

TRANSPORTATION IMPACT STUDIES

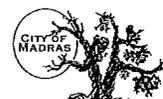
This section provides criteria and regulations to help developers and city officials determine when a transportation impact analysis should be prepared, what should be included in the transportation impact analysis, who is qualified to prepare such studies, and what standards the proposed land use action should be meeting.

When is a Transportation Impact Analysis Required?

Generally, a transportation impact analysis may be required when a development application and/or rezone application is filed with the City. Recognizing that not all developments will have an adverse impact on the transportation system, the City of Madras has developed criteria to help determine the need for and type of transportation impact analysis that will be required in relation to the proposed development. When a development meets Criterion A, B, C, or D, the City will typically require a complete transportation impact analysis.

- A. The development generates 50 or more peak-hour trips or 500 or more daily trips.
- B. An access spacing exception is required for the site access driveway(s) and the development generates 25 or more peak-hour trips or 250 or more daily trips.
- C. The development is expected to impact intersections that are currently operating at the upper limits of the acceptable range of level of service during the peak operating hour.
- D. The development is expected to significantly impact adjacent roadways and intersections that have previously been identified as high accident locations or areas that contain a high concentration of pedestrians or bicyclists such as school zones.

If it has been determined that a transportation impact analysis is not required based on the criteria presented above, the applicant's traffic engineer will be required to submit a transportation assessment letter to the reviewing agencies indicating why the proposed land use action is exempt. This letter should outline the potential trip-generating characteristics of the proposed land use action and verify that the site-access driveways or roadways meet sight-distance requirements and City of Madras roadway design standards.



Review Policy and Procedure

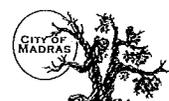
To provide a thorough land use application review, it is recommended that the following criteria be used in reviewing an application.

Subdivision and site plan review shall address the following access considerations:

- 1) Is the road system designed to meet the projected traffic demand at full build-out and are the functional roadway classification standards consistent with the proposed use?
- 2) Is access properly placed in relation to sight distance (i.e., does the driveway location meet both intersection and stopping sight distance requirements), driveway spacing, and other related considerations, including opportunities for joint or crossover access?
- 3) Is the driveway access for dwelling units on interior residential access streets rather than major roadways?
- 4) Is traffic movement within the site provided without having to use the peripheral road network?
- 5) Does the road system provide adequate access to buildings for residents, visitors, deliveries, emergency vehicles, and garbage collection?
- 6) Does the pedestrian path system link buildings with parking areas, entrances to the development, open space, and recreational and other community facilities (i.e., address the requirements of the Transportation Planning Rule)?
- 7) Does the site plan provide for potential future crossover or consolidated access, and/or alternative access?

RECOMMENDED CONDITIONS OF APPROVAL AND NECESSARY IMPROVEMENTS TO EVALUATE

As part of every land use action, the local (city or county) reviewing jurisdiction (and ODOT in land use actions involving direct access to state roadway facilities) will be required to evaluate the potential need of conditioning a development with the following items in order to maintain the existing operation and safety of existing facilities and provide the necessary right-of-way and improvements to develop the future planned transportation system.



- 1) Crossover easement agreements will be required on all compatible parcels (topography, access, and land use) to facilitate access between adjoining parcels.
- 2) Conditional access permits will be issued on new developments which have proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing access driveways.
- 3) Right-of-way dedications will be required to facilitate the future planned roadway system in the vicinity of the proposed development.
- 4) Half-street improvements including at a minimum two 12-foot travel lanes (sidewalks, curb and gutter, bike lanes/paths, and/or travel lanes) should be provided along site frontages that do not have full-buildout improvements in place at the time of development.

ELEMENTS OF A TRANSPORTATION IMPACT ANALYSIS

As a guide in the preparation of a transportation impact analysis, the City of Madras recommends the following format be used to document the analysis.

1) Table of Contents

- Listing of all sections, figures, and tables included in the report.

2) Executive Summary

- Summary of the findings and recommendations contained within the report.

3) Introduction

- Proposed land use action, including site location, building square footage, and project scope.
- Map showing the proposed site, building footprint, access driveways, and parking facilities.
- Map of the study area, which shows site location and surrounding roadway facilities.



4) Existing Conditions

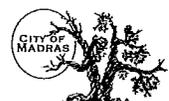
- Existing site conditions and adjacent land uses.
- Roadway characteristics (all transportation facilities and modal opportunities located within the study area, including roadway functional classifications, street cross section descriptions, posted speeds, bicycle and pedestrian facilities, on-street parking, and transit facilities).
- Existing lane configurations and traffic control devices at the study area intersections.
- Existing traffic volumes and operational analysis of the study area roadways and intersections.
- Roadway and intersection crash history analysis.

5) Background Conditions (without the proposed land use action)

- Approved developments and funded transportation improvements in the study area.
- Traffic growth assumptions.
- Addition of traffic from other planned developments.
- Background traffic volumes and operational analysis.

6) Full Buildout Traffic Conditions (with the proposed land use action)

- Description of the proposed development plans.
- Trip-generation characteristics of the proposed development (including trip reduction documentation).
- Trip distribution assumptions.
- Full buildout traffic volumes and intersection operational analysis.
- Site circulation and parking.
- Intersection and site-access driveway queuing analysis.
- Recommended roadway and intersection mitigations (if necessary).



7) Conclusions

8) Appendix

- Traffic counts summary sheets.
- Accident analysis summary sheets.
- Existing, Background, and Full Buildout traffic operational analysis worksheets.
- Other analysis summary sheets such as queuing and signal warrant analyses.

To help summarize the sections described in the recommended Table of Contents, the City of Madras also recommends the following list of figures be included in the transportation impact analysis:

Figure 1: Site Vicinity Map

Figure 2: Existing Lane Configurations and Traffic Control Devices

Figure 3: Existing Traffic Volumes and Levels of Service, Weekday AM Peak Hour

Figure 4: Existing Traffic Volumes and Levels of Service, Weekday PM Peak Hour

Figure 5: Future Year Background Traffic Volumes and Levels of Service, Weekday AM Peak Hour

Figure 6: Future Year Background Traffic Volumes and Levels of Service, Weekday PM Peak Hour

Figure 7: Proposed Site Plan

Figure 8: Future Year Assumed Lane Configurations and Traffic Control Devices

Figure 9: Estimated Trip Distribution Pattern

Figure 10: Site-Generated Traffic Volumes, Weekday AM Peak Hour

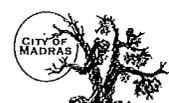


Figure 11: Site-Generated Traffic Volumes, Weekday PM Peak Hour

Figure 12: Full Buildout Traffic Volumes and Levels of Service, Weekday AM Peak Hour

Figure 13: Full Buildout Traffic Volumes and Levels of Service, Weekday PM Peak Hour

TRANSPORTATION IMPACT ANALYSIS GUIDELINES AND PROCEDURES

To ensure consistency in the preparation and review of transportation impact analyses, the City of Madras has established a set of guidelines and procedures for all new studies. These guidelines and procedures include the following:

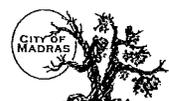
- Preparer qualifications
- Transportation impact analysis study area
- Horizon years and study periods
- Data collection guidelines
- Trip generation guidelines
- Trip distribution and assignment guidelines
- Minimum intersection operational standards
- Minimum access spacing standards

Preparer Qualifications

A professional engineer registered in the State of Oregon should perform transportation impact analyses. In addition, the preparer should have extensive experience in the methods and concepts associated with transportation impact studies.

Transportation Impact Analysis Study Area

The transportation impact analysis area should include, at a minimum, all site-access points and intersections (signalized and unsignalized) adjacent to the proposed site. In particular, if the proposed site fronts an arterial or collector street; the transportation



impact analysis should include all intersections along the site frontage and within the access spacing distances extending out from the boundary of the site frontage. This concept is graphically illustrated in Figure D1.

Beyond the minimum study area, the transportation impact analysis should evaluate all intersections that receive site-generated trips that make up at least 10% or more of the total intersection volume. In addition to these requirements, the Public Works Director (or his/her designee) shall determine any additional intersections or roadway links that might be adversely affected as a result of the proposed development. The applicant and the Public Works Director (or his/her designee) will agree on these intersections prior to the start of the transportation impact analysis.

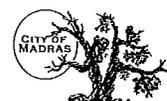
Time Periods to be Analyzed in the Transportation Impact Analysis

To adequately assess the impacts of a proposed land use action, several study periods should be addressed in the transportation impact analysis. These study periods or horizon years consist of the following:

- **Exiting Year Analysis** - Assesses all existing study roadways, intersections, and land uses within the study area.
- **Background Analysis** - Assesses the expected roadway, intersection, and land use conditions in the year the proposed land use action is expected to be fully built out, without the expected traffic from the proposed land use action. This analysis should include all in-process developments, or those city-approved developments that are expected to be fully built out in the proposed land use action horizon year.
- **Full Buildout Traffic Analysis** - Assesses the expected roadway, intersection, and land use conditions resulting from the background growth and the proposed land use action assuming full build-out and occupancy.

Within each horizon year, specific consideration should be directed to the time period(s) that experience the highest degree of network travel. These periods typically occur during the weekday morning (7:00 a.m. to 9:00 a.m.) and weekday evening (4:00 p.m. to 6:00 p.m.) peak community hours. The transportation impact analysis should always address the weekday a.m. and p.m. peak hours when the proposed land use action is expected to generate 25 trips or more during the peak time periods. If the applicant can demonstrate that the peak-hour trip generation of the proposed land use action is negligible during one of the two peak study periods and the peak trip generation of the land use action corresponds to the roadway system peak, then only the worst-case study period need be analyzed.

Depending on the proposed land use action and the expected trip-generating characteristics of that development, consideration of non-peak travel periods may be



appropriate. Examples of land uses that have non-typical trip generating characteristics include schools, restaurants, nightclubs, and churches. The Public Works Director (or his/her designee) and applicant should discuss the potential for additional study periods prior to the start of the transportation impact analysis.

Traffic Count Requirements

Once the transportation impact analysis periods have been determined, turning movement counts should be collected at all study area intersections to determine the base traffic conditions. These turning movement counts should typically be conducted during the weekday (Tuesday through Thursday) between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m., depending on the proposed land use. Historical turning movement counts may be used if the data are less than 12 months old, but must be factored to meet the existing traffic conditions.

Trip Generation for the Proposed Development

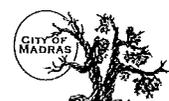
To determine the impacts of a proposed development on the surrounding transportation network, the trip-generating characteristics of that development must be estimated. Trip-generating characteristics should be obtained from one of the following acceptable sources:

- Institute of Transportation Engineers (ITE) Trip Generation Manual (latest edition).
- Specific trip generation studies that have been conducted for the particular land use action for the purposes of estimating peak-hour trip-generating characteristics. The Public Works Director (or his/her designee) should approve the use of these studies prior to their inclusion in the transportation impact analysis.

In addition to new site-generated trips, several land uses typically generate additional trips that are not added to the adjacent traffic network. These trips include pass-by trips and internal trips and are considered to be separate from the total number of new trips generated by the proposed development. The procedures listed in the Trip Generation Handbook (ITE) should be used to account for pass-by and internal trips.

Trip Distribution

Estimated site-generated traffic from the proposed development should be distributed and assigned on the existing or proposed arterial/collector street network. Trip distribution methods should be based on a reasonable assumption of local travel patterns and the locations of off-site original/destination points within the site vicinity.



Acceptable trip distribution methods should be based on one of the following procedures:

- An analysis of local traffic patterns and intersection turning movement counts can be used as long as the data have been gathered within the previous 12 months.
- A detailed market study specific to the proposed development and surrounding land uses can be used to determine the specific influence area. Site-generated traffic within the identified influence area should be distributed based on principles and concepts associated with the gravity model theory.

Intersection Operation Standards

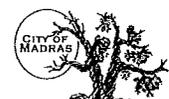
To identify impacts of the proposed land use action on the transportation system, the transportation impact analysis must compare the existing, background, and full buildout intersection traffic volumes to the minimum intersection operation standards. The City of Madras evaluates intersection operational performance based on levels of service and “demand-to-capacity” (d/c) calculations.

Intersection Demand-to-Capacity Analysis

A capacity analysis should be performed at all intersections within the identified study area. The methods identified in the latest edition of the Highway Capacity Manual, published by the Transportation Research Board, are to be used for all intersection capacity calculations. The City of Madras requires that all intersections within the study area must maintain a d/c ratio of 0.95 or less.

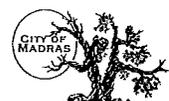
Intersection Levels of Service

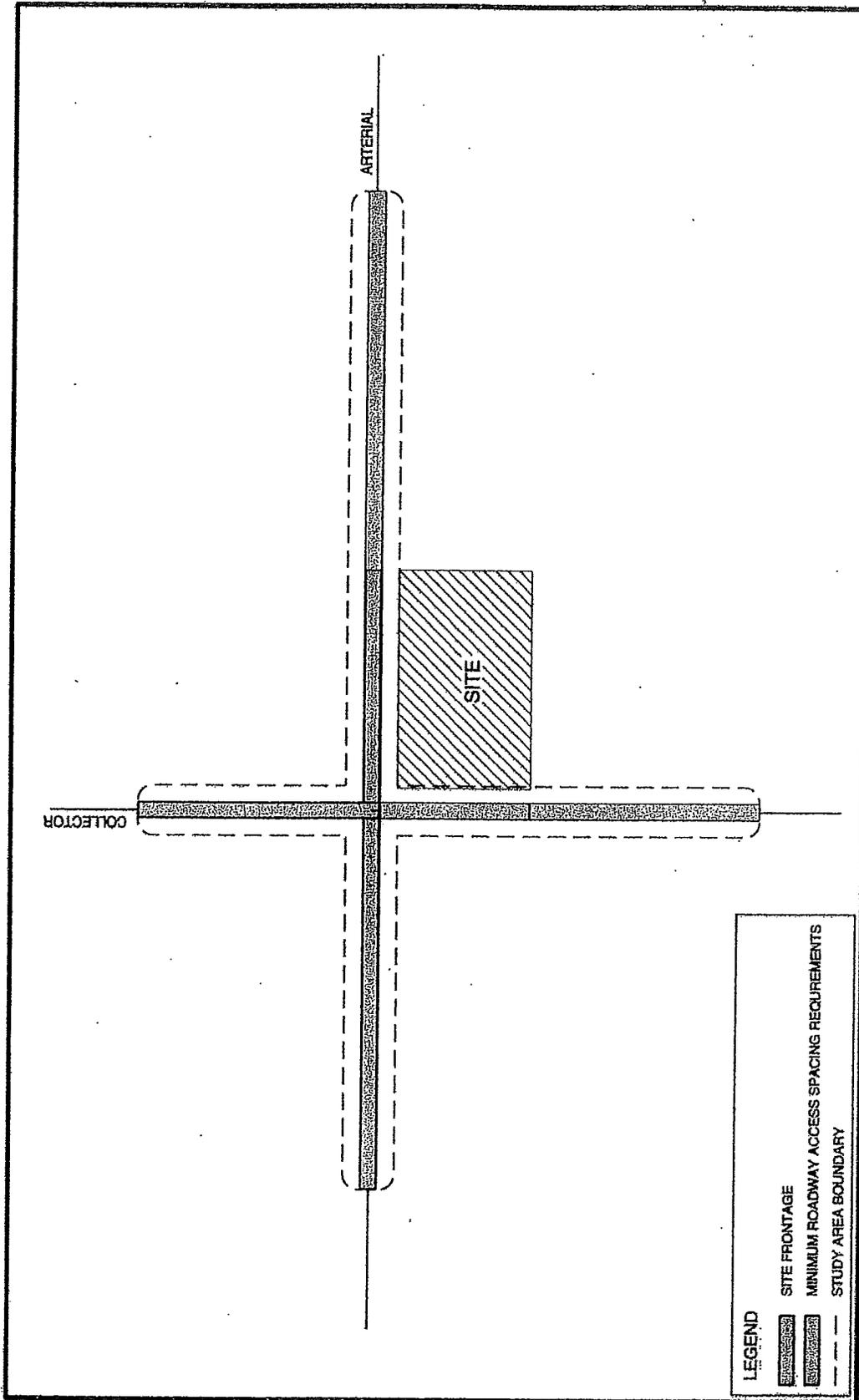
The City of Madras requires all intersections within the study area to maintain an acceptable level of service (LOS) upon full buildout of the proposed land use action. LOS calculations for signalized intersections are based on the average control delay per vehicle, while LOS calculations for unsignalized intersections are based on the average control delay and volume-to-capacity ratio for the worst or critical movement. All LOS calculations should be made using the methods identified in the most recent version of the Highway Capacity Manual, published by the Transportation Research Board. The minimum acceptable level of service for signalized intersections is LOS “D” while the minimum acceptable level of service for unsignalized intersections is LOS “E” or LOS “F” with a d/c ratio of 0.95 or less. Any intersections not operating at these standards will be considered to be unacceptable.



Transportation Impact Analysis Checklist

As part of the transportation impact analysis review process, all transportation impact analyses submitted to the City of Madras must satisfy the requirements illustrated in the Checklist for Acceptance of Transportation Impact Analyses. A sample checklist is provided as Attachment D1.





**TRANSPORTATION IMPACT ANALYSIS
 STUDY AREA**





CITY OF MADRAS COMPREHENSIVE PLAN AND
 TRANSPORTATION SYSTEM PLAN UPDATE
 MARCH 2001
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FIGURE
D1

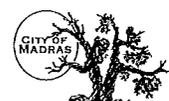
CHAPTER 8: FUNDING OPTIONS AND FINANCIAL PLAN

The successful implementation of the Transportation System Plan will require that the City of Madras work with ODOT and Jefferson County to secure adequate funding to finance new transportation projects during the next 20 years. The formulation of a comprehensive Capital Improvement Plan (CIP) will enable Madras to schedule the construction and funding of new improvements that address existing capacity and safety issues and those improvements that will be needed to accommodate future population and employment throughout the urban area. This chapter provides an analysis of available funding options that can be considered by Madras and provides a framework for a 20 year Capital Improvement Plan.

The Madras TSP identifies the need for over \$17,000,000 (1995) dollars in funding to finance the transportation system improvements over the next 20 years. It is expected that transportation system improvements will be made to city streets, county roads, and state highways within the Madras Urban Growth Boundary. This TSP cost estimate only covers the costs associated with constructing new transportation system improvements and does not cover any costs associated with maintaining the current or future system. This funding analysis assumes that there will be a cost sharing of future improvements by Madras, Jefferson County, and ODOT. Close coordination on scheduling and funding transportation improvements will be vital for the timely construction of the identified transportation system improvements.

Although this TSP considers a 20-year planning horizon, the timing for specific transportation system improvements will be governed by the rate of population and employment growth within the urban area. In recent years, Madras and Jefferson County have been growing at a high rate. If this recent high growth pattern continues, Madras, Jefferson County, and ODOT may need to consider constructing TSP improvements at an accelerated rate. If, however, the growth rate levels off, then it is more likely the City, the County, and ODOT will be able to schedule future transportation system improvements over the entire 20 year TSP life span.

At the present time, the City of Madras is doing a good job of making street, pedestrian, and bicycle improvements within the City on an annual basis. Projects that are funded are typically identified in the public facilities plan and have been identified and prioritized by the Public Works Department. This yearly capital outlay funding has been successful in financing a small number of projects each year. But the success of the program is limited due to inadequate City funding and does not address needed transportation system improvements within the study area outside the city limits. In order to implement the TSP, the City of Madras will need to work closely with ODOT and Jefferson County to increase funding for transportation projects and to consider needed improvements throughout the urban area.



This section of the TSP discusses the various funding and financing options that may be available to the City of Madras to meet its 20 year transportation funding needs. Included in this chapter is a review of historic street improvement funding sources, potential new revenue sources, a review of transportation system funding requirements, and general recommendations for financing future transportation system improvements. In addition, a brief analysis of how Jefferson County and ODOT finance transportation system improvements is included to provide a context on how the different governmental agencies can work together in the future.

HISTORIC STREET IMPROVEMENT FUNDING SOURCES

The City of Madras accounts for transportation related revenues and expenditures in three separate funds. Each fund is accounted for separately in the annual fiscal year budget. These include the Street Tax, Public Facilities Plan, and Industrial Park.

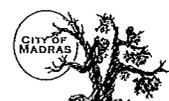
State Street Tax Fund:

The purpose of the Madras State Street Tax Fund is to maintain, rehabilitate, improve and expand city streets, drainage systems, sidewalks and traffic control devices in an orderly and cost effective program. A summary of the State Street Tax Fund over the last four years is detailed in Tables 8-1 and 8-2.

Revenues received from the State of Oregon, such as gas taxes and vehicle registration fees, provided more than 56% of the State Street Fund revenues in the 1995/1996 budget year. Systems Development Fees (SDF) for storm drains and streets provide the other significant revenue source.

The major street construction project during the 1995/1996 budget year was the completion of the "C" Street Reconstruction. Major street maintenance expenditures will be devoted to the implementation of a Pavement Management System (PMS), asphalt overlays, crack sealing and pothole repair.

The capital outlay expenditures from the State Street Tax Fund are shown on Table 8-3. During the 1995/1996 fiscal year, the City of Madras dedicated a total of \$83,860 or 42% of capital outlay expenditures to street, walkway and bikeway improvements within the community. These funds were used to finance the painting of bike lanes, ADA curb ramps and sidewalks along Buff Street, and the reconstruction of "C" Street.

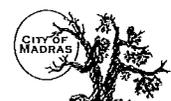


**Table 8-1
Madras Street Tax Fund: Historical Revenues**

Description	1992/1993	1993/1994	1994/1995	1995/1996
Cash on Hand	\$58,752	\$24,796	\$110,000	\$ 48,000
Shared Revenues				
• Bike Grant	\$0	\$0	\$5,000	\$5,000
Other Agencies				
• SCA Funds	\$12,500	\$0	\$25,000	\$12,500
• State Funds	\$153,257	\$180,674	\$189,260	\$196,740
• Transportation Plan	\$0	\$0	\$67,500	\$67,500
Miscellaneous Charges	\$1,066	\$251	\$500	\$500
Current Services Charges				
• SDF-Storm Drains	\$10,206	\$9,092	\$15,000	\$25,000
• SDF-Streets	\$0	\$13,176	\$40,000	\$60,000
Interest on Investments	\$741	\$3,215	\$3,000	\$2,800
Transfers-Industrial Site	\$0	\$70,000	\$0	\$0
Total Revenues	\$236,523	\$301,204	\$455,260	\$418,040

**Table 8-2
Madras Street Tax Fund: Historical Expenditures**

Description	1992/1993	1993/1994	1994/1995	1995/1996
Personal Services	\$41,910	\$27,547	\$49,745	\$60,523
Material and Services	\$65,789	\$84,782	\$91,050	\$96,900
Capital Outlay	\$88,048	\$63,744	\$290,320	\$198,860
Equipment Replacement	\$15,980	\$16,330	\$15,000	\$15,000
Operating Contingency	\$0	\$0	\$9,145	\$46,757
Unappropriated Ending Balance	\$24,796	\$108,801	\$0	\$0
Totals	\$236,523	\$301,204	\$455,260	\$418,040

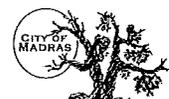


**Table 8-3
Madras Street Tax Fund: Capital Outlay Expenditures**

Description	1992/1993	1993/1994	1994/1995	1995/1996
Bicycle Path	\$0	\$3,285	\$11,420	\$3,860
Building Improvement	\$0	\$0	\$2,500	\$5,000
Equipment Purchases	\$1,817	\$6,314	\$10,000	\$10,000
Facilities Improvements	\$0	\$0	\$100,000	\$20,000
Storm Sewers	\$8,777	\$9,806	\$15,000	\$25,000
Street Expansion	\$0	\$0	\$25,000	\$0
Street Improvements	\$77,453	\$44,339	\$126,400	\$60,000
Transportation Plan	\$0	\$0	\$0	\$75,000
Total Capital Outlay	\$88,048	\$63,744	\$290,320	\$198,860

Public Facilities Plan

The Madras Public Facilities Plan is in compliance with OAR 660-11-000, the Public Facilities Rule. A summary of the Public Facilities Plan Fund revenues and expenditures over the last four years is shown on Tables 8-4 and 8-5. The purpose of this fund is to finance infrastructure construction associated with growth within the community. Revenues for the Public Facilities Plan is generated through a variety of sources including grants, loan proceeds, bond sales, construction warrants, and Local Improvement District (LID) assessments. The disbursement of funds from the Public Facilities Plan Fund is for all public infrastructures needed to permit orderly growth and development in the community. Specific areas that have been targeted include the Industrial Park, Downtown, and the overall housing stock within Madras. Transportation system improvements are included as part of the annual expenditures from this fund. During the 1995/1996 budget year, the City of Madras used the majority of the available funds to finance a total of \$417,750 on transportation related infrastructure projects within downtown.

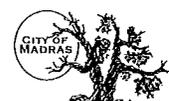


**Table 8-4
Madras Public Facilities Plan Fund: Historical Revenues**

Revenue Sources	1992-1993	1993-1994	1994-1995	1995-1996
Cash on Hand	\$32,648	\$26,674	\$1,000	\$1,000
Shared Revenues:				
- CDB Grant	\$0	\$0	\$300,000	\$270,000
- Industrial Site Loan/Grant	\$0	\$343,534	\$410,000	\$0
- ISTEA Grant	\$0	\$0	\$387,750	\$387,750
- Beautification Grant	\$0	\$0	\$25,000	\$0
- Property Owner	\$0	\$0	\$30,000	\$30,000
Reimbursement Charges For Services	\$0	\$14,710	\$0	\$0
LID Assessment	\$2,541	\$1,851	\$4,595	\$1,850
Interest on Investment	\$1,376	\$345	\$1,000	\$200
Total Revenues	\$36,566	\$387,114	\$1,159,345	\$690,800

**Table 8-5
Madras Public Facilities Plan Fund: Historical Expenditures**

Expenses	1992-1993	1993-1994	1994-1995	1995-1996
Capital Outlay:				
- CDB Grant	\$0	\$255	\$300,000	\$270,000
- Infrastructure	\$385	\$43,774	\$447,345	\$418,800
- Water Project	\$9,507	\$338,320	\$410,000	\$0
Interfund Transfers	\$0	\$2,000	\$2,000	\$2,000
Unappropriated Ending Balance	\$26,674	\$2,764	\$0	\$0
Total Fund Expenses	\$36,566	\$387,114	\$1,159,345	\$690,800

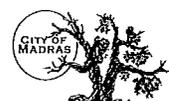


Industrial Site Fund

The City of Madras has the responsibility for the sale and lease of properties at the Madras Industrial Park. A summary of the Industrial Site Fund revenues and expenditures over the last four years is shown on Tables 8-6 and 8-7. The City maintains control of industrial park leases and sales to actively promote economic activity and diversification. This promotion is done in conjunction with the Economic Development for Jefferson County (EDJ) organization. One of the critical objectives of this fund is to finance public works infrastructure to retain existing businesses and to attract new business to Madras. The City spent approximately \$130,000 during the 1995/1996 budget year to extend the existing City rail spur line north across Cherry Lane to the Air Development Park.

Table 8-6
Madras Industrial Site Fund: Historical Revenues

Revenue Source	1992-1993	1993-1994	1994-1995	1995-1996
Cash on Hand	\$257,529	\$346,352	\$200,000	\$298,000
Revenues From Other Agencies:				
- OEDD Grant - RR Extension	\$0	\$0	\$0	\$129,700
- Community Forestry	\$0	\$0	\$40,000	\$0
Charges for Services	\$6,971	\$1,027	\$500	\$1,000
Use of Money and Property:				
- Interest on Investments	\$13,444	\$15,437	\$10,000	\$10,000
- Industrial Site Sales	\$104,399	\$68,474	\$50,000	\$12,200
- Industrial Site Leases	\$7,116	\$7,180	\$8,000	\$15,000
- Interfund Loan - Airport	\$2,000	\$2,000	\$6,000	\$6,000
Total Revenues	\$391,459	\$440,470	\$314,500	\$471,900



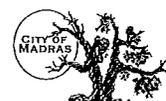
**Table 8-7
Madras Industrial Site Fund: Historical Expenditures**

Expenses	1992-1993	1993-1994	1994-1995	1995-1996
Materials and Services:				
- Industrial Site Improvements	\$6,057	\$28,038	\$110,500	\$50,000
- Industrial Site Promotion	\$17,924	\$10,868	\$50,000	\$30,000
- Miscellaneous Expenses	\$681	\$117	\$1,000	\$500
- Street Lights	\$1,316	\$1,316	\$2,000	\$2,000
Capital Outlay:				
- Industrial Park Expansion	\$7,128	\$0	\$119,000	\$326,070
Interfund Transfers:				
- General Fund	\$12,000	\$12,000	\$12,000	\$21,000
- State Street Tax	\$0	\$70,000	\$0	\$0
Operating Contingency	\$0	\$0	\$20,000	\$42,330
Unappropriated Ending Balance	\$346,352	\$318,131	\$0	\$0
Total Fund Expenses	\$391,459	\$440,470	\$314,500	\$471,900

ALTERNATIVE REVENUE SOURCES¹

In order to finance future transportation system improvements within the Madras urban area, it will be important to consider a range of alternative sources. The use of alternative revenue funding is a trend throughout Oregon as a result of implementation of Measure 5. Measure 5 has significantly reduced property tax revenues. The alternative revenue sources covered in this chapter may not all be appropriate for Madras or Jefferson County. However, a full overview is being provided to enable the City and County to consider a range of options to finance future transportation improvements during the next 20 years.

¹ This section of the TSP was written before passage of Measure 11, subsequently modified by Measure 50 which further limits property tax and the ability of local to raise funds locally.



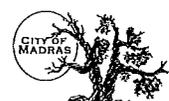
Property Taxes

Property taxes are the major revenue source for Oregon cities. Property taxes are levied through 1) tax base levies, 2) serial levies, and 3) bond levies. The most common method is tax base levies that are continuous and are allowed to increase by 6% per annum. The amount and time they can be imposed limit serial levies. Bond levies are for specific projects and are limited by time based on the debt load of the local government.

The historic dependence on property taxes is changing with the passage of Ballot Measure 5 in the early 1990's. With the 1995/1996 budget year, Ballot Measure 5 will be fully implemented. In brief, Ballot Measure 5 limits the property tax rate for purposes other than payment of certain voter approved general obligation indebtedness. With full implementation in the current budget year, the tax rate for all local taxing authorities is limited to \$15 per \$1,000 of assessed valuation. As a group, all non-school taxing authorities are limited to \$10 per \$1,000 of assessed valuation. All tax Bases, serial and special levies are subject to the tax rate limitation. Excluded from the limitation is debt service used to retire voter approved general obligation bonds. Ballot Measure 5 requires that all non-school taxing districts property tax rate be reduced if together they exceed \$10 per \$1,000 of assessed valuation by the County. If the non-debt tax rate exceeds the constitutional limit of \$10 per \$1,000 of assessed valuation, then all of the taxing districts' tax rates are reduced on a proportional basis. This proportional reduction in the taxing rate is commonly referred to as compression of the tax rate.

The City of Madras had a compressed property tax rate from the 1991/1992 through the 1993/1994 budget years. Over the last two years, the City of Madras has limited the City tax rate to conform to the actual or estimated Ballot Measure 5 compression rate. For the 1995/1996 budget year, the City of Madras taxed properties at a rate of \$5.36 per \$1,000 assessed valuation which is the Ballot Measure 5 compression rate. At that tax rate and with the 6% constitutional allowed increase, the City of Madras plans levied \$540,088 in property taxes. Of this total, \$477,559 was targeted to the general fund, while \$62,525 was allocated to retire general obligation debt.

Historically, Madras has not used property taxes to fund public works functions. In the 1995/1996 budget year, the City dedicated only 1.55% of the general fund derived from property taxes, to the Public Works Department. Rather, the City of Madras has relied almost exclusively on State of Oregon shared revenues to fund both public works maintenance and new construction. The shared revenues are derived from the local allocation of State gas tax and vehicle registration fees. In recent years, the City of Madras has supplemented public works funding through local Systems Development Charges (SDCs) and State grants.



DEBT FINANCING

There is a number of debt financing options available to the City. The use of debt to finance capital improvements must be balanced with the City's ability to make future debt service payments and to deal with the impact on its overall debt capacity and underlying credit rating. Debt financing should be viewed not as a source of funding, but as a time shifting of funds available to the City. Its use should be incorporated into the overall financing plan that may include some "pay-as-you-go" funding methods that utilize currently available revenues to meet a portion of the City's transportation needs.

While a wide variety of debt financing techniques exist, some of the primary financing tools used for transportation related projects are listed below. These include general obligation bonds, limited tax general obligation bonds, local improvement district bonds, and special tax revenue bonds.

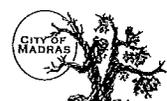
General Obligation Bonds

General obligation bonds (GO) are voter approved bond issues and represent the least expensive borrowing mechanism available to municipalities. GO bonds are typically supported by a separate property tax levy specifically approved for the purposes of retiring debt. The levy does not terminate until all the debt is paid off. The property tax levy is distributed equally throughout the taxing jurisdiction according to assessed value of property. General obligation debt is typically used to make public improvement projects that will benefit the entire community.

State statutes require that the general obligation indebtedness of a city not exceed three percent of the city's true cash value. Bonds issued for water, sewer, and other utility purposes are excluded from this limitation. Since general obligation bonds would be issued subsequent to voter approval, they would not be restricted to the limitations set forth in Ballot Measure 5 described earlier.

Limited Tax General Obligation Bonds

Limited tax general obligation bonds (LTGO) are similar to general obligation bonds in that they represent an obligation of the municipality. However, a municipality's obligation is limited to its current revenue sources and is not secured by the public entity's ability to raise taxes. As a result, LTGOs do not require voter approval. However, since the LTGOs are not secured by the full taxing power of the issuer, investors typically require a higher rate of return than they would from a more secure, tax-backed general obligation issue. Since LTGOs are not voter approved, they are subject to limitations under Ballot Measure 5.



Local Improvement District Bonds

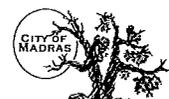
The Oregon Revised Statutes allow local governments to form Local Improvement Districts (LIDs) to construct public improvements. LIDs are most often used by cities to construct local projects such as streets, sidewalks or bikeways. The Statutes allow formation of a district by either city government or property owners. Cities that use LIDs are required to have a local LID ordinance that provides a process for district formation and payback provisions. Through the LID process, the cost of local improvements is generally spread out among a group of property owners along a public street or within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation. The types of allocation methods are only limited by the Local Improvement Ordinance.

The cost of LID participation is considered an assessment against the property which is a lien equivalent to a tax lien. Individual property owners typically have the option of paying the assessment in cash or applying for assessment financing through the City. Since the passage of Ballot Measure 5, cities have most often funded local improvement districts through the sale of special assessment bonds. Although the interest rates for these special assessment bonds are higher than GO bonds, they are not subject to the limitation of Ballot Measure 5.

The City of Madras has a Local Improvement Ordinance in place. The City requires property owners to sign a LID non-remonstrance form in lieu of making frontage improvements as a condition of receiving building permits. The City of Madras has not historically used LIDs on a regular basis to fund the construction of local public improvements. However, the City expects use of LIDs will become more common in the future for neighborhood transportation projects.

In addition to forming LIDs based on property frontage, the Madras ordinance allows LID assessments to be allocated in other ways. This flexibility is important as the benefit of specific improvements, such as a street-widening project, is not always dependent on the amount of frontage of individual properties. The Madras LID ordinance enables the City to form multiple types of LIDs regardless of property frontage.

Jefferson County also has a Local Improvement Ordinance that covers the unincorporated areas of the County. The County's use of LIDs has been significantly less than Madras. County personnel have expressed reservations about using LIDs as a financing tool to fund transportation projects because of the impacts on the Public Works Department budget. When Jefferson County has formed a LID, the County's up-front contribution has come directly out of the Public Works Department's operating budget. Because of this process, the County Public Works Department has not promoted the use of LIDs to finance transportation improvements on County roads. The



Public Works Department would rather require that property owners and developers construct public transportation improvements to city standards within incorporated city urban growth boundaries. By requiring conformance to city standards at the time of development, there would not be a need to form a LID in the future. In addition, such a policy would also enable the cities to accept county roads when new properties are annexed and eliminate the need for Jefferson County to improve roads to individual city standards.

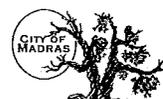
One of the challenges of utilizing a local improvement district is managing the risk of prepaid assessments. Property owners typically have the option to pre-pay assessments in order to forgo paying continued interest payments. However, when the city first issues bonds it commits to meeting a specific stream of debt service payments at certain rates to investors. When a prepayment occurs, the city loses expected interest payments in future years.

Consequently, the city must actively invest such prepayments in order to maintain previously expected cash flows. The challenge of investing numerous small streams of prepayments can be administratively daunting. More often than not prepayments are left in low interest earning accounts. As a result, when the city is required to make debt service payments, it is forced to make up the difference of a low savings rate and the higher borrowing cost of the issue. To counter this potential difficulty, a city can structure bonds to allow for early redemption. This helps to mitigate the risks posed by prepayments. However, since the predictability of debt service streams are less sure, the investor will require a higher rate of return, thus leaving the city, and ultimately the assessed property owners, with a higher cost of borrowing.

Special Tax Revenue Bonds

Cities may issue revenue bonds based on the expected receipt of special taxes. Examples of such revenues are gas taxes, hotel-motel taxes, or SDCs. Generally speaking, the more predictable the revenue source, the easier it is to support debt financing with the revenue. These types of bonds are more complicated to issue and usually restrict the other uses of the dedicated revenues so the bond holders can be assured timely payment.

A few cities in Oregon have secured revenue bond issues with State gas taxes or other special transportation revenues. In many cases, local governments have become accustomed to using state gas tax revenues solely for maintenance needs. Using gas tax revenues to pay debt service on bonds instead of funding maintenance would require an issuer to either reduce its maintenance budget or provide some other source of funding for maintenance needs.



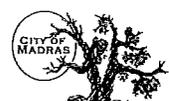
SYSTEMS DEVELOPMENT CHARGES

System Development Charges (SDCs) are becoming increasingly popular in funding public works infrastructure needed for new development within local communities. Local governments have the legal authority to charge property owners and/or developers fees for improving local public works infrastructure. The charges are most often targeted towards improving community water, sewer, and/or transportation systems. Cities and counties must have specific infrastructure plans in places that comply with State guidelines in order to collect SDCs.

The City of Madras has a SDC dedicated solely to transportation. The fee is collected when new building permits are issued within the corporate city limits. Madras calculates the fee based on trip generation of the proposed development. For a single-family residence, the City calculates the rate based on the assumption that a typical household will generate 9.5 vehicle trips per day. Non residential use calculations are based on employee ratios for the type of business or industrial uses. The City of Madras transportation SDC has been a revenue source for the State Street Tax Fund since the 1993/1994 budget year and currently generates 24% of the total State Street Tax Fund revenues. During the 1995/1996 budget year, transportation SDC fees generated approximately \$60,000 to the State Street Tax Fund. The SDC fees will help fund construction of the transportation network throughout the City.

Jefferson County has explored the feasibility of implementing a SDC fee program. The County's program would likely be similar to the one currently in place within the City of Madras. Jefferson County would also likely have the SDCs directed only towards transportation system improvements within the County. As dictated by the State guidelines, Jefferson County would need to prepare a transportation inventory and adopt a systems development charge ordinance before fees could be applied to development projects.

It may be appropriate for the City of Madras and Jefferson County to consider a transportation SDC for the unincorporated area around Madras. The boundaries of the area to be included can coincide with the area covered by the Madras TSP. SDCs generated from the area outside the city could be targeted towards upgrading county roads. In order to put a SDC in place outside of Madras, Jefferson County would need to adopt a SDC Ordinance with a plan showing how the fees would be calculated and how revenues would be spent in the future. In addition, Madras and Jefferson County would need to amend the City/County Urban Growth Area Management Agreement (UGAMA) to specify how SDC fees would be collected and what urban land areas would be included in the SDC zone.



VEHICLE REGISTRATION FEES

The Oregon Vehicle Registration Fee is currently \$30 every 2-years for regular passenger vehicles and is allocated to the State, counties and cities for road funding. Cities receive 15.57%, counties 24.38%, while the State retains 60.05%. Oregon counties are granted authority to impose a vehicle registration fee that covers the entire county. The Oregon Revised Statutes allows Jefferson County to impose a biannual registration fee for all passenger cars licensed within the County. Although both counties and special districts have this authority, vehicle registration fees have not been imposed by local jurisdictions. In order for a local vehicle registration fee program to be viable in Jefferson County, all the incorporated cities and the county would need to formulate an agreement which would detail how the fees would be spent on future street construction and maintenance.

GRANTS AND LOANS

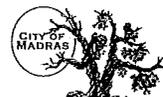
The City of Madras has been very successful in obtaining a number of grants in recent years to assist with transportation related projects. Examples include the ISTEPA grant used to improve the downtown street system and the bikeway grant used to construct the bike path along Willow Creek. The majority of the grant and loan programs available today are geared towards economic development, and not specifically for construction of new streets.

Typically, grant programs target areas that lack basic public works infrastructure needed to support new or expanded industrial businesses. Because of the popularity of some grant programs such as the Oregon Special Public Works Fund, the emphasis has shifted to more of a loan program. The loan programs often require an equal match from the local jurisdiction as a condition of approval. Although Madras should continue to pursue public works grants in the future, the City should not base their long-term capital improvement funding on future grants or loan programs. Rather, the City should continue to pursue federal and state grants for site specific projects to retain and attract new businesses, and to assist with area specific improvements. Two common State grant/loan programs are described below.

ODOT Immediate Opportunity Grant Program

ODOT administers a grant program designed to assist local and regional economic development efforts. The program is funded to a level of approximately \$5,000,000 per year through state gas tax revenues. ODOT officials use the following as primary factors in determining eligible projects:

- Funding used to improve public roads;



- Used for an economic development related project of regional significance;
- Primary project must create primary employment; and
- Preference to grantee providing local funds to match grant (lesser matches may also be considered).

The maximum amount of any grant under the program is \$500,000. Local governments which have received grants under the program include Washington County, Multnomah County, Douglas County, City of Hermiston, Port of St. Helens, and the City of Newport.

Oregon Special Public Works Fund

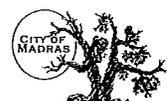
The Special Public Works Fund (SPWF) program was created by the 1995 State Legislature as one of the several programs for the distribution of funds from the Oregon Lottery to economic development projects in communities throughout the State. The program provides grant and loan assistance to eligible municipalities for the construction of public infrastructure. Projects funded through the program must support commercial and industrial development that result in permanent job creation or job retention. To be awarded funds, each infrastructure project must support businesses wishing to locate, expand, or remain in Oregon.

A SPWF award can be used for improvement, expansion, and new construction of public sewage treatment plants, public water supply treatment and distribution facilities, public roads, and public transportation.

While SPWF program assistance is provided in the form of both loans and grants, the program emphasizes loans. This assures that funds will return to the State over time for reinvestment in local economic development infrastructure projects. The maximum loan amount per project is \$11,000,000 and the term of the loan cannot exceed the useful life of the project, or 25 years, whichever is less. Interest rates for loans funded with State of Oregon Revenue Bonds are based on the rate the State may borrow through the Oregon Economic Development Department Bond Bank.

The Department may also make loans directly from the SPWF and the term and rate on direct loans can be structured to meet project needs. The maximum amount of a direct loan from the SPWF is \$500,000 per project, but may not exceed 85% of the total project cost.

Local agencies that have received SPWF funding for projects including some type of transportation related improvement are the Cities of Cornelius, Woodburn, Forest Grove, Portland, Reedsport, Wilsonville, Redmond, and Bend, and Douglas County.



ODOT FUNDING OPTIONS

The State of Oregon provides funding for all highway related transportation projects through the Statewide Transportation Improvement Program (STIP). The STIP is administered by the Oregon Department of Transportation (ODOT). The STIP outlines the schedule for ODOT projects throughout the State. The STIP, which identifies transportation for a three year funding cycle, is updated on an annual basis.

Starting with the 1998 budget year, ODOT is identifying projects for a 4 year funding cycle. In developing this funding program, ODOT must verify that the identified projects comply with the Oregon Transportation Plan (OTP), ODOT Modal Plans, Corridor Plans, compliance with local comprehensive plans, and ISTEA planning requirements. The STIP must fulfill ISTEA planning requirements for a staged, multi-year, statewide, intermodal program of transportation projects.

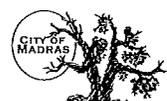
Specific transportation projects are prioritized based on a review of the ISTEA planning requirements and the different State plans. ODOT consults with local jurisdictions before highway related projects are added to the STIP.

The highway related projects identified in the Madras TSP would be considered for future inclusion in the STIP. The timing of including specific projects will be determined by ODOT based on an analysis of all the project needs within Region 4. The TSP will provide ODOT with a prioritized project list for the Madras Urban Area for the next 20 years. The City of Madras, Jefferson County, and ODOT will need to communicate on an annual basis to review the status of the STIP and the prioritization of individual projects within the US Highway 97 and 26 highway corridors. Ongoing communication will be important for the City, County, and ODOT to coordinate the construction of both local and state transportation projects.

ODOT also has the option of making some highway improvements as part of their ongoing highway maintenance program. The type of road construction projects that can be included within the ODOT maintenance programs includes intersection realignments, addition of turn lanes, and striping for bike lanes. The addition of a left-turn lane, from US Highway 26 onto Depot Road, is the type of project that may be constructed through the ODOT maintenance program.

ODOT maintenance crews using State equipment usually do not construct projects. The maintenance crews do not have the staff or specialized road equipment needed for large construction projects.

An ODOT funding technique that will likely have future application to the Madras TSP is the use of state and federal transportation dollars for off-system improvements. Until the passage and implementation of ISTEA, state and federal funds were limited to transportation improvements on highways. ODOT now has the authority and ability to fund transportation projects that are located outside the boundaries of the highway. The



criteria for determining what off-system improvements can be funded has not yet been clearly established. It is expected that this new funding technique will be used to finance local system improvements that reduce traffic on state highways or reduce the number of access points for future development along state highways.

JEFFERSON COUNTY FUNDING OPTIONS

The Madras TSP area includes roads that are under the maintenance jurisdiction of Jefferson County. The City/County Urban Growth Area Management Agreement (UGAMA) stipulates that Jefferson County retains jurisdiction of county roads within the Urban Growth Boundary until:

1. Annexation; and
2. The roads are brought up to urban standards.

At present, there are a number of county roads still within the corporate limits of Madras. Jefferson County provides maintenance on all the county roads within the Madras area while the City has maintenance responsibility for city streets and former county roads that have been annexed and upgraded to city standards.

Jefferson County allocates limited funding to the City of Madras through a countywide revenue sharing program. In the 1995/1996 budget year, the city's share totaled \$9,000. These funds are deposited directly into the City's general fund and are not dedicated specifically for either transportation system maintenance or new construction.

In past years, Jefferson County has contributed funding for individual street projects based on allocations of a former five-year road plan. However, in recent years the County has not provided funding to Madras for construction projects because the County has had to fund major road repair projects elsewhere. After the County completes work on a new road inventory, it is expected funding for incorporated cities transportation projects will be made available.

Jefferson County does not have an updated Capital Improvement Plan (CIP) for transportation projects. The County is in the process of developing a comprehensive inventory of their road system. After the inventory has been completed, a classification will be applied based on the amount of service. A new CIP is expected to be prepared after the inventory and road classification phase are completed. The intent of the new CIP will be to plan transportation projects for the entire County and to coordinate funding construction with all incorporated cities. The projects identified in the Jefferson County TSP and the Madras TSP can form the basis for a new County CIP.

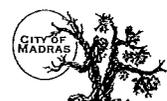
A short-term serial levy has received the most consideration by Jefferson County as a funding method to supplement limited property taxes and State revenue sharing monies for county transportation system improvements. The serial levy would likely be



established to run from one to three years and would be used to finance specific transportation projects within unincorporated areas of the county. Revenues generated from a levy could be used to fund some county road projects in and around Madras. However, as with the consideration of a SDC fee, Jefferson County will not likely consider a special transportation serial levy until after work has been completed on the transportation road inventory and the application of uniform road classifications.

MADRAS TRANSPORTATION SYSTEM PLAN FUNDING REQUIREMENTS

The Madras TSP identifies a range of transportation improvements that will be needed during the next 20 years. Overall, a total of five transportation system alternatives have been selected for funding as part of the Madras TSP. These improvements, shown on Table 8-8, are for improvements along the State Highway system and improvements to the local street network within the Madras Urban Area. The preliminary estimated cost for the six transportation improvement options is \$15,033,140. ODOT will be considered the funding agency for the transportation improvements located within the US Highway 97 and 26 corridors. The City of Madras and Jefferson County will be the primary funding agencies for the local improvements within the city limits and the unincorporated urban area. The specific project alternatives recommended for funding are detailed below:



**Table 8-8
Madras Improvement Options: Funding Requirements**

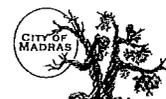
Project Description	Cost Estimate
<u>ODOT Projects</u>	
North US Highway 97/26 Intersection	\$1,500,000
South US Highway 97/27 Couplet	\$900,000
US Highway 26 Traffic Signals	\$500,000
Subtotal	\$2,900,000
<u>Local Projects</u>	
Walkway and Bikeway	\$4,050,140
Basic Street Grid	\$6,265,000
Industrial Park Connection	\$1,818,000
Subtotal	\$12,133,140
Total Funding Requirements	\$15,033,140

Oregon Department of Transportation Projects

ODOT will need to be the primary funding source for future improvements to the US Highway 97/26 intersection at the north end of Madras and the South US Highway 97/26 couplet at the south end of Madras. In addition, ODOT would likely be the primary funding source for those local improvements that would reduce the amount of local traffic on the State highways within the urban area. The ODOT related transportation improvement projects include:

US Highway 97/26 Intersection

At the present time, two alternatives have been identified to improve the north US Highway 97/26 intersection. Shown as improvement Alternative 5A in the TSP, they include the realignment of US Highway 97 south on 6th Street to Oak Street. At the intersection of Oak Street and US Highway 26, a signal would be installed. The preliminary cost estimate of \$1,500,000. The recommendation is for the improvements to be constructed in the near term, during the next 5 year planning cycle.



South US Highway 97/26 Couplet

Transportation System Plan improvement Alternative 7 would reroute a portion of the US Highway 97/26 (5th Street) northbound traffic along a section of the existing Adams Drive right-of-way. This improvement option also would include the future connection of a section of Adams Drive, south of the highway realignment to 10th Street. The south Highway couplet improvement project has a preliminary engineering cost estimate of \$814,000. This cost would be expected to be shared by ODOT, the City of Madras, and Jefferson County. The local share would be expected to include revenue obtained through transportation system development fees applied to new residential development that would use the Adams Drive/10th Street connection for access.

US Highway 26 Traffic Signals

Transportation System Plan improvement Option 9 identifies the need to install two traffic signals along US Highway 26 in the vicinity of the Madras Industrial Park. Two traffic signals, estimated to cost approximately \$500,000, would be constructed at the US Highway 26/Cherry Lane Intersection and the US Highway 26/Earl or Hess Streets intersections. It is expected that these two traffic signals would be installed and maintained by ODOT. Installation of the signals would occur when they met the required traffic and safety warrants.

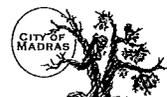
Local Projects

Basic Street Grid Improvements

An extensive list of local street improvements has been identified in TSP Option 3. The purpose of these improvements will be to continue to improve the street grid pattern throughout the city and the urban area. The total costs of the basic street grid improvements is expected to cost approximately \$6,265,000. Funding for these improvements would mainly come from the City of Madras, and Jefferson County. Some of the basic grid street improvements that would reduce reliance on the state highways could be funded by ODOT in the future. The locally generated funds would include revenues generated by SDC fees for new developments and LIDs.

Industrial Park Connection

The Madras Industrial Park connection project is detailed in TSP Option 8. It is considered an important project to improve safety for trucks moving between the



Industrial Park and downtown Madras, and farm trucks and machinery that access the agricultural areas west of Madras. The industrial park connection is planned to be done in two phases. The expected project cost is \$1,818,000. Primary funding for this project would come from local revenues. ODOT may consider participating in financing part of this improvement if it can be shown that the level of local traffic on US Highway 26 will be reduced.

MADRAS TRANSPORTATION SYSTEM PLAN FUNDING STRATEGY

The City of Madras, Jefferson County, and ODOT will need to coordinate and cooperate on a funding strategy to fund the expected \$17.5 million Capital Improvement Plan. It is recommended that ODOT continue as the lead agency in funding the transportation related improvements along the US Highway 97 and US Highway 26 corridors. The City of Madras will need to continue as the lead local government in financing local transportation system improvements. Jefferson County would be expected to assist in funding improvements to county roads within the Madras Urban Area.

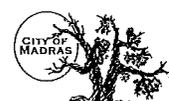
In order to increase funding to implement the Madras TSP, the City, County, and ODOT will all need to consider a range of possible funding sources during the next 20 years. The recommended funding strategy for the Madras TSP is detailed below.

City of Madras

The City of Madras Capital Improvement Program should concentrate on funding improvements to the basic street grid and pedestrian and bikeway systems. The adoption of the TSP will provide an extensive list of local transportation related projects that should be constructed over the next 20 years. Madras will need to increase funding to construct the identified projects. Likely funding sources include increasing the existing transportation SDC for basic street improvements and increasing the use of LIDs for pedestrian and bikeway projects. The City will need to work closely with Jefferson County, and ODOT on developing funding strategies for non-city urban roads and State highway improvements.

Transportation System Development Charge

The Madras transportation SDC fee is expected to generate \$60,000 during the 1995/1996 budget year. The amount of revenue received from the SDC is tied directly to construction activity within the City. After the City adopts the TSP, consideration should be given to increasing the transportation SDC fee. The SDC fee revenue should be dedicated to financing part or all of the local street grid improvements over the next 20-year planning cycle.



Local Gas Tax

Based on a preliminary analysis conducted by the City, it may be possible to generate \$30,000 to \$40,000 for transportation projects from a local gas tax. Ongoing discussions should continue with Madras, Prineville, and Redmond regarding a tri-city local gas tax. If a local gas tax is implemented, the Madras revenues should be dedicated towards funding street grid system improvements. It is recommended that Madras continue with the evaluation of a local gas tax and consider including Jefferson County in any local gas tax proposal.

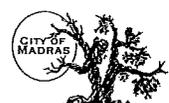
Local Improvement Districts

The City of Madras has a strong Local Improvement District (LID) Ordinance which permits the formation of districts for transportation related projects. The City has not actively used LIDs in the past to fund local street projects. Madras will need to consider using LIDs as a funding technique to finance construction of local street, pedestrian and bikeway projects adopted as part of the TSP. It is recommended that the City of Madras implement a program to target future LIDs for pedestrian and bikeway improvements within residential areas of the City. As part of such a LID program, the City should consider funding a portion of the LIDs to make them affordable to property owners. Priority for future LIDs should include improving sidewalks and bikeways in the vicinity of the schools, and improving pedestrian and bike corridors across US Highway 97/26.

County and ODOT Coordination

Jefferson County will need to be the lead-funding agency for the improvement of county roads within the Madras Urban Area. Both the City and County should consider formulating a joint Capital Improvement Plan for the Madras Urban Area. Such a CIP would be a refinement of the Madras and Jefferson County Transportation System Plans. This refined CIP should include the entire street, pedestrian, and bikeway projects that have been identified for the Madras Urban Area. As part of the process of formulating a joint Urban Growth Area CIP, Jefferson County should be encouraged to adopt a transportation SDC fee, and join the discussions on adoption of a local gas tax. Jefferson County and the City of Madras will need to work closely together on funding techniques that will finance the transportation system improvements.

All transportation related improvements on US Highway 97 and US Highway 26 are assumed to be funded by ODOT. With the adoption of the TSP, ODOT will consult the City of Madras before any highway-related projects are added to the State Transportation Improvement Program (STIP) plan. In the future, ODOT may have the



ability to assist in funding some of the basic street grid projects that reduce dependence on State highways. As the City of Madras plans local street improvement projects, ODOT should be consulted to determine whether state transportation funds could be used for specific local transportation projects.

Jefferson County

Jefferson County has jurisdiction of all the local roads outside the City of Madras and inside the Urban Growth Area. As the urban area is developed, it is expected that county roads will be upgraded to city standards and turned over to the City at time of annexation. The County's contribution to the Madras TSP should include:

- Funding the extension of county roads detailed as part of the basic street grid improvement option;
- Funding to bring the non-city urban area roads up to city standards; and
- Funding the expansion of the pedestrian and bikeway systems throughout the urban area.

Adoption of a countywide transportation SDC will likely be the best funding technique to bring non-city roads up to city standards. Another possible funding technique will be consideration of a county gasoline tax.

Jefferson County will not likely be in a position to increase funding for transportation related projects in the Madras Urban Area until after work has been completed on a new county road inventory. As discussed earlier in this chapter, Jefferson County is currently involved with developing a detailed inventory of the entire County transportation system. Likewise, the County will then consider adopting a road classification for all arterial and collector roads under their jurisdiction. Until the inventory and road classification process is completed, it will be difficult to make projections on what are the most viable funding techniques to enable Jefferson County to bring urban area roads up to city standards.



Transportation System Development Charges

Jefferson County should continue to evaluate the feasibility of adopting a countywide transportation SDC. The existing Madras SDC would be a good model for the County to use in the unincorporated areas. If a transportation SDC is adopted by Jefferson County, the fees collected within the Madras Urban Area should be dedicated to bringing county roads up to city standards. This funding strategy can also be used to help finance the basic street grid improvements. As discussed above, Jefferson County will not likely be in a position to consider adopting a transportation SDC until after work has been completed on the county road inventory and road classification.

Local Gas Tax

The passage of a local gas tax measure could be a new funding source for Jefferson County. All funds generated by such a tax would need to be dedicated towards transportation projects within the County. It is recommended that Jefferson County participate with the City of Madras in discussions with other local communities regarding a possible regional gas tax.

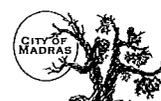
Oregon Department of Transportation

ODOT will be responsible for funding all highway related transportation projects within the Madras TSP boundaries. Other than consulting with the City as part of the STIP process, ODOT has the authority to prioritize highway projects based on their own analysis and evaluation. The detailed study completed on the north US Highway 97/26 intersection is an example of this independent ODOT process. The adoption of the Madras TSP will provide ODOT with highway related transportation projects that are important to Madras and Jefferson County.

The one new ODOT funding technique that should be considered for the Madras TSP is possible use of State money to fund off-system improvements that reduce reliance on State highways. A policy to enable ODOT to use this possible new funding technique is still being formulated as the Madras TSP is being completed. It is recommended that the City of Madras consult ODOT on a yearly basis regarding State funding options for local street improvements.

Existing and Potential Pedestrian and Bicycle Funding Sources

In recent years the City has been successful in obtaining grants from the Oregon Parks and Recreation Department and the Oregon Department of Transportation (ODOT) to construct several multi-use trail projects and other improvements that benefit



pedestrians and bicyclists. The City's local funding contribution has come out of the Transportation Operations Fund.

Intergovernmental revenues, franchise fees, and service/utility fees will likely continue to be the primary sources of revenue for the Transportation Operations Fund in future budget cycles. Gas tax increases and fee increases will continue to be dependent on the state of the economy and voter approval. The state gas tax increased by 25 percent on January 1, 2011 and constitutes the first rise in the Oregon gas tax since 1993. However, the tax increase should not be considered a long-term funding source given the improved fuel efficiency of new vehicles, the rise in ownership of hybrid and electric vehicles, and the increased use of alternative fuels.

The City should continue to apply for grant funding from state programs that have been utilized in recent years to fund capital improvements. Additionally, the City should consider applying for grants from a variety of other programs.

Table 1 summarizes key characteristics of many federal and state funding sources and their applicability to pedestrian and bicycle projects included in the Madras TSP Bike and Pedestrian Update. Each funding source in the table is linked to a description in the sections that follow.

As shown in Table 1, there are 15 state and federal funding sources with a variety of purposes that could be applied to bike and pedestrian projects in Madras. Some sources can be applied to bike and pedestrian projects if they are a component of a larger project (i.e. transit improvements, or highway improvements), while other funds are dedicated for recreational purposes. A general summary of bike and pedestrian project types that are expected to be applicable for funding through each source is provided, although not all projects of that type may be applicable. For this reason, the City should review full funding guidelines provided by the administration agencies to understand all requirements and applicability to a project prior to completing a formal application.

The funding potential identified in table 1 is generally intended to identify those funds that are expected to be more likely to fund one or more bike or pedestrian projects included in the Madras TSP. It is also loosely based on factors such as number of competing applications expected relative to annual funding available, previous success, and how well specific projects in Madras align with the purpose of each funding source.

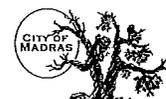


Table 1 - Existing and Potential Funding Sources for Madras Bike and Pedestrian Projects

Source ID	Source Title	Award Cycle	Intended Use	Applicable Pedestrian and Bicycle Project Types	Administration Agency	Deadline	Construction Eligible	Local Match	Previously Utilized Source?	Funding Potential	Funding Comments	Link
1	Federal Transit Administration Discretionary Grant Programs	Annual	Pedestrian and bicycle projects associated with a larger transit improvement	Sidewalk, bikeways, crossing improvements	Federal Transit Administration	Varies	Yes	20%	No	Low	Limited transit in City	http://www.fta.dot.gov/grants/13094.html
2	New Freedom Program	Annual	Accessible transportation improvement projects in areas with individuals with disabilities	sidewalk, crossing improvements	Federal Transit Administration	Varies	Yes	20%	No	Low	Limited availability of funds	http://www.fta.dot.gov/grants/13093-3559.html
3	Rivers, Trails, and Conservation Assistance Program	Annual	Technical assistance for recreation and conservation projects. Does not fund implementation.	Shared-use paths	National Park Service	August	No	None	No	Low	Limited applications	http://www.nps.gov/direct/grants/13094/EligibleFunds.shtml
4	Flexible Federal Funds	Annual	Non-highway transportation projects, programs and services that improve modal connectivity, the environment, and operation of transportation system	Shared-use paths	ODOT	October	Yes; \$50,000 min. and \$2.1 million max.	10.27%	Yes; US 97 to Highway 361 Trail Project	Moderate		http://www.oregon.gov/ODOT/TTIP/EligibleFunds.shtml
5	Highway Safety Improvement Program	Annual	Address safety issues on highways and High Risk Rural Roads	All	ODOT	Varies	Yes	10%	No	Moderate	Must address bike and pedestrian crashes	www.oregon.gov/ODOT/HWY/TRAFFIC/ROADWAY/HighwaySafety/oregon.shtml
6	Surface Transportation Program	Annual	Surface projects and programs	All	ODOT	Varies	Yes	20%	No	Low	National competition	http://www.ftwa.dot.gov/safeand/la-districts/strn.htm
7	Transportation, Community, and System Preservation Program	Annual	Community preservation and environmental conservation through transportation efficiency	Sidewalk, bikeways, crossing improvements	ODOT	January	Yes	20%	No	Low	National competition	http://www.ftwa.dot.gov/districtonal-VIS/2012/12/16.htm
8	Oregon Parks and Recreation Local Government Grants	Annual	Primary use is recreation; transportation allowed. Construction limited to outside road right-of-way, only in public parks or designated recreation areas	Shared-use paths	OPRD	Varies	Yes	20-50%	Yes; Madras Bike & State Park	Moderate		http://www.oregon.gov/OPRD/GRANT/State.shtml
9	Recreational Trails Program	Annual	Non-motorized trails	Shared-use paths	OPRD	October	Yes; \$250,000 maximum	20%	Yes; C Street Pedestrian Bridge, Buff Street Pedestrian Bridge and Trail, North Y Trail	Moderate		http://www.oregon.gov/OPRD/GRANT/Trails.shtml
10	Land and Water Conservation Fund	Annual	Acquire land for public outdoor recreation or develop basic outdoor recreation facilities	Shared-use paths, bikeways, sidewalks	OPRD	Varies	Yes; \$25,000 minimum	50%	No	Moderate		http://www.oregon.gov/OPRD/GRANT/State.shtml
11	Bicycle and Pedestrian Program Grants	Biennial	Primary use is transportation; recreation allowed	Sidewalk, bikeways, crossing improvements, shared-use paths	ODOT	Next in spring 2012	Yes; inside road right-of-way only, paved only	5%	Yes; "B" Street Bicycle and Pedestrian Improvements	Moderate		http://www.oregon.gov/ODOT/HWY/BIKEPED/Grant1.shtml
12	Safe Routes to School	Biennial	Identify and reduce barriers for biking and walking to/from school	All	ODOT	Varies	Yes; \$500,000 maximum	None	Yes; Buff Street/10th Street Intersection Improvements	Moderate		http://www.oregon.gov/ODOT/TS/safeschools.shtml
13	Statewide Transportation Improvement Program	Biennial	Multi-year, statewide, intermodal program of transportation projects	Sidewalk, bikeways, crossing improvements	ODOT	Varies	Yes	Varies	No	Moderate		http://www.oregon.gov/ODOT/HWY/STIP/
14	Transportation Enhancements Program	Biennial	Primarily transportation; recreation allowed	All	ODOT	May	Yes; \$1.5 million maximum (typical)	10.27%	Yes; US 97 - Fairgrounds Road to "I" Street Improvements	Moderate		http://www.oregon.gov/ODOT/HWY/LE/Enhancements.shtml
15	Urban Trails Fund	Undefined	Shared-use paths for non-motorized vehicles and pedestrians	Bikeways, sidewalks, shared-use paths	ODOT	Varies	Yes	20%	No	Low	Funding uncertain	Patricia Fisher (503-986-5528)



Table 2 provides a summary of the funding sources that are applicable to each type of project.

Table 2 - Funding Source by Project Type

Project Type	Potential Funding Sources ¹
Bike Lanes	1, 4, 5, 6, 7, 11, 12, 13, 14
Sidewalks	1, 2, 4, 5, 6, 7, 11, 12, 13, 14
Shared-use Paths	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Crossings	1, 2, 4, 5, 6, 7, 11, 12, 13, 14

¹ See Table 1 above for cross-reference of numbers to sources.

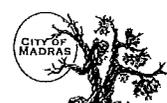
FEDERAL AND STATE FUNDING SOURCES

Federal funding is primarily distributed through a number of different programs established by Congress. The latest act, the Safe, Accountable, Flexible, Efficient Transportation Equity Act - a Legacy for Users (SAFETEA-LU), was enacted in August 2005 as Public Law 109-59

SAFETEA-LU authorized the federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009. SAFETEA-LU legislation expired on September 30, 2009, but at the time of writing had been extended to March 31, 2012. It should therefore be noted that it is not possible to guarantee the continued availability of any listed SAFETEA-LU programs, or to predict their future funding levels or policy guidance. Nevertheless, many of these programs have been authorized in some form in repeated federal transportation reauthorization acts, and thus may continue to provide capital for improvements.

In Oregon, most federal monies are administered through ODOT and regional planning agencies. Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system. There are a number of programs identified within SAFETEA-LU that are applicable to bicycle and pedestrian projects. These programs are discussed below.

More information: <http://www.fhwa.dot.gov/safetealu/index.htm>



Federal Transit Administration Discretionary Grant Programs

The Federal Transit Administration (FTA) views walking and bicycling as modes that complement public transit, as many people either begin or end a trip on public transportation on foot or by bicycle. The FTA has recently issued a policy statement that defines a catchment area around transit stops within which bicycle and pedestrian projects are eligible for FTA financial support. All pedestrian projects within one-half mile and bicycle projects within three miles of a public transit stop are considered to have a de facto relationship with public transportation. Projects within this catchment area are thereby eligible for one of the grant programs administered by the FTA to fund the design, construction, and maintenance of pedestrian and/or bicycle projects that enhance or are related to public transportation facilities.

Projects that may be eligible due to geographic co-location with transit stops are also subject to additional statutory criteria, such as requirements to:

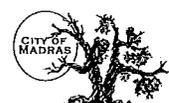
- Enhance economic development or incorporate private investment
- Enhance the effectiveness of public transportation project and relate physically or functionally to that project
- Establish new or enhanced coordination between public transportation and other transportation
- Provide a fair share of revenue for public transportation

Recipients of FTA funding will not be required to certify ridership numbers related to their projects within the catchment areas. Research has indicated that improved access to a stop or station typically results in increased ridership. However, pedestrian projects outside the half-mile radius may still apply for FTA funding if the increased distance from a transit stop is still considered comfortable for the pedestrian. In that case, a study showing the likelihood of increased ridership would be appropriate. Bicycle projects outside of the three-mile radius are not eligible for this exception.

More Information: <http://www.fta.dot.gov/grants/13094.html>;
<http://edocket.access.gpo.gov/2009/pdf/E9-27240.pdf>

New Freedom Program

SAFETEA-LU created a new formula grant program that provides capital and operating costs for transportation services and facility improvements that exceed those required by the Americans with Disabilities Act. Examples of pedestrian/accessibility projects funded in other communities through the New Freedom Initiative include installing Accessible Pedestrian Signals (APS), enhancing transit stops to improve accessibility, and establishing a mobility coordinator position. Madras should consider pursuing New



Freedom Initiative grants in the future for enhanced facility accessibility improvement projects laid out in the TSP Update, possibly in coordination with Cascades East Transit. Likely eligible improvements include mid-block and high visibility crossing improvements.

More information: http://www.fta.dot.gov/grants/13093_3549.html; or
<http://www.hhs.gov/newfreedom/>

Rivers, Trails, and Conservation Assistance Program

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program providing technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds, and open space. The RTCA program provides only for planning assistance - there are no implementation monies available. Projects are prioritized for assistance based on criteria including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. This program may benefit trail development in Madras indirectly through technical assistance, particularly for community organizations, but should not be considered a future capital funding source.

More information: <http://www.nps.gov/pwro/rtca/who-we-are.htm>

Flexible Federal Funds

As an outcome of the 2009 Legislative Session, ODOT was asked to increase its investment in Non-Highway Transportation. In 2010, the Oregon Transportation Commission approved the formation of a new Flexible Funds Program. The intent of the program is to provide capital for transit, bicycle and pedestrian, and Transportation Demand Management (TDM). Projects must meet FHWA eligibility requirements for STP funding and must demonstrate that projects are "shovel ready". The minimum project size is \$50,000 (federal share excluding match) and the maximum size is 10% of the available program funding, or approximately \$2.1 million (federal share excluding match).

More information: <http://www.oregon.gov/ODOT/TD/TP/FlexFunds.shtml>

Highway Safety Improvement Program

This program is designed to help communities implement projects designed to achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. This program includes the Railway-Highway Crossings Program and the High Risk Rural Roads Program. ODOT estimates that they will



receive an average of \$14 million annually for this program through the lifetime of SAFETEA-LU.

More information: http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/highway_safety_program.shtml

Surface Transportation Program

The Surface Transportation Program (STP) provides states with flexible funds that may be used for a variety of projects on any Federal-Aid Highway including the National Highway System, bridges on any public road, and transit facilities. Bicycle and pedestrian improvements are eligible activities under the STP. This covers a wide variety of projects such as on-street facilities, off-road trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. SAFETEA-LU also specifically clarifies that the modification of sidewalks to comply with the requirements of the American with Disabilities Act (ADA) is an eligible activity.

As an exception to the general rule described above, STP-funded bicycle and pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. In addition, bicycle-related non-construction projects, such as maps, coordinator positions, and encouragement programs, are eligible for STP monies. ODOT estimates that they receive an average of \$84 million annually for this program through the lifetime of SAFETEA-LU.

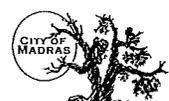
More information: <http://www.fhwa.dot.gov/safetealu/factsheets/stp.htm>

Transportation, Community, and System Preservation Program

The Transportation, Community, and System Preservation (TCSP) Program provides federal funding for transit-oriented development, traffic calming, and other projects that improve the efficiency of the transportation system, reduce the impact on the environments, and provide efficient access to jobs, services, and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities. The TCSP Program funds require a 20-percent match.

In most years, Congress has identified projects to be selected for funding through the TCSP program. Assuming that this method is used to allocate TCSP monies in the future, the City of Madras will need to work closely with ODOT and Members of Congress to gain access to this funding.

Relatively few Oregon communities have received monies from this program since 1999, and a majority of projects are highway-related efforts. The potential for winning funding for the TSP Update projects is thus rated as low, though it may be worth



pursuing for selected bicycle, pedestrian, and multimodal projects that meet the grant criteria if Madras has reason to believe that the local Congressional delegation would be willing to champion the project.

More information: <http://www.fhwa.dot.gov/tcsp/>

Oregon Parks and Recreation Local Government Grants

The Oregon Parks and Recreation Department (OPRD) administers a Local Government Grants program using Oregon Lottery revenues. The grants may pay for acquisition, development, and major rehabilitation projects for public outdoor park and recreation areas and facilities. The amount of money available for grants varies depending on the approved OPRD budget. Grants are available for three categories of projects: small projects (maximum \$50,000 request), large projects (maximum \$750,000 request, or \$1,000,000 for land acquisition), and small community planning projects (maximum \$25,000 request). Several projects identified in this Plan would meet the grant eligibility requirements.

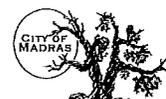
More information: <http://www.oregon.gov/OPRD/GRANTS/local.shtml>

Recreational Trails Program

The Recreational Trails Program (RTP) of the federal transportation bill provides funding to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, and equestrian use. These monies are available for both paved and unpaved trails, but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.

Recreational Trails Program funds may be used for:

- Maintenance and restoration of existing trails
- Purchase and lease of trail construction and maintenance equipment
- Construction of new trails, including unpaved trails
- Acquisition or easements of property for trails
- State administrative costs related to this program (limited to seven percent of a state's RTP dollars)
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a state's RTP dollars)



In Oregon, the Recreational Trails Program is administered by the Oregon Parks and Recreation Department (OPRD) as a grant program. This grant is specifically designed to pay for recreational trails projects rather than utilitarian transportation-based projects. Proposed shared-use paths are the most likely facility type that could be funded through the Recreational Trails Program.

More information: <http://www.oregon.gov/OPRD/GRANTS/trails.shtml>

Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. Funds can be used for right-of-way acquisition and construction. This grant program is administered by the Oregon Parks and Recreation Department.

Any TSP Update projects located in future parks could benefit from planning and land acquisition funding through the LWCF. Trail coordinator acquisition can be funded with LWCF grants as well, but historically few trails have been proposed compared to parks.

More information: <http://www.oregon.gov/OPRD/GRANTS/lwcf.shtml>

Bicycle and Pedestrian Program Grants

The Bicycle and Pedestrian Grant Program is a competitive grant program providing approximately \$5 million every two years to Oregon cities, counties, and ODOT regional and district offices for design and construction of pedestrian and bicycle facilities.

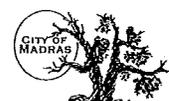
Proposed facilities must be within public rights-of-way. Grants are awarded by the Oregon Bicycle and Pedestrian Advisory Committee and administered by ODOT.

More information: <http://www.oregon.gov/ODOT/HWY/BIKEPED/grants1.shtml>

Safe Routes to School

ODOT administers Oregon's portion of the national Safe Routes to School (SRTS) program. Under the Oregon Safe Routes to School Program, approximately \$3.7 million has been available for grants between 2006 and 2010. The grants can be used to identify and reduce barriers and hazards to children walking or bicycling to school. ODOT estimates that they have received an average of \$1.37 million annually for this program through the lifetime of SAFETEA-LU.

More information: <http://www.oregon.gov/ODOT/TS/saferoutes.shtml>



Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program (STIP) is ODOT's short-term capital improvement program, providing project funding and scheduling information for the department and Oregon's metropolitan planning organizations. STIP project lists are updated every two years, with four-year project lists. Project lists are developed through the coordinated efforts of ODOT, federal and local governments, Area Commissions on Transportation, tribal governments, and the public.

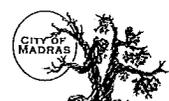
In developing this program, ODOT must verify that the identified projects comply with the Oregon Transportation Plan, ODOT Modal Plans, Corridor Plans, local comprehensive plans, and SAFETEA-LU planning requirements (including this Pedestrian and Bicycle Master Plan). The STIP must fulfill federal planning requirements for a staged, multi-year, statewide, intermodal program of transportation projects. Specific transportation projects are prioritized based on federal planning requirements and the different state plans. ODOT consults with local jurisdictions before highway-related projects are added to the STIP. Stand-alone bicycle/pedestrian projects are an eligible funding category, and multi-modal roadway projects that contain a planned pedestrian or bicycle improvement can also be funded through this mechanism.

Oregon STIP funds currently have paid for or will pay for numerous stand-alone bicycle/pedestrian projects and programs, including Safe Routes to School programs and infrastructure improvements, bicycle parking at schools, preliminary engineering, construction, and rehabilitation of numerous path segments, and transportation demand management programs in communities around the State of Oregon. The current STIP also includes pavement preservation and modernization of a large number of multimodal facilities, which will benefit walking and bicycling infrastructure along those roadways. The adopted 2010-2013 STIP is already an excellent funding source for bicycle/pedestrian projects, and future updates to the STIP should be considered an important opportunity for projects identified in this plan.

More information: <http://www.oregon.gov/ODOT/HWY/STIP/>

Transportation Enhancements Program

The Transportation Enhancements (TE) program is intended to promote projects that improve all modes of transportation. A federal program administered by ODOT, the TE program is funded by a set-aside of Surface Transportation Program (STP) monies. Ten percent of STP funds are designated for Transportation Enhancement (TE) activities, which include the "provision of facilities for pedestrians and bicycles, provision of safety and educational activities for pedestrians and bicyclists," and the "preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian and bicycle trails). Other TE categories are Historic Preservation; Landscaping and



Scenic Beautification; and Environmental Mitigation. Projects must serve a transportation need. TE grants can be used to build a variety of pedestrian, bicycle, streetscape, and other improvements that enhance the cultural, aesthetic, or environmental value of transportation systems. The statewide grant process is competitive.

More information: <http://www.oregon.gov/ODOT/HWY/LGS/enhancement.shtml>

Urban Trails Fund

The Urban Trails Fund (UTF) was created in 2009 by the Oregon Legislature, as part of HB 2001 (the Jobs and Transportation Act). The purpose of the Urban Trails Fund was to develop shared-use paths for non-motorized vehicles and pedestrians, within urban growth boundaries, to provide or improve links to roads and highways, footpaths, bike trails, and public transit. The UTF was specifically created in response to a gap in the current funding stream for projects outside of the public right-of-way that provide non-motorized transportation links.

The Urban Trails Fund was initially created by a one-time appropriation of \$1.0 million, and was managed as a competitive grant program by ODOT. The Oregon Bicycle and Pedestrian Advisory Committee was the public advisory committee overseeing the Urban Trails Fund. The intention of the first round of funding was to demonstrate the value of the program with the hope that the Oregon Legislature will authorize additional program dollars in the future. If the program is continued in the future, shared-use path projects identified in this Plan are likely to compete well for grant awards.

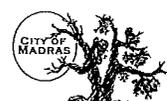
More information: None available online; ODOT contact is
Patricia Fisher (503-986-3528)

STATE RESOURCES

Oregon Transportation Infrastructure Bank

The Oregon Transportation Infrastructure Bank (OTIB) is a statewide revolving loan fund designed to promote innovative transportation solutions. Oregon's program was started in 1996 as part of a ten-state federal pilot program. Additional legislation passed in 1997 by the Oregon Legislature establishes the program in state law and includes expanded authority. OTIB may cover up to 100% of project costs. Eligible borrowers include cities, counties, transit districts, other special districts, port authorities, tribal governments, state agencies, and private for-profit and non-profit entities. Eligible projects include:

- Highway projects, such as roads, signals, intersection improvements and bridges



- Transit capital projects, such as buses, equipment, and maintenance or passenger facilities
- Bikeway or pedestrian access projects on highway right-of-way

Eligible project types include preliminary engineering, environmental studies, right-of-way acquisition, construction (including project management and engineering), inspections, financing costs, and contingencies.

Bicycle and pedestrian projects are explicitly eligible for loans, but Madras has not received funding through this source in the past. It also should be noted that a loan may facilitate the implementation of a project, but monies will still need to be identified to repay the loan. This program should primarily be seen as an implementation tool for projects identified in the TSP Update and not a funding source.

More information: <http://www.oregon.gov/ODOT/CS/FS/otib.shtml>

State Highway Trust Fund

Madras receives its share of state gas tax and weight mile tax receipts from the State Highway Trust Fund. These monies are currently contributed to the City's Transportation and Operations Fund, which is used to fund operations and maintenance as well as capital projects. The Oregon state gas tax increased by six cents a gallon in January 2011. Operations and maintenance needs of on-street bicycle and pedestrian facilities will continue to benefit from this funding source, and multimodal roadway projects paid for through this source may result in improved bicycle and pedestrian facilities, but it is unlikely to provide for stand-alone pedestrian or bicycle facilities in the future.

Oregon Revised Statute 366.514

Often referred to as the "Oregon Bicycle Bill," this law applies equally to bicycle and pedestrian facilities. The statute's intent is to ensure that future roads be built to accommodate bicycle and pedestrian travel. The statute requires the provision of bicycle and pedestrian facilities on all Major Arterial and Collector roadway construction, reconstruction, or relocation projects where conditions permit. The statute also requires that in any fiscal year, at least one percent of highway funds allocated to a jurisdiction must be used for bicycle/pedestrian projects. This amount could increase to 1.5 percent or higher in the future and could, therefore, present a greater opportunity for funding bicycle and pedestrian facilities.

More information: http://www.oregon.gov/ODOT/HWY/BIKEPED/bike_bill.shtml



LOCAL FUNDING OPTIONS

The following section describes local funding options available to the City of Madras for implementing bicycle and pedestrian projects contained within the TSP. Each description includes the potential funding level, the action needed to implement the option, the administrative cost of implementation, anticipated community acceptance of the action, and the types of projects that could be implemented through the option. All options discussed are legal in Oregon and in use in communities today. Some require specific action in order to establish the program for the first time.

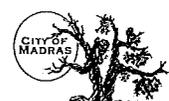
Local Bond Measures

Local bond measures, or levies, are usually initiated by voter-approved general obligation bonds for specific projects. Bond measures are typically limited by time, based on the debt load of the local government or the project under focus. Funding from bond measures can be used for right-of-way acquisition, engineering, design, and construction of pedestrian and bicycle facilities. Transportation-specific bond measures featuring a significant bicycle/pedestrian facility element have passed in other communities, such as Seattle's "Closing the Gap" measure. Though this funding source is one that can be used to finance a multitude of project types, it must be noted that the accompanying administrative costs are high and voter approval must be gained.

Urban Renewal District/Tax Increment Financing

Urban Renewal Districts are separate taxing districts created to remove blight within a District as defined by State statute and local Urban Renewal Plans. Each Urban Renewal Plan has identified actions that will remove the blight within the District. Those actions are funded by debt financing (e.g., bonds) using the incremental tax revenue generated from improvements on private property that increase the tax assessable value of that property that then create additional property tax revenue. The additional tax revenue (i.e., tax increment) is then directed to the Urban Renewal District to be used for blight removal. This public finance method is referred to as Tax Increment Financing (TIF) and is limited to Urban Renewal in the State.

Madras has an Urban Renewal District that uses TIF to remove blight within the District. The City's Urban Renewal District has an Urban Renewal Plan which is called the Urban Renewal Action Plan which identifies, amongst other action, improving public infrastructure within the District to remove blight and also inspire development and redevelopment of private property within the District. It should be noted that TIF programs around the state have been performing poorly during the current economic downturn because property values have not risen steadily as expected.



System Development Charges

System Development Charges (SDCs) are typically tied to trip generation rates and traffic impacts produced by a proposed project. Upon City Council approval of such a policy, a developer may reduce the number of trips (and hence impacts and cost) by paying for on- or off-site pedestrian improvements that will encourage residents/tenants to walk or use transit rather than drive. In-lieu fees may be used to help construct new or improved pedestrian facilities as allowed by City Ordinance. SDCs are currently in use in Madras and by policy include bicycle and pedestrian facilities; the parks component of the SDC may also be applied towards building trails on park lands.

Local Fuel Tax

Every state collects an excise tax on fuel, and this includes diesel and biodiesel. Only nine states permit cities or counties to impose a local fuel tax, and Oregon is one of those states. Other Oregon cities, such as Eugene, have chosen to implement this mechanism in order to pay for street operation, maintenance and preservation activities. If the Madras City Council were to adopt a local fuel tax, improvements to the walking and biking infrastructure that have been identified in the TSP Update would be eligible for funding.

Transportation System Maintenance Fee

The revenue generated by a Transportation System Maintenance Fee (sometimes called a transportation maintenance fee or a street user fee) is commonly used for operations and maintenance of the street system, including maintaining on-street bicycle and pedestrian facilities, including routine sweeping of bicycle lanes and other designated bicycle routes. Like the local fuel tax, a transportation system maintenance fee is enacted by City Council in order to secure a dedicated funding source for bike and pedestrian facilities upkeep. Additionally, if the fee collection system can be tied to an existing collection system, the administrative costs will remain low. In light of the steady decline in the real value of State Highway Trust Fund revenues, a Transportation Utility Fee may make sense for Madras in the future.

Local Improvement Districts (LIDs)

Local Improvement Districts (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks, or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as trip generation. Though the costs of an LID project are borne primarily by the property owners, moderate administrative costs must be factored in, and the public involvement process must still be followed.



Economic Improvement Districts (EIDs)

Pedestrian improvements can often be included as part of larger efforts aimed at business improvement and retail district beautification. Economic Improvement Districts collect assessments or fees on businesses in order to fund improvements that benefit businesses and improve customer access within the district. Adoption of a mutually agreed upon ordinance establishing guidelines and setting necessary assessments or fees to be collected from property owners is essential to ensuring a successful EID. These districts may include provisions for pedestrian and bicycle improvements, such as wider sidewalks, landscaping, and ADA compliance.

Stormwater Green Streets Funding

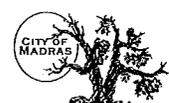
Municipal water quality agencies are increasingly turning to green streets projects as a promising strategy to fulfill their mission to improve water quality by minimizing and treating stormwater runoff. Green streets improvements can often serve a secondary community benefit as traffic calming by adding on-site stormwater management to traffic circles, chicanes, and curb extensions. Fees collected by stormwater management agencies are commonly applied to a variety of projects, including capital investments. Depending on the agency culture, these capital investments may include green streets efforts. In order for these fees to be collected, the City of Madras Water/Wastewater Department will need to either increase rates or change current policies regarding revenue spending. The administrative costs of a green streets program can remain low as long as they are administered through an existing stormwater and wastewater fee program.

CITY OF MADRAS TRANSPORTATION FUNDING PLAN

Identified Street Improvement Projects

Approximately \$17.4 million in transportation system improvements are projected to be required within the Madras Urban Area over the next 20 years (See Table 8-8 for a breakdown of expected project costs). It is assumed that ODOT will fund \$5,400,000 or 35% of these costs for US Highway 97 and US Highway 26 improvement projects. The City of Madras would be responsible for funding \$13,000,000 or 65% of the total transportation system costs over the next 20 years.

A review has been conducted of a range of alternative transportation funding mechanisms that are available to the City. This review was done in order to develop a list of options that are considered to be the most feasible methods to fund local projects. **A funding package combining SDC revenues, state gas tax revenues, Local Improvement Districts, as well as some type of debt financing mechanism backed**



by property taxes, represents the most feasible funding strategy available to the City to meet expected capital and maintenance funding needs.

Systems Development Charges¹

The City of Madras already has a transportation SDC (SDC) fee in place. The current fee is computed based on a SDC of \$600 per dwelling unit (9.55 ADT). Commercial and industrial SDC fees are calculated based on employees using the trip rates identified in the Uniform Traffic Manual. The City will need to consider increasing the transportation SDC to help fund local projects identified in the TSP.

A SDC is a means of requiring that new developments pay a fair-share of the capital costs of improvements needed to accommodate growth. State law allows the imposition of systems development charges for specified purposes. The requirements and limitations are found in the Oregon Revised Statutes (ORS) 223.297 to 223.314. This section of the report outlines the methodology for a transportation systems development charge. It identifies SDC funding options for projects to meet the long-range transportation needs of the City of Madras.

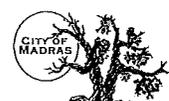
The basic methodology used to assess transportation SDC fees was to compare employment, dwelling units, and forecasted trips with street improvement needs for year

¹ A new Transportation System Development Charge Study was conducted by FCS Group out of Redmond, Washington and adopted by the City Council on July 24, 2007. Refer to Appendix H, 2006 TSP Update. This notation added by City Recorder when TSP was updated in 2007.

2015. This section of the report describes the calculations upon which the charge per trip is based. The charge is calculated by dividing the eligible costs of transportation projects by the forecast trips that cause the need for improvements. The eligible costs are those which increase capacity and service.

Finally, the fee levied against a development is derived by determining the number of trips forecast and multiplying this by the per trip fee.

The growth assumptions for the City of Madras are documented elsewhere, but are summarized in Table 8-9. Table 8-9 lists anticipated increases in both residential development and employment between 1995 and 2015. In addition to the number of dwelling units and employment increases, Table 8-9 lists the average number of trips caused on a daily basis by these broad land use categories. These are the figures used in the computer-based transportation model used to assess the City of Madras' long-range transportation system needs.



As shown in Table 8-9, an increase of almost 40,000 daily trips within Madras is forecasted between 1995 and 2015.

**Table 8-9
Forecasted Increase in Trip Generation From New Development
1995-2015**

Development Type	Forecasted Increase in Number of Units	Trips/Unit	Forecast Increase in Number of Trips
<u>RESIDENTIAL USES</u>			
Single-family Dwelling Units	1,890	9.55 ¹	18,050
Multi-family Dwelling Units	270	6.47	1,747
<u>NON-RESIDENTIAL DEVELOPMENT</u>			
Commercial Employees	1,055	17.5	18,463
Industrial Employees	1,540	1.06	1,632
TOTAL TRIPS			39,892 ²

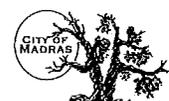
¹ ITE Trip Generation Manual, 5th Edition, 1991

² Assumes unincorporated land areas within UGB will be annexed to the City within 20-year plan life.

The key assumption for the SDC program is that these trips directly cause the need for improvements to the City's transportation system. The total cost of transportation projects under the City's jurisdiction is estimated to be \$12,133,140. The basic concept behind project-based systems development charge is to divide the cost of needed projects by the number of trips expected to occur during the same time period. If the City of Madras seeks to recover all costs for construction of street projects from new development through SDC fees, the calculation is as follows:

$$\text{\$12,133,140} / \text{39,892} = \text{\$304.15 per trip.}$$

Note that certain other costs associated with annual monitoring and compliance are also eligible for recovery under an SDC program and are permitted under the ORS. Bookkeeping and documentation associated with these compliance activities may not make the option attractive to Madras. Since the City of Madras already has a transportation systems development charge in place, the methodology needs to be reviewed only briefly.



Typically, SDC's are levied on new developments and are collected at the time of issuance of a building permit or as otherwise provided for by the ordinance.

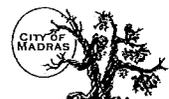
One potential change to the City of Madras' SDC program is to change the basis upon which the fee is calculated. The amount of the transportation systems development charge levied against a development is most easily explained if it is based upon the average daily number of trips generated multiplied by the per trip fee calculated above. The trip rate for each use should be derived from the latest edition of the Institute of Transportation Engineers' Trip Generation Manual.

For residential uses, the fee is determined by multiplying the number of units by the per unit trip generation rate. For non-residential uses, the fee is determined by multiplying the gross floor area (measured in thousands of square feet) by the applicable trip generated rate. The City may also give the developer the option of submitting a detailed traffic study to establish a trip generation rate for a specific project. The traffic study must be prepared by a licensed traffic engineer in the State of Oregon and shall be prepared in accordance with the methodology contained in the Institute of Transportation Engineers' Trip Generation Manual.

The City of Madras has the option of choosing the amount of funding it wants to recover from new development to pay for needed long-range transportation improvements. To recover 100 percent of the \$12,133,140 needed to fund all local projects, the SDC fee is calculated to be \$304.15 per trip. If the City chooses to collect only half of the \$12 million dollar amount, the SDC fee could be lowered to approximately \$150 per daily trip.

Table 8-10 summarizes the trip generation rates and proposed SDC fees for a broad range of possible developments. Table 8-10 is a nearly complete list of land use categories and daily trip rates listed in the Institute of Transportation Engineer's Trip Generation Manual. The column headed by "ID #" refers to the land use category in Trip Generation and the column headed with "Trip Rate" lists the average daily trip rate taken directly from, or derived from, the same manual. The "Assumed Size" column lists a typical size for a building in this land use category. The building size is then used to calculate the number of trips and the proposed SDC fee.

Table 8-10 lists three options for the SDC fee. These are in columns headed with the descriptions "100% Recovery," "75% Recovery," "50% Recovery." These refer to the proportion of the \$12 million needed for local projects that would be recovered from the SDC program. For example, if the development summarized in Table 8-9 occurs over the next twenty years and the City uses a \$304.15 fee per trip, the City might reasonably expect to recover 100 percent of the funding needed for the \$12 million list of projects. The fees for typical developments would be those shown in the "100% Recovery" column.



**Table 8-10
SYSTEMS DEVELOPMENT CHARGE CALCULATIONS
Proposed SDC for City of Madras for Sample Developments**

ID #	Land Use	Trip Rate	Unit per TGSF unless otherwise	Assumed Size Sq. ft.	Calculated Trips	100% Recovery	75% Recovery	50% Recovery
030	Truck Terminal	9.85		100,000	985.00	\$ 252.61	\$ 189.46	\$ 126.31
110	General Light Industrial	6.97		100,000	697.00	\$ 248,820.85	\$ 186,615.64	\$ 124,410.43
120	General Heavy Industrial	1.50		700,000	1050.00	\$ 176,069.17	\$ 132,051.88	\$ 88,034.59
130	Industrial Park	6.97		400,000	2788.00	\$ 265,240.50	\$ 198,930.38	\$ 132,620.25
140	Manufacturing	3.85		400,000	1540.00	\$ 704,276.68	\$ 528,207.51	\$ 352,138.34
150	Warehousing	4.88		300,000	1464.00	\$ 389,019.40	\$ 291,764.55	\$ 194,509.70
151	Mini-Warehouse	2.61		50,000	130.50	\$ 369,821.04	\$ 277,365.78	\$ 184,910.52
170	Utilities	0.79		100,000	79.00	\$ 32,965.61	\$ 24,724.20	\$ 16,482.80
210	Single Family Detached Housing	9.55	per DU	1	9.55	\$ 19,956.19	\$ 14,967.14	\$ 9,978.10
220	Apartment	6.47	per DU	1	6.47	\$ 2,412.43	\$ 1,809.32	\$ 1,206.21
221	Low-Rise Apartments	6.59	per DU	1	6.59	\$ 1,634.39	\$ 1,225.79	\$ 817.19
222	High-Rise Apartments	4.20	per DU	1	4.20	\$ 1,664.70	\$ 1,248.52	\$ 832.35
230	Residential Townhouse/Condo	5.86	per DU	1	5.86	\$ 1,060.96	\$ 795.72	\$ 530.48
232	High-Rise Townhouse/Condo	4.18	per DU	1	4.18	\$ 1,480.29	\$ 1,110.22	\$ 740.15
240	Mobile Home Park	4.81	per DU	1	4.81	\$ 1,055.91	\$ 791.93	\$ 527.95
252	Congregate Care Facility	2.15	per DU	1	2.15	\$ 1,215.05	\$ 911.29	\$ 607.53
270	Residential Planned Development	7.44	per DU	1	7.44	\$ 543.11	\$ 407.33	\$ 271.56
310	Hotel	21.75 *		60,000	1305.00	\$ 1,879.42	\$ 1,409.56	\$ 939.71
320	Motel	25.50 *		60,000	1530.00	\$ 329,656.05	\$ 247,242.04	\$ 164,828.03
411	City Park	2.23	per acre	15	33.45	\$ 386,493.30	\$ 289,869.98	\$ 193,246.65
412	County Park	2.99	per acre	30	89.70	\$ 8,449.80	\$ 6,337.35	\$ 4,224.90
416	Campground/RV Park	74.38	per acre	20	1487.60	\$ 22,659.12	\$ 16,994.34	\$ 11,329.56
430	Golf Course	8.33	per acre	50	416.50	\$ 375,782.64	\$ 281,836.98	\$ 187,891.32
443	Movie Theater	77.79		20,000	1555.80	\$ 105,212.07	\$ 78,909.05	\$ 52,606.03
491	Tennis Courts	33.33	per court	6	199.98	\$ 393,010.64	\$ 294,757.98	\$ 196,505.32
492	Racquet Club	17.14		20,000	342.80	\$ 50,516.95	\$ 37,887.71	\$ 25,258.47
493	Health Club	15.82 *		20,000	316.40	\$ 86,594.71	\$ 64,946.03	\$ 43,297.35
						\$ 79,925.80	\$ 59,944.35	\$ 39,962.90

**Table 8-10
SYSTEMS DEVELOPMENT CHARGE CALCULATIONS
Proposed SDC for City of Madras for Sample Developments**

ID #	Land Use	Trip Rate	Unit per TGSF unless otherwise	Assumed Size Sq. ft.	Calculated Trips	100% Recovery	75% Recovery	50% Recovery
494	Bowling Alley	33.33		20,000	666.60	\$ 168,292.37	\$ 126,292.37	\$ 84,194.91
520	Elementary School	10.72		60,000	643.20	\$ 162,478.75	\$ 121,859.06	\$ 81,239.38
530	High School	10.90		100,000	1090.00	\$ 275,344.90	\$ 206,508.68	\$ 137,672.45
560	Church	9.32		20,000	186.40	\$ 47,086.50	\$ 35,314.88	\$ 23,543.25
561	Synagogue	10.64		20,000	212.80	\$ 53,755.41	\$ 40,316.56	\$ 26,877.70
565	Day Care Center	79.26		3,000	237.78	\$ 60,065.61	\$ 45,049.20	\$ 30,032.80
566	Cemetery	4.16	per acre	10	41.60	\$ 10,508.58	\$ 7,881.43	\$ 5,254.29
590	Library	45.50		30,000	1365.00	\$ 344,812.65	\$ 258,609.49	\$ 172,406.33
610	Hospital	16.78		200,000	3356.00	\$ 847,759.16	\$ 635,819.37	\$ 423,879.58
620	Nursing Home	5.50 *		150,000	825.00	\$ 208,403.25	\$ 156,302.44	\$ 104,201.63
630	Clinic	23.79		150,000	3568.50	\$ 901,438.79	\$ 676,079.09	\$ 450,719.39
710	General Office Building							
	0-10,000 sq. ft.	24.60		10,000	246.00	\$ 62,142.06	\$ 46,606.55	\$ 31,071.03
	10,001-25,000	19.72		20,000	394.40	\$ 99,629.38	\$ 74,722.04	\$ 49,814.69
	25,001-50,000	16.58		40,000	663.20	\$ 167,530.95	\$ 125,648.21	\$ 83,765.48
	50,001-100,000	14.03		80,000	1122.40	\$ 283,529.46	\$ 212,647.10	\$ 141,764.73
	100,001-200,000	11.85		150,000	1777.50	\$ 449,014.28	\$ 336,760.71	\$ 224,507.14
	200,001-300,000	10.77		250,000	2692.50	\$ 680,152.43	\$ 510,114.32	\$ 340,076.21
	300,001-400,000	9.96		350,000	3486.00	\$ 880,598.46	\$ 660,448.85	\$ 440,299.23
	400,001-500,000	9.45		450,000	4252.50	\$ 1,074,224.03	\$ 805,668.02	\$ 537,112.01
	500,001-600,000	9.05		550,000	4977.50	\$ 1,257,366.28	\$ 943,024.71	\$ 628,683.14
	600,001-700,000	8.75		650,000	5687.50	\$ 1,436,719.38	\$ 1,077,539.53	\$ 718,359.69
	700,001+	8.46		800,000	6768.00	\$ 1,709,664.48	\$ 1,282,248.36	\$ 854,832.24
715	Single Tenant Office Building	11.50		100,000	1150.00	\$ 290,501.50	\$ 217,876.13	\$ 145,250.75
720	Medical-Dental Office Building	34.17		30,000	1025.10	\$ 258,950.51	\$ 194,212.88	\$ 129,475.26
730	Government Office Building	68.93		20,000	1378.60	\$ 348,248.15	\$ 261,186.11	\$ 174,124.07
733	Government Office Complex	25.00		140,000	3500.00	\$ 884,135.00	\$ 663,101.25	\$ 442,067.50

Table 8-10
SYSTEMS DEVELOPMENT CHARGE CALCULATIONS
Proposed SDC for City of Madras for Sample Developments

ID #	Land Use	Trip Rate	Unit per TGSF unless otherwise	Assumed Size Sq. ft.	Calculated Trips	100% Recovery	75% Recovery	50% Recovery
750	Office Park	11.42		200,000	2284.00	\$ 252.61	\$ 189.46	\$ 126.31
760	Research & Development Center	7.70		200,000	1540.00	\$ 576,961.24	\$ 432,720.93	\$ 288,480.62
770	Business Park	14.37		200,000	2874.00	\$ 389,019.40	\$ 291,764.55	\$ 194,509.70
812	Building Supply & Lumber Store	30.56		15,000	458.40	\$ 726,001.14	\$ 544,500.86	\$ 363,000.57
814	Specialty Retail Center	40.67		20,000	813.40	\$ 115,796.42	\$ 86,847.32	\$ 57,898.21
815	Discount Store	70.13		50,000	3506.50	\$ 205,472.97	\$ 154,104.73	\$ 102,736.49
816	Hardware-Paint Store	51.29		20,000	1025.80	\$ 885,776.97	\$ 664,332.72	\$ 442,888.48
817	Nursery (Garden Center)	36.08		10,000	360.80	\$ 259,127.34	\$ 194,345.50	\$ 129,563.67
820	Shopping Center					\$ 91,141.69	\$ 68,356.27	\$ 45,570.84
	0-10,000 sq. ft.	167.59		10,000	1675.90	\$ -	\$ -	\$ -
	10,001-50,000	91.65		40,000	3666.00	\$ 423,349.10	\$ 317,511.82	\$ 211,674.55
	50,001-100,000	70.67		80,000	5653.60	\$ 926,068.26	\$ 694,551.20	\$ 463,034.13
	100,001-200,000	54.50		150,000	8175.00	\$ 1,428,155.90	\$ 1,071,116.92	\$ 714,077.95
	200,001-300,000	46.41		250,000	11602.50	\$ 2,065,086.75	\$ 1,548,815.06	\$ 1,032,543.38
	300,001-400,000	42.02		350,000	14707.00	\$ 2,930,907.53	\$ 2,198,180.64	\$ 1,465,453.76
	400-001-500,000	38.65		450,000	17392.50	\$ 3,715,135.27	\$ 2,786,351.45	\$ 1,857,567.64
	500,001-600,000	36.35		550,000	19992.50	\$ 4,393,519.43	\$ 3,295,139.57	\$ 2,196,759.71
	600,001-800,000	33.88		700,000	23716.00	\$ 5,050,305.43	\$ 3,787,729.07	\$ 2,525,152.71
	800,001-1,000,000	32.09		900,000	28881.00	\$ 5,990,898.86	\$ 4,493,174.07	\$ 2,995,449.38
	1,000,001-1,200,000	30.69		1,100,000	33759.00	\$ 7,295,629.41	\$ 5,471,722.06	\$ 3,647,814.71
	1,200,001-1,400,000	29.56		1,300,000	38428.00	\$ 8,527,860.99	\$ 6,395,895.74	\$ 4,263,930.50
	1,400,001+	28.61		1,500,000	42915.00	\$ 9,707,297.08	\$ 7,280,472.81	\$ 4,853,648.54
831	Quality Restaurant	96.51		7,000	675.57	\$ 10,840,758.15	\$ 8,130,566.61	\$ 5,420,379.08
832	High-Turnover (Sit Down) Restaurant	205.36		7,000	1437.52	\$ 170,655.74	\$ 127,991.80	\$ 85,327.87
833	Fast Food Restaurant w/o Drive Thru	786.22		2,000	1572.44	\$ 363,131.93	\$ 272,348.95	\$ 181,565.96
834	Fast Food Restaurant With Drive Thru	632.12		2,000	1264.24	\$ 397,214.07	\$ 297,910.55	\$ 198,607.03
835	Drinking Place	15.49		3,000	46.47	\$ 319,359.67	\$ 239,519.75	\$ 159,679.83
						\$ 11,738.79	\$ 8,804.09	\$ 5,869.39

Table 8-10
SYSTEMS DEVELOPMENT CHARGE CALCULATIONS
Proposed SDC for City of Madras for Sample Developments

ID #	Land Use	Trip Rate	Unit per TGSF unless otherwise	Assumed Size Sq. ft.	Calculated Trips	100% Recovery	75% Recovery	50% Recovery
840	Automobile Care Center	26.35 *		10,000	263.50	\$ 66,562.74	\$ 49,922.05	\$ 33,281.37
841	New Car Sales	47.91		25,000	1197.75	\$ 302,563.63	\$ 226,922.72	\$ 151,281.81
844	Service Station	680.45 *		1,000	680.45	\$ 171,888.47	\$ 128,916.36	\$ 85,944.24
845	Service Station w/Convenience Mkt	743.80 *		1,000	743.80	\$ 187,891.32	\$ 140,918.49	\$ 93,945.66
846	Service Station w/Con Mkt & Car Wash	688.88 *		1,500	1033.32	\$ 261,026.97	\$ 195,770.22	\$ 130,513.48
847	Car Wash	200.00 *		1,500	300.00	\$ 75,783.00	\$ 56,837.25	\$ 37,891.50
848	Tire Store	47.15 *		5,000	235.75	\$ 59,552.81	\$ 44,664.61	\$ 29,776.40
850	Supermarket	87.82 *		40,000	3512.80	\$ 887,368.41	\$ 665,526.31	\$ 443,684.20
851	Convenience Market (24-hours)	737.99		2,000	1475.98	\$ 372,847.31	\$ 279,635.48	\$ 186,423.65
854	Discount Supermarket	69.74 *		80,000	5579.20	\$ 1,409,361.71	\$ 1,057,021.28	\$ 704,680.86
861	Discount Club	78.02		100,000	7802.00	\$ 1,970,863.22	\$ 1,478,147.42	\$ 985,431.61
870	Apparel Store	37.00 *		5,000	185.00	\$ 46,732.85	\$ 35,049.64	\$ 23,366.43
890	Furniture Store	4.34		30,000	130.20	\$ 32,889.82	\$ 24,667.37	\$ 16,444.91
895	Video Arcade	40.00 *		3,000	120.00	\$ 30,313.20	\$ 22,734.90	\$ 15,156.60
911	Walk-in Bank	140.61		6,000	843.66	\$ 213,116.95	\$ 159,837.71	\$ 106,558.48
912	Drive-in Bank	265.21		3,000	795.63	\$ 200,984.09	\$ 150,738.07	\$ 100,492.05
	Home Occupation			n/a		\$0	\$0	\$0

NOTES: * Indicates Weekday Rate Derived From Other Data
TGSF = Thousands of Gross Square Feet

Note that in Table 8-10, residential development SDC fees would be based on the number of dwelling units (DU's). As proposed in Table 8-10, almost all commercial and industrial uses would be charged based upon building size. The sizes listed in Table 8-10 are only examples. In actual practice, the city building official or planner will meet with the developer or owner to determine the appropriate land use category and actual building size from which the SDC fee is calculated.

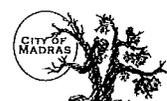
Cities or counties are sometimes concerned that their SDC will discourage desired development and choose to adjust the methodology as a matter of policy. In doing so, these agencies also accept the fact that by lowering SDC fees, they will need to find other funding sources to pay for needed transportation projects. Besides the option of choosing a lower recovery percentage, the City may consider other methods of reducing transportation SDC fees. Some of the options the City might consider are:

- Adjustments to account for “passer by” trips;
- Combining specific land uses into broader development categories; or
- Placing “caps” or maximums on the trip generation rate.

An adjustment to account for “passer-by” trips has an impact on commercial developments. For some uses within the retail sector, a variety of studies indicate some trips are “passer-by” trips. That is, the trip to an individual business is merely an intermediate stop as part of a longer trip made by a motorist who is passing-by. The argument is that since the motorist was using the street anyway, a lesser impact on the street system occurs than would with a non-passer-by trip. The only employment sector for which a passer-by component has been identified is the retail sector. Furthermore, not all retail businesses have a passer-by component. Using a passer-by adjustment would have no impact on SDC fees for residential development.

Another possibility for reducing the SDC fees for some businesses involves combining some categories. For example, careful examination of Table 8-10 reveals that restaurants have a wide range of trip generation rates. Fast food restaurants generate approximately seven times as many trips per thousand square feet than do quality restaurants. In an effort to encourage fast food restaurants, some cities establish a single “restaurant” category and apply the lower trip generation rate from the “quality restaurant” category. In doing so, these cities forego much of the SDC revenue from the development and must find other funding sources to accommodate the transportation needs caused by that restaurant.

Yet another common approach used by cities is to establish a “cap” or maximum rate to be used in the calculation of trips. This is sometimes set at 200 or 300 trips per thousand square feet. This has the effect of limiting the fees collected from fast food restaurants and convenience markets. Like other adjustments, a cap on trip rates reduces SDC fee collections and forces the cities to find other funding sources.



The SDCs stated above are substantially higher than those currently levied by the City of Madras. Additional types of funding will need to be considered in order to reduce the SDC requirements. The City will need to make a determination on what levels of SDCs best fit the City's overall growth strategy and development policies.

While an increased SDC fee program will provide increased annual revenues to the City for financing related capital projects, they will most likely not match exactly the timing of required capital projects. The City has two options for funding transportation projects depending on the timing of required capital. If the increased SDC inflows are initially greater than the capital requirements, then the City can build up a larger SDC fund balance in order to pay for those costs. If required transportation related project costs outpace inflows of charges, then some type of debt financing based on SDC and other revenues will need to be pursued.

Since SDCs are a less stable form of revenue than more secure forms such as property taxes, the City of Madras will likely need to secure debt paid by the SDC program with additional forms of revenue such as gas tax receipts. In the event that future SDC inflows were not sufficient to pay required debt service, then investors would have claim on additional pledged City revenues. Even with the pledge of other revenues, the City would have a higher cost of borrowing than it would with general obligation debt in order to compensate investors for the additional perceived risk associated with purchasing the City's SDC-based bonds.

General Obligation Debt Secured By Property Taxes

General obligation bond financing secured by property tax revenues is a common method of financing road improvements. Due to the tax's strong security, general obligation bonds are the least costly debt-financing tools available to local governments.

Oregon revised statutes provide that the total outstanding general obligation indebtedness of a city not exceed three percent of the city's true cash value. Bonds issued for water, sewer, and utility purposes are excluded from the 3% limitation. Based on the City's 1995 true cash value of \$138 million and netting out legal deductions, the City's debt limit would be just over \$4 million (Table 8-11). This is the remaining capacity that the City has available to issue additional general obligation debt for transportation or any other public improvements. Because the City is growing, it should be able to add more assessed value in future years to its tax roll and be able to increase the issuance limit for general obligation debt.

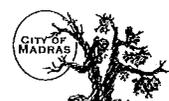


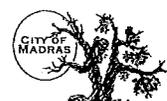
Table 8-11
City of Madras Street Fund Calculation of Legal Debt Limit

Time Cash Value	\$138,000,000
	<u> x 3%</u>
	\$ 4,140,000
Current Bonded Debt (Less Legal Deductions)	
Industrial Park Bonds	
Phase 1	- \$500,000
Phase II	- \$200,000
Sewer Bonds	- \$1,650,000
Net Debt Subject to 3% Limitations	\$0
Amount Available for Future Indebtedness	\$ 4,140,000

Given the City's current debt limitation, bonds to cover the cost of some of the transportation improvement options can be issued up to \$4,000,000. The role of general obligation bond financing in the City's overall funding program will be dependent on the willingness of the Council to dedicate some or all of the City's debt capacity to street improvements. The City will have the ability to issue GO bonds, with repayment by SDC fees. Since these bonds will be secured by the full faith of the City, the bond rates will have a lower interest rate. In addition, this funding technique would not require an increase to the City property tax rate.

MADRAS TRANSPORTATION SYSTEM PLAN FUNDING RECOMMENDATIONS

In the funding requirements section, a total of \$17.5 million in State and Local transportation improvement projects were identified (Table 8-8). This total includes the funds needed for both State highway and local street system improvements. The analysis assumed that ODOT would continue to be the primary funding agency for the \$5.4 million identified for improvements to US Highway 97 and 26 within the study area. ODOT conducted a detailed study of possible improvement options for the US Highway 97/26 intersection. This analysis assumed that any selected option would cost \$4 million dollars. The City of Madras, with some possible financial assistance from Jefferson County, would have primary funding responsibility for the \$12,133,140 in local transportation system improvements during the next 20 years.



The recommended funding techniques for the Madras TSP have been detailed in the proceeding section. Based on an analysis of historic local funding techniques, it is expected the City of Madras will not be able to fund the TSP transportation system improvement projects unless existing fees are increased and new funding sources are dedicated towards transportation. Even with the City of Madras, Jefferson County, and ODOT adopting new funding techniques, it may be difficult to fund all the TSP projects during the 20 year planning cycle. The City may want to consider a process to prioritize the local transportation system funding based on a further analysis of available funding.

The City of Madras, Jefferson County, and ODOT should implement the following actions to fund the TSP projects:

City of Madras

Increase Transportation SDC Fee

It is recommended that the City increase the current transportation SDC fee by 50 to 75 percent for new development. This action will enable Madras to finance \$5.0-7.6 million of the local TSP improvement projects.

Jefferson County Funding Request

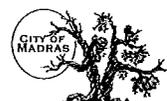
It is recommended that the City request that Jefferson County provide future funding to improve all non-city urban roads within the Madras UGB to city standards. This funding would be used to upgrade existing county roads and to extend future roads to improve the local street grid system.

General Obligation Bond Financing

It is recommended that the City use a portion of the City's bonding debt authority to issue General Obligation bonds to fund a portion of the TSP projects. The bonds should be secured with future SDC fee revenues to make the bonds attractive to investors. The funds obtained through a GO bond sale should be dedicated towards local street improvement projects identified within the TSP.

Local Gasoline Tax

It is recommended that the City adopt a 1 - 2 cent local gasoline tax dedicated towards maintenance of the transportation system.



ODOT Off-System Funding

It is recommended that the City request ODOT to use Off-System funds to finance a portion of the local street improvements that specifically reduce traffic on either US Highway 97 or 26 within the TSP boundaries.

Street Improvement LIDs

It is recommended that Madras implement a comprehensive Local Improvement District program targeted towards walkway improvements along city streets.

Jefferson County

Systems Development Charges (SDC) Fee

It is recommended that Jefferson County continue their evaluation of a countywide transportation SDC. As part of the countywide evaluation, it is also recommended that Jefferson County implement a transportation SDC for the Madras TSP planning area. Fee revenues received from new development within the Madras TSP area should be dedicated to the basic street grid improvements identified in the TSP. These county generated funds can be used to finance county road improvements that are part of the basic street grid in the Madras Urban Area.

Local Gas Tax

It is recommended that Jefferson County consider passage of a local gasoline tax dedicated to transportation improvements. A portion of these gas tax revenues should be used to finance the local street grid improvements within the TSP boundaries.

Street Design Standards

It is recommended that Jefferson County amend the City/County Urban Growth Area Management Agreement (UGAMA) to require city street design standards for new development within the Madras Urban Growth Area.



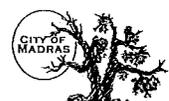
Oregon Department of Transportation

North US Highway 97 / 26 Intersection

It is recommended that ODOT continue their evaluation of the North US Highway 97/26 intersection. When a recommended improvement option has been identified and approved, the Madras TSP will need to be amended.

Off-System Funding

It is recommended that ODOT continue the evaluation of funding off-system improvements in the Madras TSP area. Local street improvement projects that will reduce use of either US Highway 97 or 26 should be considered for possible future funding.



CHAPTER 9: RECOMMENDED POLICIES AND ORDINANCES

In 1991, the Oregon Transportation Planning Rule (TPR) was adopted to implement State Planning Goal 12 (Transportation). The TPR was amended in May 1995 and September 1995. The TPR requires jurisdictions to adopt ordinances that support all transportation modes. In addition, the TPR requires all jurisdictions to complete a Transportation System Plan, and then adopt ordinances to implement that plan.

The City of Madras has previously adopted ordinances that generally support bicycle and pedestrian facilities, as directed by the TPR in Section 660-12-045(3). Recommendations for additional detail and clarification are included in this Chapter. In addition, this TSP recommends access management standards and street standards that should be implemented by policy and ordinance.

Jefferson County has not yet adopted ordinances to implement the TPR. For the portion of the Madras TSP that is included in the Madras UGB, the ordinances recommended for the urban area will apply. For the portions of the TSP that are located outside of the UGB, rural ordinances are recommended.

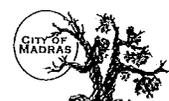
In addition to meeting the requirements of the TPR, the City of Madras is examining the potential for establishing mixed-use zones and possibly higher densities to mitigate some of the expected growth impacts on the transportation system. A suggested set of ordinances for providing some of these features are discussed following the Elements required by the TPR.

Finally, like many growing communities Madras has been considering how to best measure the potential impacts of rezoning and development on the transportation system. An ordinance that helps guide when a traffic impact study should be completed is included in this chapter for consideration.

ELEMENTS REQUIRED BY THE TRANSPORTATION PLANNING RULE

The applicable portion of the Transportation Planning Rule is found in Section 660-12-045 - Implementation of the TSP, which is included in Appendix H. In summary, the TPR requires that local governments revise their land use regulations to implement the TSP in the following manner:

- Amend land use regulations to reflect and implement the TSP.
- Clearly identify which transportation facilities, services, and improvements are allowed outright, and which will be conditionally permitted or permitted through other procedures.



- Adopt land use or subdivision ordinance measures, consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their identified functions, including the following topics:
 - Access management and control;
 - Protection of public use airports;
 - Coordinated review of land use decisions potentially affecting transportation facilities;
 - Conditions to minimize development impacts to transportation facilities;
 - Regulations to provide notice to public agencies providing transportation facilities and services of land use applications that potentially affect transportation facilities;
 - Regulations assuring that amendments to land use applications, densities, and design standards are consistent with the TSP.

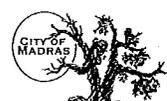
- Adopt land use or subdivision regulations for urban areas and rural communities to provide safe and convenient pedestrian and bicycle circulation and bicycle parking, and to ensure that new development provides on-site streets and accessways that provide reasonably direct routes for pedestrian and bicycle travel.

- Establish street standards that minimize pavement width and total right-of-way.

These elements are discussed in the following sections, where they are grouped by similarity in terms of appropriate policy and ordinance.

Approval Process for Transportation Facilities

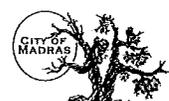
Section 660-12-045 (1) of the TPR requires that jurisdictions amend land use regulations to conform to the jurisdiction's adopted TSP. This section of the TPR is intended to clarify the approval process for transportation-related projects. Madras and Jefferson County must consider the level of review necessary for transportation projects, and include policy and ordinance language, such as the following recommendations, to give clear guidance:



1. Recommended Policies for Approval Process

Policies should clarify the approval process for different types of projects. It is recommended that the following policies be recommended as part of adopting the TSP:

- A. Changes in the specific alignment of proposed public road and highway projects shall be permitted without plan amendment if the new alignment falls within a transportation corridor identified in the TSP.**
- B. Public road and highway projects involving the operation, maintenance, repair, and preservation of existing facilities that are consistent with the TSP, the classification of that roadway and approved road standards shall be allowed without land use review, except where specifically regulated (i.e., within a floodplain).**
- C. Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with the TSP, the classification of the roadway and approved road standards shall be allowed without land use review.**
- D. When uses permitted outright under ORS 215.213(1)(m) through (p) and ORS 215.283(1)(k) through (n) are consistent with the TSP, the classification of the roadway and approved road standards, they shall be allowed without land use review.**
- E. Where changes in the frequency of transit, rail and airport services are consistent with the TSP, they shall be allowed without land use review.**
- F. For State projects that require an EIS or EA, the draft EIS or EA shall serve as the documentation for local land use review, if required. The appropriate procedure shall be followed:**
 - (1) Where the project is consistent with the TSP, formal review of the draft EIS or EA;**
 - (2) Where the project is consistent with the TSP, formal review of the draft EIS or EA and concurrent or subsequent compliance with applicable development standards or conditions;**



- (3) **Where the project is not consistent with the TSP, formal review of the draft EIS or EA and concurrent completion of necessary goal exceptions or plan amendments.**

2. Recommended Ordinances for Approval Process

Once the Madras area has completed its TSP, there are two directions that the City and County may take to govern review of transportation projects. The City and County can decide that all projects identified in the TSP are permitted outright, with no further land use review, and subject only to the standards established by the Plan. This is the simplest approach, requiring the least amount of administration. This approach is recommended for the portion of the project area that is outside of the UGB, since all major projects will be associated with the State Highway and be subject to ODOT's review process.

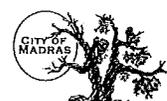
For projects within the UGB and urban portion of Madras, however, there are significant differences in level of detail provided for the projects included in the TSP and the studies that are usually required for construction. For example, it is not possible to clearly identify the amounts of grading, cuts and fills, vegetation removal, or other environmental impacts in the TSP. These are frequently issues of great concern to the community. Clear identification of the impacts of a project through the land use review process affords the best opportunity to build community support and develop mitigation measures, if needed. Also, it is important to note that some transportation projects in rural areas may require goal exceptions or other findings to address State statutes or rules.

Therefore, it is recommended that the City of Madras and Jefferson County review transportation projects within the UGB as regulated land use actions, using conditional use language as contained in Appendix H. This language is recommended for inclusion in the supplementary provision section or as a new section within the development code.

3. Protecting the Existing and Future Operation of Facilities

Section 660-12-045(2) of the TPR requires that jurisdictions protect future operation of transportation corridors. For example, an important arterial for through traffic must have that function protected in order to meet the community's identified needs. In addition, the proposed function of a future roadway must be protected from incompatible land uses. It is also important to preserve the operation of existing and proposed transportation facilities, such as airports, that are vulnerable to the encroachment of incompatible land uses. A set of proposed ordinances to protect the function of general use airports is included below.

Other future transportation facilities that Madras may wish to protect include the space and building orientation necessary to support future transit, and right-of-



ways or other easements for accessways, paths, and trails. Policies are suggested below that will demonstrate the desire of the community to protect these transportation facilities.

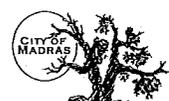
Protection of existing and planned transportation systems can be provided by ongoing coordination with other relevant agencies, adhering to the road standards recommended in Chapter 7 of this Plan, and applying the policies and ordinances suggested below.

A. Recommended Policies for Protection of Transportation Facilities

- 1. The function of existing and planned roadways as identified in the Transportation System Plan shall be protected through the application of appropriate access control measures.**
- 2. Land use decisions shall include a consideration of their effect on existing or planned transportation facilities.**
- 3. The function of existing or planned roadways or roadway corridors shall be protected through the application of appropriate land use regulations; for example, residential uses shall not have direct access off of a proposed arterial.**
- 4. The function of existing or planned general use airports shall be protected through the application of appropriate land use designation, particularly as it pertains to airport-compatible uses.**
- 5. The function of existing or planned transit shall be protected by identifying potential transit corridors and encouraging transit-compatible land uses and site planning (i.e., retaining space for bus pull-outs and orienting major new buildings to the street with good pedestrian access).**
- 6. The potential to establish or maintain accessways, paths, or trails shall be considered prior to the vacation of any public easement or right-of-way.**

B. Recommended Access Control Ordinances

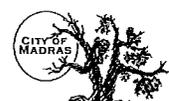
Access Management standards are recommended in Chapter 7 of this TSP. Appendix K contains recommended policies and ordinance to support the access management standards.



4. Recommended Policies to Protect Public Use Airports

Section 660-12-045(2)(c) of the TPR requires all jurisdictions to adopt measures to protect public use airports. The following are examples of recommended policies to protect airports:

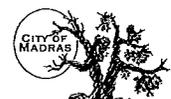
- A. To avoid danger to the public safety from potential aircraft accidents, commercial and residential uses resulting in concentrations of people shall not be permitted beneath the airport approach surfaces and an area within 500 feet parallel from the runway centerline.**
- B. Land uses around the Madras Airport shall be required to provide an environment that will not be adversely affected by noise and safety problems and will be compatible with the airport and its operations.**
- C. The Madras Airport is recognized as an important transportation facility. Its operations, free from conflicting land uses, is in the best interests of the citizens of the City of Madras and Jefferson County; therefore, incompatible land uses will be prohibited on the lands adjacent to the airport.**
- D. The City of Madras shall encourage cooperation between the City, Jefferson County, and the Oregon Department of Transportation; Aeronautics Section when reviewing any land uses development near the Madras Airport.**
- E. The City of Madras, Jefferson County, and the Oregon Department of Transportation, Aeronautics Section shall work together in developing an Airport Master Plan for the Madras Airport.**
- F. The City of Madras will cooperate and coordinate with Jefferson County, and the Oregon Department of Transportation, Aeronautics Section in the protection of the Madras Airport and future expansion areas from potential adverse effects posed by incompatible land uses.**
- G. The City of Madras and Jefferson County shall create local Airport Advisory Committees for each airport. This committee shall be responsible for advising the sponsors during the development of Airport Master plans, implementing ordinances or in individual land use actions.**



- H. The land use element of the Madras Airport Master Plan shall become part of this comprehensive plan and guide land use decision making in the vicinity of these transportation facilities.
- I. The Airport Runway Protection Zones shall be protected from development that could conflict with aircraft approach safety, or threaten surrounding development.
- J. Development in highly hazardous areas, such as land within a floodway or under the Airport Runway Protection Zone will be restricted or prohibited.
- K. Because of potential bird hazards to airborne aircraft, land uses beneath designated airport approach surfaces within 500 feet off the approach end of runway(s) accommodating piston engine aircraft, and within 10,000 feet of the approach end of runway(s) accommodating jet aircraft shall not create water impoundments, sanitary landfills, or sewer treatment plants.
- L. The City of Madras and Jefferson County shall adopt and implement an Airport Overlay Zone supporting land use compatibility around the Madras Airport.
- M. The City of Madras and Jefferson County support:
 - (1) Land Use Zoning with respect to the Airport land use plan and noise contours;
 - (2) A comprehensive capital-improvements program for land acquisition for airport expansion and safety; and
 - (3) Frequent updating of the Airport Master Plan and related land use plans to keep the planning program current with changes in community goals.

5. Recommended Ordinance to Protect Public Use Airports

Airport overlay zones are commonly used to protect smaller public use airports. Appendix L contains a recommended Airport Overlay Zone developed by the Oregon Department of Transportation, Aeronautics Section.



6. Process for Coordinated Review of Land Use Decisions

A lack of coordination between State and local decision processes can result in costly delays and changes in public road and highway projects, as well as some maintenance and operation activities. Section 660-12-045(2)(d) of the TPR requires that jurisdictions develop a process for the coordinated review of land use decisions affecting transportation facilities. The following recommended policies would demonstrate the community's desire to establish coordinated review. Ordinance language for coordinated review is provided within the suggested ordinances for Access Management.

7. Recommended Policies for Coordinated Review

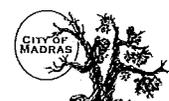
A. The City of Madras / Jefferson County shall coordinate with the Department of Transportation to implement the highway improvements listed in the Six-Year Highway Improvement Program that are consistent with the TSP and comprehensive plan.

B. The City of Madras / Jefferson County shall consider the land use findings of ODOT's draft EISs and EAs as integral parts of the land use decision-making procedures. Other actions required, such as a goal exception or plan amendment will be combined with review of the draft EA or EIS and land use approval process. In addition, if a project must comply with standards or conditions to be allowed in a particular development zone, these conditions and standards will be applied during review of the draft EIS or EA.

8. Process for Applying Conditions to Development Proposals

Section 660-12-045(2)(e) of the TPR requires that jurisdictions develop a process that allows them to apply conditions to development proposals in order to minimize impacts on transportation facilities. These conditions are largely those that would be covered by the access management standards as suggested in Appendix L.

In addition, the Site Plan review process of the City of Madras and Jefferson County Codes should include a requirement to provide data on the potential traffic impacts of a project through a traffic impact study or, at the minimum, an estimation of the number of trips expected to be generated. Recommended language to be included under Site Plan Criteria can be found in Appendix J.



9. Regulations to Provide Notice to Public Agencies

A notice typically initiates review of land use actions. The Zoning and Subdivision Ordinances usually defines this process. These ordinances should be amended to provide for Notice to ODOT regarding any land use action that could potentially affect a State facility. Similarly, all actions by a city or county potentially affecting another jurisdiction's road should require notice to that jurisdiction's public works department. In addition, the policy should be to notice providers of public transit and special interest transportation groups such as truckers, railroad, bicyclists, pedestrians, and the disabled on any roadway or other transportation project.

Information that should be conveyed to reviewers is included in Appendix J.

10. Regulations Assuring Amendments are Consistent with the TSP

Section 660-12-045(2)(g) of the TPR requires that jurisdictions develop regulations to assure that all development proposals, plan amendments, or zone changes conform to the TSP. This requirement can be addressed by adding a policy to the Comprehensive Plan, as follows:

- **All development proposals, plan amendments, or zone changes shall conform to the adopted TSP.**

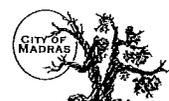
Within the zoning ordinance, development proposals can be addressed through Site Plan Review, discussed above. Zone changes and plan amendments are partially addressed by the standard language found in most codes, such as follows:

- **The applicant must show that the proposed change conforms with the Comprehensive Plan...**

A statement should be added to the local ordinance and policy language governing zone changes and plan amendments as contained in Appendix J.

11. Safe and Convenient Pedestrian and Bicycle Circulation

Bicycling and walking are often the most appropriate mode for short trips. Especially in smaller cities like Madras where the downtown area is compact, walking and bicycling can replace short auto trips, reducing the need for construction and maintenance of new roads. However, the lack of safe and convenient bikeways and walkways can be a strong discouragement for these

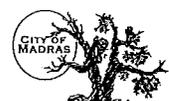


mode choices. The TPR requires that jurisdictions plan for bicycling and walking as part of the overall transportation system.

12. Recommended Policies for Pedestrian and Bicycle Circulation

The current City of Madras and Jefferson County Comprehensive Plans do not provide policies to protect or promote bicycle and pedestrian transportation. To comply with the objectives of the TSP and the TPR, it is recommended that Madras and Jefferson County amend their Comprehensive Plans with policies such as the following to protect, support, and encourage bicycle and pedestrian travel.

- A. In areas of new development the City of Madras / Jefferson County shall investigate the existing and future opportunities for bicycle and pedestrian accessways. Many existing accessways such as user trails established by school children distinguish areas of need and shall be incorporated into the transportation system.**
- B. Bikeways shall be established on all arterials and major collectors within the Madras Urban Growth Boundary.**
- C. Sidewalks shall be established on all arterials and collectors within the Madras Urban Growth Boundary.**
- D. Priority shall be given to accessways to major activity centers within the Madras Urban Growth Boundary, such as the downtown commercial center, schools, and community centers.**
- E. Bikeways and pedestrian accessways shall be connected to local and regional recreation and alternative travel routes.**
- F. Bikeways and pedestrian accessways shall be designed and constructed to minimize potential conflicts between transportation modes and adjacent uses. Design and construction of such facilities should follow the guidelines established by the Oregon Bicycle and Pedestrian Plan.**
- G. Maintenance and repair of existing bikeways and pedestrian accessways (including sidewalks) shall be consistent with the maintenance and repair of motor vehicle facilities.**
- H. Bicycle parking facilities shall be provided at all new multiplex (four units or more) residential, commercial, industrial, recreational, and institutional facilities. Showers and changing areas shall be**



encouraged at all commercial, professional, industrial, and institutional facilities.

- I. A citizens advisory committee shall be established to protect and promote bicycle and pedestrian transportation within the Madras Urban Growth Boundary.

13. Recommended Ordinances for Bicycle Parking

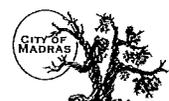
Section 660-12-045(3)(a) of the TPR deals with bicycle parking. Madras Zoning Ordinance #528 Article 4, Section 4.5 establishes the bicycle parking standards for the City of Madras. Article 4, Section 4.5 also adequately addresses the pertinent issues regarding bicycle parking and satisfies the requirements of Section 660-12-045(3)(a) of the TPR. However, because the lack of safe and convenient bicycle parking can waste resources and further discourage bicycling as a transportation mode, as well as irritate non-cyclists, Appendix J contains recommended amendments to Article 4, Section 4.5.

Jefferson County Land-Use Code Section 423 (Off-Street Parking Requirements) does not include provisions for bicycle parking. To remedy this, it is recommended that Jefferson County adopt the bicycle parking requirements established by the City of Madras (including the recommendations stated above) for new multi-family residential developments of four units or more, retail, office and institutional developments, and any park and ride lots within the Madras Urban Growth Boundary. Outside of the Urban Growth Boundary, it is suggested that Jefferson County adopt the bicycle-parking ordinance specified for rural areas.

14. Recommended Ordinances for Bicycle and Pedestrian Circulation and Access

Sections 660-12-045(3)(b), (c), and (d) of the TPR deal with providing facilities for safe and convenient pedestrian and bicycle circulation and access, both within new residential and commercial development, and on public thoroughfares. In order for walking and bicycling to be viable forms of transportation, especially in the smaller urban centers where they can constitute a significant portion of local trips, the proper facilities must be supplied. In addition, certain development design patterns, such as orienting commercial uses to the street and placing parking behind the building, make a commercial district more accessible to non-motorized transportation and to existing or future transit.

The TPR specifies that, at a minimum, sidewalks and bikeways be provided along arterials and collectors in urban areas, and separate bicycle and providing



a "short cut" provides pedestrian facilities where these would safely minimize trips distances. The City of Madras should consider enhancing the existing City codes by adopting the recommended ordinances and additions as contained in Appendix J.

It is also recommended that Jefferson County adopt the Internal Circulation Requirements established by the City of Madras (including the recommendations stated above) as part of new multi-family residential developments of four units or more, commercial, industrial, and institutional developments within the Madras Urban Growth Boundary.

Adding the provisions contained in Appendix J will satisfy the objectives of the TPR by creating more favorable conditions for pedestrians and bicyclists within new developments. While current Design Standards within the Land Use Codes for Madras provide for sidewalks and bike paths, the City may decide that additional provisions could further encourage transportation alternatives.

In addition to the above provisions, the recommended bikeway and sidewalk road standards for new road construction or the reconstruction of existing roads within the Madras Urban Area should be enhanced to include specifications for bikeways and sidewalks as outlined in Appendix J.

MIXED-USE LAND USE ORDINANCES

Mixed-use development allows residential and commercial uses to occur within the same development or property. The practice of mixing uses, especially where somewhat higher densities than typical are allowed, may have a beneficial effect on transportation needs in a community. This is because trips become shorter, encouraging walking or bicycling, and employment is located adjacent to housing.

A mixed-use development is modeled on the small towns, neighborhoods, and villages that were common in the pre-World War II era. It has been observed that many quality of life issues, such as mobility, safety, and lack of congestion are often superior in the remaining enclaves of this type of development still found in older parts of our cities. Appendix M contains a model ordinance for consideration by the City of Madras.

MODEL TRAFFIC IMPACT STUDY ORDINANCE

Appendix N contains an example ordinance for determining when a traffic impact study might be needed.

