CITY OF MILWAUKIE

Street Surface Maintenance Program

December 2006

Authorized per City Council Resolution No. 35-2006
and Ordinances No. 1966, 1967, 1970

Contents

1. Problem Definition

Milwaukie's local streets are in a state of rapid decline, some have already failed, and funding is not adequate to turn the situation around. If nothing is done, the roads will worsen and the cost to remedy the situation will skyrocket.

Milwaukie city officials are responsible for maintaining 138 lane miles of paved roadway. The replacement value of Milwaukie's street system was estimated at $65 million in 2004 – a figure that is rapidly rising with the escalation of construction costs.

A July 2004 report by the consulting firm EIS Inc. rated Milwaukie's overall street network condition as a 67 (out of 100), which placed the City's street network in the upper range of the "satisfactory" condition. However, EIS Inc. also concluded that the cost of the city's deferred street maintenance was growing rapidly and that the City was not allocating sufficient funds to address street maintenance needs. EIS projected that by 2006, absent a new maintenance effort, the overall street network condition would fall to 63. Because maintaining streets is much more cost-effective than rebuilding them after they have failed, deferred maintenance costs can build up very quickly as streets pass the point at which they can be rehabilitated.

The City of Milwaukie is not alone in this predicament. The 2004 Regional Transportation Plan describes the problem this way:

> . . . revenues from the State Highway Trust Fund, which is funded from the state gas tax revenues and related truck fees and vehicle registration fees, has become the primary source of transportation funding for many jurisdictions in the region. The problem the region is facing by relying primarily on this revenue source is that it is subject to two factors that reduce its purchasing power over time: inflation and increasing fuel efficiency. Therefore, the gas tax cost per mile driven in Oregon (in current $) has decreased from 2.6 cents per mile in 1970 to 1.3 cents per mile today.[1]

2. Existing Conditions

A. Street Network

Based on a 2004 visual inspection by EIS Inc., 60% of Milwaukie's streets were in good condition, 17% were in satisfactory condition; and 22% were in fair to poor condition. That 2004 data was combined with a 2006 staff score and the results of an earlier study to arrive at a "composite" condition score. (The earlier study, conducted in 1995, tested sub-surface conditions, which were not reflected in the 2004 assessment.)

[1] Regional Transportation Plan, Chapter 5: Growth and the Priority System, page 5-34.

Pavement conditions were ranked again, based on the composite score, and then divided into four groups, from poor to good. This ranking placed 55% of the street system in good condition, 18% in satisfactory condition, and 27% in the fair and poor categories.

Good condition streets require the least costly preventive maintenance (crack sealing) in order to extend the useful life of the pavement surface. At the opposite extreme, many of the 27% of the streets in the fair to poor category require full or partial reconstruction, which typically involves rebuilding the base and adding all new pavement. The 18% in satisfactory condition require rehabilitation, which typically involves grinding off the deteriorated top layer, adding a layer of "fabric," and a pavement overlay.

B. Street Fund

The Oregon State Gas Tax, which is assessed per gallon on motor vehicle fuel sold statewide, is the Street Fund's primary revenue source for flexible funding. The tax has not been increased since 1993. In 1995-1996, the City's share of Gas Tax revenues was $906,065; the projection for 2006-2007 is $959,646. The second source of flexible revenues for the Street Fund is franchise fees, collected from other City utilities (water, storm and wastewater). Franchise fees total about half of Gas Tax revenues ($490,198 in 2004-2005; $546,650 projected for 2006-2007).

While Street Fund revenues have remained largely flat, the cost of road construction and maintenance has increased substantially, particularly in recent years. According to the Federal Highway Administration's surfacing price index, $128 worth of surfacing projects in 1995 would cost $215 today.[2] Milwaukie's share of state gas tax proceeds are down nearly 40% over the past decade when adjusted for this inflation in costs. Clackamas County's 2006 construction bids are coming in at approximately 30% higher than just one year ago.

In recent years, the City has enjoyed success competing for grants and loans for specific capital projects. In the 2006-2007 budget, these accounted for just over $1 million in revenue. Such funds are dedicated to specific projects and cannot be expended on maintenance.

Street expenditures in 2004-2005 totaled $2.2 million. These expenditures broke down as follows:

- 32% to capital expenditures;

[2] "Price Trends for Federal-Aid Highway Construction," Third Quarter 2005, U.S. Department of Transportation, Federal Highway Administration. Available on-line at: http://www.fhwa.dot.gov/programadmin/pt2005q3.pdf.

- 20% to contributions to support or administrative functions (transfers to Engineering and Community Development Administration, and General Administrative Services Charge);
- 17% to maintenance;
- 13% to street light electricity costs;
- 9% to overhead (the vast majority for vehicle fuel, maintenance, and replacement fee); and
- 8% to reserves for future capital projects.

The Street Department maintains multiple aspects of the street system. Based on FTE assignments and allocable materials and services costs, staff estimates that in 2004-2005, out of a total maintenance budget of $378,000: 24% went to right-of-way maintenance (mowing, removing branches, etc.); 23% was devoted to emergency street repairs (i.e., filling potholes and patching); 16% was spent on sign and signal maintenance; 15% went to street sweeping; 13% went to street marking and striping; and 8% was devoted to preventive surface maintenance (crack sealing as needed).

The preventive surface maintenance expenditures do not include any rehabilitation or reconstruction projects, which the city cannot currently afford. In recent years, the city's CIP has included an "unfunded" $200,000 line item for overlay (rehabilitation) projects in the unfunded category. Though the $200,000 figure has been somewhat arbitrary, these past CIP's are a record of the City's ongoing recognition of the street network's unmet maintenance need.

3. Authority

City Ordinance No. ___ establishes the Street Surface Maintenance Program ("SSMP") and a Street Maintenance Fee. City Ordinance No. ___ establishes a one and one-half percent (1.5%) PGE Privilege Tax. Ordinance No. ___ establishes a local gasoline tax of two (2) cents per gallon. (Details on the operation of these revenues are below in Sectiona 10, 11, and 12, respectively.) The ordinances dedicate all revenues from these sources to street surface maintenance and repair and those activities necessary to carry out the program, such as condition assessment and inspection.

4. Program Goals

A. PCI Index Goals

Pavement Condition Index, or PCI, is a measure of the status of street surface, ranging from 0 to 100. A newly constructed street would have a PCI of 100 and failed street would have a PCI of 25 or less. The "Good" range is from 70 to 100. An ideal (the most

cost-effective) maintenance program is possible with a network average in the low 80's. The goal of the City of Milwaukie Street Surface Maintenance Program is to bring all major streets to a point where the cost-efficiencies of good preventive maintenance are enjoyed, approximately 75 or above, and maintain them at that level. Progress towards this goal will be assessed in the annual program report.

B. Deferred Maintenance Goals

The goal of the SSMP is to reduce the deferred maintenance backlog and, ultimately, to eliminate it. This requires both reconstruction projects and rehabilitation projects (overlays). Eliminating deferred maintenance on larger streets will be prioritized. Reconstructions on local streets would be addressed only after all Preventive Maintenance needs have been addressed and after larger streets are brought up to the "good" range.

C. Maintenance Goals

The SSMP's maintenance goal is to prevent any street from deteriorating to the point of requiring reconstruction. (Many Milwaukie streets that require reconstruction were not constructed with adequate bases). This requires an aggressive program of crack sealing and rehabilitation as required. These activities will be prioritized over reconstructions of already failed streets.

D. Stopgap Goals

"Stopgap" refers to emergency repairs to keep streets in a serviceable condition (e.g., pothole patching). These are temporary and do not extend the pavement life. Current Street Fund revenues are adequate to perform needed stopgap repairs. The SSMP stopgap goal is to continue to adequately fund and repair trouble spots throughout the City, with the expectation that this need will diminish as the network is improved.

E. Program Cost Goals

The overall revenue goal is $1.2 million per year for the first ten years, or $12 million total (2006 dollars). The annual cost of maintaining only major streets thereafter could be achieved at roughly half that budget. A continuation of the higher level of funding would allow the City to address local streets as well. The program progress report will allow Council to reassess the level of revenue and activity annually.

5. Responsibilities

By ordinance, the following responsibilities are established within the city government:

The Engineering Director and the Streets Supervisor are jointly responsible for annually developing and updating a cost-effective 5-year SSMP project schedule. The Engineering Director is responsible for ensuring that the schedule is properly integrated into the CIP and that the schedule is coordinated with other City capital projects. The Engineering Director is responsible for sharing the CIP with non-city utilities and coordinating all City capital projects with the various private utilities to the extent possible.

The Engineering Director is responsible for the contracting of services to complete projects funded by the Program.

The Engineering Director is responsible for assigning non-residential utility customers to Trip Generation Categories, using his or her best professional judgment and the criteria provided for in the ordinance, and for ruling on requests for category adjustments. (See Sections 10 B and 10 C for more detail.)

The Engineering Director is responsible for implementation and enforcement of steps to minimize utility cut damage to streets, including a five-year moratorium on capital projects on recently reconstructed, rehabilitated, or newly built City streets. The Public Works Operations Director is responsible for City utility compliance with street cut repair policy

The Community Development and Public Works Director is required to provide an annual report on the Street Surface Maintenance Program to City Council and the public each spring. See Section 7 for the elements of that report.

The Finance Director is responsible for billing, collection, and dedicated allocation of Street Surface Maintenance Program revenues.

6. Project Selection

As part of the annual Capital Improvement Plan development process, the Public Works and Engineering departments update the SSMP project schedule for the coming five years. In addition, a more detailed schedule of crack sealing and similar preventive maintenance projects for the up-coming summer is developed. The project list development begins with the recommended maintenance program produced by a Pavement Management System (PMS) software application. The Engineering Director and Street Operations Supervisor select a package of treatments that best match the

recommendations generated by the PMS software with local knowledge of street condition, the cost benefits of grouping multiple projects (both coordinating with other utility projects and tackling adjacent streets where possible to minimize mobilization costs), and other project needs (for instance, recently built new projects that require overlays to match grades).

In allocating resources among projects, staff prioritizes projects with the greatest return (i.e., street life extension versus cost). Remaining funds are dedicated to reconstruction projects on significant routes. These routes are prioritized according to their functional classification within the City Transportation System Plan, with adjustments made by the project selection team based on school routes, freight routes, emergency routes, safety considerations, traffic patterns, and cost-effective contracting practices.

Table 1 (below) provides a model for the first two 5-year SSMP project schedules. Staff anticipates refining and adjusting this plan based on continued research on best practices, unpredictable weather events, and shifting patterns of traffic.

By tracking and recording completed repair and maintenance projects in the PMS database, the Engineering Department maintains the quality of the data used to inform the project selection process. In addition, the entire database is updated every 3 to 5 years with the results of a complete visual inspection of the street network condition. Finally, on an occasional basis (every 10 –15 years) the City contracts for "deflection" testing to assess the sub-surface condition of streets.

Table1. Model SSMP Project Schedule, Years 1 – 5.

Year	Activity	2006 PCI	Activity Type	Cost Estimate
Year 1	Billing & Program Setup		SSMP Program Expense	$25,000
	Pavement Assessment (Deflection)		SSMP Program Expense	$80,000
	Oak Street (224 to Monroe)	55	Overlay/Rehab	$85,802
	37th Ave. (Lake to Wister)	53	Overlay/Rehab	$72,162
	Washington St (McLoughlin to Oak)	69	Overlay/Rehab	$181,098
	42nd (Harvey to JCB)	55	Overlay/Rehab	$137,283
	Logus (Stanley to 51st)	60	Overlay/Rehab	$55,019
	Crack/Slurry/Fog Seals		Preventive Maintenance	$125,000
			Total	*$761,364*
			Revenue Est (+ prev bal)	*$800,000*
			Balance	*$38,636*
Year 2	King Road (43rd to Hollywood)	40	Reconstruct	$770,816
	Crack/Slurry/Fog Seals		Preventive Maintenance	$125,000
			Total	*$895,816*
			Revenue Est (+ prev bal)	*$1,038,636*
			Balance	*$142,820*
Year 3	Linwood Ave. (Railroad to Monroe)	79	Overlay/Rehab	$334,423
	Lake Road (Shell Ln to Kuehn)	53	Overlay/Rehab	$311,491
	Roswell (32nd to 42nd)	52	Reconstruct	$252,165
	Crack/Slurry/Fog Seals		Preventive Maintenance	$150,000
			Total	*$1,048,079*
			Revenue Est (+ prev bal)	*$1,142,820*
			Balance	*$94,740*
Year 4	Washington Street (37th to 40th)	66	Overlay/Rehab	$27,878
	27th (Lake to Washington)	72	Overlay/Rehab	$103,545
	Harrison Phase 1 (McLoughlin to 42nd)	44	Reconstruct	$740,000
	Crack/Slurry/Fog Seals		Preventive Maintenance	$150,000
			Total	*$1,021,423*
			Revenue Est (+ prev bal)	*$1,094,740*
			Balance	*$73,318*
Year 5	Pavement Assessment (Visual)		SSMP Program Expense	$20,000
	Harrison Phase 2 (McLoughlin to 42nd)	44	Reconstruct	$200,000
	Railroad Ave Phase 1 (Harrison to Harmony)	44	Reconstruct	$531,000
	Crack/Slurry/Fog Seals		Preventive Maintenance	$175,000
			Total	*$926,000*
			Revenue Est (+ prev bal)	*$1,073,318*
			Balance	*$147,318*

Table 1 Continued. Years 6 -10

Year	Activity	2006 PCI	Activity Type	Cost Estimate
Year 6	43rd (King to Howe) and Howe (to 42nd)	73	Overlay/Rehab	$121,074
	River Road (McLoughlin to Lark)	76	Overlay/Rehab	$95,129
	Railroad Ave Phase 2 (Harrison to Harmony)	44	Reconstruct	$150,000
	Monroe Street Phase 1 (224 to City limit)	41	Reconstruct	$431,000
	Crack/Slurry/Fog Seals		Preventive Maintenance	$175,000
			Total	*$972,203*
			Revenue Est (+ prev bal)	*$1,147,318*
			Balance	*$175,115*
Year 7	International Way (37th to Harmony)	70	Overlay/Rehab	$373,000
	Monroe Street Phase 2 (224 to City limit)	41	Reconstruct	$300,000
	Crack/Slurry/Fog Seals		Preventive Maintenance	$200,000
			Total	*$873,000*
			Revenue Est (+ prev bal)	*$1,175,115*
			Balance	*$302,115*
Year 8	Harvey Street (32nd Ave past 42nd Ave)	26	Reconstruct	$303,000
	Home and Wood Avenues	48	Reconstruct	$688,351
	Crack/Slurry/Fog Seals		Preventive Maintenance	$200,000
			Total	*$1,191,351*
			Revenue Est (+ prev bal)	*$1,302,115*
			Balance	*$110,764*
Year 9	Pavement Assessment (Visual)		SSMP Program Expense	$30,000
	McBrod Avenue (17th to Ochoco)	27	Reconstruct	$370,000
	Major Route Overlays TBD		Overlay/Rehab	$400,000
	Crack/Slurry/Fog Seals		Preventive Maintenance	$225,000
			Total	*$1,025,000*
			Revenue Est (+ prev bal)	*$1,110,764*
			Balance	*$85,764*
Year 10	Major Route Overlays TBD		Overlay/Rehab	$400,000
	Mailwell Avenue (Main St. to Commerce Park)	28	Reconstruct	$190,000
	Crack/Slurry/Fog Seals		Preventive Maintenance	$225,000
			Total	*$815,000*
			Revenue Est (+ prev bal)	*$1,085,764*
			Balance	*$270,764*

Cost estimates include 4.2% inflation in construction costs per year. All reconstruction and rehabilitation costs include a 25% contingency and a 2% inspection cost.

7. Annual Reporting

The Public Works and Community Development Director provides an annual report to City Council. The report includes a narrative description of the overall condition of the street network, findings from new condition assessments, a detailed project schedule for the upcoming year, an updated 5-year project schedule, the project selection criteria, and a report on the previous years projects, projects underway, and the overall program's progress. The Public Works and Community Development Director is required to update Council on the feasibility of the program given trends in revenues and costs.

A summary of the report to Council will be distributed to the community through the website, the Pilot, and Neighborhood Associations.

8. Project Implementation

"In-house" preventive maintenance by City of Milwaukie street crews addresses scattered, relatively small-scale crack sealing needs. Larger projects, such as a street seal or reconstruction project, are contracted through a competitive bid process, as per City and State rules and regulations. Contract work is overseen and managed by Engineering and Streets department staff. Project inspection, including inspection of asphalt mixes, is carried out by City staff or independent, third party contractors. City staff provide contracting guidelines to ensure that requirements are clear, procedures for documenting and correcting unacceptable work are in place, and all performance requirements are reflected in contracts. Forthcoming City of Milwaukie Public Works Standards include a written policy specifying asphalt composition, proportions of mixtures, and required compaction. Adequate funds for contingency, engineering, and inspection are included in the cost estimates used to develop the five-year project schedule.

In order to extend the life of overlay and street reconstruction projects, the City is updating policies on utility cuts and other cuts in the right-of-way. The SSMP ordinance directs the Engineering Director to establish and enforce a moratorium of five years on utility capital projects beneath streets that have been rehabilitated, reconstructed, or newly built. The ordinance also makes clear that the Engineering Director is responsible for sharing the City's Capital Improvement Plan with private utilities on an annual basis. The following practices are under review, to be presented to Council in 2007 with the Public Works Standards and/or the fee schedule update:

- Utility cut permit applicants currently provide a deposit to guarantee patch quality for one year. The City will establish a policy making clear at what point such a deposit will be forfeit and used by the City to repair faulty patches. The amount and duration of the deposit will be reviewed and corrected as part of

the annual fee schedule update. A sliding fee based on cut size will be considered.

- The new Public Works Standards will include a higher standard of repair for any patch made to City streets in the moratorium period.

9. Dedication of Funds

As per the implementing ordinances, all new revenues are dedicated exclusively to street surface maintenance and repair. All new Program revenues will be accounted for in a new fund dedicated exclusively to street surface maintenance. PGE makes its franchise fee payments to the City on an annual (calendar year) basis, the first payment is due by April 2008 and will only include one-half of a year of revenue.

The ordinance requires a reduction of local SSMP fees and/or taxes to balance any new revenue streams dedicated to street maintenance created at the state, county, regional or any other governmental level.

Dedicated street surface maintenance and repair funds are available to pay for contracted services to maintain or improve street surface condition (such as street maintenance, rehabilitation and repair activities, including seal, overlay and reconstruction projects); services in support of that mission (including inspection of contracted work and utility cuts; regular street condition inspections; and training and other services necessary to make the most efficient use of available funds); and additional costs involved in setting up revenue mechanisms such as additional programming necessary to include the street maintenance fee on the City utility bill.

10. Street Maintenance Fee

A. Residential Street Maintenance Fee

By Ordinance No. _____, the street maintenance fee is fixed for single family residences ($3.35 per month) and multi-family apartments ($2.10 per month per dwelling unit).

Table 2. Residential Street Maintenance Fee Categories

Category	*Typical customer*	*Unit*	*Trips Per Unit*	*Monthly Bill Per Unit*
Single Family Residential	Detached house	dwelling units	9.57	$3.35
Multi-Family Residential	Apartment or condo	dwelling units	6.00	$2.10
Elderly Housing	Retirement community	dwelling units	4.00	$1.40
Congregate Care	Long term care facility	dwelling units	2.00	$0.70

B. Non-Residential Street Maintenance Fee

By Ordinance No. _____, the non-residential street maintenance fee is calculated based on the number of square feet of building area (or alternative unit, such as gas pumps, or members) and a charge per thousand square feet. Each non-residential customer is assigned a category based on the type of business or organization. The fee is based on building size and the number of trips that such an operation typically generates, based on the widely-used figures reported in the most recent edition of the International Traffic Engineers (ITE) manual Trip Generation. See Table 3 below.

The monthly non-residential fee is capped at $250 per property, adjusted annually for inflation.

Table 3. Non-Residential Street Maintenance Fee Categories

Category	*Typical customer*	*Unit*	*Trips Per Unit*	Monthly Bill Per Unit
1	Elem/Middle School; Lodge	students	0.75	$0.26
		members	0.75	$0.26
2	Heavy Industrial; High School	k sq feet	2.00	$0.70
		students	2.00	$0.70
3	Manufacturing; Warehouse; Religious Institution	k sq feet	4.00	$1.40
4	Light Industrial; Office	k sq feet	8.00	$2.80
5	Hospital; Business Park; Auto Care	k sq feet	16.00	$5.60
6	Recreation Facility; Special Retail; Supermarket	k sq feet	32.00	$11.20
7	Govt Office; Restaurant; Gas Station	k sq feet	64.00	$22.40
8	Fast Food; Convenience Store; Bank	k sq feet	128.00	$44.80
9	Multipurpose recreational facility	acres	200.00	$70.00
10	Movie theater	screens	400.00	$140.00

k sq feet: thousand of square feet of building area

C. Street Maintenance Fee Review Process

After a preliminary trip category assignment is made using the ITE standards, a letter is mailed to the utility customer notifying them of the category assigned. Customers are notified that if they believe their categorization overstates actual trip generation, they can request a review of their account. The Engineering Director will conduct the review, considering all relevant evidence presented by the customer related to their actual trip generation patterns. Such evidence may include business records, parking lot usage, or traffic studies. The Engineering Department leads the fee review process, with assistance from Planning and Community Development. The Engineering Director makes the final determination based on the evidence provided.

Any customer that is not satisfied with the fee review outcome may appeal the categorization to Council, as provided for in the ordinance.

D. Street Maintenance Fee Billing

The Finance Department is responsible for including the street maintenance fee within the City utility billing system. It is included as a line item on each City utility bill, calculated based on building square feet and a per square foot charge (based on the category structure described above) or fixed according to the residential user rates. The fee goes into effect July 2007.

E. Low Income Exemption

The SSMP includes a complete exemption from the street maintenance fee for those households qualifying for the previously established "Low Income Utility Program".

11. PGE Privilege Tax

By Ordinance No. ___, PGE begins collecting the additional 1.5% Privilege Tax in July 2007. To allow local businesses an adequate planning horizon, advance notice is to be provided upon adoption of the ordinance. Privilige Tax revenues are included in PGE's annual franchise fee payment to the City, due prior to April 1 of the calendar year following collection.

12. Local Gas Tax

City ordinance No. ___ establishes a $.02 per gallon tax on gasoline sold within the City. The Oregon Department of Transportation Fuels Tax Group collects the tax from local dealers on behalf of the City of Milwaukie. ODOT collects the additional tax from distributors making bulk deliveries of fuel to service stations and other wholesale customers of motor vehicle fuel in the City. Payments are made to the City on a quarterly basis with a reduction for ODOT administrative costs.

Appendix A

TRANSPORTATION UTILITY FEE: THE OREGON EXPERIENCE

The City of Milwaukie Street Maintenance Fee calculation methodology was adopted from the "Parcel Level Trip Analysis" described in this paper.

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ABSTRACT

Ten Oregon agencies have adopted transportation utility fee (TUF) programs to augment shrinking roadway maintenance revenues. Four additional agencies are investigating the feasibility of TUF programs this year, which would generate roughly $6,000 per road mile annually through this new mechanism. Clackamas County (pop. 345,000) is in the process of investigating a transportation maintenance fee (TMF) program, and, if adopted, will become the largest agency in the state with this type of finance system. Initial annual revenue estimates were $20 million for eligible maintenance activities, but these were scaled back to $4.2 million through the public review process. If adopted, this funding shift could provide opportunities to transfer a portion of the gas tax funds to capital project investments, which are substantially under funded.

The TMF development process in Clackamas County included a convergence of traditional travel demand forecasting with near-term traffic impact techniques to create a road user nexus at a parcel level. To accomplish this, trip estimates were made using ITE methods with a crosscheck to the regional travel demand model. A major challenge was to make a reasonable assessment of travel activity for every building within the county. Each of the 97,000 residential tax lots and 7,000 non-residential tax lots was evaluated using tax assessment and state employment records to estimate travel activity and proportionately allocate fees. Lessons learned in this project include the trade-offs between road user fee 'market' value versus technical and legal defensibility, and justification for better inter-agency land use data organization.

INTRODUCTION

A Brief History of Oregon Gas Tax

The Oregon gas tax represents the largest component of motor vehicle revenues collected by the state. It applies to light vehicles (automobiles, pick-up trucks), while a separate tax for heavy vehicles are charged based on a weight-mile formula. The remaining component of the motor vehicle revenues comes from vehicle registration fees. During fiscal year 1999/2000, gas tax revenues accounted for 53 percent of the $728 million collected statewide, while weight-mile fees accounted for 31 percent and registration fees were 16 percent.

Today, road maintenance in Oregon relies on gas tax revenues as a primary funding source(1). Oregon was the first state in the union to adopt a gas tax back in 1918 at rate of 1 cent per gallon. Sixty-six years later, in 1984, it had risen up to 8 cents per gallon, and then, during the next nine years, it increased to 24 cents per gallon by 1993. This relatively rapid rise in state gas tax in the late 1980's and early 1990's appears to have adversely affected the public's perception of gas tax utility and equity. Since that date, the gas tax rate has not changed despite three unsuccessful attempts by the state legislature.

The gas tax rate is not indexed for annual inflation, so the state, county and city jurisdictions have effectively lost $0.23 per dollar in maintenance buying power over the past ten years. In addition, increasingly fuel-efficient vehicles have shaved off 8 percent of the average gas consumption since 1990. The gap in revenues versus usage is illustrated by comparing the growth rate in total motor vehicle revenues versus change in vehicle-miles-traveled. In the past 10 years, total revenues have grown by 13 percent statewide(2), while vehicle-miles-traveled have increased 21 percent. With greater reliance on trucks moving the nation's freight, the higher VMT also means a higher level of heavy truck impacts on regional facilities. The net effect for many jurisdictions, especially in urban areas, is decreasing maintenance dollars and increasing maintenance needs.

Organization of this Paper

The purpose of this paper is to examine how Oregon cities and counties have responded to insufficient state funding for roadway maintenance funds over the past decade. A few local agencies have attempted to raise their local share of gas taxes, but success has been rare. Others have enacted a local transportation utility fee program to augment gas tax funding. Initially, this TUF approach was taken by small cities, between 2,000 and 10,000 population. More recently, larger Oregon metropolitan cities and counties have considered TUF programs as an alternative solution to the funding shortfalls.

This paper presents the experience of ten Oregon cities that have adopted street utility fee programs, and explores the on-going efforts by one of the most populated counties, Clackamas County, to apply a TUF program to their jurisdiction. The concluding section identifies 'lessons learned' through the technical analysis, public review, and implementation of the proposed TUF program for Clackamas County.

Street Utility Fee Augments Funding Shortfall

A transportation utility fee (also known as transportation maintenance fee) allocates a portion of the recurring roadway maintenance costs to all development located within the jurisdiction limits on a monthly basis. The types of roadway services covered by this fee generally are limited to pavement maintenance, but some have included all manner of maintenance activities associated with roadway operations. In general, costs are assigned proportionately to road usage, based on trip intensity or estimated vehicle-miles traveled. A few smaller cities (under 5,000 pop.) have assigned a flat fee rate for all road users without distinction between land use type or size.

Table 1 summarizes a few basic facts about the Oregon communities that have adopted transportation utility fees. The list highlights the population, gross annual revenue collected by the TUF and basic averages that are convenient for comparisons between jurisdictions. The household monthly fees ranges from just under $2 up to $5. In terms of revenue per person, the range is $12 to $48 per year. The annual revenue per maintained road mile ranged from $2,000 up to $10,000 with an average of about $6,000. In addition to the jurisdictions shown, Gresham, Lake Oswego, Tigard, and Clackamas County are considering TUF (or TMF) ordinances this year.

CASE STUDY: CLACKAMAS COUNTY

During the past 10 years, Clackamas County voters have rejected initiatives to increase county gas taxes on two occasions. The first county initiative, in 1995, was for a three cent per gallon increase, and the second initiative in 1997 was for one cent per gallon for three years with an increase to three cents thereafter. In both cases, county voters defeated these initiatives. As a result, the county administrators and several local cities were left to seek out other means for fair and equitable funding to help span the funding gap before roadway maintenance deteriorated to a critical level. Clackamas County began to consider a transportation maintenance fee in 2002.

Clackamas County is located in the Portland-Vancouver metropolitan region with a population of 345,000 (2000 census) spanning an area about the size of the State of Delaware. The county maintains approximately 268 urban and 1157 rural road miles with an annual road maintenance budget of $14 million (2002). According to county staff, this budget is approximately $7 million below the level needed to cost effectively maintain these facilities. Local streets in unincorporated areas are typical targets for deferred maintenance in favor of investments in higher functional classes. Several local facilities have degraded to such a poor level as to be impassable by motor vehicle traffic.

The county worked with five local cities to develop a transportation maintenance fee (TMF) for their jurisdictions. The participating cities included Oregon City, Milwaukie, Gladstone, Happy Valley and Estacada. The county maintenance forces supply road maintenance services to these cities on a contract basis. Other cities within the county opted to not participate, or had a city-based TMF program already in place. The county led TMF development process involved the following three stages:

1. Screening existing maintenance activities for funding eligibility.
2. Estimating average weekday trip activity for each development within the county limits.
3. Establishing fee tiers to simplify implementation and administration.

Stage 1: Selecting Maintenance Fee Activities for Inclusion in the Utility

The principles for selecting maintenance fee elements are not specifically defined by Oregon Administrative Rules, as are capacity building fee programs, such as Traffic Impact Fees. Jurisdictions are left to select TUF elements based more on community consensus rather than legislative mandate. The City Council of Portland, Oregon adopted a TUF program in 2001, but it was withdrawn that same year after a successful voter referendum petition was filed. One of the criticisms of that TUF proposal was that some activities were too broad and not directly related to roadway maintenance. An example cited was tow charges for abandoned vehicles.

In response, Clackamas County TUF policy targeted activities and services with a clear and direct benefit to roadway users, to reduce the possibly of a voter referendum and to keep the fee rates comparable to other Oregon TUF jurisdictions. The county and five cities initially chose the following activities as core elements to the road maintenance program:

- Bridge Maintenance — The county and cities maintain over 170 bridges to ensure that the bridge structures operate at a safe level.

- Guardrails — This includes the maintenance, repair and new installations of guardrails along roads and bridges.
- Road Shouldering — This activity includes the repair and stabilization of road shoulders.
- Road Treatment — This includes preventative and corrective maintenance of all county and city roads.
- Street Lighting — This activity includes designing, installing, maintaining and operating streetlights.
- Traffic Operations — This activity includes installing, repairing, monitoring and maintaining traffic signals, signs and striping.
- Utility Billing — This activity is included to insure adequate funding for the administration of the fee. This is the only administrative activity included in the fee.
- Vegetation Control — This activity helps to ensure motorist and pedestrian/bicycle safety while lowering the cost of future maintenance activities.

The county budget for each of the above maintenance activities is summarized in Table 2 along with its percentage of the total operating maintenance budget. Overall, the selected county activity comprised $14.4 million. This represents half of the current department budget. Other activities, such as capital projects, planning, enforcement and general administration were excluded from the list to be funded by the TMF. Assuming the gas tax revenues remained generally constant (maintenance cost inflation has been about even with VMT growth), the initial additional revenues from the TMF would add $14 million, which would eliminate the maintenance funding gap. A portion of the gas tax revenue currently applied to road maintenance would be re-allocated to accelerate deferred capital projects or other high priority county investments.

In addition, each participating city jurisdiction reviewed past maintenance spending trends to identify amounts to be recovered by the fee for the above categories. Several cities lacked comprehensive assessment tools for determining the appropriate budget required to cost effectively maintain their road system. Absent clear quantitative guidelines for pavement management, many cities chose to just continue existing funding levels, despite the anecdotal evidence that this was substantially below levels needed to maintain the design life of the roadways. The five cities together identified $5.5 million annually for roadway maintenance. Together with the county funds, the initial annual total considered as the basis for fee rate calculation was $19.9 million.

Stage 2: Parcel Level Trip Analysis

The main collection component of the TUF administration will be a utility statement to every independent development within the county. This required that a trip generation analysis be conducted for each tax parcel in Clackamas County to assess the relative road usage for each development. There were 97,000 residential tax lots and 7,000 tax lots with commercial, industrial, or other non-residential uses. County staff conducted a comprehensive review of these tax assessment and other land development data to evaluate trip activity.

The basic approach used to estimate the relative road usage for each parcel in Clackamas County involved assessing the trip intensity, trip length, and truck usage. These three factors were identified by the technical advisory committee to establish a nexus between land use activity and road usage. Trip generation estimates were made on a daily basis using Institute of Transportation Engineers (ITE) published data(3). Trip intensity was computed for 86 land use categories reported by ITE. Trip length information was not applied explicitly to convert this to vehicle-mile-traveled. Instead, the trip length factors were expressed relative to residential trip lengths based on previous work done for the county. The land use categories selected for these relative trip length factors were schools, retail, day care, library (generally much shorter than typical

residential trips), and major recreational facilities (generally much longer than typical residential trips). All other land uses were not factored relative to residential uses.

The relationship between heavy truck trips and the rate of pavement damage is well established. However, a literature review of published truck trip generation showed very limited data at the level of detail suitable for parcel level estimates. Therefore, a separate truck factor was not included in the calculation.

Parcel Level Analysis Steps

The inventory and analysis process for tax parcels involved the following five steps. Refer to Figure 1 for the flow diagram of the parcel level trip generation analysis. The process is summarized with comments regarding specific applications made during the course of this study.

Step 1: Inventory Existing Buildings for Residential and Non-residential land use types
The number of housing units, gross building area, zoning, and tax lot acreage was tallied for all parcels. This work was done from tax assessor records, field inventories, and state employment data sources by county staff and interns.

Step 2: Assign Trip Generation Category Types
Each building was assigned an ITE land use category code based on local knowledge and field checking, where appropriate. For residential uses, this was a simple allocation. For many non-residential uses, there was a range of uses on a given site with identical zoning. The decision was made during the study to designate a given building or complex by the predominant land use type category. For example, a light industrial business center that included storage unit facilities, light manufacturing, and a retail pizza outlet was coded entirely as a light industrial facility. The primary reason cited was the administrative tracking system needed to follow tenant changes was not in place, plus, such a detailed tenant level assessment could create substantial fluctuations paid by the property manager. By using the general average rate for the development, the administrative duties were kept more reasonable and the utility fees paid by the property owners would be uniform from year to year. The same principal was applied to office complexes with restaurant or coffee shops within the buildings, and in larger shopping centers with outlying retail pads. A subsequent calculation was made to back-check that these types of estimates were comparable on a wide area basis to the travel demands estimated by the regional travel model.

Step 3: Compute Raw Trip Generation
Estimate daily trip generation based on designated land use type and ITE trip rate data. The daily trip generation level was considered more equitable as a measure of overall road usage than peak hour travel estimates, which are more commonly used for assessing system infrastructure expansion.

Step 4: Pass-By Trip Adjustment
Factor retail uses for ‘pass-by’ discount to account for linked trips. ITE research shows that categories with detailed ‘pass-by’ data were applied as appropriate. For those categories without specific studies, a general factor of 30% was applied to retail uses in the ITE code 800 and 900 series.

Step 5: Trip Length Adjustment
A trip length factor was applied to selected land use types to account for the relative VMT compared to residential uses. A previous study done for the county (4) as a part of their Transportation System Development Charge development broke out trip length estimates by land use categories consistent with ITE trip generation data. However, the process used to make these estimates was not clearly documented, so a partial application was made in this case. The trip length relative value was applied for categories that were substantially longer or shorter than the reported residential trip length (1.0). A relative adjustment factor of 0.5 was applied to retail,

school, day care, and library uses, and a 1.5 factor was applied to major recreational facilities. All other uses had a trip length factor of 1.0.

Trip Generation Findings

Using the above method, the total trip generation for Clackamas County was 2.35 million daily vehicle trips. This was compared to the regional travel model daily trip estimates as a back-check. The Clackamas County total daily trips according to the Portland Metropolitan Area Regional Model for Year 2000 was 2.38 million vehicle trips, representing a difference of less than 2 percent. Residential trips accounted for 1.0 million and non-residential trips were 1.4 million. This comparison validates the selected trip calculation methodology as a reasonable approach for use in implementing the TMF. The trip totals by jurisdiction in Clackamas County based on the above methodology is listed in Table 3.

Stage 3: Fee Tier Allocations

Trip rate and trip quantity information was used to develop the rate tiers for fee administration. The concept is that each of the land uses within a given tier would be charged based on a common trip rate, rather than specific rates as defined by ITE. Grouping trip rates helps to correct for cases where ITE data for a given land use is limited, and it greatly simplifies fee administration. The fee tiers approach was approach taken in other Oregon cites of Lake Oswego, Eugene, Springfield and Tigard.

The residential land use categories were grouped into four tiers, based on their relative trip rates. These tiers were single-family, multi-family, elderly housing, and congregate care. Manufactured homes were grouped with elderly housing based on similar trip rates.

The non-residential trip generation estimates for Clackamas County derived from the ITE methodology were sorted by land use category based on the net weekday trip rate (trips per land unit) – see Figure 2. Trip rates increase from left to right as shown by the solid line, with values ranging from 1 to 450 on the right vertical axis. In a few cases, the trip rates were normalized to an equivalent land coverage basis by applying density assumptions where the land use unit was not KSF (1,000 gross square feet of building area). For example, a trip rate based on number of employees was converted to an equivalent basis by factoring for the assumed number of employees per KSF. By making these adjustments, the net trip rate is more comparable across all ITE categories. The ITE code categories are listed on the x-axis of the chart, and the estimated weekday trips by ITE category are shown in bars. The tallest bars represent categories with the highest aggregate trip totals across the county. These top trip quantity categories are: Specialty Retail (ITE Code 814) with 151,000 daily trips, Shopping Center (ITE Code 820) with 118,000 daily trips, Supermarket (ITE Code 850) with 75,000 trips, and Warehouse (ITE Code 150) with 73,000 daily trips.

Boundaries between the ten non-residential tiers were selected to minimize the ratio between tier rates and ITE rates for a given land use category. Initially, five non-residential tiers were used, but the number was doubled after the business community comments on the draft fee program. They stated a preference for smaller gaps between tiers, and less deviation between ITE rates and fee rates. The tier trip rates were reconciled against the trip calculation using individual ITE category rates to ensure that the countywide totals were consistent. The final tier trip rates and adjusted ITE trip rates are listed in Table 4 for the land use categories applied in Clackamas County.

Initial Transportation Maintenance Utility Fee Schedule

The initial cost per vehicle trip was calculated based on $20 million eligible annual costs, which yielded about $1.50 per daily vehicle trip that originates or ends within the county. A

preliminary cost for each land use category was developed based on the tier trip rates and unit cost per trip, which yielded the following sample monthly fee schedule:

Sample Land Use Type	Monthly Fee
Single Family Detached Dwelling Unit:	$15
Neighborhood Shopping Center (50,000 square feet lease area):	$3,000
Apartment Complex (200 units):	$1,800
Elementary School (500 students)	$550

This initial estimate was approximately three times higher than the rates found in comparable Oregon communities. Therefore, further technical review was conducted to identify the appropriate mix of maintenance activities to reduce the fee closer to current 'market' costs. State law requires that a fee system have a clear nexus between actual maintenance costs and the fee collected. However, an initial finding of this study showed that, although the county could collect up to $15 per single family dwelling unit, it may be better received by the community if only a portion of those eligible costs were recovered through this fee system.

IMPLEMENTATION ISSUES

The technical analysis of road use by parcel level was a challenge for the Clackamas County community. However, the administrative and policy-making issues associated with implementing a comprehensive new fee system for two-thirds of the county's population was a larger effort in many ways. The following sections highlight the most notable technical and administrative implementation issues encountered during the Clackamas County study.

Resolving Basis for Cost Assumptions

While the larger jurisdictions had comprehensive cost management tools for evaluating transportation maintenance activities, many of the smaller cities lacked detailed historical records that identified both the actual expenses and the system needs. With deferred maintenance of the roadway system being a common solution for many jurisdictions, the actual funding required to maintain minimum system performance measures (e.g., pavement integrity) often was unknown. The preferred starting point for the cost basis discussion was a comprehensive pavement management system and regular pavement inspection.

Specificity of Parcel Level Trip Generation versus Available Activity Data

Residential trip generation estimation was a straightforward exercise based on readily available data. However, many of the public records for non-residential uses lacked sufficient details to match variables reported in the ITE *Trip Generation Manual*. A team of student interns was assigned the tasks of uncovering essential details about 7,000 industrial, commercial, school and other non-residential generators. This work spanned several months and included field visits, phone calls to businesses and property managers, and reviews by aerial photographs. The resulting data set describing building floor area, employees, and business type was incorporated into an expanded information management system to be maintained by the county.

Nexus versus Market Forces

The Clackamas County TMF continues through refinement at this date. A part of the on-going discussion involved how the fees would be collected from multiple jurisdictions since the cost basis (roadway maintenance cost per road mile) varied between jurisdictions. To date, the discussion has led to funding the least common denominator between all jurisdictions, which had the lowest fee rate. Instead of $15 monthly per single-family dwelling unit (as a comparative

indicator), the latest rate (5) would charge $2.17 for the same unit. The final data and process description for the Clackamas TMF is illustrated in Figure 3.

Billing Administration and Multiple Jurisdictions

One of the initial concepts for TMF administration would have used a central billing agency (the county) to build on a billing system used for tax assessment. However, participating cities were not satisfied with the sole responsibility of fee collection and distribution to reside with the county, primarily because of possible misperceptions by city elected officials about fairness and equity on the county's behalf. A range of administration schemes was considered that included the least, average and highest cost denominators and uniform and area-specific fee programs (i.e., each city would establish and maintain their own fee program). Under the highest common denominator scheme, several of the participating cities would 'over collect' relative to their local needs, and the balance would be distributed to the members with higher unit maintenance costs.

A major policy choice was to avoid the need for re-distributing fees collected in one jurisdiction for application in another. These types of policies choices were very important in shaping the level and form of the current fee rate program being considered by Clackamas County, which, as presently defined, would use existing utility program billing systems (water, sewer) for the transportation utility fee administration rather than a countywide tax billing system.

A final billing issue was: exactly who is charged? Residential customers are generally identified by tax records, and these accounts can be readily monitored. Tax records typically have non-residential landowners, but not necessarily the business operators or landlords. An on-going policy decision involves choosing between tax lot owners and business operators as the basis for fee collection. A general preference was stated by the elected officials reviewing the program to target business operators that are responsible for management at given business location, and accountable for these types of recurring costs of operation. However, the information system for monitoring changes in business operators around the county (business licenses and permits, etc.) is not well coordinated with other more comprehensive systems maintained by the tax assessors office. There is a clear need for re-organization of these data management systems to make the fee collection and administration costs effective.

Public Outreach

A separate advisory committee from the community was formed after the draft program policies and rates were identified to present and refine the TMF program. This advisory body re-evaluates the policy and cost implications to their respective constituents of the business, educational, and development community, and provides feedback to county staff leading the program development. Their recommendations will be forwarded to the county commissioners for their review of the TMF program ordinances for possible adoption.

CONCLUSIONS

The TUF (or TMF) program is an important potential contribution to a jurisdiction's revenue system to recover maintenances costs that are increasingly not covered by declining revenue streams such as state gas taxes. This type of supplemental funding scheme enables a local jurisdiction to collect maintenance fees on a recurring monthly basis according to proportional usage of the road facilities. For most of the jurisdictions that have enacted a TUF program, the funds are applied for road maintenance exclusively. Revenue collected by adopted Oregon TUFs range from $12 to $48 annually per capita.

In Oregon, these fees can be implemented by administrative action, without direct affirmation by vote; however, the public still has opportunity to refer actions to a general vote. This past year, two of the larger jurisdictions to enact TUF programs (Eugene, Springfield)

withdrew their adopted ordinances in the same year based on potential voter referendum actions. Eight jurisdictions remain with intact TUF programs.

By contrast, local gas tax increases have a much broader range of applications, and they require a majority vote at a general election to be affirmed. Oregon voters have consistently not supported increases in local or state gas taxes. Many local agencies do not consider increases to their share of the gas tax as a viable solution for transportation funding because of the poor general public support. The latest statewide legislative efforts are targeting a 1-cent increase to the 24-cent tax, with the more important addition of an index that adjusts for inflation. If this increase is passed by the legislature and affirmed by Oregon voters, it would mark the first change in ten years.

The technical information needed to produce a comprehensive nexus analysis requires extensive and well-coordinated data sets that may extend beyond the limits of existing information systems. For example, the experience in Clackamas County showed that substantial new surveys and data collection was required to sufficiently define land use at parcel levels so that they could be associated with data categories reported by ITE *Trip Generation* research. The general administrative burden of the TUF approach is substantially greater than a comparable gas tax approach.

The Clackamas County experience also demonstrated that the larger aspect of implementing their proposed TUF was the associated policy choices and public education required to implement the program. The foremost policies related to which maintenance activities were to be funded, the minimum levels of services provided, and fee collection methods. Furthermore, the purpose and need for the TUF was a moderately complex message to explain to average potential users. The public groups that were the most challenging to educate were those that would pay the highest fee levels, larger retail and business centers. The education message was further compounded by the diversity in the maintenance needs and fees required by the participating city jurisdictions.

On November 5, 2004, the proposed Clackamas County TMF appeared on the general election ballot, and it was defeated by a margin of 2:1. Compared to the last gas tax increase vote, which failed 5:1, a modicum of progress in winning public support to transportation funding was made.

ACKNOWLEDGEMENTS

The author acknowledges the assistance of several colleagues during the technical analysis, review of the Clackamas TMF study and preparation of this paper. These included Mr. Ron Skidmore, Senior Transportation Planner and Ms. Pam Hayden, Senior Policy Analyst, Clackamas County Department of Transportation and Development, Clackamas, Oregon; and members of the study Technical Advisory Committee. Thanks also to Dr. Robert Bertini of Portland State University who provided editorial comments.

LIST OF TABLES AND FIGURES

TABLE 1: Transportation Utility Fees Adopted in Oregon (as of July, 2003)

City	Population	Gross Annual Revenue	Monthly Fee for Single Family Detached Unit	Average Revenue Per Road Mile	Annual Revenue Per Capita
Ashland	19,490	$734,000	$5.12	$3,966	$37.66
Eagle Point	4,665	$80,000	$3.00	$1,958	$17.15
Eugene *	140,000	$5,700,000	$2.90	$10,000	$40.71
La Grande	12,885	$200,000	$4.00	$2,326	$15.52
Medford	59,990	$2,900,000	$4.64	$9,767	$48.34
Phoenix	3,970	$60,000	$1.55	$3,294	$15.11
Springfield *	52,000	$1,000,000	$1.75	—	$19.23
Talent	5,065	$62,400	$1.96	$3,120	$12.32
Tualatin	21,345	$620,000	$2.92	$10,532	$29.05
Wilsonville	12,985	$482,713	$4.48	$9,851	$37.17
Average				$6,090	$27.23

Notes: — denotes sufficient data not available to calculate this rate.
* Eugene and Springfield repealed their TUF rates in July 2003 due to pending voter referendum initiatives.

TABLE 2: Clackamas County Roadway Maintenance Activities Selected for TMF

Maintenance Activity	2002-2003 Budget Total ($1,000)	Percent of Annual Budget
Bridges	$725	5.0%
Guardrail	91	0.6
Road Shoulder	869	6.0
Roadway Treatments	10,298	71.5
Traffic Operations (excluding traffic counts, traffic calming and ITS)	1,315	9.1
Vegetation Control	715	5.0
Subtotal Activities Allocated to TMF	$14,014	97.3%
All Other Activities and Services	386	2.7
Total Activities Allocated to TMF	$14,400	

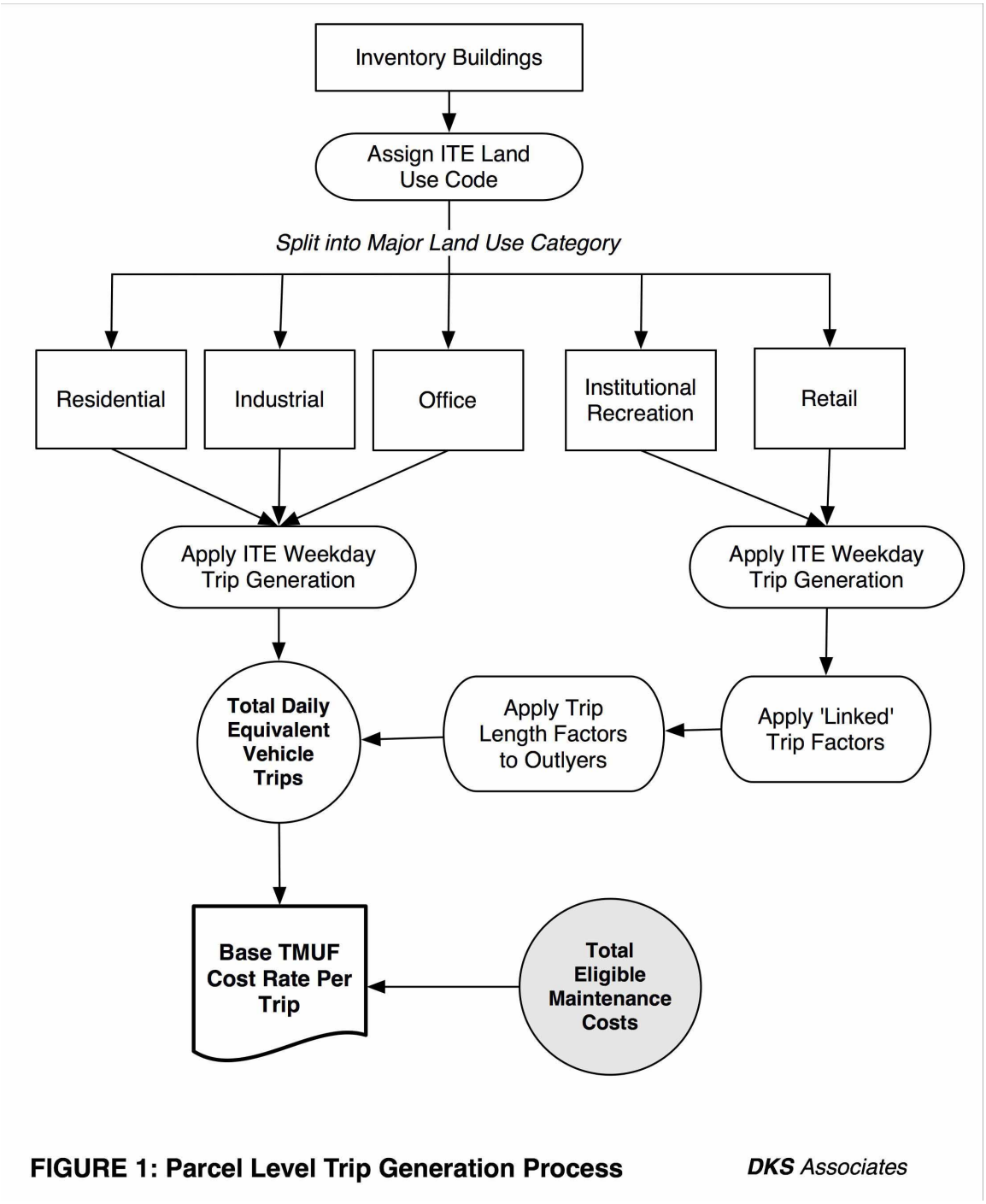


FIGURE 1: Parcel Level Trip Generation Process ***DKS** Associates*

TABLE 3: Estimated Daily Vehicle Trips by Jurisdiction in Clackamas County, Oregon

Jurisdiction	Residential Trips	Non Residential Trips	Total Daily Vehicle Trips
Barlow	382	1,314	1,696
Canby	31,635	65,425	97,060
Clackamas Urban	211,479	497,666	709,145
Clackamas Rural	287,480	93,331	380,811
Estacada	6,015	21,455	27,470
Gladstone	28,665	35,336	64,001
Happy Valley	18,172	6,454	24,626
Lake Oswego	106,191	144,218	250,409
Milwaukie	58,724	126,264	184,988
Molalla	13,747	27,170	40,917
Oregon City	69,281	153,129	222,410
Portland (portion of)	2,458	104	2,562
River Grove	1,081	840	1,921
Sandy	14,475	37,713	52,188
Tualatin	6,947	24,991	31,938
West Linn	70,470	49,103	119,573
Wilsonville	31,588	111,361	142,949
All Cities	459,831	804,877	1,264,708
All Unincorporated	498,959	590,997	1,089,956
Jurisdiction Total	958,790	1,395,874	2,354,664

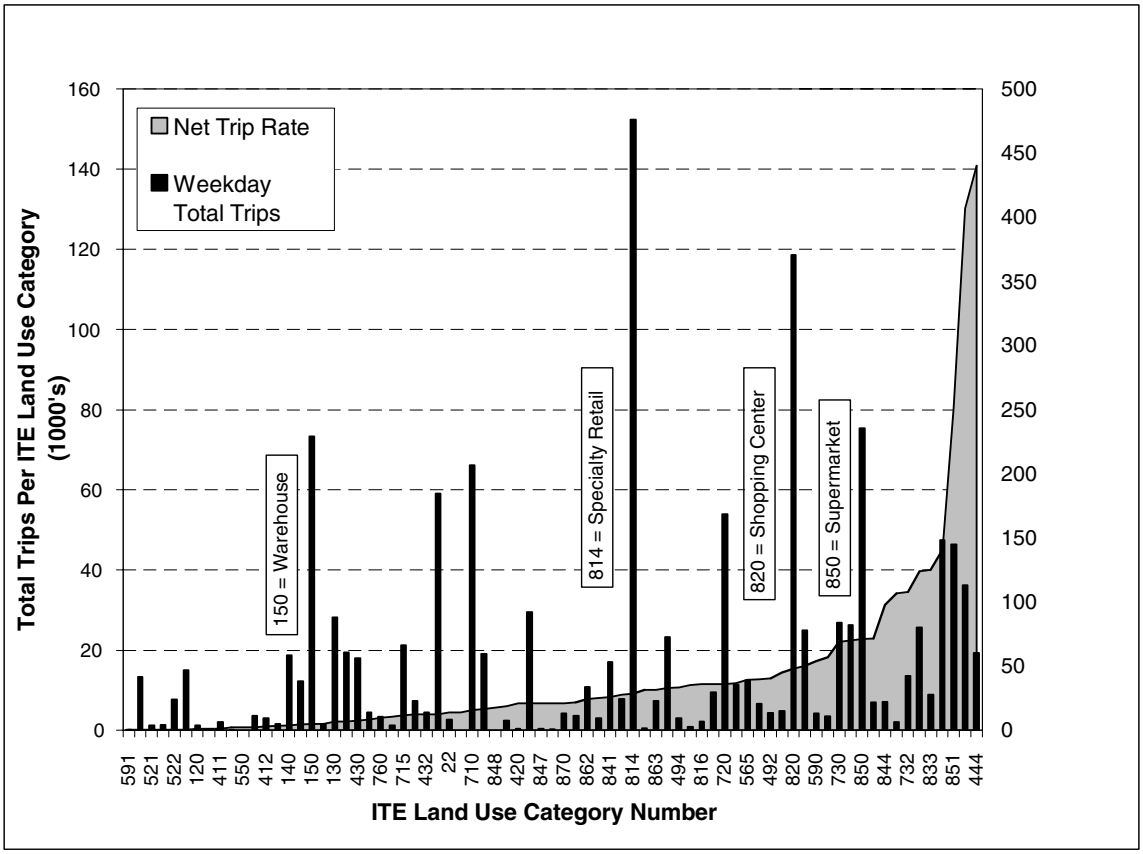


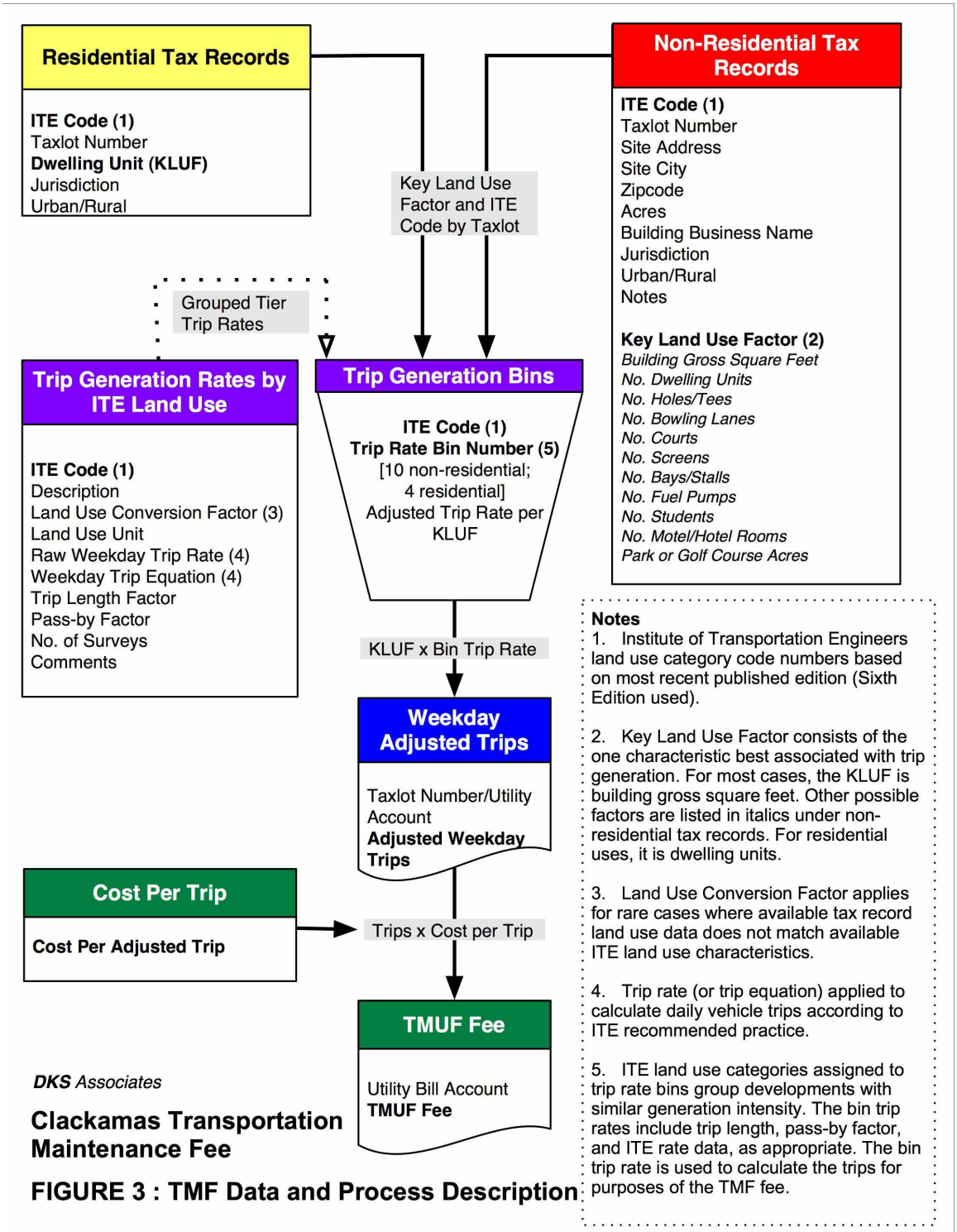
FIGURE 2: Trip Generation Rate and Net Trips Sorted by Land Use Category

Table 4: Adjusted Weekday Trip Generation Rates by ITE Category (Sorted by Tiers)

ITE Code	Description	Land Use Unit	Tier	Tier Trip Rate	Adj. ITE Rate	Rate Ratio
Non-Residential Uses						
413	State Park	Acre	0	0.75	0.65	0.87
520	Elementary School	Student	0	0.75	0.51	0.68
521	Private School (K-12)	Student	0	0.75	0.65	0.87
522	Middle School	Student	0	0.75	0.73	0.97
591	Lodge/Fraternal Organization	Member	0	0.75	0.29	0.39
120	General Heavy Industrial	KSF	1	2	1.50	0.75
151	Mini-Warehouse	KSF	1	2	2.50	1.25
411	City Park	Acre	1	2	1.59	0.80
530	High School	Student	1	2	1.79	0.90
540	Junior/Community College	Student	1	2	1.54	0.77
550	University/College	Student	1	2	2.38	1.19
890	Furniture Store	KSF	1	2	2.38	1.19
140	Manufacturing	KSF	2	4	3.82	0.96
150	Warehouse	KSF	2	4	4.96	1.24
170	Utilities	KSF	2	4	5.00	1.25
412	County Park	Acre	2	4	3.42	0.86
560	Church	KSF	2	4	4.56	1.14
620	Nursing Home	KSF	2	4	3.60	0.90
110	General Light Industrial	KSF	3	8	6.97	0.87
130	Industrial Park	KSF	3	8	6.96	0.87
320	Motel	Room	3	8	8.45	1.06
430	Golf Course	Acre	3	8	7.56	0.95
710	General Office	KSF	3	8	11.01	1.38
715	Single Tenant Office Building	KSF	3	8	11.57	1.45
750	Office Park	KSF	3	8	11.42	1.43
760	Research & Development Center	KSF	3	8	8.11	1.01
836	Drinking Place	KSF	3	8	10.50	1.31
22	General Aviation Airport	Employee	4	16	14.24	0.89
310	Hotel	Room	4	16	12.35	0.77
432	Golf Driving Range	Tees	4	16	12.50	0.78
566	Cemetery	Acre	4	16	18.92	1.18
610	Hospital	KSF	4	16	16.78	1.05
770	Business Park	KSF	4	16	12.76	0.80
818	Nursery (Wholesale)	KSF	4	16	21.00	1.31
840	Automobile Care Center	KSF	4	16	21.00	1.31
847	Self-Service Car Wash	Wash Stall	4	16	21.00	1.31
848	Tire Store	KSF	4	16	17.91	1.12
849	Wholesale Tire Store	KSF	4	16	14.25	0.89
861	Discount Club	KSF	4	16	21.74	1.36
870	Apparel Store	KSF	4	16	21.00	1.31

ITE Code	Description	Land Use Unit	Tier	Tier Trip Rate	Adj. ITE Rate	Rate Ratio
420	Marina	Acre	5	32	31.40	0.98
491	Tennis Courts	Courts	5	32	31.04	0.97
492	Racquet Club	Courts	5	32	40.53	1.27
493	Health Club	KSF	5	32	40.00	1.25
494	Bowling Alley	KSF	5	32	33.33	1.04
495	Recreational Community Center	KSF	5	32	45.00	1.41
565	Day Care	KSF	5	32	39.63	1.24
590	Library	KSF	5	32	27.00	0.84
630	Clinic	KSF	5	32	31.45	0.98
720	Medical-Dental Office Building	KSF	5	32	36.13	1.13
812	Building Materials & Lumber	KSF	5	32	27.80	0.87
813	Discount Super Store	KSF	5	32	32.87	1.03
814	Specialty Retail	KSF	5	32	28.47	0.89
815	Discount Store	KSF	5	32	47.00	1.47
816	Hardware/Paint Store	KSF	5	32	35.90	1.12
817	Nursery/Garden Center	KSF	5	32	25.26	0.79
820	Shopping Center	KSF	5	32	28.33	0.89
832	High Turnover Sit-Down Rest.	KSF	5	32	37.15	1.16
837	Quick Lubrication Vehicle Stop	Service Position	5	32	35.00	1.09
841	New Car Sales	KSF	5	32	26.25	0.82
845	Gas/Service Station with Convenience Market	Fueling Positions	5	32	35.81	1.12
850	Supermarket	KSF	5	32	35.68	1.12
862	Home Improvement Superstore	KSF	5	32	24.54	0.77
863	Electronics Superstore	KSF	5	32	31.53	0.99
844A	Fuel Pumps with Grocery Store	Fueling Positions	5	32	31.88	1.00
24	Airport Facilities	Employee	6	64	56.96	0.89
730	Government Office Building	KSF	6	64	68.93	1.08
831	Quality Restaurant	KSF	6	64	50.37	0.79
844	Gas Station	Fueling Positions	6	64	48.88	0.76
846	Gas/Service Station with Convenience Market, Car Wash	Fueling Positions	6	64	53.49	0.84
854	Discount Supermarket	KSF	6	64	70.00	1.09
732	United States Post Office	KSF	7	128	108.19	0.85
833	Fast Food w/o Drive-Thru	KSF	7	128	125.00	0.98
834	Fast Food With Drive-Thru	KSF	7	128	124.03	0.97
851	Convenience Market	KSF	7	128	125.46	0.98
911	Walk-In Bank	KSF	7	128	109.54	0.86
912	Drive-In Bank	KSF	7	128	140.56	1.10
435	Multipurpose Recreational Facility	Acre	8	256	203.36	0.79
444	Movie Theater with Matinee	Screens	9	512	440.00	0.86
Residential Uses						
210	SF Detached	DU	10	9.57	9.57	1.00

ITE Code	Description	Land Use Unit	Tier	Tier Trip Rate	Adj. ITE Rate	Rate Ratio
231	Low-Rise Residential Condo/Townhouse	DU	10	9.57	9.01	0.94
220	Apartment	DU	11	6	6.63	1.11
221	Low-Rise Apartment	DU	11	6	6.59	1.10
230	Condo/Townhouse	DU	11	6	5.56	0.93
240	Mobile Home	DU	12	4	4.81	1.20
253	Elderly Housing	DU	12	4	3.48	0.87
252	Congregate Care	DU	13	2	2.15	1.08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No. Holes/Tees
No. Bowling Lanes
No. Courts
No. Screens
No. Bays/Stalls
No. Fuel Pumps
No. Students
No. Motel/Hotel Rooms
Park or Golf Course Acres
Key Land Use Factor and ITE Code by Taxlot
Grouped Tier Trip Rates
Trip Generation Rates by ITE Land Use
ITE Code (1)
Description
Land Use Conversion Factor (3)
Land Use Unit
Raw Weekday Trip Rate (4)
Weekday Trip Equation (4)
Trip Length Factor
Pass-by Factor
No. of Surveys
Comments
Trip Generation Bins
ITE Code (1)
Trip Rate Bin Number (5)
[10 non-residential;
4 residential]
Adjusted Trip Rate per KLUF
KLUF x Bin Trip Rate
Weekday Adjusted Trips
Taxlot Number/Utility Account
Adjusted Weekday Trips
Cost Per Trip
Cost Per Adjusted Trip
Trips x Cost per Trip
TMUF Fee
Utility Bill Account
TMUF Fee
DKS Associates
Clackamas Transportation Maintenance Fee
FIGURE 3 : TMF Data and Process Description
Notes
1. Institute of Transportation Engineers land use category code numbers based on most recent published edition (Sixth Edition used).
2. Key Land Use Factor consists of the one characteristic best associated with trip generation. For most cases, the KLUF is building gross square feet. Other possible factors are listed in italics under non-residential tax records. For residential uses, it is dwelling units.
3. Land Use Conversion Factor applies for rare cases where available tax record land use data does not match available ITE land use characteristics.
4. Trip rate (or trip equation) applied to calculate daily vehicle trips according to ITE recommended practice.
5. ITE land use categories assigned to trip rate bins group developments with similar generation intensity. The bin trip rates include trip length, pass-by factor, and ITE rate data, as appropriate. The bin trip rate is used to calculate the trips for purposes of the TMF fee.

REFERENCES

(1) Oregon Legislative Revenue Office, "Oregon Public Finance: Basic Facts", 2001, page G3. Roadway maintenance sources include gas tax for light vehicles, weight-mile tax for heavy vehicles, and vehicle registration fees. Total motor vehicle tax revenues for grew on average 9.3% between 1982 and 1993, grew at 2.2% over the past 10 years.
(2) Oregon Department of Transportation, Oregon VMT for state owned facilities, http://www.odot.state.or.us/tdb/traffic_monitoring/vmt.htm. Accessed April 2, 2003.
(3) Institute of Transportation Engineers, "Trip Generation", Sixth Edition, 1998. Pass-by trip data for retail uses published in companion report entitled "Trip Generation Handbook: An ITE Proposed Recommended Practice", October 1998.
(4) Don Ganer & Associates, "Clackamas County: Countywide Transportation System Development Charges Methodology Update Report", September 18, 2001.
(5) "Clackamas County Transportation Fee Analysis and Utility Formation Study", Financial Consulting Solutions Group, April 2003.

CITY OF MILWAUKIE

CITY COUNCIL DISCUSSION: JULY 18, 2006

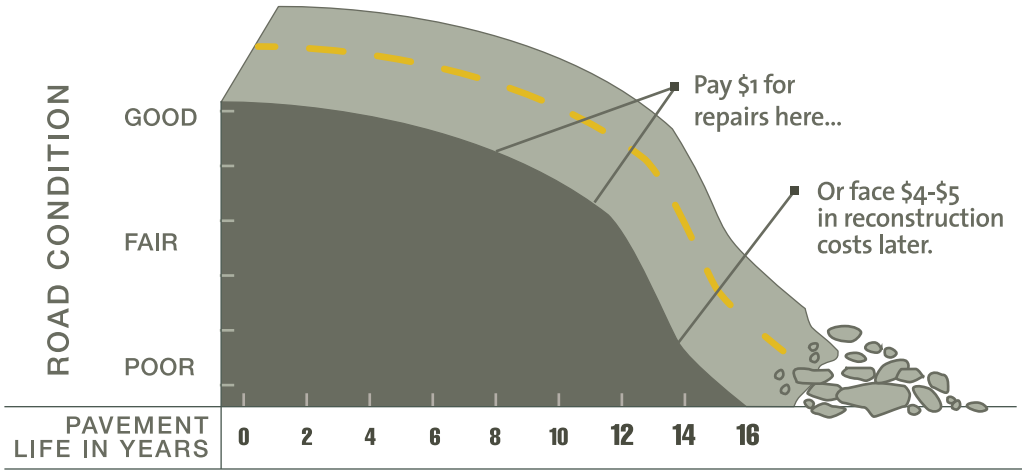
CAUTION AHEAD

Milwaukie's streets are in a state of rapid decline. Some have already failed. Funding is not adequate to turn the situation around. If nothing is done, the roads will worsen and the cost to remedy the situation will skyrocket.

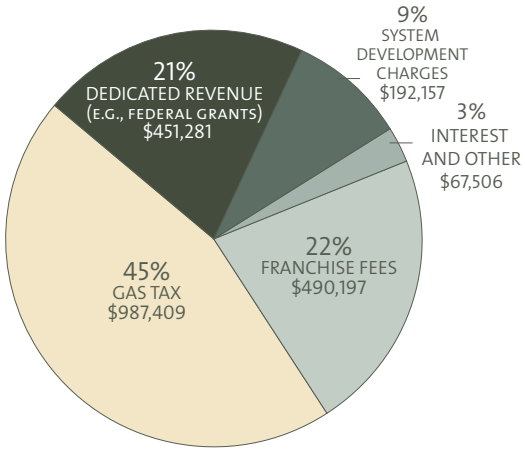
- Milwaukie's streets are worth over $65 million. This investment is increasingly at risk.
- Road repair and construction costs are climbing while funding for street maintenance is shrinking.
- Current funding only covers temporary fixes like filling potholes and minimal crack sealing, but not permanent repairs.
- The longer we wait, the worse our roads get, and the more expensive repairs become.

ROADS IN GOOD CONDITION	ROADS IN FAIR CONDITION	ROADS IN POOR CONDITION
$1.50-$3/SQ. YD. TO MAINTAIN	**$3-$32/SQ. YD. TO REPAIR**	**$32-$70/SQ. YD. TO REPAIR**
Requires: Crack sealing	Requires: Slurry sealing, paving or overlay	Requires: Complete reconstruction
55% OF MILWAUKIE ROADS ARE IN THIS CONDITION.	**18% OF MILWAUKIE ROADS ARE IN THIS CONDITION.**	**27% OF MILWAUKIE ROADS ARE IN THIS CONDITION.**
		
ESTIMATED COST OF NEEDED MAINTENANCE AND RECONSTRUCTION		
MAINTAIN ALL GOOD CONDITION ROADS: $110,000	**REPAIR ALL FAIR CONDITION ROADS: $1,950,000**	**RECONSTRUCT ALL POOR CONDITION ROADS: $5,200,000**

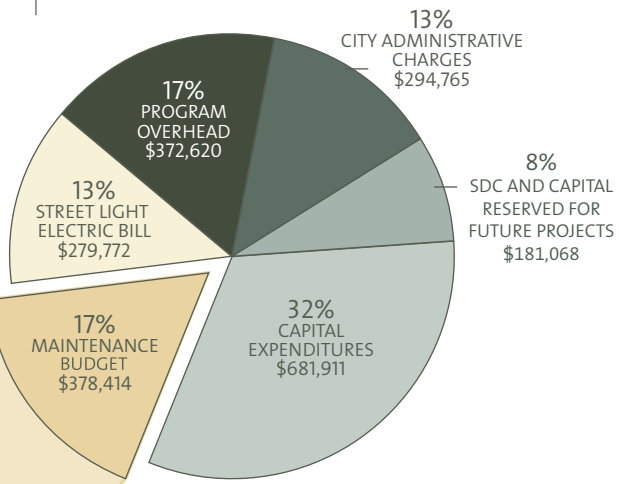
PAVE NOW OR PAY LATER

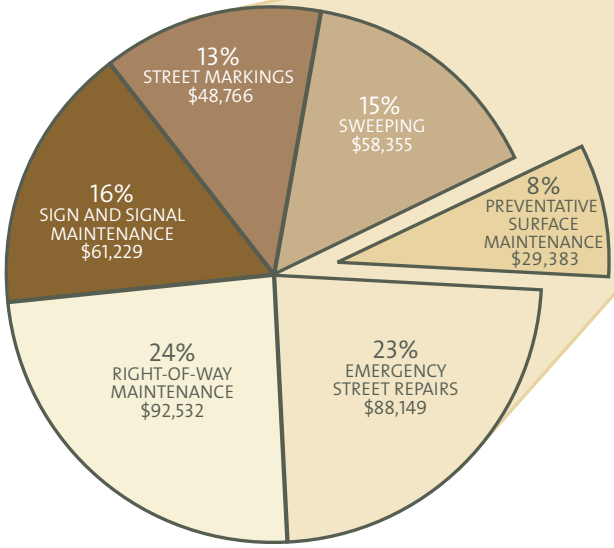


STREET REVENUES 2004-2005 (Total $2.2 million)



STREET EXPENDITURES 2004-2005





Out of a $2.2 million budget, approximately $30,000 is available each year to maintain Milwaukie's 150 miles of pavement.

MAINTENANCE BUDGET (PERSONNEL AND MATERIALS) 2004-2005

CITY OF MILWAUKIE

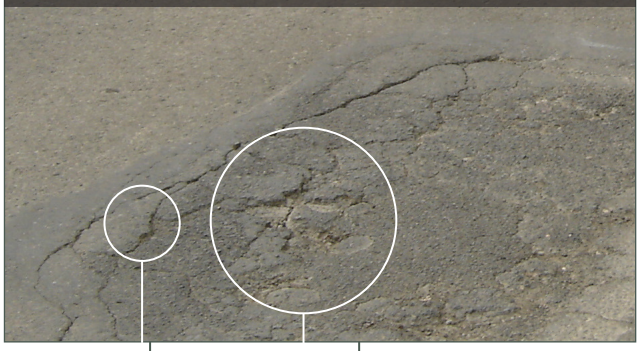
CITY COUNCIL DISCUSSION: JULY 18, 2006

A LOOK AT MILWAUKIE'S STREETS

Milwaukie's street network is worth more than $65 million and is one of the City's most valuable assets. In 2004 an engineering study found that the cost of the maintenance backlog will continue to grow unless enough funds are provided to repair and maintain our streets.

Source: EIS Inc., July 2004

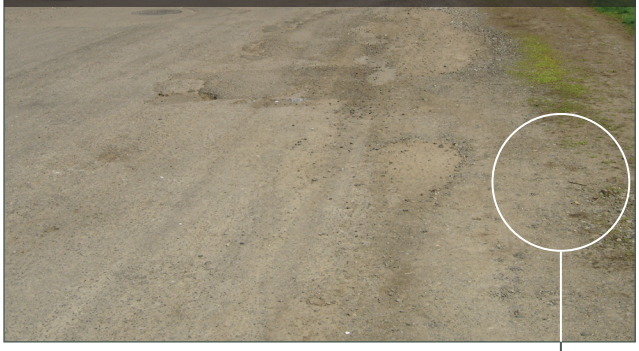
LAKE ROAD, ARTERIAL: POOR, PCI* 2.9
COST TO REPAIR: $31,500/BLOCK



Cracks due to aging.

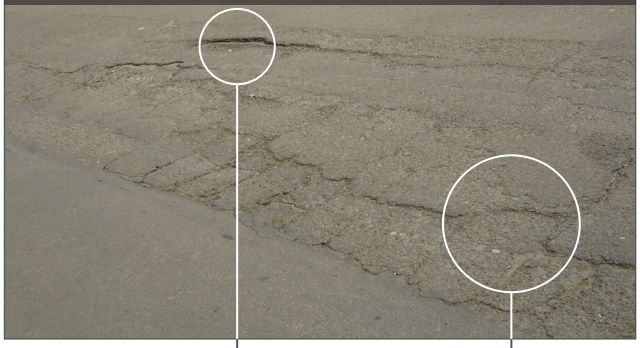
Large holes due to aged asphalt, poor base material and sub-base failure. Base failure creates soft spot that is pushed down by traffic.

MONROE STREET, COLLECTOR: FAIR, PCI* 5.7
COST TO REPAIR: $9,000/BLOCK



Poor shoulder drainage contributes to deterioration of aging asphalt. As asphalt is eroded, gravel is exposed and released.

ROSWELL STREET, LOCAL: FAIR, PCI* 5.5
COST TO REPAIR: $13,500/BLOCK



Water enters sub-base through cracks and, over time, the asphalt becomes brittle and breaks away.

"Alligator" cracks caused by heavy vehicle traffic on aged asphalt.

JACKSON STREET, LOCAL: POOR, PCI* 3.5
COST TO REPAIR: $18,667/BLOCK

Poor drainage allows water to saturate base and sub-base.

Roadway releases gravel from asphalt mix.

*PCI: Pavement Condition Index is a rating between 1 to 10 describe street surface quality and condition.

STREET FUNCTIONAL CLASS	A: Arterial C: Collector L: Local	PAVEMENT CONDITION INDEX (PCI) :	>8 Good, no treatment 7-8 Good, crack seal @ $1.50/sq. yd 5-6.9 Fair, overlay @ $30/sq. yd	4-4.9 Poor, mix of overlay and reconstruct @ $50/sq. yd 0-3.9 Poor, reconstruct @ $70/sq. yd

STREET	CLASS	PCI	STREET	CLASS	PCI	STREET	CLASS	PCI	STREET	CLASS	PCI
17TH AVE	C	7.5 - 7.9	ADAMS ST	L	2.1 - 7.8	HARVEY ST	L	2.1 - 8.1	RAILROAD AVE	C	2.3 - 7.9
19TH AVE	L	8.8 - 9.0	ANGELA WY	L	8.9	HAZEL ST	L	7.2	RAINBOW CIR	L	8.6
20TH AVE	L	4.1 - 5.5	APPENINE WY	L	2.9 - 9.0	HEMLOCK ST	L	8.2	RAINBOW LN	L	8.2
21ST AVE	C/L	6.4 - 8.3	APPLE ST	L	8.5	HILLSIDE CT	L	5.2	REDWOOD AVE	L	8.3
22ND AVE	L	7.2 - 7.3	ARDEN ST	L	7.0	HOME AVE	C	2.4 - 5.1	REGENTS CIR	L	8.5
23RD AVE	L	7.4 - 8.6	ASH CT	L	6.5	HOWE LN	L	7.5	REGENTS DR	L	8.4
24TH AVE	L	7.7	ASPEN ST	L	8.8	HOWE ST	L	1.9 - 9.0	RHODESA ST	L	6.2
25TH AVE	L	2.3 - 8.4	B ST	L	8.6	HUNTER CT	L	2.7	RIO VISTA ST	L	7.8 - 7.9
26TH AVE	L	1.9 - 9.0	BALFOUR ST	L	1.7	INTERNATIONAL WY	C	3.7 - 7.6	RIVER RD	A	6.3 - 7.2
27TH AVE	L	8.8	BARBA ST	L	8.8	JACKSON ST	L	3.1 - 8.4	ROBERTA LN	L	7.6
28TH AVE	L	4.2 - 8.2	BECKMAN AVE	L	8.6	JEFFERSON ST	L	6.5 - 8.1	ROCKVORST ST	L	9.0
28TH PL	L	5.5	BETA ST	L	8.4	JOBES CT	L	1.5	ROCKWOOD ST	L	3.8 - 7.7
29TH AVE	L	2.6 - 8.2	BIRK ST	L	3.9	JOHNSON CREEK BLVD	L	9.1	ROSWELL ST	L	4.5 - 8.9
30TH AVE	L	3.0 - 9	BLUEBIRD ST	L	7.5 - 9.0	JUNIPER AVE	L	8.8	RYAN CT	L	2.8
31ST AVE	L	2.6 - 9.0	BOB WHITE ST	L	4.3	KATHRYN CT	L	8.8	SCOTT ST	L	6.4
32ND AVE	C/L	4.4 - 9	BOSS LN	L	8.9	KEHRLI DR	L	5.8	SELLWOOD ST	L	8.9 - 9.0
33RD AVE	L	6.7 - 9.0	BOWMAN ST	L	8.4	KELVIN ST	L	4.0	SEQUOIA AVE	L	8.5
34TH AVE	C/L	5.0 - 8.8	BOYD ST	L	7.3	KENT ST	L	1.9	SEQUOIA PL	L	8.0
34TH CT	L	7.5	BRAE ST	L	7.4	KING RD	A/L	3.4 - 7.6	SHELL LN	L	2.3
35TH AVE	C	8.3 - 9.0	BROOKSIDE DR	L	7.0 - 8.4	LAKE RD	A	2.9 - 8.2	SHERRETT ST	L	7.1
35TH CT SE	L	9.0	C ST	L	8.2	LAMPLIGHTER AVE	L	3.3	SHERRY LN	L	4.2
36TH AVE	L	2.0 - 8.9	CAMPBELL ST	L	6.4 - 8.1	LARK ST	L	6.3 - 6.5	SOMEWHERE DR	L	9.0 - 9.5
37TH AVE	L	3.7 - 9.0	CEDARCREST DR	L	8.4	LAVA DR	L	2.1	SPARROW ST	L	7.7 - 9.0
38TH AVE	L	2.1 - 8.4	CHELSEA ST	L	8.2	LEONE LN	L	1.5	STANLEY AVE	C	3.2 - 6.9
39TH AVE	L	4.0 - 5.2	CHESHIRE LN	L	10	LICYNTRA CT	L	8.3	STANLEY CT	L	2.1
39TH CT	L	9.0	CLATSOP ST	L	7.7	LICYNTRA LN	L	8.9 - 8.9	STUBB ST	L	3.1 - 8.1
40TH AVE	L	1.3 - 9.0	CONWAY ST	L	2.2	LINWOOD AVE	A	7.3 - 7.4	SUNDIAL CT	L	6.2 - 8.0
41ST AVE	L	3.5 - 8.6	COVELL ST	L	7.3	LLEWELLYN ST	L	2.8 - 8.4	TAMBARA ST	L	6.7
41ST CT	L	1.9 - 8.8	CRITERION CT	L	7.8	LLOYD ST	L	1.7 - 5.6	THOMAS CT	L	7.8
42ND AVE	L	5.6 - 8.1	D PL	L	8.7	LOGUS RD	L	6.8 - 7.3	VAN WATER ST	L	4.4 - 4.7
42ND CT	L	5.1	D ST	L	8.6	MADISON ST	L	8.5	VERNIE AVE	L	7.2
43RD AVE	C/L	5.3 - 8.6	DAPHNE CT	L	8.3	MADRONA DR	L	7.6	VERNIE CT	L	8.9
43RD CT	L	1.8	DEERING CT	L	8.3	MAILWELL DR	L	2.8	VERNIE LANE	L	8.4
44TH AVE	L	3.9 - 8.6	DERDAN CT	L	8.7	MAIN ST	C	8.1 - 8.4	VIVALDI CIRCLE	L	3.0
44TH CT	L	9.1	DEWEY CT	L	6.4	MALCOLM ST	L	3.7 - 4.7	WAKE CT	L	1.5
45TH AVE	L	4.4 - 8.5	DICK ST	L	4.0	MALLARD WY	L	9.2	WAKE ST	L	2.8 - 3.1
46TH AVE	L	3.4 - 8.4	DRAKE ST	L	1.3 - 9.0	MAPLE CT	L	1.3	WASHINGTON PL	L	6.3
46TH CT	L	8.2	DREFSHILL ST	L	8.6	MAPLEWOOD CT	L	10	WASHINGTON ST	C/L	6.1 - 8.1
47TH AVE	L	7.2 - 8.6	DWYER DR	L	9.8	MARY CT	L	9.0	WAVERLY CT	L	4.7
48TH AVE	L	7.8 - 9.0	EAGLE ST	L	6.1	MASON CIR	L	8.5	WAYMIRE ST	L	8.7
49TH AVE	L	1.3 - 8.3	EDISON ST	L	6.8	MASON HILL DR	L	6.3 - 8.9	WEEDMAN CT	L	9.0
50TH AVE	L	2.6	ELK ST	L	4.1	MASON HILL LN	L	9.3	WEEDMAN ST	L	8.9
51ST AVE	L	1.0 - 3.5	ELSEWHERE LN	L	4.9	MASON LN	L	8.4 - 8.7	WEIKO WY	L	8.0
52ND AVE	L	1.8 - 6.6	ELSEWHERE LN	L	9.5	MCBROD AVE	L	1.9 - 7.7	WHERE ELSE LN	L	2.7 - 9.0
52ND CT	L	1.8	EUNICE ST	L	7.5	MEADOWCREST CT	L	7.9	WHERE ELSE LN	L	3.7
53RD PL	L	8.4	FIELDCREST DR	L	4.3	MEEK ST	L	7.9	WHITE LAKE RD	L	7.0 - 8.5
54TH CT	L	10	FIELDCREST RD	L	2.0	MELODY LN	L	8.7	WICHITA CT	L	1.8
54TH PL	L	4.7	FILBERT AVE	L	8.8	MILPORT RD	L	6.5 - 7.9	WILLARD ST	L	4.7 - 5.5
55TH AVE	L	4.7 - 7.4	FLOSS ST	L	8.3	MINTHORN LP	L	8.1	WILLOW ST	L	1.9 - 8.9
56TH AVE	L	1.7 - 9.2	FOXFIRE ST	L	2.7	MONROE ST	C/L	4.5 - 8.3	WILMA CIR	L	8.9
59TH AVE	L	2.2 - 8.4	FRANKLIN ST	L	5.1	MONTGOMERY DR	L	8.1	WINSOR CT	L	8.9
60TH AVE	L	5.8 - 7.4	FREEMAN RD	L	7.1 - 9.0	MOORES ST	L	6.9 - 8.2	WINSOR DR	L	8.3 - 9.0
60TH CT	L	8.4	FREEMAN WY	C	7.1 - 7.9	MULLAN ST	L	6.5	WINWORTH CT	L	1.8
63RD AVE	L	8.4	FURNBERG ST	L	8.2 - 8.7	MYRTLE ST	L	7.7	WISTER ST	L	7.7 - 8.7
63RD CT	L	8.7	GARRETT CIRCLE	L	5.7	NASE CT	L	9.0	WOOD AVE	L	1.9 - 7.5
64TH AVE	L	6.8 - 8.5	GARRETT DR	L	4.5 - 8.1	NORTHRIDGE CT	L	5.0 - 8.7	WOOD CT	L	4.1
64TH CT	L	8.5	GINO LN	L	9.0	OAK ST	C	6.0 - 8.4	WOODHAVEN ST	L	1.6 - 4.2
65TH CT	L	8.5	GROGAN ST	L	8.4	OATFIELD RD	C	6.6 - 6.9	WREN ST	L	1.9 - 9.0
66TH AVE	L	7.3	GROVE CT	L	4.6	OCHOCO ST	L	3.2 - 8.0			
67TH AVE	L	8.7	GROVE LP	L	2.0	OLSEN ST	L	4.0 - 8.9			
67TH CT	L	8.3	GUIDO BOCCI DR	L	9.0	OMARK DR	L	2.1			
69TH CT	L	8.3	GUILFORD DR	L	8.4 - 8.7	PARK ST	L	4.1 - 9.0			
70TH AVE	L	6.8 - 8.9	HANNA HARVESTER DR	L	2.0 - 9.6	PENNYWOOD CT	L	8.6			
71ST AVE	L	8.4	HARLENE ST	L	4.2	PENNYWOOD DR	L	8.5 - 8.8			
A ST	L	8.6	HARLOW ST	L	6.0	PENZANCE ST	L	7.8 - 8.9			
ADA LN	L	7.5 - 8.6	HARRISON ST	A/L	2.1 - 8.5	PLUM DR	L	8.7			

CITY OF MILWAUKIE

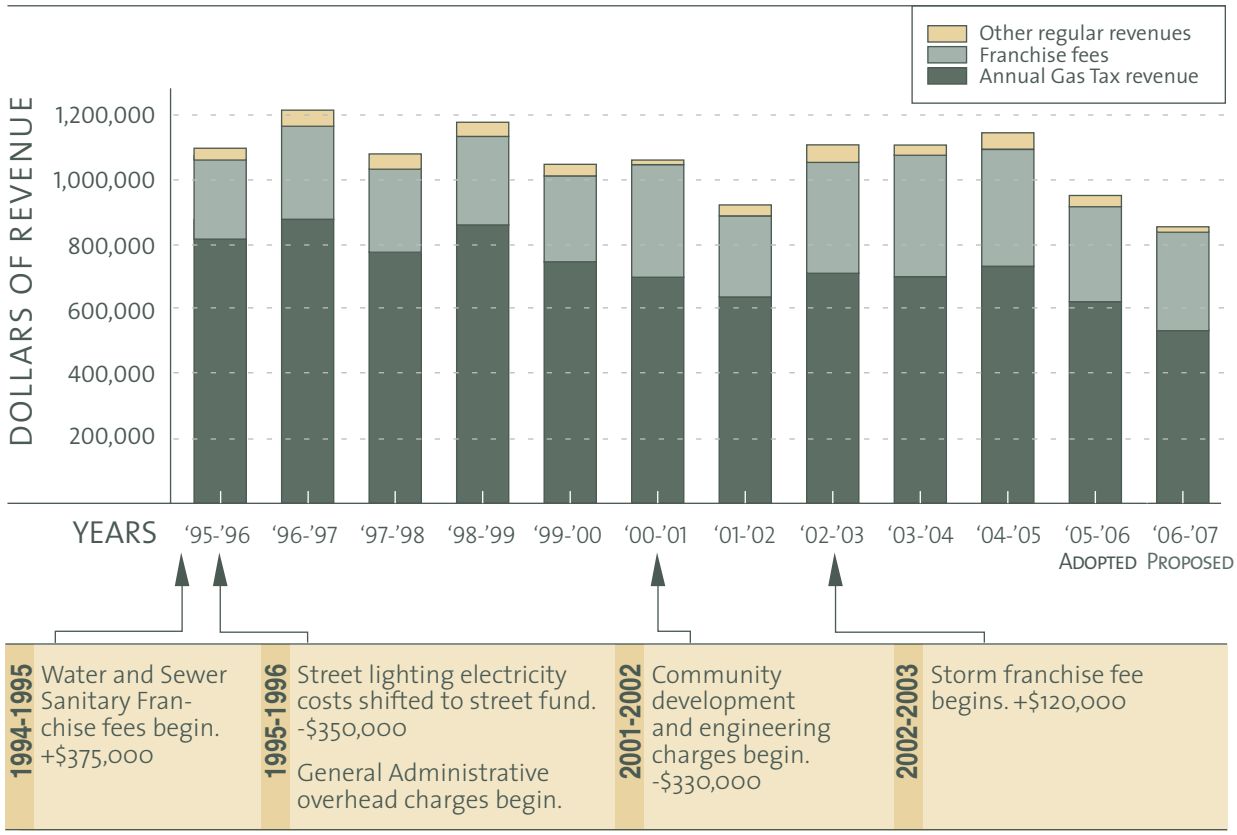
CITY COUNCIL DISCUSSION: JULY 18, 2006

A HISTORY OF STREET FUNDING IN MILWAUKIE

The Street Fund's capacity to pay for essential maintenance and reconstruction projects has declined significantly over the past decade.

1. Oregon Gas Tax revenue has declined.
2. Road construction and repair costs have grown very quickly.
3. There are new burdens on the Street Fund.

HISTORICAL STREET FUND REVENUE



The dollar amounts in the chart are adjusted for the inflation in street construction costs. All revenues are shown in terms of how much road they could have "bought" in 1996.

TO BRING ALL CITY STREETS TO A GOOD CONDITION WOULD COST $1.2 MILLION PER YEAR FOR SIX YEARS*

*Source: EIS Inc., July 2004; updated by City staff in 2006 to account for inflation in construction costs.

FUNDING "NON-OPTIONS"

- **Federal grants are extremely competitive and typically do not pay for road reconstruction except as part of larger projects, such as building new lanes or sidewalks. FHWA: (503) 587-4704.**
- **ODOT's Preservation program only improves or maintains state highways. State grants to local governments are for special projects, such as bike or pedestrian facilities. ODOT: (503) 731-8237.**
- **The County only maintains county arterials and does not provide any money for city-managed roads. Clackamas County: (503) 353-4400.**
- **Private foundations do not fund governmental functions such as road maintenance.**

LOCAL OPTIONS FOR ROAD FUNDING

PROPERTY TAX LEVY: Increase in the City property tax levy 5 to 10 years.
Projected annual revenue: $1,000,000
Cost per month to typical household: $9.50 **Local Example:** Washington County MSTIP
(Household with an assessed value $150,000)

STREET UTILITY FEE: Charge all City utility payers a monthly transportation fee based on typical trip generation patterns.
Projected annual revenue: $750,000
Cost per month to typical household: $3.50-$5.00 **Local Example:** Lake Oswego, Tigard, Tualatin & Wilsonville

PGE PRIVILEGE TAX: State law allows the City to charge a 1.5% "Privilege Tax" on total PGE revenues in the City. The tax would be passed through to PGE customers on electricity bills.
Projected annual revenue: $300,000
Cost per month to typical household: $0.75-$2.00 **Local Example:** Gresham, Troutdale & Woodburn

SHIFT STREET LIGHTING COST: Electricity costs for street lights are currently paid from the Street Fund. Shifting those costs back to the General Fund would free up additional money for street maintenance.
Projected annual revenue: $350,000
Cost per month to typical household: $0.00 **Local Example:** Beaverton, Hillsboro & Oregon City

PAID PARKING: Install meters in downtown for on-street and other City-owned parking.
Projected annual revenue: Less than $200,000
Cost per month to typical household: Variable **Local Example:** Oregon City & Portland

MILWAUKIE'S SOLUTION

LOCAL FUNDING OPTION(S)	STREETS/PROJECTS

CITY OF MILWAUKIE

CITY COUNCIL DECISION
DECEMBER 19, 2006

STREET MAINTENANCE PROGRAM - PHASE II

This spring City staff attended Neighborhood and other civic group meetings to discuss the state of the City's street system. In addition, staff sent mailers, featured information about the street situation at the community booth in the farmer's market and included the information on the City's website with an online survey.

As a refresher, here are the most important elements of this past spring's outreach effort.

Milwaukie's streets are in a state of rapid decline. Some have already failed. Funding is not adequate to turn the situation around. If nothing is done, the roads will worsen and the cost to fix them will skyrocket.

- Milwaukie's streets are worth over $65 million. This investment is increasingly at risk.
- Road repair and construction costs are climbing while funding for street maintenance is shrinking.
- Gas Tax revenues, adjusted for inflation in road construction costs, declined almost 40% over the past decade.
- Current funding only covers temporary fixes like filling potholes and minimal crack sealng, but not permanent repairs.
- The longer we wait, the worse our roads get, and the more expensive repairs become.

ROADS IN GOOD CONDITION	ROADS IN FAIR CONDITION	ROADS IN POOR CONDITION
$1.50-$3/SQ. YD. TO MAINTAIN Requires: Crack Sealing 55% OF MILWAUKIE ROADS ARE IN THIS CONDITION.	$3-$32/SQ. YD. TO REPAIR Requires: Paving or overlay 18% OF MILWAUKIE ROADS ARE IN THIS CONDITION.	$32-$70/SQ. YD. TO MAINTAIN Requires: Complete reconstruction 27% OF MILWAUKIE ROADS ARE IN THIS CONDITION.
		
ESTIMATED COST OF 10-YEAR MAINTENANCE PROGRAM (IN 2006 DOLLARS)		
MAINTAIN ALL GOOD CONDITION ROADS: $500,000	REPAIR ALL FAIR CONDITION ROADS: $1.6 MILLION	REPAIR POOR CONDITION MAJOR ROADS: $6.4 MILLION

FINDING THE FUNDING FOR OUR STREETS

There were two parts to the outreach effort - one was to demonstrate the need for more funding for our streets. Responses gathered at the City's presentations and through feedback forms and the online survey show residents recognize the problem and are willing to fund a solution.

The second part of the outreach was to find the funding options residents would support. The City suggested a host of options. Some drew support and others did not.

Based on this outreach, City Council dropped from consideration a property tax levy and a paid parking program in the Downtown area. Council directed staff to design, in collaboration with Milwaukie Neighborhoods and businesses, a City of Milwaukie Street Maintenance Program that used "any combination" of these four funding mechanisms: PGE Privilege Tax, Street Utility Fee, Local Gas Tax, and Shifting the Street Lighting Cost out of the Street Department Budget.

A consultant's analysis of our road system suggests that the City needs to raise an additional $1.2 million each year for the next 10 years to repair our failing road system.

The City has developed a proposal consisting of three parts:

1. Shift street lighting out of street fund and pass a 1.5% PGE tax to cover the expense.
2. Implement a street utility fee.
3. Implement a local gas tax.

PGE Privilege Tax

Proposal: 1.5% Tax

Revenue estimate: $300,000

How it works:
PGE collects the tax from Milwaukie customers and passes the revenue along to the City.

Impact on residents:
The privilege tax would add about $1 per month to residents' PGE bills. A typical Milwaukie household's electric bill is $70 per month.

Impact on businesses:
Non-residential electricity users (including Providence Milwaukie and local governments) consume two-thirds of the City's electricity and would pay about two-thirds of the privilege tax. The top four power consuming businesses would pay about half of the tax.

Street Maintenance Fee

Proposal:
$.35 monthly fee per trip "generated"

Revenue estimate: $700,000

How it works:
Each utility customer in the City would be billed a charge based on how many trips a typical home, apartment or business generates.

Impact on residents:
A single family home would be billed about $3.35 per month. Apartments would be billed about $2.20 per month.

Impact on businesses:
For non-residential uses, the calculation is typically based on number of square feet of building area and the type of business or activity.

A few big trip generators (approximate monthly bill in parenthesis) include:
Milwaukie High ($980)
Mill End Store ($830)
Providence Hospital ($750)
International Way Office Park ($710)
King Road Safeway ($500)

Local Gas Tax

Proposal: $0.02 tax per gallon

Revenue estimate:
$150,000 to $200,000

How it works:
ODOT collects a tax on all gasoline sold in Milwaukie and passes that revenue to the City.

Some of the tax likely would be passed on to buyers at the pump, and some would be paid by the gas stations themselves.

The following estimates assume that 1 penny per gallon would be passed on and 1 penny would come out of gas station revenues.

Impact on residents:
A typical U.S. household (driving 20,000 miles a year in vehicles that get 20 miles per gallon), buying all of its gasoline in Milwaukie, would pay an extra $10 per year with the tax.

Impact on businesses:
The six gas stations in town would pay the taxes not passed on to customers, costing these business owners up to several thousand dollars per month.

CITY OF MILWAUKIE

CITY COUNCIL DECISION
DECEMBER 19, 2006

HOW WOULD THE CITY INVEST THE MONEY?

All of the funding would be placed in a special fund dedicated exclusively for the Street Maintenance Program.

1. Preventive Maintenance

The first priority will be preventitive maintenance, such as crack sealing, to extend the life of asphalt streets.

This is the most cost effective category of treatment in terms of the cost per year of pavement life.

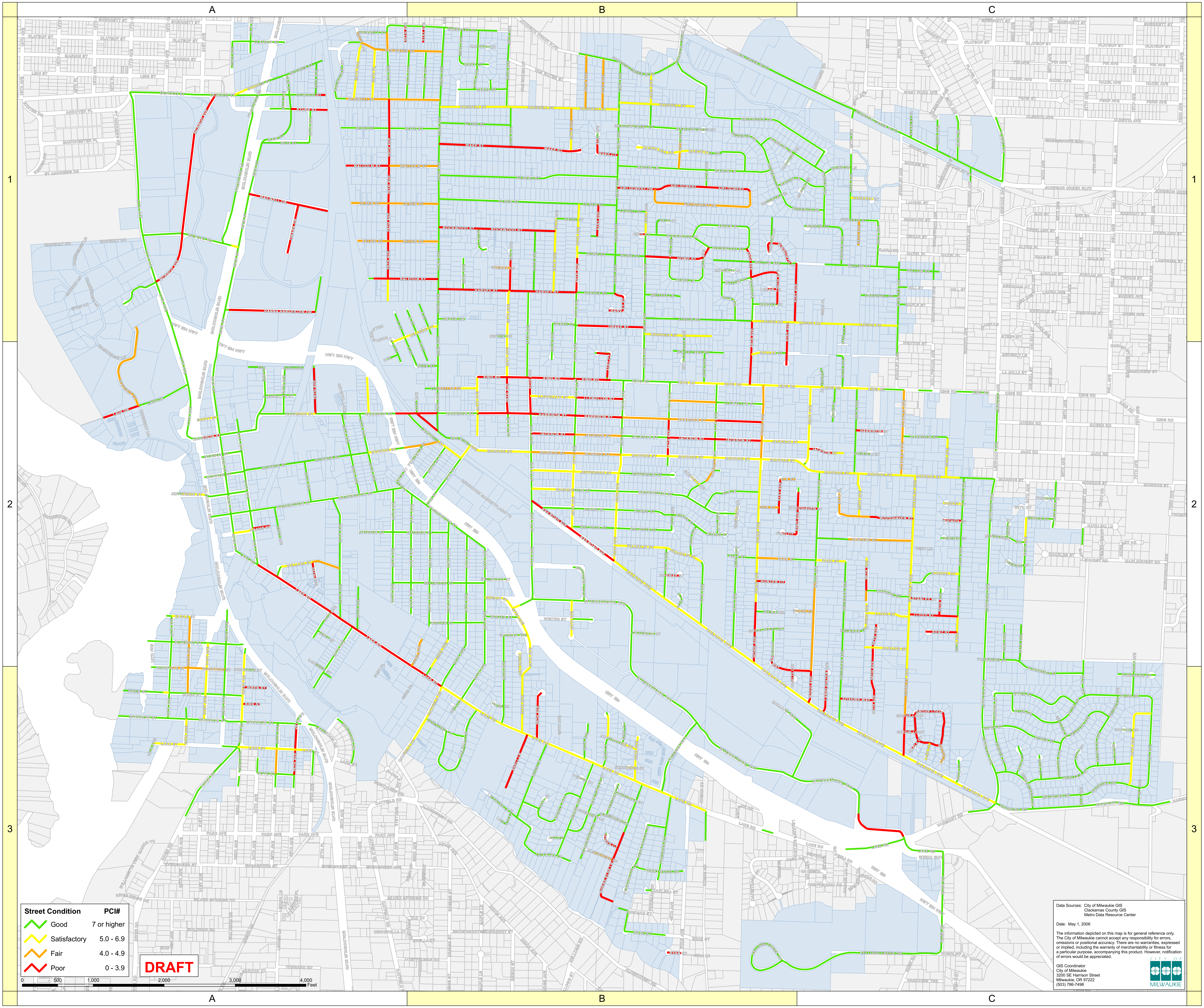
2. Overlay Projects

Overlay projects will be the second priority. As streets age, they begin to crack and break-up in ways that cannot be repaired with surface treatments. If they are caught in time, however, an overlay (i.e., a new layer or two of asphalt) can extend the life of the street significantly.

3. Road Reconstruction

If a street has deteriorated badly, or if it was built without an adequate sub-base to begin with, overlaying new asphalt is not cost effective. In these cases, the road must be reconstructed.

DRAFT Schedule of Major Projects	Rehabilitation (overlay) Projects:	Reconstruction Projects:
Years 1-3	Lake Road Oak Street 37th Avenue	King Road Harrison Street
Years 4-6	Washington Street	Railroad Avenue Monroe Street Stanley Avenue 42nd Avenue
Years 7+	27th & 43rd Avenues River Road Linwood Avenue	Harvey Steet, Home Avenue Wood Avenue, Howe Street Roswell Street


A
B
C
1
2
3
Street Condition
PCI#
Good
7 or higher
Satisfactory
5.0 - 6.9
Fair
4.0 - 4.9
Poor
0 - 3.9
DRAFT
0
500
1,000
2,000
3,000
4,000
Feet
Data Sources: City of Milwaukie GIS
Clackamas County GIS
Metro Data Resource Center
Date: May 1, 2006
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CITY OF MILWAUKIE