

Transportation System Plan

Multnomah County, Oregon

SAUVIE ISLAND AND MULTNOMAH CHANNEL RURAL AREA TRANSPORTATION SYSTEM PLAN

August 2015

Prepared for:

Multnomah County

1600 SE 190th Avenue
Portland, Oregon 97233
(503) 823-4000

Prepared by:

Kittelson & Associates, Inc.

610 SW Alder Street, Suite 700
Portland, Oregon 97205
(503) 228-5230



Transportation System Plan

Sauvie Island and Multnomah Channel Rural Area Transportation System Plan

Multnomah County, Oregon

Draft

August 2015

Transportation System Plan

Sauvie Island and Multnomah Channel Rural Area TSP

Multnomah County, Oregon

Prepared For:

Multnomah County

1600 SE 190th Avenue

Portland, OR 97233

(503) 823-4000

Prepared By:

Kittelson & Associates, Inc.

610 SW Alder, Suite 700

Portland, OR 97205

(503) 228-5230

Project Manager: Susan Wright, P.E.

Project Analyst: Jenny Miner, EIT

Project Principal: Julia Kuhn, P.E.

Project No. 17964

August 2015

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Moving Ahead for Progress in the 21st Century (MAP-21), local government, and the State of Oregon funds.

The contents of this document do not necessarily reflect views or policies of the State of Oregon.

TABLE OF CONTENTS

Preface.....	vii
Introduction.....	2
Goals and Policies	2
Key Transportation Issues.....	3
TSP Update Process.....	5
Existing Conditions.....	7
Plans and Policies.....	7
Existing Transportation System Needs	7
Range of Solutions	12
Transportation System Plan.....	35
Transportation Goals and Policies	35
Improvement Projects	41

LIST OF FIGURES

Figure 1	Functional Classification and Site Vicinity Map	4
Figure 2	TSP Projects and Programs Map.....	43

LIST OF TABLES

Table 1	Solutions Summary Table	12
Table 2	TSP Projects and Programs	41

APPENDICES

- Appendix 1 Plan Development Workshop Report
- Appendix 2 Existing Plans and Policies Review
- Appendix 3 Needs, Opportunities, Constraints, and Tools Technical Memorandum
- Appendix 4 Technical Information Memorandum

PREFACE

The development of this plan was guided by the Project Management Team (PMT) and the Community Advisory Committee (CAC). The PMT and CAC rosters are below, along with members of the consultant team. The CAC members devoted a substantial amount of time and effort and their participation was instrumental in the development of the Sauvie Island and Multnomah Channel Rural Area Transportation System Plan (TSP). The Sauvie Island and Multnomah Channel Rural Area's future transportation system has been enhanced because of their commitment.

Project Management Team

Joanna Valencia <i>Multnomah County</i>	Susan Wright <i>Kittelson & Associates, Inc.</i>
Terra Lingley <i>Oregon Department of Transportation</i>	Kevin Cook <i>Multnomah County</i>

Community Advisory Committee

Cindy Reid <i>Sauvie Island resident</i>	Timothy Larson <i>Floating home resident</i>
Mike Hashem <i>Bella Organics</i>	Cherie Sprando <i>Moorage owner</i>
Roselie Fulkman <i>Floating home resident</i>	Ericka Dickey-Nelson <i>Sauvie Island resident</i>
Stephan Morris <i>Bicyclist</i>	Martha Berndt <i>Sauvie Island resident</i>
Jeremy Sievert <i>Multnomah County Planning Commission</i>	Jan Hamer <i>Moorage owner</i>
Julie Samples <i>Oregon Law Center</i>	Mark Greenfield <i>Sauvie Island resident</i>

Consultant Project Team

Susan Wright <i>Kittelson & Associates, Inc.</i>	Julia Kuhn <i>Kittelson & Associates, Inc.</i>
Jenny Miner <i>Kittelson & Associates, Inc.</i>	Karla Kinglsey <i>Kittelson & Associates, Inc.</i>
Jon Somerville <i>Kittelson & Associates, Inc.</i>	

Section 1

Introduction

INTRODUCTION

The Sauvie Island and Multnomah Rural Area Transportation System Plan (TSP) forms the transportation element of the Multnomah County Comprehensive Plan. The TSP is the master plan for how the rural transportation system will evolve and develop for the next 20 years. The plan's primary focus is on enhancing the safety of the transportation system and improving options for agricultural, visitor, residential, bicycle, and pedestrian travel to and from the rural areas. The TSP supports an economically vital and healthy community.

Transportation is the movement of people and goods from one place to another. Our transportation systems affect nearly every aspect of life. We import the basic necessities of life – food, clothing, and building materials – to our homes. A constant flow of freight supplies our lives. We travel to work and school, and move about to socialize and play. Streets create the framework around which our cities and counties are built. Personal choices about how we travel affect our daily lives and our physical and mental well-being. Transportation is the backbone that supports a community as it grows and evolves.

This TSP covers the areas of the County reflected in Figure 1 and is an update to the policies and projects identified in the 1998 Westside Rural Multnomah County TSP. Figure 1 also depicts the functional classification of the roadways within the study area.

This TSP provides Multnomah County with guidance for operating and improving the multimodal transportation system. The TSP includes transportation policies and priorities for projects and programs to implement over the next 20 years. It also provides a vision for longer term projects that could be implemented, should additional funding become available. The TSP is intended to be flexible to respond to changing community needs and revenue sources over the next 20 years and will be updated approximately every 5 to 10 years. The TSP builds consensus among the County, ODOT, and other agencies on area transportation needs and priority projects and informs local citizens on the projects that will be carried forward for funding from local, state, and federal sources.

GOALS AND POLICIES

Review of the previous TSP, the Multnomah Channel Rural Area Plan (RAP), and input from the Project Management Team (PMT) and Citizen's Advisory Committee (CAC) provided the base for which the goals for this plan were developed. The goals provide a clear vision of what Sauvie Island and Multnomah Channel aims to achieve.

- Goal 1: Implement a transportation system that is safe and efficient in meeting the needs of area residents and those traveling through the area.
- Goal 2: Implement a balanced transportation system that supports all modes of travel.
- Goal 3: Develop a transportation system that supports the rural character of West Multnomah County.
- Goal 4: Develop a transportation system the supports a healthy economy.

- Goal 5: Provide transportation improvements in a timely manner according to funding capability.

KEY TRANSPORTATION ISSUES

The plan focuses on addressing both current as well as year 2035 needs of the transportation system. The central needs are:

- **Reducing conflicts between different modes** – Sauvie Island is served by two-lane narrow rural roadways. A variety of users with diverse needs and varying speeds (e.g., farm equipment, an active cycling community, pedestrians, and motorists) use the roadway, which can result in conflicts between modes.
- **Increasing safety for all system users** – Recent crash history reflects a tendency toward single vehicle crashes with fixed objects after leaving the roadway. One of the fixed object crashes resulted in a fatality.
- **Managing travel demand** – Peak traffic conditions, resulting from seasonal all-day events (such as access to public beaches and pumpkin patches) and limited duration events (such as concerts and farm-to-table dinners), result in traffic congestion and long vehicle queues. During these times, vehicle queues consistently occur at the US 30/Sauvie Island Road intersection and at the access points to key visitor destinations. In addition to causing delays, highly congested roadways concern Island residents because of the potential impact on emergency response times.

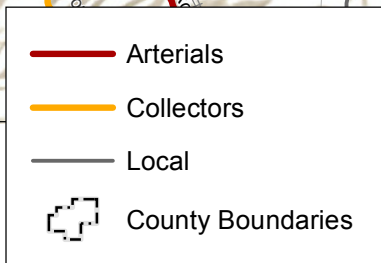
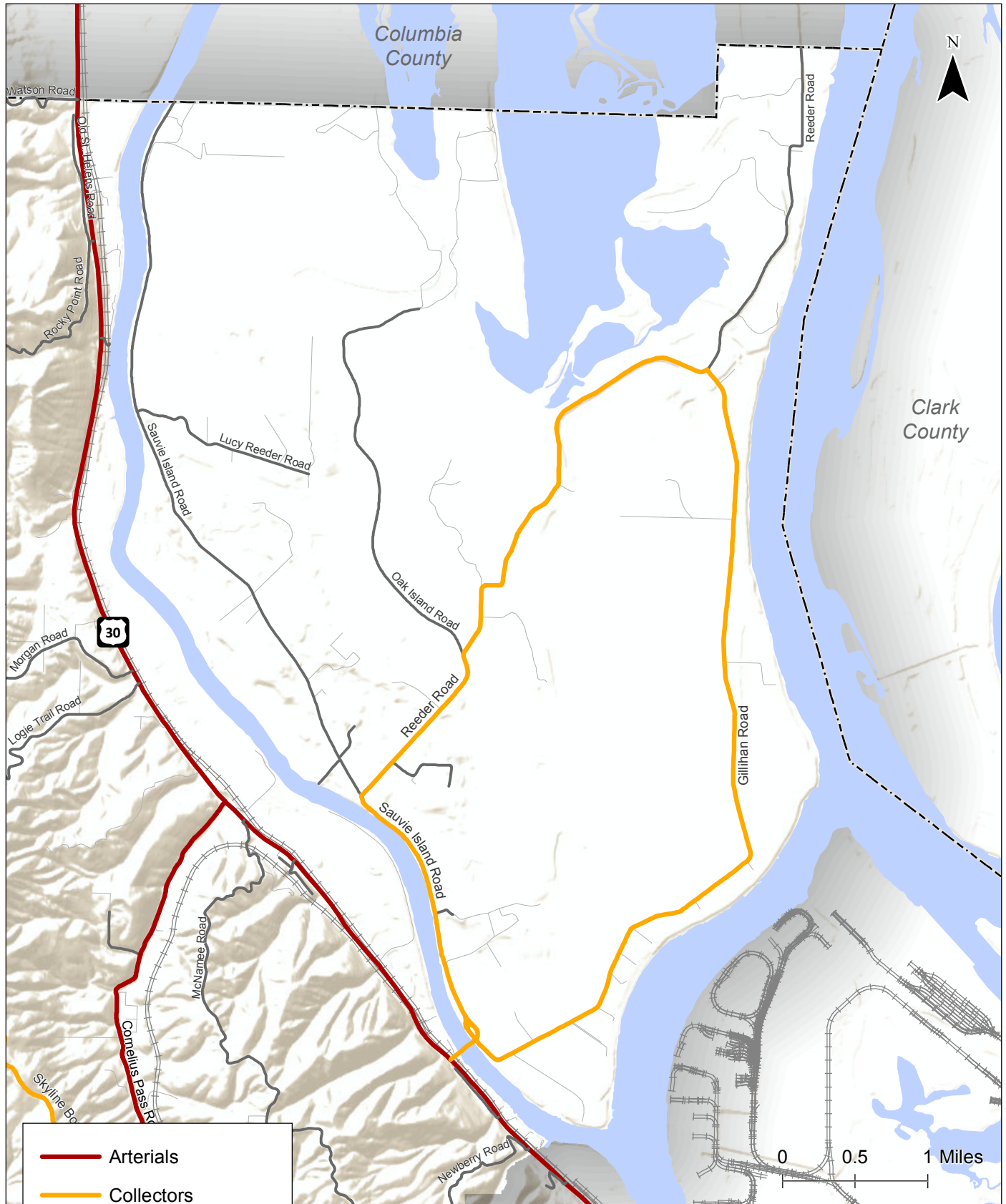
Sections 2 through 4 comprise Volume 1 of the TSP and provide the main substance of the plan. Technical Appendices in Volume 2, which contains the technical memoranda, supplement Volume 1.

Section 2 describes the transportation system existing conditions and needs.

Section 3 presents an overview of each of the solutions included in the TSP.

Section 4 is the Transportation System Plan. This section describes the projects, studies, and programs to implement over the next 20 years.

\\kittleison.com\is\H_Portland\profiles\17694 - Westside Rural Multnomah Co. TSP Update\gis\01 Functional Classifications.mxd - jstormerville - 8/28 AM 8/5/2015



**Functional Roadway Classifications
Multnomah County, Oregon**

**Figure
1**

TSP UPDATE PROCESS

The TSP Update process included a series of technical memoranda, meetings with the Citizens Advisory Committee (CAC), and two plan development workshops. The technical memoranda included a review of existing plans and policies, a traffic data summary, and an overview of the transportation need, opportunities, and constraints. Regular meetings with the PMT allowed for effective coordination throughout the project. All technical memoranda can be found in the Technical Appendices.

The contents of the Needs, Opportunities, Constraints, and Tools memo were presented at a CAC meeting and at a public workshop in April 2015. Based on those meetings, the team developed and summarized feedback in the Draft Plan Development Workshop Report during and after the first workshop and made recommendations on proposed solutions. The team held a second workshop in May 2015 to present potential TSP amendments and discuss the feedback from the previous workshop. Workshop #1 focused on the range of applicable improvement options whereas Workshop #2 focused on details of the recommended treatments and corresponding potential projects. The full workshop report is Appendix 1.

Section 2

Existing Conditions

EXISTING CONDITIONS

The following describes the existing plans, policies, and transportation system needs within the study area of the Sauvie Island and Multnomah Channel Rural Area TSP.

PLANS AND POLICIES

Plans and documents addressing the Sauvie Island and Multnomah Channel Rural Area that include policies relevant to the Transportation System Plan (TSP) include:

- Sauvie Island Drainage Improvement Company policies;
- Sauvie Island & The Multnomah Channel Rural Area Plan *Draft* (1997; 2014 Update Adoption Process);
- Rural Westside TSP (1998);
- Multnomah County Transportation Capital Improvement Plan and Program Fiscal Years 2014-2018 (2014);
- Sauvie Island Wildlife Area Management Plan (2012); and
- Sauvie Island Wildlife Area Beach Use Plan (1993).

The Existing Plans and Policies Review Memo dated March 2015 in Appendix 2 contains the description of these documents and policies.

EXISTING TRANSPORTATION SYSTEM NEEDS

This TSP addresses current transportation issues, particularly related to the increasing number of visitors and the need to provide safe, multimodal transportation facilities for residents, visitors, and businesses. A key component of the plan is identifying a range of potential programs, policies, and projects that the County can implement over the next 20 years. The Needs, Opportunities, Constraints, and Tools memo dated May 2015 in Appendix 3 documents the transportation needs as well as tools, opportunities, and potential constraints to future implementation of a variety of policies, programs and projects.

The following sources provided insights on existing transportation needs:

- public outreach related to the County's TSP Update project scoping work in 2013;
- review of relevant plans and policies (see January 22, 2015 Plans and Policies Memo prepared by Kittelson & Associates, Inc.);
- a review of traffic data (see January 27, 2015 Traffic Data Technical Memo prepared by Multnomah County);
- the implementation needs for transportation related policies in the Draft Sauvie Island & Multnomah Channel Rural Area Plan; and,

- stakeholder interviews from November 2014 through February 2015 conducted by the project team to identify needs.

Based on information from the above efforts, the transportation needs in the study area generally fall into the following categories:

- reducing conflicts between different modes;
- increasing safety for all system users; and,
- managing travel demand.

The following sections outline the relevant needs to consider for each of these categories.

Reducing Modal Conflicts

Sauvie Island is served by two-lane narrow rural roadways. A variety of users with diverse needs and varying speeds (e.g., farm equipment, an active cycling community, pedestrians and motorists) use the roadway, which can result in conflicts between modes. Some of the issues related to these potential conflicts are below.

Roadways on Sauvie Island are operated and maintained by Multnomah County, while ODOT operates Highway 30. Primary travel on the island occurs along a main loop comprised of three rural collector roadways: Gillihan Road, Reeder Road, and Sauvie Island Road. Other roads on Sauvie Island provide access to private property and Oregon Department of Fish and Wildlife (ODFW) lands for recreation and are local roads.

There are no dedicated pedestrian or bicycle facilities along the Island's roadways today, and roadway shoulders are narrow or non-existent in most places. The 1998 Transportation System Plan identified the need for 4 foot shoulders along major segments of Sauvie Island Road, Reeder Road, and Gillihan Road, but the County has not yet implemented these projects. Constraints on most of these roadways include limited right-of-way to provide wider shoulders or a parallel multi-use path and potential improvement costs and construction constraints near the levees create significant barriers to implementation. A complete list of the study area projects included in the County's 2014-2018 Capital Improvement Program (CIP) is provided in the Existing Plans and Policies Review memo in Appendix 2.

Sauvie Island is also a popular destination for recreational cyclists. On the weekends and peak seasons, visitors and residents enjoy cycling along the Island's roadways. In October 2014, daily weekend bicycle volumes were as high as 365 cyclists on Sauvie Island Road north of the Cracker Barrel store. In total, 1,765 cyclists were recorded there during the month of October.

In addition to safer facilities, stakeholders identified the need to provide wayfinding and information related to restrooms, water, and parking locations as well as education and outreach for all road users on sharing and obeying the rules of the road.

Many areas along Sauvie Island Road and Reeder Road are within the Sauvie Island Drainage Improvement Company (SIDIC) levee right-of-way and set back area. Construction along these sections of the roadways require special permitting from the Army Corps of Engineers and can only be considered if they will enhance the structural integrity of the levee. The County or Corps of Engineers would need to determine if construction of a multi-use path parallel to the loop roadways, on the island side of the levee could enhance the structural integrity of the levee and be approved by the Corps.

Enhancing Safety

Both the County's policies and stakeholder feedback identify the importance of improving safety for all transportation system users on Sauvie Island and the Multnomah Channel.

Multnomah County staff reviewed reported crash data from 2007 through 2013 to establish a baseline for identifying potential safety-related improvements. This review revealed the following:

- There was only one reported crash in the Multnomah Channel area that was not located on Highway 30.
- There were no reported crashes involving pedestrians or bicycles on County facilities on Sauvie Island.
- The majority of crashes on Sauvie Island were reported as fixed object/run off the road.
- There were two recorded fatal crashes. One occurred at the Sauvie Island Road/Reeder Road intersection and one occurred along Gillihan Road south of the Reeder Road intersection.
- Areas with a pattern of crashes include:
 - Sauvie Island Road/US 30
 - Sauvie Island Road/Gillihan Road
 - Sauvie Island Road/Reeder Road
 - Reeder Road/Gillihan Road
 - Reeder Road curves
 - Sauvie Island Road along the levee

County staff also reviewed operating speeds along the rural collector roadway system in an effort to understand how speeds and potential speed differentials may affect safety. Most of the roadways have a posted speed limit of 45 miles per hour, with the exception of Gillihan Road which is not currently

posted and as such Oregon's "Basic Rule"¹ applies. Based on a 2014 County speed study, Reeder Road, Gillihan Road, and Sauvie Island Road all have 85th percentile speeds between 44 and 48 miles per hour, which is consistent with the posted speeds. Even with this speed consistency, this TSP includes treatments that can enhance safety by reducing conflicts between vehicles traveling the speed limit with slower moving agricultural vehicles, pedestrians, and cyclists. The Traffic Data Technical Memo in Appendix 4 provides additional information on the crash reports and speed data.

Stakeholder interviews and reviewed documents identified other safety concerns related to the multiple crossings of the railroad that runs north-south between US 30 and the Multnomah Channel. These concerns primarily relate to the lack of active crossing measures, such as gates and flashing lights at these crossings.

Manage Travel Demand

The majority of the year the transportation network primarily serves residents, agricultural uses, and daily business operations on the Island and the rural areas. Average daily traffic volumes on most of the roadways throughout Sauvie Island are typically less than 3,000 vehicles per day. The popularity of the beaches, hunting and fishing areas, recreational cycling opportunities, seasonal festivals, and agri-tourism activities lead to significant fluctuations in daily traffic volumes during the summer and fall peak seasons. During these times, Sauvie Island Road can serve as many as 17,000 vehicles per day and 1,800 cyclists per month. These higher demand periods result in traffic congestion and long vehicle queues, especially at the US 30/Sauvie Island Road intersection and at access points to key visitor destinations. In addition to causing delays, highly congested roadways concern Island residents because of the potential impact on emergency response times.

This TSP includes solutions for managing traffic on Sauvie Island during peak events and seasons to ensure safe multimodal travel while supporting a vibrant agricultural and recreational economy over the next 20 years.

¹ The "Basic Rule" is that you may only drive a speed that is "reasonable and prudent" considering traffic, road, weather and other conditions.

Section 3

Range of Solutions

RANGE OF SOLUTIONS

The project team identified four categories of opportunities to address transportation needs: bicycle and pedestrian facilities, safety, signage and signal treatments, and transportation demand management.

Table 1 summarizes the solutions that are included in the TSP. The following pages provide additional information on each of the solutions. The May 2015 Needs, Opportunities, Constraints, and Tools memo in Appendix 3 contains a full list of solutions identified.

Table 1 Solutions Summary Table

Reference Number	Potential Solutions	Transportation Needs Addressed
Bicycle and Pedestrian Facilities		
BPF-1	Multi-use path	Reduce Modal Conflicts
BPF-2	Advisory bike lane	Reduce Modal Conflicts
BPF-3	Paved shoulder	Reduce Modal Conflicts
BPF-4	Shared-lane roadways	Reduce Modal Conflicts
BPF-5	Bike map	Reduce Modal Conflicts, Manage Travel Demand
Safety		
SA-1	Increased shoulder width	Reduce Modal Conflicts, Additional Safety Issues
SA-2	Curve improvements	Additional Safety Issues
SA-3	Rural intersection improvements	Reduce Modal Conflicts, Additional Safety Issues
SA-4	Railroad crossing improvements	Additional Safety Issues
Signage and Signal Treatments		
SI-1	Wayfinding signage	Reduce Modal Conflicts, Manage Travel Demand
SI-2	Warning/advisory signs	Reduce Modal Conflicts
SI-3	Speed limit signs	Reduce Modal Conflicts, Additional Safety Issues
SI-4	Signal Controller/Timing Plans	Additional Safety Issues
Transportation Demand Management		
D-1	User-generated parking information	Manage Travel Demand
D-2	Real-time parking information	Manage Travel Demand
D-3	Pricing parking permit	Manage Travel Demand
D-4	Parking enforcement	Manage Travel Demand
D-5	Off-island park-n-ride lots	Manage Travel Demand
D-6	On-Island shuttle service	Manage Travel Demand
D-7	Event permit calendar	Manage Travel Demand
D-8	Event-based "TDM" plan	Manage Travel Demand

The following pages serve as a toolbox of information on the four categories of solutions in Table 1. Each solution has one page describing the solution, pros, cons, applicability to the TSP area, and other information.



Bicycle and Pedestrian Facilities

MULTI-USE PATH



Springwater Trail, Portland, OR



Multi-use paths are paved, bi-directional trails separated from roadways that serve both pedestrians and bicyclists. Multi-use paths increase the safety and comfort level of the user. They play an integral role in recreation, commuting, and accessibility due to their appeal to users of all ages and skill levels.

TSP Area Applicability

The main loop road that consists of Sauvie Island Road, Reeder Road, and Gillihan Loop Road could benefit from a multi-use path. A multi-use path on Sauvie Island would improve accessibility for residents on the Island and increase safety for all users including recreational cyclists.

Pros

- Provides facility for both pedestrians and bicyclists in less space than separated facilities.
- Providing separation from motor vehicles can attract pedestrians and cyclists of all ages and abilities.
- Would improve accessibility for residents on the Island and increase safety for all users including recreational cyclists.

Cons

- May result in conflicts between modes in areas with frequent crossings or driveways.
- May result in conflicts between bicyclists and pedestrians.
- When parallel to roadways, the path must be buffered from motorists which requires substantial right-of-way.
- Speed differentials between more experienced cyclists and slower cyclists and pedestrians can cause conflicts on a shared facility.

Design Considerations

- Best suited in areas where roadway crossings can be minimized (such as parallel to travel barriers such as highways, railroad tracks, rivers, shorelines, natural areas, etc.). High-visibility treatments are needed at path crossings.
- A minimum width of 10 feet is recommended for low-pedestrian/bicycle-traffic contexts and would be appropriate for some areas of the Island; 12 to 20 feet should be considered in areas with moderate to high levels of bicycle and pedestrian traffic such as the loop.
- Pavement markings can be used to indicate separate space for pedestrian and bicycle travel.
- May need right-of-way acquisition and levee restrictions may alter design and alignment.
- Permeable paving options could help minimize surface water runoff and be compatible with the rural character of the area.

Complementary Strategies

- Bike map, Wayfinding signage



Bicycle and Pedestrian Facilities

ADVISORY BIKE LANE



,Numansdorp, The Netherlands



Hanover, NH
Photo: Danny Kim,
The Dartmouth

Advisory bike lanes, also known as “suggestion lanes,” are bicycle lanes that motor vehicles can use to pass oncoming motor vehicles after yielding to bicyclists. Advisory bicycle lanes are used in combination with a single center lane (without a centerline) for bi-directional motor vehicle travel on relatively low-volume streets.

TSP Area Applicability

This treatment is applicable to streets with less than 6,000 average daily motorized traffic (ADT) that do not have sufficient width for dedicated bicycle only facilities. Most Sauvie Island roadways have annual average ADT below 3,000; however seasonal traffic peaks result in ADT up to 17,000 vehicles in a day on Sauvie Island Road. Therefore, this treatment is likely to be suitable only on local roads that are not part of “the loop” but that are popular cycling routes.

Pros

- Provides striped bicycle facility on roadways with very limited right-of-way or pavement width.
- Encourages slower motor vehicle speeds and motorists yielding to bicyclists.
- Inexpensive treatment consisting of only signing and striping.

Cons

- Motorists may not initially understand advisory lanes due to limited applications in the US to date; education would be required.
- Does not provide physical protection from vehicles and may not attract bicyclists of all levels.
- Does not improve pedestrian environment.
- No US design guidelines available.

Design Considerations

- Advisory bike lanes can be striped as 5-7 foot lanes with a single center motorized vehicle lane of 10 to 18 feet.
- Explanatory signage may be helpful in US contexts to communicate to motorists that they must yield to bicyclists before passing oncoming vehicles.

Complementary Strategies

- Bike map
- Wayfinding
- Speed limit signs



Bicycle and Pedestrian Facilities

PAVED SHOULDER



A paved road shoulder can serve as a bicycle and pedestrian facility that provides space separated from motor vehicle traffic in rural areas.

TSP Area Applicability

Paved shoulders can be applied to any roadway in the study area but would require special permits to be constructed on roadways on the levee.

Pros

- Provides a space separated from motorists.
- Requires less right-of-way than a separated multi-use path.
- Standard treatment for Multnomah County and equipment for maintenance available.

Cons

- Does not provide physical protection from vehicles and may not be comfortable for all users.
- Shoulders serving other uses, such as disabled vehicles, farm equipment, or pedestrians may require bicyclists and pedestrians to use travel lanes.

Design Considerations

- A 6-foot width is preferred to accommodate bicycle and pedestrian travel, with a 4-foot minimum in constrained areas. Greater widths can be used in higher-speed locations.
- Rumble strips or profiled striping can be used to enhance safety and minimize motorists encroaching on the shoulder.
- May require right-of-way acquisition.
- Levee restrictions may alter design or prohibit construction.

Complementary Strategies

- Bike map
- Wayfinding
- Rumble strips





Bicycle and Pedestrian Facilities

SHARED LANE ROADWAYS



Shared lane roadways are those where motorists and cyclists share the same travel lanes. Shared lane roadways that are part of a designated bicycle network may include shared lane markings (“sharrows”) or signage to indicate the legal presence of bicyclists in the travel lane.

TSP Area Applicability

All of the roadways on Sauvie Island are currently shared facilities. Posting “Bikes on Roadway” signs would indicate to road users that bicyclists may be present and are on the roadway.

Pros

- Allows for bicycle travel when other treatments are not feasible.
- Low- to no-cost.

Cons

- Does not provide any separation from vehicles.
- Without additional traffic-calming treatments, it is likely to attract only strong and fearless bicyclists.
- Does not improve pedestrian environment.

Design Considerations

- Provide guidance signage to alert drivers of the shared road. See warning/advisory signs section.
- Educate drivers on the rules of sharing the road.
- Increase signage and pavement markings.

Complementary Strategies

- Pedestrian path
- Bike map



Safety Treatments

INCREASED SHOULDER WIDTH



A wide shoulder can be used to provide a separated space for cyclists and pedestrians, assist with vehicular recovery during driver inattentiveness, assist with incidence response and emergency situations, and provide space for motorists to bypass slow moving vehicles such as farm equipment.

TSP Area Applicability

During the past five years, nearly 70 percent of the reported crashes on Sauvie Island were single vehicle crashes. Widening the shoulders could be effective at reducing these types of crashes by providing space for recovery, especially along Reeder Road, Sauvie Island Road, and Gillihan Road.

Pros

- Provides drivers more opportunity to recover before departing the roadway or slow their vehicle to a controlled stop.
- Wider shoulders may be used by pedestrian and bicyclists when other facilities are not present.
- Widening the shoulder could allow for shoulder rumble strips.
- As a current Multnomah County standard, knowledge and equipment for maintenance is available.

Cons

- Additional right-of-way may be required.

Design Considerations

- Adequate right-of-way is necessary.
- Levee restrictions may alter design or prohibit construction.

Complementary Strategies

Safety Treatments

CURVE IMPROVEMENTS



Source: MUTCD

Curve improvements include a variety of treatments that help to inform the driver of the presence and characteristics of curves. Treatments include, but are not limited to, curve warning signs, decreased speed signs, curve delineation posts, and illumination.

TSP Area Applicability

Many of the roads on Sauvie Island are winding with limited warning to drivers of the impending curves. In addition, many of the reported crashes on Sauvie Island occur on or around roadway curves. Providing curve warning signs and delineation posts may help to reduce crashes along Island roadways, especially along Reeder Road and Gillihan Road.

Pros

- Provides advanced notification to road users of location and characteristics of potentially unexpected curves.
- May help to decrease crashes on curves.

Cons

- Contributes to sign clutter.
- Requires additional cost and maintenance

Complementary Strategies

- Increased shoulder width

Safety Treatments

RURAL INTERSECTION IMPROVEMENTS



Intersection improvements include a variety of treatments to help all modes efficiently and safely travel through intersections. Treatments include, but are not limited to changing intersection control type or changing the stop-controlled approaches, adding turn lanes, adding marked or active crossing treatments, and providing adequate roadway illumination.

TSP Area Applicability

Four locations on Sauvie Island would benefit from intersection improvements that help all modes move safely and efficiently on the roadway system. These include:

- Sauvie Island Road/US 30
- Sauvie Island Road/Gillihan Road
- Sauvie Island Road/Reeder Road
- Reeder Road/Gillihan Road

More in depth analysis is necessary to provide recommendations on specific treatments to the intersections.

Pros

- Lighting increases night-time visibility of roadway users and animals and sense of security for all roadway users.
- Possible improved operations of the intersection.

Cons

- Cost of design and construction.
- Potential right-of-way acquisition.
- Increased maintenance costs with signals and illumination

Complementary Strategies

- Shoulder widening
- Rumble strips
- Wayfinding signage

Safety Treatments

RAILROAD CROSSING IMPROVEMENTS



Source: www.iqtrafficcontrol.com



Source: urbanpostmortem.wordpress.com

Railroad crossings can have passive control (devices that mark the location of a crossing such as cross-bucks and yield or stop signs) or active control (devices that mark the location of a crossing and indicate the approach or presence of a train such as flashing lights and gate arms). Active crossings are relatively expensive to install and maintain but provide increased safety compared to a passive crossing.

Design Considerations

For private railroad crossings (those at a driveway or private road), improving the crossing from passive control to active control requires railroad permission and a contract between the property owner and the railroad. Public crossings in Oregon (generally those at a crossing of a public road) are regulated by the Oregon Department of Transportation (ODOT). ODOT's Rail Division follows a federal mandate to consolidate at-grade railroad crossings. The federal direction has resulted in a requirement to close one or more crossings when a new crossing is constructed or an existing crossing is upgraded.

Upgrading crossings to active control in rural areas typically ranges from \$200,000 - \$500,000. In addition, railroad companies typically require crossing owners to pay \$5,000 - \$10,000 per year per crossing in annual maintenance fees to compensate for additional weekly inspections and maintenance required over the life of the crossing.

When railroad crossings are upgraded to active crossings the railroad tracks and the road bed typically also require reconstruction to current standards. The road grade at the crossing must have no more than approximately a three inch rise or fall within 30 feet of either side of the tracks per national standards. This can result in the need to re-grade the roadway or railroad track approaches to the crossing.

TSP Area Applicability

There are approximately eight passive railroad crossings in the study area along Highway 30. Private property owners may be able to get permission to upgrade crossings from the railroad; however, public crossing upgrades will require a plan to consolidate and close one to two other public or private crossings. The best candidates for crossing upgrades are those with flat crossings with good visual clearance.

Pros

- Provide active control and effectively communicates to vehicles, pedestrians, and bicyclists the need to stop at the railroad crossing.

Cons

- Costly and likely to require closure of other crossings.

Complementary Strategies

- Warning/advisory signs

Signage and Signal Treatments

WAYFINDING SIGNAGE



Source: Andy Daleiden, Kittelson & Associates, Inc.



Signage indicating to bicyclists and pedestrians the direction and distance to points of interest along a corridor. Wayfinding signs can also be used to inform drivers of key recreational destinations, parking, etc.

TSP Area Applicability

Provide guidance to motorized and non-motorized users to areas of interest such as types and location of recreation, parking, and other key destinations.

Pros

- Encourages walking and biking by providing access information to major attractions.

Cons

- Additional cost and maintenance.
- Potential for sign clutter.

Design Considerations

- Place in key locations/decision points such as intersections.

Complementary Strategies

- Multi-use paths
- Bike lanes
- Pedestrian paths
- Bike map

Signage and Signal Treatments

WARNING/ADVISORY SIGNS



Source: KAI



<http://msue.anr.msu.edu/>

Signage providing guidance or warning about unexpected conditions for all users of the roadway.

TSP Area Applicability

Signs can be used on Island roadways to inform motorists of bicycles sharing the road, locations of frequent pedestrian crossings, and roadway curvature. Signage may be particularly helpful along those roadways that remain “shared use” as well as areas with limited visibilities of roadway curvature and upcoming intersections.

Pros

- Provides advanced notification to road users of unexpected conditions; i.e. pedestrians entering the roadway, curves, etc.
- Creates more awareness by motorists of the shared use and to look for bicyclists.

Cons

- Contributes to sign clutter.
- Additional cost and maintenance.

Complementary Strategies

- Curve improvements
- Shared lane roadways

Signage and Signal Treatments

SPEED LIMIT SIGNS



Source: KAI

Signage providing guidance on appropriate speeds for traveling the roadway.

TSP Area Applicability

Most roadways have posted speeds today, except Gillihan Road.

Pros

- Alerts the driver to speeds appropriate for the roadway.
- Informs pedestrians and bicyclists about the suitability of the road for their comfort level.

Cons

- Contributes to sign clutter.
- Additional cost and maintenance.

Complementary Strategies

- Shoulder bikeways and shared lane roadways

Signage and Signal Treatments

SIGNAL CONTROLLER/TIMING PLANS



A traffic signal controller runs the signal timing and phase plan for a given traffic signal. Various timing plans can be used for different times of day (e.g. peak and off peak hour), time of years, and special events.

TSP Area Applicability

The existing controller at the intersection of Sauvie Island Road and Highway 30 is programmed but operation has degraded with age. The internal clock that controls the timing plans is faulty. Upgrading the controller to a newer version could provide more effective signal operations.

Pros

- Effective movement of vehicles through an intersection.
- Better efficiency reduces congestion which can lead to safety benefits.

Cons

- Controller upgrades can be expensive.

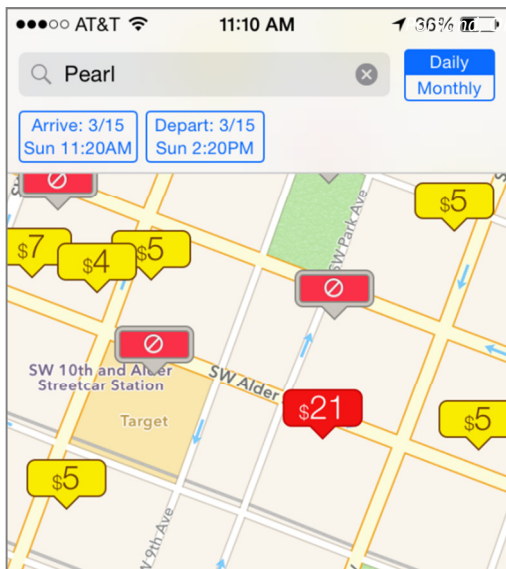
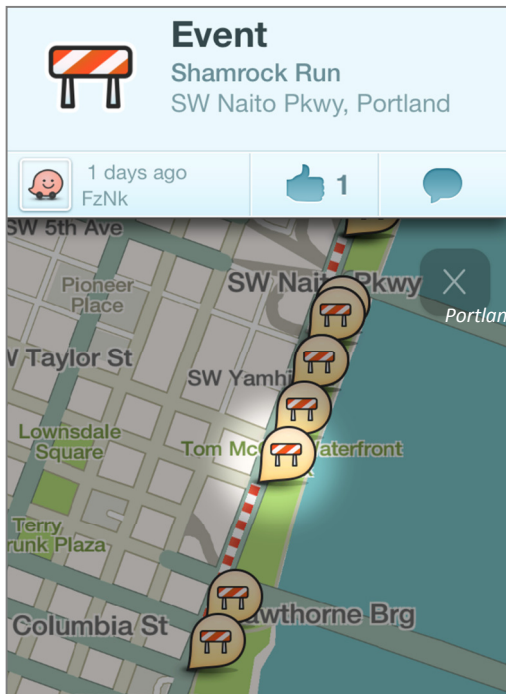


Complementary Strategies

- Event permit calendar
- Event-based TDM plans

Transportation Demand Management

USER-GENERATED PARKING INFORMATION



User-generated parking information would provide visitors and/or event participants with information about public or privately-held parking availability. This information is “shared” amongst system users through “apps” and other electronic means. This type of strategy has been implemented successfully for real-time user-generated traffic information by apps such as Waze, where users can report incidents or other temporary issues affecting traffic.

TSP Area Applicability

On Sauvie Island, this strategy could be implemented through the development of a smart-phone app and corresponding installation of real-time signage at key locations on the Island. These signs could be useful to:

- Visitors arriving at popular locations, such as the beaches, that are to encouraged to log-in to the app and report on the current availability of parking.
- Provide users arriving on the Island with information about parking availability and traffic congestion.
- Business owners and event organizers that can advise potential visitors to come later or park at alternate locations.

Pros

- Can help avoid unnecessary trips when no parking is available.
- After the development of the app and installation of the signage, does not require additional staffing or investment.

Cons

- Relies on users to generate information, which may result in inconsistent or infrequent updates.
- Limited cell phone coverage on the Island. Only users with smartphones and cell service can access.

Design Considerations

- Signage should be visible and easy to understand
- App could be designed with a “points” system and rewards for consistent users that report parking information, such as discounts on permits.

Complementary Strategies

- Parking permit pricing
- Park-N-Ride lots

Transportation Demand Management

REAL-TIME PARKING INFORMATION

Real-time parking information can help avoid unnecessary trips by letting visitors know when and where parking is already fully occupied. Digital displays are frequently used in parking garages, where automated counting or sensing is installed. Lower-tech options are also possible that rely upon a person to update the sign message. This information is provided by a designated staff person or through the use of parking sensors or video, rather than relying on users to report parking availability to other users.

TSP Area Applicability

Due to the predominance of graveled parking on Sauvie Island, it is not currently feasible to install detection or sensor on most parking locations. Instead, this strategy could be implemented through lower-tech methods such as:

- Informational maps of all parking locations can be readily available for visitors to the island, with various locations numbered or color-coded for easy “real-time” information communication
- On the busiest weekends, patrol officers, ODF&W, paid attendants, or volunteers at busy locations could relay information to the Cracker Barrel store, where information about the parking locations shown on the map would be posted for visitors arriving to the Island.
- In cases where popular parking locations are full, an information board could suggest alternate parking locations.
- Video cameras could be installed at key parking areas with complementary displays posted near the entrance to the Island and online.

Pros

- Can help avoid unnecessary trips when no parking is available.
- Provides a low-tech way to provide information to all visitors

Cons

- May require manual updates from people at the locations of parking and a display board, unless video cameras are installed.
- Video cameras may raise privacy concerns

Design Considerations

- Signage with information about parking locations and availability should be positioned so that it is easily understood and visible to visitors entering Sauvie Island.

Complementary Strategies

- Parking permit Pricing
- Park-N-Ride lots

Transportation Demand Management

OPTIMIZE PARKING PERMIT PRICING



Pricing parking is a powerful tool for managing demand. Requiring payment for parking can influence travelers' choice to carpool or use other modes.

TSP Area Applicability

Visitors to Sauvie Island currently pay \$7 for a daily permit to park in wildlife areas on the island. Annual permits cost \$22. Additional strategies for consideration include:

- Permit pricing could be increased during high-traffic times, such as prime weekends, and decreased during lower-traffic times, such as week days or winter months, to help smooth out the flow of visitors.
- Annual permit costs could be increased or split into two "season" permits, with winter season having a much lower cost.
- Requiring permits for all vehicles entering the Island. Resident parking could be free or at a low cost covering only permit administration.
- Additional fees for parking could be collected in popular or congested locations, such as the beaches.

Pros

- Can generate revenue as long as administrative costs are not substantial.
- Is demonstrated to help manage demand, since people are price-sensitive.

Cons

- May be perceived as unfair or bad for business by some Island businesses if all visitors are required to obtain permits. Today, only those visitors desiring to use a public parking facility are required to buy permits.
- Cost of enforcement.

Design Considerations

- Any increases or changes to the pricing structure could be accompanied by an explanation of where the additional revenue will be used. In examples where people are able to see the local benefit of the parking revenue, they are much more likely to support the increased costs.

Complementary Strategies

- Off-Island Park-N-Ride

Transportation Demand Management

PARKING ENFORCEMENT



Regular enforcement of existing parking regulations can improve compliance. If people expect to receive a ticket for improper parking, they are more likely to seek other options.

TSP Area Applicability

Enforcement officers could increase the amount of patrolling and ticketing on peak weekends during the summer in wildlife parking areas or in areas not designated for parking. Communication about the increased enforcement could motivate visitors to follow parking regulations before getting tickets.

Depending on results, enforcement efforts could be limited to specific times or days to minimize the additional staffing investment.

Pros

- Provides an economic incentive to follow the rules on parking locations by fining people for breaking them.
- Can generate additional revenue.

Cons

- Requires parking enforcement staff
- May anger visitors or residents that have been accustomed to more relaxed parking enforcement.

Complementary Strategies

- Parking Information
- Off-Island Park-N-Ride

Transportation Demand Management

OFF-ISLAND PARK-N-RIDE LOTS



Park-n-ride lots offer people a place to park their cars when transferring to a different mode, such as carpooling with another person, bicycling, or taking transit.

TSP Area Applicability

An off-island park-n-ride could be located along Highway 30 south of the island in an industrial area. Partnerships for shared parking could be established for existing private parking that is used primarily during the week. This could enable:

- Beach-goers to form carpools to go to the island, leaving other vehicles at the park-n-ride locations off-island.
- Bicyclists to leave their cars and ride their bicycles from parking locations on Highway 30.
- Provision of shuttle service from the park-n-rides during events or high-traffic weekends.

Pros

- Facilitates use of carpooling and can reduce need for parking on the island.
- Can more effectively utilize off-island parking spaces that are normally used primarily during the week.

Cons

- Would need to negotiate public access to existing location along Highway 30.
- More distant park-n-ride lots may not appeal to bicyclists, since Highway 30 may not be a comfortable bike route for many riders.
- May raise liability issues for parking arrangements on private properties.

Design Considerations

- Signage and online information to promote the park-n-ride lot would need to be prominent to ensure that visitors know its location and that they can use it.

Complementary Strategies

- Shuttle service
- Parking pricing
- Event TDM strategies



Transportation Demand Management

ON-ISLAND SHUTTLE SERVICE



A branded on-island shuttle circulator service could provide access to popular island locations during peak weekend days during the summer.

TSP Area Applicability

- An on-island shuttle service could operate as a circulator during peak weekend days, allowing people to park once and then travel in the shuttle to popular locations. This shuttle could run between the Cracker Barrel store and the beach during the peak summer days. In addition, shuttles could be chartered for particular event weekends, or by large events, to serve special event visitors. In these cases, shuttles could also travel to and from off-island park-n-ride locations.

Pros

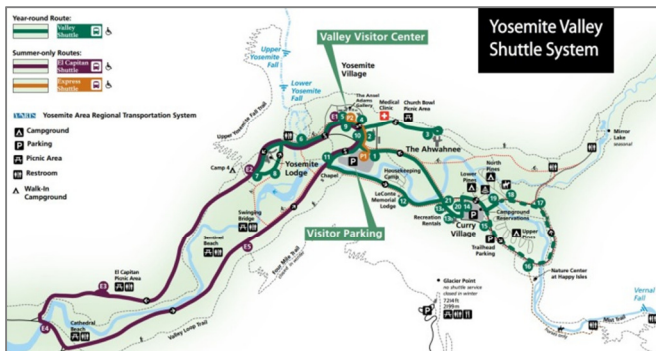
- Could provide an alternative to driving and parking on the island.
- If effectively utilized, could allow for more visitors with fewer traffic and parking impacts on the island.

Cons

- Funding shuttle service may be difficult to sustain.
- Without consistent service, people may not be able to rely on the shuttle being available.

Design Considerations

- Signage and online information to promote the shuttle service would need to be prominent to ensure that visitors know its location and how they should use it.



Transportation Demand Management

EVENT PERMITS / CALENDAR

A system of event permits requires event organizers to register events through a central calendar system. A permit issued for each event states the requirements that each would have to meet.

TSP Area Applicability

On Sauvie Island, where events occur frequently throughout the year, this system could allow for coordination between same day events. This idea builds on the existing voluntary event permit system through the Sauvie Island Community Association and could remain informal or could be administered by a local TMA or by the County. This system could include:

- Events over a certain size limit could be required to implement a transportation demand management (TDM) plan for the event which would outline how the event will utilize any number of different TDM strategies to reduce traffic impacts.
- Provision of incentives, such as partial reimbursement for shuttle costs, for events demonstrating a certain level of non-drive-alone mode share.
- Provision of a daily “cap,” if necessary, on the total number of event attendees arriving to the island in private vehicles, in order to help avoid days with the highest levels of congestion. For example, under the same cap, one large event or four smaller events may be able to occur on the same day – but all five would not be able to be held concurrently.

Pros

- Allows for anticipation of heavy traffic days
- By capping total anticipated event attendance per day, events can be spread more evenly throughout the year
- Provides a mechanism for coordination TDM strategies among event planners

Cons

- Administration of the permit system and calendar may require additional staff time.
- Event planners may have to commit to certain dates earlier than they would otherwise.
- Could result in conflicts between event organizers/local businesses in the competition for popular dates.

Complementary Strategies

- Park-n-ride
- Event-based shuttle system
- Modified signal timing

Transportation Demand Management

EVENT-BASED “TDM” PLANS



Events of a certain size would be required to submit a transportation demand management (TDM) plan in order to receive an approved event permit.

TSP Area Applicability

Organizers of large events would need to provide a transportation demand management plan to demonstrate ways that they will manage impacts. Transportation demand management plans could include:

- Traffic management plan – organizers must demonstrate how they would manage the arrivals and parking for attendees of the event, including:
 - providing adequate parking to accommodate attendees
 - employing flaggers, if needed
 - arranging for overflow parking in alternate locations, if needed
 - coordinating with other events occurring in the same time-frame.
- Demand management strategies – organizers can draw on a number of demand management strategies to reduce vehicle trips:
 - Carpool / ride-matching for event attendees
 - Promotion of park-n-ride location for carpools, bicyclists, or other recreational visitors
 - Provide shuttle or van service from a park-n-ride location
 - Charging fees for event parking



Photo: Thomas Cobb, Travel Portland

Pros

- Reduces congestion on Island roadways.
- Adds accountability for events
- Will encourage thorough planning and help mitigate impacts of larger events

Cons

- Increases the organizational burden for event planners
- Requires staff time to review TDM plans and work with event planners.

Complementary Strategies

- Park-n-ride
- Event permit / calendar
- Shuttle service
- Valet bike parking
- Modified signal timing

Section 4

Transportation System Plan

TRANSPORTATION SYSTEM PLAN

This section details the projects, programs, and policies needed to serve Sauvie Island and Multnomah Channel Rural Areas through 2035. They represent the culmination of the existing needs and guidance from citizens, business owners, and governmental agencies within Sauvie Island and Multnomah Channel Rural Area, the PMT and the CAC. The projects, policies, and programs help to ensure and support the efficient and safe multimodal movement of people and goods throughout the Sauvie Island and Multnomah Channel Rural Area.

TRANSPORTATION GOALS AND POLICIES

The Sauvie Island and Multnomah Channel Rural Area Plan (RAP) provides transportation policies for the study area. This TSP update implements the RAP policies, and uses the policies as guidance in developing goals, objectives, and policies. The applicable RAP policies, categorized by the three issue focus areas, are below.

- Reduce Modal Conflicts
 - Policy 5.2 – Identify and implement short- and long- term solutions to safely accommodate bicyclists, pedestrians, and motor vehicles on Sauvie Island including on-road bikeways, separated multi-use paths, and funding options.
 - Policy 5.4 - Consider context sensitive design when reviewing rural roadway standards to determine appropriate paved shoulder widths to preserve the rural character of roads. Shoulder widening should aim to achieve a minimum 3 foot paved width.
 - Policy 5.7 – Promote a transportation system that prioritizes and supports the efficient and safe movement of farm vehicles and equipment.
 - Policy 5.8 – Maintain and improve the transportation system for all modes of travel in a manner that reduces conflict and minimizes impacts to the natural environment, and reflects the community’s rural character while ensuring efficiency and connectivity.
- Additional Safety Issues
 - Policy 5.5 – Coordinate with ODOT Rail and Public Transit Division to promote appropriate safety devices at crossings.
 - Policy 5.11 – Promote effective use of signage designed to educate the public about farm equipment using roadways, wildlife crossings and bicycle and pedestrian safety. Work with businesses to create additional way-finding signs that can help visitors get to their destinations more efficiently.

- **Manage Travel Demand**
 - Policy 5.6 – Coordinate with the Oregon Department of Fish and Wildlife (ODFW) and Columbia County to manage and reduce demand on the Sauvie Island transportation system, especially during peak use periods, by making more efficient use of capacity on the system through strategies such as user fees, shuttles, and parking management programs. Strategies may include, but are not limited to:
 - **(a)** Encourage and support action by the Oregon Fish and Wildlife Commission to increase daily fees during peak use periods to an amount that will effectively reduce the traffic burden on Sauvie Island roads and reduce adverse wildlife impacts resulting from heavy traffic, noise and dust.
 - **(b)** Encourage Columbia County and the Columbia County Sheriff to prohibit parking on county roads outside designated parking areas and to post and enforce its parking restrictions.
 - **(c)** Encourage the use of ride sharing, and support safe and convenient park-and-ride facilities for carpools and transit service in convenient and appropriate off-island locations.
 - **(d)** Explore options for shuttle support and traffic reduction strategies such as traffic fees and parking management programs.
 - **(e)** Coordinate with transit agencies and service providers to identify existing transit deficiencies and the improvements necessary to increase accessibility to transit service by potential users.
 - Policy 5.9 – Implement a range of Transportation Demand Management (TDM) policies encouraging existing businesses and requiring new development (beyond single family residential use and agricultural uses) to help reduce vehicle miles traveled (VMT), maximize use of existing facilities and alleviate congestion on US 30 and county roads caused by seasonal and special event traffic. Support the use of bicycle transportation alternative to automotive use without encouraging purely recreational bicycle activities that may increase this level of vehicle conflict on roadways.

Descriptions of the five TSP goals and respective objectives, policies, and implementation strategies, which implement the RAP policies listed above, are below. These will guide the development of the transportation system over the next 20 years.

Goal 1: Implement a transportation system that is safe and efficient in meeting the needs of area residents and those traveling through the area.

Objective A: *Provide a transportation system that addresses safety concerns for all modes of travel*

Policy: Continuously improve safety levels all motorized and non-motorized traffic.

Implementation strategies:

- I. Monitor accident rates for all modes of transportation and recommend implementation of low-cost operational improvements within budgetary limits. Target resources to reduce accident potential in the top 10 percent of accident locations
- II. Continue to monitor high accident location sites for all modes of transportation
- III. Implement access management standards to reduce vehicle conflicts and maintain the rural character of the area

Policy: Actively support safe travel speeds on the transportation system. Reduce speeds limits to ensure they are compatible with adjacent land uses, support safety for all modes of travel. Speeds shall be consistent with corresponding implementation documents.

Implementation strategies:

- I. Support speed limit enforcement (i.e. use of radar), traffic calming and education concepts.
- II. Apply design standards that encourage appropriate motor vehicle and truck speeds.
- III. Coordinate with ODOT to reduce speeds on rural roadways.

Objective B: *Provide a transportation system that is convenient and limits congestion while safely accommodating all modes of travel.*

Policy: Adopt rural road design standards specific to Sauvie Island that are appropriate to safely meet the needs of all roadway users.

Implementation strategies:

- I. Support the Street Design Guidelines for 2040 and apply them appropriately to maintain the rural character of Multnomah County as well as support the Rural Reserve requirements.
- II. Support Title 6 of the Urban Growth Management Functional Plan and apply level of service standards appropriately to maintain the character of rural Multnomah County.

Goal 2: Implement a balanced transportation system that supports all modes of travel.

Objective A: *Establish a transportation system that accommodates a variety of methods of travel and minimizes reliance on a single travel mode.*

Policy: Encourage the use of ride sharing facilities.

Implementation strategies:

- I. Support safe and convenient park and ride facilities for car pools and transit service in convenient and appropriate locations.

- II. Encourage the placement of bike lockers at all park and ride/park and car pool locations. Support and promote their use.
- III. Coordinate with other agencies to assist users with convenient services (e.g. ride share matching).

Policy: Encourage mobility for the transportation disadvantaged.

Implementation strategies:

- I. Work with public transportation providers to monitor and provide for the transportation needs of the transportation disadvantaged. Strategies could include establishing focus groups for conducting outreach to these groups.

Policy: Support the development of multi-use paths.

Implementation strategies:

- I. Coordinate multi-use trail transportation needs with Metro Parks and Green Spaces.
- II. Coordinate with the Sauvie Island Drainage Company for potential multi-use trails on Sauvie Island.

Goal 3: Develop a transportation system that supports the rural character of West Multnomah County.

Objective A: *Maintain a transportation system that supports the surrounding rural land use designations.*

Policy: Discourage through traffic on trafficways with functional classification of rural local road.

Implementation strategies:

- I. Reduce travel conflicts by providing appropriate facilities, signs, and traffic markings based upon user type and travel mode.
- II. On rural local roads with heavy through traffic, consider implementing appropriate traffic-calming measures to reduce such traffic.

Objective B: *Provide a transportation system that minimizes impacts to wildlife and agricultural resources.*

Policy: Apply roadway design safety standards appropriately by balancing the needs of the travelling public and minimizing negative impacts to the environment.

Implementation strategies:

- I. Develop and implement a design exception process that considers the relative and incremental benefits of implementation, costs and impacts to the environment.
- II. Assess implications of fish passage requirements on county facilities and develop a program for retrofitting drainage facilities.
- III. Adopt and apply drainage system design guidelines and standards to accommodate fish passage.
- IV. Adopt and apply rural roadway shoulder standards that preserve the rural character of the area.

- V. Adopt and apply rural roadway standards that maintain and improve safe wildlife movement and ensure wildlife connectivity in the SIMC planning area.
- VI. Assess Natural Resource strategies and explore design elements to minimize impacts to fish and wildlife habitat.
 - 1. Where possible, avoid harm to wildlife, including wildlife movement, from new, existing, or improved transportation facilities, and where not possible, minimize harm to wildlife. Mitigate any unavoidable harm to wildlife.
 - 2. Potential mitigation measures include, but are not limited to: wildlife crossings; improved culverts with shelves or dry paths built into the sides; mechanisms to funnel wildlife into the culverts; signage; habitat modification; asking drivers to turn on running lights; public awareness programs; and other wildlife mitigation measures that have been demonstrated to be effective.
- VII. Explore incorporation of wildlife criteria for the Capital Improvement Plan and Program (CIPP).
- VIII. Work with agencies to address impacts of boat traffic on the environment (e.g. shoreline).
- IX. Consider climate change and the Climate Action Plan when planning transportation investments and service delivery strategies.

Objective C: *Maintain the beauty of the area by preserving critical view sheds.*

Policy: Encourage the placement of new pipelines and transmissions lines in existing right-of-way whenever possible.

Implementation strategies:

- I. Develop general guidelines for utility placement within the county right-of-way that reduce the number of conflicts and cost of implementation.
- II. Enhance the rural character and scenic qualities of the area by placing utilities underground when possible.
- III. Coordinate improvements with utility companies through regular status meetings to maintain and preserve the beauty of the rural character of west Multnomah County.

Objective D: *Ensure the transportation plan meets federal, state and regional air, water, and noise standards.*

Policy: Coordinate transportation improvement projects with appropriate regulatory agencies.

Implementation strategies:

- I. Retrofit existing facilities to meet regulatory requirements within budgetary limits.
- II. Obtain permits as necessary for transportation improvement projects and maintenance activities.

Goal 4: Develop a transportation system the supports a healthy economy.

Objective A: *Provide a convenient access while maintaining movement of freight along the U.S. Corridor 30.*

Policy: Provide ongoing coordination with state, regional, and local business interests to assure efficient movement of goods and services.

Implementation strategies:

- I. Participate in, support, and adopt the U.S. 30 Corridor Plan.
- II. Provide for auxiliary turn lanes on road connections to U.S. 30 to achieve acceptable operating levels of service.

Policy: Promote transportation alternatives for the movement of freight.

Implementation strategies:

- I. Encourage rail operators to maintain rail service within the U.S. 30 corridor.
- II. Support the movement of freight on the Columbia River, including the U.S. Army Corps of Engineers' study of deepening the Lower Columbia River navigation channel to accommodate deep draft ships.

Objective B: *Preserve the function and safety of the transportation system.*

Policy: Provide a transportation system that ensures economically viable transportation of goods from farm to market.

Implementation strategies:

- I. Conduct a study of Cornelius Pass Road.

Policy: Coordinate transportation system management activities with interested and affected stakeholders.

Implementation strategies:

- I. Work with property owners to consolidate existing accesses when possible and as appropriate to access management standards.
- II. Support limited accesses along U.S. 30 to the extent possible. Support access management along U.S. 30 in accordance with ODOT's Access Management Standards.

Goal 5: Provide transportation improvements in a timely manner according to funding capability.

Objective A: *Maximize cost-effectiveness of transportation improvements using the Capital Improvement Plan process.*

Policy: Invest in safety and maintenance improvements.

Implementation strategies:

- I. Accelerate shoulder paving to safely accommodate automobile, bicycle, and pedestrian use.
- II. Make intersection improvements to improve safety, sight distance, and intersection efficiency.
- III. Continue to provide opportunities to educate and inform citizens with easy-to-understand materials on transportation finance.
- IV. Ensure the Capital Improvement Plan evaluation criteria adequately evaluate rural needs.

IMPROVEMENT PROJECTS

Two community workshops and multiple CAC meetings provided feedback on the potential range of solutions in Section 3 and informed a 20-year list of programs and policies for TSP implementation. The resultant set of solutions intends to help manage traffic on Sauvie Island and ensure safe multimodal travel for Sauvie Island residents, visitors, and businesses during the next 20 years. Project priority categorizes the projects into one of three timeframes: near-, mid-, and long-term. Short-term projects include those that could be addressed within the next five years. Mid-term projects could be addressed within the next six to ten years. Long-term could be addressed within 11 to 20 years. Figure 2 and Table 2 illustrate the project list.

Table 2 Planned Projects and Programs

Project Number	Project/Program Name	Project/Program Description	Estimated Cost	Priority
1	Sauvie Island Road Multi-Use Path	Construct multi-use path parallel to sections of Sauvie Island Road located on the levee.	\$\$	Near-term
2	Advisory Bike Lane Study	Conduct engineering study to identify potential locations for an advisory bike lane pilot test and verify adequate sight distance.	\$	Near-term
3	Advisory Bike Lane Pilot Project	Implement advisory lane pilot test project. The project will temporarily implement an advisory lane and be monitored for compliance and use.	\$	Near-term
4	Sauvie Island and Multnomah Channel (SIMC) Bike Map	Work with Sauvie Island Community Association (SICA) and other Sauvie Island stakeholders to develop a bike map that includes wayfinding and education	\$	Near-term
5	Gillihan Road Curve Improvements	Provide warning signs and delineation posts on curves along the loop roads.	\$\$	Near-term
6	Gillihan Road/Reeder Road Intersection Improvement Study	Conduct an engineering/safety study to determine impacts and safety considerations for implementing three-way stop-control at the intersection of Gillihan Road and Reeder Road.	\$	Near-term
7	Gillihan Road/Reeder Road Intersection Upgrades	Implement a three-way stop control at the intersection of Gillihan Road and Reeder Road.	\$\$	Near-term
8	SIMC Wayfinding Upgrades	Install additional wayfinding to provide guidance to motorized and non-motorized users to areas of interest such as types and location of recreation, parking, and other key destinations.	\$	Near-term
9	Share the Road Improvements	Install warning/advisory signs are to inform motorists of bicycles and farm equipment sharing the road along facilities (all roads under existing conditions)	\$\$	Near-term
10	Gillihan Road Signage Improvements	Install speed limit signs on unsigned sections of Gillihan Road.	\$	Near-term
11	Sauvie Island Mobile Speed Radar Implementation	Obtain a mobile speed radar unit for Sauvie Island that can be relocated at regular intervals.	\$	Near-term
12	US 30/Sauvie Island Road Intersection Upgrades	Upgrade the traffic signal controller at the intersection of US 30 and Sauvie Island Road.	\$\$	Near-term

Project Number	Project/Program Name	Project/Program Description	Estimated Cost	Priority
13	US 30/Sauvie Island Road Intersection Signal Study	Conduct study of signal timing at the intersection of US 30 and Sauvie Island Road for possible truck extensions, westbound detection issues, and optimization of green and red time.	\$	Near-term
14	Parking Information Distribution Study	Study to determine the most effective and feasible method to implement distribution of parking information.	\$	Near-term
15	Permitting Study	Work with ODF&W to implement an increased parking permit fee and/or limit number of permits. Include bicycle permitting.	\$	Near-term
16	Sauvie Island Park-n-Ride and Shuttle Service Study	Study to determine location of off-island park-n-ride lots and plan for on-island shuttle service for events.	\$	Near-term
17	Event Permit Calendar	Develop event permit calendar and implement use.	\$	Near-term
18	Daily Trip Study	Study to explore a daily trip cap.	\$	Near-term
19	Ticket and Permit Enforcement Study	Study the implementation of increased permits and enforcement of permits; including illegally parked vehicles, beach day use permits, and existing permit compliance.	\$	Near-term
20	Sauvie Island Bridge Toll Study	Study the implications of a Sauvie Island Bridge toll for non-residents.	\$	Near-term
21	SIMC Travel Demand Management Plan	Develop a Travel Demand Management Plan for the island that further explores each of the potential TDM strategies and explores and identifies a potential Transportation Management Association (TMA) for Sauvie Island. Elements of the TDM plan should include input from projects 14-20.	\$\$	Near-term
22	Sauvie Island Road/Reeder Road Intersection Improvement Study	Conduct an engineering/safety study to determine impacts and safety considerations for implementing three-way stop-control and channelized right-turn for northbound traffic at the intersection of Sauvie Island Road and Reeder Road.	\$	Near-term
23	SIMC Rail Study	Conduct rail corridor study to identify feasible local street connections and railroad crossing consolidation and upgrades. Project will include coordinate with owners of the private rail crossings.	\$\$	Mid-term
24	Loop Road Shoulder Improvements	Provide 3-4 foot paved shoulders on the loop roads including Reeder Road, Sauvie Island Road, and Gillihan Road.	\$\$\$	Mid-term
25	Sauvie Island Speed Photo Radar Implementation	Implement permanent speed photo radar signs at several locations on Sauvie Island.	\$\$	Mid-term
26	Sauvie Island Speed Photo Radar Ticketing Implementation	Implement photo radar ticketing at several locations on Sauvie Island	\$	Mid-term
27	Sauvie Island Road Shoulder Improvements	Provide 3-4 foot paved shoulders on Sauvie Island Road from Reeder Road to the Columbia County line.	\$\$\$	Long-term
28	Reeder Road Shoulder Improvements	Provide 3-4 foot paved shoulders on Reeder Road from Gillihan Road to the Columbia County line.	\$\$\$	Long-term

\$ = \$0 - \$100,000;

\$\$ = \$100,000 - \$500,000;

\$\$\$ = > \$500,000

Near-term = 0-5 years

Mid-term = 6-10 years

Long-term = 11-20 years

KEY CODE AND POLICY AMENDMENTS

The Transportation Planning Rule (TPR), as codified in Oregon Administrative Rules (OAR) 660-012-0020(2)(h), requires that local jurisdictions identify land use regulations and code amendments needed to implement the TSP, and include them as the implementation element.

The Multnomah County Comprehensive Plan update includes this work; expected completion by June 2016.

