potential Revenue @ 100% Avg.	Potential Revenue @ 120% Avg.
Single-Fam. Res.	$ 1,222	172.21	$ 168,352	$ 210,440	$ 252,528
Multi-Fam. Res.	828	193.85	128,404	160,505	192,606
Mfg. Hous. Res.	615	88.15	43,369	54,211	65,053
Comm./Ind.	16,530	59.37	785,139	981,424	1,177,709
Total Potential Annual Revenue:			$ 1,125,263	$ 1,406,579	$ 1,687,895

For your information, I have attached a spreadsheet showing a more complete breakdown of these calculations.

If these revenue estimates are sufficient to warrant proceeding further in the development of the Transportation SDC, please let me know as soon as possible so I can begin work and we can complete the project before November.

Sincerely,

Don Ganer
attachment

MARION COUNTY TRANSPORTATION

SDC REVENUE PROJECTION

6/14/94

LAND USE	SDC AMOUNT*	UNIT OF MEAS	1992 UNITS	1993 UNITS	1994** UNITS	% WITHIN UGB***	AVERAGE UNITS/YR WITHIN UGB	ANNUAL REVENUE BLDG. ACTIV 100.00%	ANNUAL REVENUE BLDG. ACTIV 80.00%	ANNUAL REVENUE BLDG. ACTIV 120.00%
Residential										
Single Family	$1,222	/ unit	303	203	24	70.40	172.21	$210,440	$168,352	$252,528
Multi Family	$828	/ unit	154	224	42	100.00	193.85	$160,505	$128,404	$192,606
Mfgd Housing	$615	/ unit	206	227	25	41.70	88.15	$54,211	$43,369	$65,053
Sub-Total Residential:								$425,155	$340,124	$510,186
Commercial/Industrial										
Comm/Ind	$16,530	/ unit	62	116	14	67.00	59.37	$981,424	$785,139	$1,177,709
TOTAL FOR RESIDENTIAL AND COMMERCIAL/INDUSTRIAL:								$1,406,579	$1,125,263	$1,687,895

* Hypothetical SDC amounts are based on Clackamas County rates, with the rate for commercial/industrial units derived from a random sample of 27 Marion County permits issued in 1993.

**1994 building activity is for first 2 months of the year.

*** Percentages within the UGB were derived from random samples of building permits issued during 1993 within the unincorporated area of Marion County. The samples included 27 commercial/industrial permits, 35 multi-family units, 27 single family units, and 24 manufactured housing units.

DRAFT

Don
Ganer &
Associates

15418 N.W. White Fox Drive
Beaverton, Oregon 97006
(503) 690-8981
FAX: 645-8543

July 15, 1994

Mr. Bob Hansen, Director
Marion County Public Works
300 Senator Bldg.
220 High Street N.E.
Salem, Oregon 97301

Dear Bob:

If the County decides to proceed with implementation of a Transportation SDC *within the Urban Growth Boundary*, I recommend that the County use the City's methodology as the basis for determining the SDC rates. This recommendation is based on my review of the methodology used for the City of Salem's proposed SDC rates.

The City's methodology is consistent with the requirements of ORS 223.297 - 223.314 and it considers the costs of growth-related future transportation needs for the next twenty years for both the City *and the unincorporated area* within the Urban Growth Boundary. Essentially, the City has already developed the methodology needed for a Transportation SDC within the Urban Growth Boundary; there is no need for the County to repeat this process.

My recommendation assumes that the proposed projects identified in the City's transportation plan closely match *growth-related* projects which have been identified by the County. If there are differences which would significantly increase or decrease the total cost of projects, the SDC rates may need to be adjusted to reflect these differences.

If the County selects the same funding level (Option 4) being recommended for the City, the fee levels charged by the City and the County would be the same. Option 4 includes use of (1) a combination of SDC's and bonds for street capacity improvements, (2) SDC revenues to fund new traffic signals, and (3) SDC revenues for street standards upgrades outside the CDA. If the County selects a different set of project-types for funding by an SDC, the SDC rates may be different than those selected by the City.

DRAFT

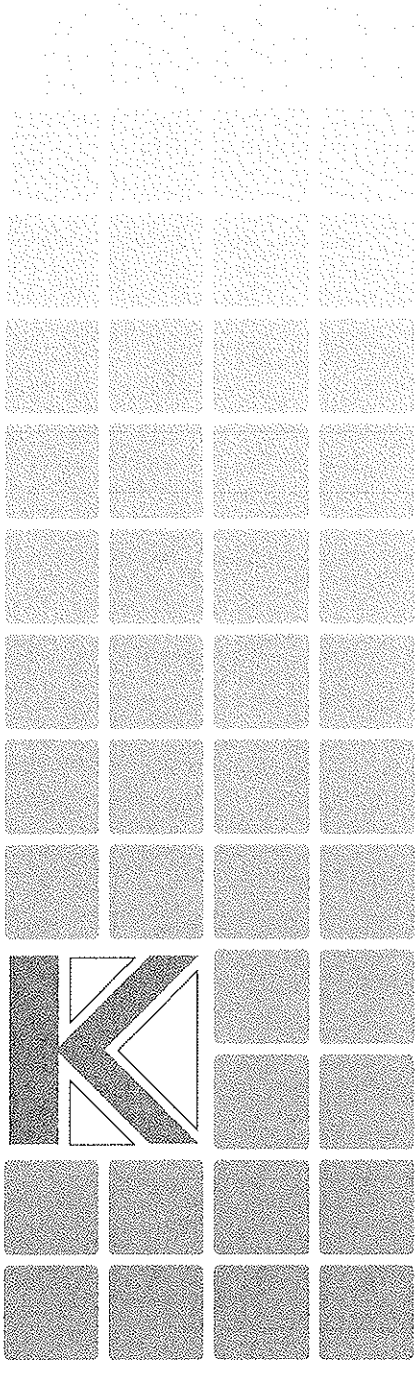
If the County chooses to do anything other than adopt the same project list, funding level, and SDC rates proposed for the City, I recommend that you consider obtaining the services of Kittleson and Associates to make the modifications to their methodology that may be required to meet the County's needs.

I will be glad to talk with you and further discuss my recommendations at your convenience.

Sincerely,

Don Ganer

Appendix B



Marion County Transportation SDC
New Traffic Signals[4]

Project Number	Location	Total Cost	1999 Indexed Cost
Northeast District			
1	Hwy. 99E/Kale	$120,000	$146,040
2	Fisher/Ward	$120,000	$146,040
3	Portland Rd./Northgate Extension	$120,000	$146,040
4	Hyacinth/Salem Industrial	$120,000	$146,040
Central District			
5	Silverton Rd./Hollywood	$120,000	$146,040
6	Silverton/17th	$120,000	$146,040
7	Sunnyview/Fisher	$120,000	$146,040
8	Sunnyview/45th	$120,000	$146,040
9	Park/D	$120,000	$146,040
10	Center/Park	$120,000	$146,040
11	Center/45th	$120,000	$146,040
12	State/46th	$120,000	$146,040
13	Macleay/Connecticut	$120,000	$146,040
14	Union/Liberty	$120,000	$146,040
15	Swegle/45th	$120,000	$146,040
Southeast District			
16	McGilchrist/22nd	$120,000	$146,040
17	Fairview/Pringle	$120,000	$146,040
18	Fairview Industrial Drive/Reed	$120,000	$146,040
19	Turner/Airway Dr.	$120,000	$146,040
20	Battle Creek/Reed	$120,000	$146,040

[4]Note: Those signals that are located inside the Salem city limits are shaded.

Project Number	Location	Total Cost	1999 Indexed Cost
21	Kuebler/Stroh Lane	$120,000	$146,040
22	Kuebler/27th	$120,000	$146,040
23	Kuebler/36th Ave.	$120,000	$146,040
South District			
24	S. River/Schurman	$120,000	$146,040
25	S. River/Croisan Creek Rd.	$120,000	$146,040
26	Sunnyside/Mildred	$120,000	$146,040
West District			
27	Eola Dr./Edgewater	$120,000	$146,040
28	Eola/Kingwood	$120,000	$146,040

Marion County Transportation SDC
Street Capacity Improvements Less City of Salem Bond Projects

Note: Those projects that are located inside the Salem city limits are shaded.

Northeast District								SDC Costs			Non-SDC	Total	1994 to 1999 Indexed Costs	
Project #	Desc	Road	Begin Int	End Int	Length	X Width (ft)	Class	Street Costs	ROW Costs	Total	Costs	Cost	SDC Costs	Total
1	A	Chemawa	I-5	Highway 99E	0.9	48	Beltline	$1,060,000	$860,000	$1,920,000	$1,790,000	$3,710,000	$2,340,000	$4,520,000
2	B	Kale	Highway 99E	Happy	0.2	32	Minor Arterial	$220,000	$30,000	$250,000	$290,000	$540,000	$300,000	$660,000
3	A	Hyacinth	Salem Parkway	Highway 99E	0.7	32	Arterial	$0	$0	$0	$2,300,000	$2,300,000	$0	$2,800,000
4	B	Ward Dr	I-5	Lancaster	0.5	28	Collector	$310,000	$60,000	$370,000	$620,000	$990,000	$450,000	$1,200,000

Central District								SDC Costs			Non-SDC	Total	1994 to 1999 Indexed Costs	
Project #	Desc	Road	Begin Int	End Int	Length	X Width (ft)	Class	Street Costs	ROW Costs	Total	Costs	Cost	SDC Costs	Total
5	A	Silverton	Fairgrounds	Hawthorne Ave	1.3	32	Arterial	$0	$0	$0	$4,270,000	$4,270,000	$0	$5,200,000
6	A	Hawthorne	Silverton	March Ct	2	32	Arterial	$0	$0	$0	$6,570,000	$6,570,000	$0	$8,000,000
7	A	Sunnyview Rd	Lancaster	Brown	0.6	32	Arterial	$930,000	$230,000	$1,160,000	$810,000	$1,970,000	$1,410,000	$2,400,000
8	A	Hawthorne	State St	Mill Creek	0.8	36	Arterial	$0	$0	$0	$2,630,000	$2,630,000	$0	$3,200,000
9	C	Capitol	Market	Fairgrounds	0.5		Arterial	$0	$0	$0	$2,500	$2,500	$0	$3,000
10	C	Summer	Market	Union	0.4		Arterial	$0	$0	$0	$2,000	$2,000	$0	$2,000
11(a)	C	State Street	13th	17th	0.3		Arterial	$0	$0	$0	$160,000	$160,000	$0	$190,000
11(b)	B	State Street	17th	25th	0.5	28	Arterial	$0	$0	$0	$1,640,000	$1,640,000	$0	$2,000,000
12	A	Cordon Road	Highway 22	Wagon Wheel Rd	1.6	34	Beltline	$2,820,000	$1,520,000	$4,340,000	$2,250,000	$6,590,000	$5,280,000	$8,020,000

Southeast District								SDC Costs			Non-SDC	Total	1994 to 1999 Indexed Costs	
Project #	Desc	Road	Begin Int	End Int	Length	X Width (ft)	Class	Street Costs	ROW Costs	Total	Costs	Cost	SDC Costs	Total
13	B	SE 36th Ave	Kuebler Blvd	S. of Boone Rd.	0.3	28	Minor Arterial	$380,000	$40,000	$420,000	$380,000	$800,000	$510,000	$970,000
14(a)	A	12th St	13th St	Commercial	2	36	Arterial	$0	$0	$0	$6,570,000	$6,570,000	$0	$8,000,000
14(b)	B	13th St	Mission	12th St	0.9	28	Arterial	$0	$0	$0	$2,960,000	$2,960,000	$0	$3,600,000
15	A	25th St	Mission	SPRR	1.2	34	Arterial	$0	$0	$0	$3,940,000	$3,940,000	$0	$4,790,000
16	B	Fairview Industrial	Fairview Hospital	Keubler	1.5	28	Minor Arterial	$0	$0	$0	$3,990,000	$3,990,000	$0	$4,860,000
17	B	Battle Creek Rd	Hillrose St	Eastlake Dr	1.3	28	Arterial	$2,220,000	$490,000	$2,710,000	$1,560,000	$4,270,000	$3,300,000	$5,200,000
18	A	Kuebler	Highway 22	I-5	2.7	34	Beltline	$0	$0	$0	$11,120,000	$11,120,000	$0	$13,530,000

South District								SDC Costs			Non-SDC	Total	1994 to 1999 Indexed Costs	
Project #	Desc	Road	Begin Int	End Int	Length	X Width (ft)	Class	Street Costs	ROW Costs	Total	Costs	Cost	SDC Costs	Total
19	B	Owens St/S River Rd	Commercial	Croisan	2	28	Minor Arterial	$0	$0	$0	$5,320,000	$5,320,000	$0	$6,470,000
20	A	Kuebler	City Limits	Sunnyside	2	32	Beltline	$0	$0	$0	$8,240,000	$8,240,000	$0	$10,030,000
21	A	Commercial	Barnes Ave	I-5	1.6	32	Arterial	$0	$0	$0	$5,250,000	$5,250,000	$0	$6,390,000
22	A	Liberty Rd	Kuebler Blvd	Kevin Way	0.2	28	Arterial	$0	$0	$0	$660,000	$660,000	$0	$800,000
23	B	Croisan Creek Rd	S River Rd	Keubler	3	28	Collector	$0	$0	$0	$5,920,000	$5,920,000	$0	$7,200,000

Marion County Transportation SDC
Street Capacity Improvements Less City of Salem Bond Projects

Note: Those projects that are located inside the Salem city limits are shaded.

West District								SDC Costs			Non-SDC	Total	1994 to 1999 Indexed Costs	
Project #	Desc	Road	Begin Int	End Int	Length	X Width (ft)	Class	Street Costs	ROW Costs	Total	Costs	Cost	SDC Costs	Total
24	A	Glen Creek	Doaks Ferry	Alpine	1.6		Arterial	$0	$0	$0	$5,250,000	$5,250,000	$0	$6,390,000
25	B	Eola	Kingwood	Salem-Dayton Hwy	0.4	28	Minor Arterial	$70,000	$50,000	$120,000	$0	$120,000	$150,000	$150,000
26	B	Edgewater	Eola	Rosemont	0.2	28	Minor Arterial	$250,000	$30,000	$280,000	$250,000	$530,000	$340,000	$650,000

Total by Districts

NE	$1,590,000	$950,000	$2,540,000	$5,000,000	$7,540,000	$3,090,000	$9,180,000
Central	$3,750,000	$1,750,000	$5,500,000	$18,330,000	$23,830,000	$6,690,000	$29,020,000
SE	$2,600,000	$530,000	$3,130,000	$30,520,000	$33,650,000	$3,810,000	$40,950,000
South	$0	$0	$0	$25,390,000	$25,390,000	$0	$30,890,000
West	$320,000	$80,000	$400,000	$5,500,000	$5,900,000	$490,000	$7,190,000
Total	$8,260,000	$3,310,000	$11,570,000	$84,740,000	$96,310,000	$14,080,000	$117,230,000
BRIDGES			$2,955,000	$2,805,000	$5,760,000	$3,600,000	$7,010,000
Total			$14,525,000	$87,545,000	$102,070,000	$17,680,000	$124,220,000

Arterials Only - Total by District

NE	$1,280,000	$890,000	$2,170,000	$4,380,000	$6,550,000	$2,640,000	$7,980,000
Central	$3,750,000	$1,750,000	$5,500,000	$18,330,000	$23,830,000	$6,690,000	$29,020,000
SE	$2,600,000	$530,000	$3,130,000	$30,520,000	$33,650,000	$3,810,000	$40,950,000
South	$0	$0	$0	$19,470,000	$19,470,000	$0	$23,690,000
West	$320,000	$80,000	$400,000	$5,500,000	$5,900,000	$490,000	$7,190,000
Total	$7,950,000	$3,250,000	$11,200,000	$78,200,000	$89,400,000	$13,630,000	$108,830,000
BRIDGES			$2,955,000	$2,805,000	$5,760,000	$3,600,000	$7,010,000
Total			$14,155,000	$81,005,000	$95,160,000	$17,230,000	$115,810,000

Project Description
A - Widen from 2/3 lanes to 5 lanes, including bicycle lanes, curb and gutter, and sidewalk.
B - Widen from 2 to 3 lanes, including bicycle lanes, curb and gutter, and sidewalk.
C - Re-stripe for additional travel and bicycle lanes.

Marion County Transportation SDC
Street Standard Upgrades Outside the CDA

Note: Those Projects (portion or whole) that are located within Marion County are shaded.

NE District				SDC Costs				Non-SDC Costs				Total	1994 to 1999 Indexed Costs	
Street	Class	Length	Street $/LF	Street	ROW	Bridge	Total	Street	ROW	Bridge	Total	Cost	SDC	Total
Indian School (1)	Collector	0.9	$75	$360,000	$20,000	$75,000	$460,000	$1,300,000	$20,000	$255,000	$1,575,000	$2,040,000	$560,000	$2,480,000
Blossom Dr (2)	Collector	0.4	$75	$160,000	$10,000		$170,000	$580,000	$10,000		$590,000	$760,000	$210,000	$920,000
Niles Ave (3)	Collector	0.2	$75	$80,000	$0		$80,000	$290,000	$0		$290,000	$370,000	$100,000	$450,000
Hayesville (west) (4)	Collector	0.3	$75	$120,000	$10,000		$130,000	$430,000	$10,000		$440,000	$570,000	$160,000	$690,000
Salem Industrial Dr (5)	Collector	0.5	$75	$200,000	$10,000	$75,000	$290,000	$720,000	$10,000	$255,000	$985,000	$1,280,000	$350,000	$1,560,000
Lake Labish/Labish Gardens (6)	Collector	2.4	$75	$950,000	$50,000	$75,000	$1,080,000	$3,490,000	$50,000	$255,000	$3,795,000	$4,880,000	$1,310,000	$5,940,000
Hayesville (east) (7)	Collector	0.3	$75	$120,000	$10,000		$130,000	$430,000	$10,000		$440,000	$570,000	$160,000	$690,000
Ward (8)	Collector	0.3	$75	$120,000	$10,000	$75,000	$210,000	$430,000	$10,000	$255,000	$695,000	$910,000	$260,000	$1,110,000
Herin (9)	Collector	0.2	$75	$80,000	$0	$75,000	$160,000	$290,000	$0	$255,000	$545,000	$710,000	$190,000	$860,000
Kale (10)	Minor Arterial	1.2	$75	$480,000	$30,000		$510,000	$1,740,000	$30,000		$1,770,000	$2,280,000	$620,000	$2,770,000
Hazel Green (11)	Beltline	1.5	$325	$2,570,000	$240,000	$330,000	$3,140,000	$2,180,000	$240,000	$255,000	$2,675,000	$5,820,000	$3,820,000	$7,080,000
TOTAL	Collector	5.5	$75	$2,190,000	$120,000	$375,000	$2,710,000	$7,960,000	$120,000	$1,275,000	$9,355,000	$12,090,000	$3,300,000	$14,700,000
TOTAL	Minor Arterial	1.2	$75	$480,000	$30,000	$0	$510,000	$1,740,000	$30,000	$0	$1,770,000	$2,280,000	$620,000	$2,770,000
TOTAL	Basic Arterial	0	$275	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL	Beltline	1.5	$325	$2,570,000	$240,000	$330,000	$3,140,000	$2,180,000	$240,000	$255,000	$2,675,000	$5,820,000	$3,820,000	$7,080,000
	TOTAL	8.2		$5,240,000	$390,000	$705,000	$6,360,000	$11,880,000	$390,000	$1,530,000	$13,800,000	$20,190,000	$7,740,000	$24,550,000

Central District				SDC Costs				Non-SDC Costs				Total	1994 to 1999 Indexed Costs	
Street	Class	Length	Street $/LF	Street	ROW	Bridge	Total	Street	ROW	Bridge	Total	Cost	SDC	Total
Carolina Ave (12)	Collector	0.3	$75	$120,000	$10,000		$130,000	$430,000	$10,000		$440,000	$570,000	$160,000	$690,000
Auburn (13)	Collector	0.4	$75	$160,000	$10,000		$170,000	$580,000	$10,000		$590,000	$760,000	$210,000	$920,000
Macleay (14)	Collector	0.5	$75	$200,000	$10,000		$210,000	$720,000	$10,000		$730,000	$940,000	$260,000	$1,140,000
Swegle (15)	Minor Arterial	0.2	$75	$80,000	$0		$80,000	$290,000	$0		$290,000	$370,000	$100,000	$450,000
Center (16)	Basic Arterial	0.4	$275	$580,000	$30,000		$610,000	$160,000	$30,000		$190,000	$800,000	$740,000	$970,000
Airport (17)	Basic Arterial	0.6	$275	$870,000	$40,000	$270,000	$1,180,000	$870,000	$40,000	$255,000	$1,165,000	$2,350,000	$1,440,000	$2,860,000
Sunnyview (18)	Basic Arterial	0.3	$275	$440,000	$20,000		$460,000	$430,000	$20,000		$450,000	$910,000	$560,000	$1,110,000
Silverton (19)	Basic Arterial	0.4	$275	$580,000	$30,000	$270,000	$880,000	$580,000	$30,000	$255,000	$865,000	$1,750,000	$1,070,000	$2,130,000
Hawthorne (20)	Basic Arterial	0.3	$275	$440,000	$20,000	$270,000	$730,000	$430,000	$20,000	$255,000	$705,000	$1,440,000	$890,000	$1,750,000
TOTAL	Collector	1.2	$75	$480,000	$30,000	$0	$510,000	$1,730,000	$30,000	$0	$1,760,000	$2,270,000	$630,000	$2,750,000
TOTAL	Minor Arterial	0.2	$75	$80,000	$0	$0	$80,000	$290,000	$0	$0	$290,000	$370,000	$100,000	$450,000
TOTAL	Basic Arterial	2	$275	$2,910,000	$140,000	$810,000	$3,860,000	$2,470,000	$140,000	$765,000	$3,375,000	$7,250,000	$4,700,000	$8,820,000
TOTAL	Beltline	0	$325	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	TOTAL	3.4		$3,470,000	$170,000	$810,000	$4,450,000	$4,490,000	$170,000	$765,000	$5,425,000	$9,890,000	$5,430,000	$12,020,000

Marion County Transportation SDC
Street Standard Upgrades Outside the CDA

Note: Those Projects (portion or whole) that are located within Marion County are shaded.

SE District				SDC Costs				Non-SDC Costs				Total	1994 to 1999 Indexed Costs	
Street	Class	Length	Street $/LF	Street	ROW	Bridge	Total	Street	ROW	Bridge	Total	Cost	SDC	Total
Deer Park Rd (21)	Collector	1.3	$75	$510,000	$30,000	$150,000	$690,000	$1,890,000	$30,000	$510,000	$2,430,000	$3,120,000	$840,000	$3,800,000
Carson Dr (22)	Collector	1.8	$75	$710,000	$40,000		$750,000	$2,620,000	$40,000		$2,660,000	$3,410,000	$910,000	$4,150,000
Gath Rd (23)	Collector	0.5	$75	$200,000	$10,000		$210,000	$720,000	$10,000		$730,000	$940,000	$260,000	$1,140,000
Kashmir Way (24)	Collector	0.6	$75	$240,000	$10,000		$250,000	$870,000	$10,000		$880,000	$1,130,000	$300,000	$1,380,000
14th St (25)	Collector	0.2	$75	$80,000	$0		$80,000	$290,000	$0		$290,000	$370,000	$100,000	$450,000
Oxford St. (26)	Collector	0.3	$75	$120,000	$10,000		$130,000	$430,000	$10,000		$440,000	$570,000	$160,000	$690,000
22nd St (27)	Collector	0.1	$75	$40,000	$0		$40,000	$140,000	$0		$140,000	$180,000	$50,000	$220,000
Boone Rd (28)	Collector	0.3	$75	$120,000	$10,000		$130,000	$430,000	$10,000		$440,000	$570,000	$160,000	$690,000
Barnes Ave (29)	Collector	0.3	$75	$120,000	$10,000		$130,000	$430,000	$10,000		$440,000	$570,000	$160,000	$690,000
27th Ave (30)	Collector	0.2	$75	$80,000	$0	$75,000	$160,000	$290,000	$0	$255,000	$545,000	$710,000	$190,000	$860,000
Reed Lane (31)	Collector	0.2	$75	$80,000	$0		$80,000	$290,000	$0		$290,000	$370,000	$100,000	$450,000
Brentwood Dr/Robins Lane (32)	Collector	0.4	$75	$160,000	$10,000		$170,000	$580,000	$10,000		$590,000	$760,000	$210,000	$920,000
Wiltsey St. (33)	Collector	0.9	$75	$360,000	$20,000	$75,000	$460,000	$1,300,000	$20,000	$255,000	$1,575,000	$2,040,000	$560,000	$2,480,000
36th (34)	Collector	0.5	$75	$200,000	$10,000		$210,000	$720,000	$10,000		$730,000	$940,000	$260,000	$1,140,000
Langley St. (35)	Collector	0.5	$75	$200,000	$10,000		$210,000	$720,000	$10,000		$730,000	$940,000	$260,000	$1,140,000
Eastland Ave (36)	Collector	0.3	$75	$120,000	$10,000		$130,000	$430,000	$10,000		$440,000	$570,000	$160,000	$690,000
Turner Rd (37)	Minor Arterial	2	$75	$790,000	$40,000	$150,000	$980,000	$2,910,000	$40,000	$510,000	$3,460,000	$4,440,000	$1,190,000	$5,400,000
Unnamed (38)	Minor Arterial	0.7	$75	$280,000	$10,000		$290,000	$1,010,000	$10,000		$1,020,000	$1,310,000	$350,000	$1,590,000
Aumsville Hwy (39)	Minor Arterial	0.5	$75	$200,000	$10,000		$210,000	$720,000	$10,000		$730,000	$940,000	$260,000	$1,140,000
Marietta (40)	Minor Arterial	0.5	$75	$200,000	$10,000		$210,000	$720,000	$10,000		$730,000	$940,000	$260,000	$1,140,000
32nd (41)	Minor Arterial	0.1	$75	$40,000	$0		$40,000	$140,000	$0		$140,000	$180,000	$50,000	$220,000
Reed Rd. (42)	Minor Arterial	0.8	$75	$320,000	$20,000		$340,000	$1,160,000	$20,000		$1,180,000	$1,520,000	$410,000	$1,850,000
Trelstad (43)	Minor Arterial	0.3	$75	$120,000	$10,000		$130,000	$430,000	$10,000		$440,000	$570,000	$160,000	$690,000
Turner Rd. (44)	Minor Arterial	2.8	$75	$1,110,000	$60,000	$150,000	$1,320,000	$4,060,000	$60,000	$510,000	$4,630,000	$5,950,000	$1,610,000	$7,240,000
36th Ave. (45)	Minor Arterial	0.4	$75	$160,000	$10,000		$170,000	$580,000	$10,000		$590,000	$760,000	$210,000	$920,000
Airway Dr (46)	Minor Arterial	1	$75	$400,000	$20,000		$420,000	$1,450,000	$20,000		$1,470,000	$1,890,000	$510,000	$2,300,000
Hawthorne (47)	Basic Arterial	0.3	$275	$440,000	$20,000		$460,000	$430,000	$20,000		$450,000	$910,000	$560,000	$1,110,000
Lancaster Avenue. (48)	Basic Arterial	1.3	$275	$1,890,000	$80,000		$1,970,000	$1,890,000	$80,000		$1,970,000	$3,940,000	$2,400,000	$4,790,000
TOTAL	Collector	8.4	$75	$3,340,000	$180,000	$300,000	$3,830,000	$12,150,000	$180,000	$1,020,000	$13,350,000	$17,190,000	$4,680,000	$20,890,000
TOTAL	Minor Arterial	9.1	$75	$3,620,000	$190,000	$300,000	$4,110,000	$13,180,000	$190,000	$1,020,000	$14,390,000	$18,500,000	$5,010,000	$22,490,000
TOTAL	Basic Arterial	1.6	$275	$2,330,000	$100,000	$0	$2,430,000	$2,320,000	$100,000	$0	$2,420,000	$4,850,000	$2,960,000	$5,900,000
TOTAL	Beltline	0	$325	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	TOTAL	19.1		$9,290,000	$470,000	$600,000	$10,370,000	$27,650,000	$470,000	$2,040,000	$30,160,000	$40,540,000	$12,650,000	$49,280,000

South District				SDC Costs				Non-SDC Costs				Total	1994 to 1999 Indexed Costs	
Street	Class	Length	Street $/LF	Street	ROW	Bridge	Total	Street	ROW	Bridge	Total	Cost	SDC	Total
Lone Oak (49)	Collector	1.9	$75	$750,000	$40,000	$150,000	$940,000	$2,760,000	$40,000	$510,000	$3,310,000	$4,250,000	$1,140,000	$5,170,000
Red Leaf Dr. (50)	Collector	0.5	$75	$200,000	$10,000		$210,000	$720,000	$10,000		$730,000	$940,000	$260,000	$1,140,000
Ballyntyne (51)	Collector	0.6	$75	$240,000	$10,000	$75,000	$330,000	$870,000	$10,000	$255,000	$1,135,000	$1,470,000	$400,000	$1,790,000
Croisan Mountain Dr (52)	Collector	0.6	$75	$240,000	$10,000		$250,000	$870,000	$10,000		$880,000	$1,130,000	$300,000	$1,380,000
Viewcrest Dr (53)	Collector	1.3	$75	$510,000	$30,000		$540,000	$1,890,000	$30,000		$1,920,000	$2,460,000	$660,000	$2,990,000
Inland (54)	Collector	0.2	$75	$80,000	$0		$80,000	$290,000	$0		$290,000	$370,000	$100,000	$450,000
Rees Hill (55)	Minor Arterial	1	$75	$400,000	$20,000	$75,000	$500,000	$1,450,000	$20,000	$255,000	$1,725,000	$2,230,000	$610,000	$2,710,000
Mildred Lane (56)	Minor Arterial	2.4	$75	$950,000	$50,000		$1,000,000	$3,490,000	$50,000		$3,540,000	$4,540,000	$1,220,000	$5,530,000
Liberty (57)	Basic Arterial	0.8	$275	$1,160,000	$50,000		$1,210,000	$1,160,000	$50,000		$1,210,000	$2,420,000	$1,470,000	$2,950,000
Viewcrest Dr (58)	Beltline	2.4	$325	$4,120,000	$380,000		$4,500,000	$3,480,000	$380,000		$3,860,000	$8,360,000	$5,480,000	$10,170,000
TOTAL	Collector	5.1	$75	$2,020,000	$100,000	$225,000	$2,350,000	$7,400,000	$100,000	$765,000	$8,265,000	$10,620,000	$2,860,000	$12,920,000
TOTAL	Minor Arterial	3.4	$75	$1,350,000	$70,000	$75,000	$1,500,000	$4,940,000	$70,000	$255,000	$5,265,000	$6,770,000	$1,830,000	$8,240,000
TOTAL	Basic Arterial	0.8	$275	$1,160,000	$50,000		$1,210,000	$1,160,000	$50,000	$0	$1,210,000	$2,420,000	$1,470,000	$2,950,000
TOTAL	Beltline	2.4	$325	$4,120,000	$380,000		$4,500,000	$3,480,000	$380,000	$0	$3,860,000	$8,360,000	$5,480,000	$10,170,000
	TOTAL	11.7		$8,650,000	$600,000	$300,000	$9,560,000	$16,980,000	$600,000	$1,020,000	$18,600,000	$28,170,000	$11,640,000	$34,280,000

Marion County Transportation SDC
Street Standard Upgrades Outside the CDA

Note: Those Projects (portion or whole) that are located within Marion County are shaded.

West District				SDC Costs				Non-SDC Costs				Total	1994 to 1999 Indexed Costs	
Street	Class	Length	Street $/LF	Street	ROW	Bridge	Total	Street	ROW	Bridge	Total	Cost	SDC	Total
College Dr (59)	Collector	1.3	$75	$510,000	$30,000		$540,000	$1,890,000	$30,000		$1,920,000	$2,460,000	$660,000	$2,990,000
Sunwood Dr. (60)	Collector	0.5	$75	$200,000	$10,000		$210,000	$720,000	$10,000		$730,000	$940,000	$260,000	$1,140,000
37th Ave/New Collector (61)	Collector	1.3	$75	$510,000	$30,000		$540,000	$1,890,000	$30,000		$1,920,000	$2,460,000	$660,000	$2,990,000
Emerald Dr/38th Ave. (62)	Collector	0.7	$75	$280,000	$10,000		$290,000	$1,010,000	$10,000		$1,020,000	$1,310,000	$350,000	$1,590,000
Echo (63)	Collector	0.6	$75	$240,000	$10,000		$250,000	$870,000	$10,000		$880,000	$1,130,000	$300,000	$1,380,000
New Collector (64)	Collector	1.4	$75	$550,000	$30,000		$580,000	$2,040,000	$30,000		$2,070,000	$2,650,000	$710,000	$3,230,000
Michigan City (65)	Collector	1.5	$75	$590,000	$30,000		$620,000	$2,180,000	$30,000		$2,210,000	$2,830,000	$750,000	$3,440,000
Orchard Heights Road (66)	Minor Arterial	2	$75	$790,000	$40,000	$150,000	$980,000	$2,910,000	$40,000	$510,000	$3,460,000	$4,440,000	$1,190,000	$5,400,000
Eola Drive (67)	Minor Arterial	1.5	$75	$590,000	$30,000		$620,000	$2,180,000	$30,000		$2,210,000	$2,830,000	$750,000	$3,440,000
Doaks Ferry (68)	Beltline	5.6	$325	$9,610,000	$890,000	$330,000	$10,830,000	$8,130,000	$890,000	$255,000	$9,275,000	$20,110,000	$13,180,000	$24,470,000
TOTAL	Collector	7.3	$75	$2,880,000	$150,000	$0	$3,030,000	$10,600,000	$150,000	$0	$10,750,000	$13,780,000	$3,690,000	$16,760,000
TOTAL	Minor Arterial	3.5	$75	$1,380,000	$70,000	$150,000	$1,600,000	$5,090,000	$70,000	$510,000	$5,670,000	$7,270,000	$1,940,000	$8,840,000
TOTAL	Basic Arterial	0	$275	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL	Beltline	5.6	$325	$9,610,000	$890,000	$330,000	$10,830,000	$8,130,000	$890,000	$255,000	$9,275,000	$20,110,000	$13,180,000	$24,470,000
	TOTAL	16.4		$13,870,000	$1,110,000	$480,000	$15,460,000	$23,820,000	$1,110,000	$765,000	$25,695,000	$41,160,000	$18,810,000	$50,070,000

All Districts				SDC Costs				Non-SDC Costs				Total	1994 to 1999 Indexed Costs	
Street	Class	Length	Street $/LF	Street	ROW	Bridge	Total	Street	ROW	Bridge	Total	Cost	SDC	Total
TOTAL	Collector	27.5	$75	$10,910,000	$580,000	$900,000	$12,430,000	$39,840,000	$580,000	$3,060,000	$43,480,000	$55,950,000	$15,160,000	$68,020,000
TOTAL	Minor Arterial	17.4	$75	$6,910,000	$360,000	$525,000	$7,800,000	$25,240,000	$360,000	$1,785,000	$27,385,000	$35,190,000	$9,500,000	$42,790,000
TOTAL	Basic Arterial	4.4	$275	$6,400,000	$290,000	$810,000	$7,500,000	$5,950,000	$290,000	$765,000	$7,005,000	$14,520,000	$9,130,000	$17,670,000
TOTAL	Beltline	9.5	$325	$16,300,000	$1,510,000	$660,000	$18,470,000	$13,790,000	$1,510,000	$510,000	$15,810,000	$34,290,000	$22,480,000	$41,720,000
	TOTAL	58.8		$40,520,000	$2,740,000	$2,895,000	$46,200,000	$84,820,000	$2,740,000	$6,120,000	$93,680,000	$139,950,000	$56,270,000	$170,200,000

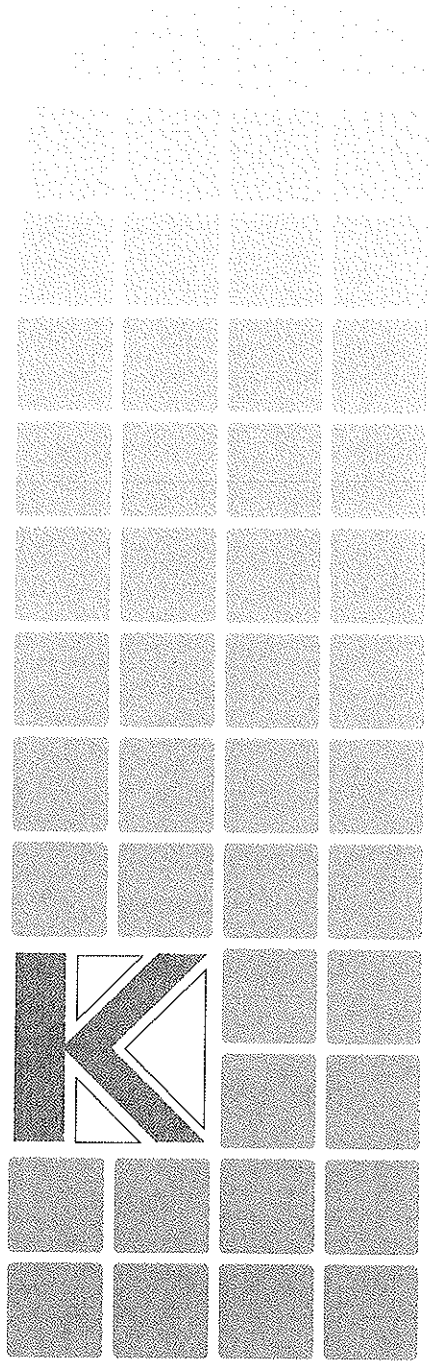
Assumptions

1 - Street Costs
- Local Road = $275/LF
- Collector = $350/LF
- Minor Arterial = $350/LF
- Basic Arterial = $550/LF
- Beltline Arterial = $600/LF

2 - ROW Oversizing (SDC to pay for half oversizing cost)
- $8/LF for Collectors & Minor Arterials [(68' - 60')*$1/SF]
- $24/LF for Basic Arterials [(84' - 60')*$1/SF]
- $60/LF for Beltline Arterials [(120' - 60')*$1/SF]

3 - Bridge Costs
- $100/LF for Collectors & Minor Arterials [($440 - $340)/LF]
- $360/LF for Basic Arterials [($700 - $340)/LF]
- $440/LF for Beltline Arterials [$780 - $340)/LF]

4 - Bridge Length = 75' or 150'



Appendix C

Appendix C
ITE Trip Generation Rates/ELNDT Adjustment Factors

ITE Land Use	ITE Land Use Code	Average Weekday ITE Trip Rate		Equivalent Length New Daily Trip Adjustment Factor	
		Rate	Unit (a)	Trip Length	Linked Trip
RESIDENTIAL					
Single Family Detached	210	9.55	Dwelling Unit	1.0	1.0
Multi-Family Attached	220	6.47	Dwelling Unit	0.97	1.0
Residential Condominium	230	5.86	Dwelling Unit	0.97	1.0
Manufactured Housing	240	4.81	Occupied Dwelling Unit	0.97	1.0
Recreational Home/Condo	260	3.16	Dwelling Unit	1.0	1.0
INSTITUTIONAL					
Truck Terminals (b)	030	9.85	1,000 sf GFA	1.12	1.0
Bus Depot (f)		25.00	1,000 sf GFA		
Transit Station (Rail) (f)		300.00	Acres		
Park and Ride Lots (f)		500.00	Acres		
Park (b)	411	2.23	Acres	0.90	1.0
City (developed) (f)		50.00	Acres		
Neighborhood (undeveloped) (f)		5.00	Acres		
Amusement (Theme) (f)		80	Acres		
Marina	420	2.96	Docking Berths	0.91	1.0
Golf Course (c)	430	37.59	Holes	0.91	1.0
Movie Theater (b)	443	1.76	Seats	0.46	1.0
Racquet Club (c)	492	17.14	1,000 sf GFA	0.51	1.0
Racquetball (f)		40.00	1,000 sf GFA		
Tennis (f)		30.00	court		
Military Base	501	1.78	Employee	1.0	1.0

Notes:

(a) Abbreviations used in "Units" column:
GFA = Gross Floor Area sf = square feet
(It is assumed that the ratio between GFA and gross leasable area (GLA), as cited for shopping centers in ITE *Trip Generation* is 1.0 : 0.85. Therefore, the ITE *Trip Generation* rates are factored down by 15% to give GFA weekday trip rates.)

(b) The ITE *Trip Generation* has less than 5 studies supporting this average rate. Applicants are strongly encouraged to conduct, at their own expense, independent trip generation studies in support of their application.

(c) The fitted relationship between the number of units and the average weekday trip generation as noted in ITE *Trip Generation* has a coefficient of correlation (R^2) of less than 0.70. Applicants are strongly encouraged to conduct, at their own expense, independent trip generation studies in support of their application.

(d) The rate shown has been approximated from the published p.m. peak hour trip generation rate. Applicants are strongly encouraged to conduct, at their own expense, independent trip generation studies in support of their application.

(e) Average of elementary and high school trip generation rates.

(f) San Diego Traffic Generators, San Diego Association of Governments, March 1993.

ITE Land Use	ITE Land Use Code	Average Weekday ITE Trip Rate		Equivalent Length New Daily Trip Adjustment Factor	
		Rate	Unit (a)	Trip Length	Linked Trip
Elementary School	520	1.09	Student	1.08	1.0
Junior High School (e)		1.20	Student	1.08	1.0
High School	530	1.38	Student	1.08	1.0
Junior/Community College (b, d)	540	1.33	Student	1.08	1.0
University	550	2.37	Student	1.08	1.0
Church (c)	560	9.32	1,000 sf GFA	1.08	1.0
Day Care Center/Preschool (c)	565	4.65	Student	0.23	1.0
Library (b)	590	45.50	1,000 sf GFA	0.49	1.0
Hospital	610	16.78	1,000 sf GFA	0.95	1.0
Nursing Home	620	2.60	Occupied Bed	0.95	1.0
BUSINESS & COMMERCIAL					
Hotel/Motel	310	8.70	Occupied Room	0.69	0.75
Building Materials/Lumber	812	30.56	1,000 sf GFA	0.49	0.75
Specialty Retail Center (b)	814	34.57	1,000 sf GFA	0.49	0.75
Discount Stores	815	70.13	1,000 sf GFA	0.49	0.75
Hardware/Paint Stores (b)	816	51.29	1,000 sf GFA	0.49	0.75
Nursery-Retail (c)	817	36.08	1,000 sf GFA	0.49	0.75
Shopping Center	820				
(under 50,000 sf GFA)	820	142.45	1,000 sf GFA	0.31	0.28
(50,000-99,999 sf GFA)	820	77.90	1,000 sf GFA	0.33	0.50
(100,000-199,999 sf GFA)	820	60.07	1,000 sf GFA	0.40	0.61
(200,000-299,999 sf GFA)	820	46.33	1,000 sf GFA	0.49	0.67
(300,000-399,999 sf GFA)	820	39.79	1,000 sf GFA	0.49	0.71
(400,000-499,999 sf GFA)	820	35.72	1,000 sf GFA	0.49	0.73

Notes:

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(b) The ITE *Trip Generation* has less than 3 studies supporting this average rate. Applicants are free to conduct, at their own expense, independent trip generation studies in support of their application.

(c) The fitted relationship between the number of units and the average weekday trip generation as noted in ITE *Trip Generation* has a coefficient of correlation (R^2) of less than 0.70. Applicants are free to conduct, at their own expense, independent trip generation studies in support of their application.

(d) The rate shown has been approximated from the published p.m. peak hour trip generation rate. Applicants are free to conduct, at their own expense, independent trip generation studies in support of their application.

(e) Average of elementary and high school trip generation rates.

(f) San Diego Traffic Generators, San Diego Association of Governments, March 1993.

ITE Land Use	ITE Land Use Code	Average Weekday ITE Trip Rate		Equivalent Length New Daily Trip Adjustment Factor	
		Rate	Unit (a)	Trip Length	Linked Trip
(500,000-599,999 sf GFA)	820	32.85	1,000 sf GFA	0.49	0.80
High Turnover Sit-Down Restaurant (b)	832	205.36	1,000 sf GFA	0.19	0.75
Fast Food Restaurant (c)	833	786.22	1,000 sf GFA	0.09	0.51
New Car Sales (b)	841	47.91	1,000 sf GFA	0.60	0.75
Service Station (b, d)	844	142.54	Gasoline Pump	0.07	0.77
Supermarket (b)	850	87.82	Employee	0.14	0.46
Convenience Market (c)	851	737.99	1,000 sf GFA	0.08	0.35
Convenience Market w/ Gas Pump (d,f)	853	194.34	Gasoline Pump	0.32	0.22
Apparel Store (d)	870	31.27	1,000 sf GFA	0.49	0.75
Furniture Store (c)	890	4.34	1,000 sf GFA	0.49	0.75
Bank/Savings: Walk-in (b)	911	140.61	1,000 sf GFA	0.17	0.75
Bank/Savings: Drive-in (c)	912	265.21	1,000 sf GFA	0.17	0.55
OFFICE					
Clinic (b)	630	23.79	1,000 sf GFA	0.53	1.0
General Office	710				
(Under 100,000 sf GFA)	710	16.58	1,000 sf GFA	0.65	1.0
(100,000-199,999 sf GFA)	710	14.03	1,000 sf GFA	0.65	1.0
(200,000 sf GFA and over)	710	11.85	1,000 sf GFA	0.65	1.0
Medical Office Building	720	34.17	1,000 sf GFA	0.53	1.0
Government Office Bldg. (b)	730	68.93	1,000 sf GFA	0.96	1.0
State Motor Vehicles Dept.	731	166.02	1,000 sf GFA	0.96	1.0
U.S. Post Office (c)	732	87.12	1,000 sf GFA	0.96	1.0
Walk-in Only	732	90.00	1,000 sf GFA		
Walk-in w/ mail Drop-Off Lane	732	300.00	1,000 sf GFA		

Notes:

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(e) Average of elementary and high school trip generation rates.

(f) San Diego Traffic Generators, San Diego Association of Governments, March 1993.

ITE Land Use	ITE Land Use Code	Average Weekday ITE Trip Rate		Equivalent Length New Daily Trip Adjustment Factor	
		Rate	Unit (a)	Trip Length	Linked Trip
Research Center	760	7.70	1,000 sf GFA	0.67	1.0
Business Park	770	14.37	1,000 sf GFA	0.67	1.0
INDUSTRIAL					
General Light Industrial	110	6.97	1,000 sf GFA	1.12	1.0
General Heavy Industrial (b)	120	1.50	1,000 sf GFA	1.12	1.0
Industrial Park (c)	130	6.97	1,000 sf GFA	1.12	1.0
Manufacturing	140	3.85	1,000 sf GFA	1.12	1.0
Warehouse	150	4.88	1,000 sf GFA	1.12	1.0
Mini-Warehouse	151	2.61	1,000 sf GFA	0.47	1.0
Utilities (b)	170	1.06	Employees	1.0	1.0
Wholesale (b)	860	6.73	1,000 sf GFA	0.49	1.0

Notes:

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