

Executive Summary

Deschutes County adopted its original Transportation System Plan (TSP) in August 1998, encompassing 1996-2016. In the intervening years, the County and its cities saw rampant population growth and associated increases on the State highways and County road segments, particularly those near Bend and Redmond. The County began a TSP update in 2007, incorporating changes in population, traffic volumes, rise of non-automotive modes, and diminishing available funding at the federal, state, and local levels for projects. The TSP update spans 2010-2030 and lists \$306.2 million in projects.

The TSP provides a roadmap to meet the needs of air, automobile bicycle, freight, pedestrian rail, transit and other modes. A combination of technical analysis, coordination with Oregon Department of Transportation (ODOT), coordination with the four cities within the County, public outreach, and local knowledge identified those needs. The TSP prioritizes projects into high (0-5 years), medium (6-10 years) and low (11-20 years) categories and provides planning-level cost estimates. The distribution of the 94 projects, excluding those on the Illustrative List is:

- High Priority: 20 projects
- Medium Priority: 31 projects
- Low Priority: 43 projects

The TSP contains background information on the major land use and transportation changes since 1998 as well as the approximately 832 miles of County-maintained roads. Of those 832 miles, 693 are paved and 139 are unpaved. Additionally, the County contains another 471 miles of public roads not maintained by the County but which the County still has jurisdiction. Of the 310 miles of County arterials and collectors only 13% (40 miles) carry more than 3,000 or more average daily trips (ADT). The County's standard is 9,600 ADT. ODOT has approximately 200 miles of State highways in the County. The bulk of vehicles moving in the County are traveling on the State system, with ADTs in the rural sections approaching 18,000; 6,000 ADTs are considered high for a County road. Volume is just one aspect of a transportation system, another is the operational safety. In the transportation industry, a crash rate of less than 1.0 per million miles of vehicles miles traveled (VMT) is acceptable. Similarly, for an intersection a crash rate of less than 1.0 million entering vehicles (MEV) is acceptable. Acceptable means the crash rates are indicative of random events and not a systematic problem. Crash data for County road segments and intersections indicate only three segments totaling 11.1 miles had a crash rate of more than 1.0 per million VMT and 10.2-segment had a rate of 0.89, which should be monitored. No County intersection exceeded a crash rate of 1.0 per MEV.

The TSP also examines non-automotive modes, including air, bicycle, freight, pedestrian, public transit, and rail. While the County's 700 miles of paved and maintained roads offer a safe and efficient route for both bicycle commuters and recreational riders, the cycling community supported a network of County- and State-designated bikeways. The Road Department would use the bikeway designation as a tiebreaker when considering improvements to roads with roughly similar functional classification, pavement condition index (PCI), and average daily traffic (ADT). Additionally, a bikeway designation could aid the County or other third parties seeking grant funding for road improvements.

The bulk of freight shipments in the County travel on the State highway system as do most vehicles.. The County has proposed roundabouts as a low-cost and safe improvement for several County-County road intersections as well as two County road-State highway intersections east of Bend. The County recognizes the use of roundabouts on the State highway system is ultimately a decision by the Oregon

Department of Transportation (ODOT). However, the County will use the cost of a rural roundabout as the baseline for the percentage of the County's financial contribution to improving County-State highway intersections. The County will work with the air, rail, and truck shippers to identify issues, opportunities, and constraints on moving freight to and through the County.

In 2010, Deschutes County had a total population of 157,733 of which 66% was urban and 34% was rural. The plurality of the urban population resided in either Bend (76,639) or Redmond (26,215), which are linked by the approximately 16 miles of US 97. By 2030, the County's population is expected to reach 266,539, an increase of 108,806 or 69 percent. The urban/rural split will remain essentially the same with 67% residing in cities and 33% on unincorporated lands. Bend (119,009) and Redmond (51,733) will remain the County's largest cities by a substantial margin.

Forecasting future traffic volumes and their distribution was based on a combination of expected population growth, employment growth, traffic data, and modeling time spent traveling between attractors and generators. ODOT prepared the State's first traffic model for a rural county, basing it on the pre-existing Bend and Redmond traffic models and dividing the rural county into 260 transportation planning analysis zones (TAZs).

The 2030 forecast volumes demonstrated the majority of the roadway segments or intersections that will need improvement occur on the State system, primarily on US 97 from Terrebonne to Redmond and Sunriver to La Pine; US 20 from Black Butte to Sisters and Tumalo to Bend; and OR 126 on the east and west fringe of Redmond. For County roads, a few short segments on the margins of Bend and Redmond will need improvements as well as a few intersections, primarily on the eastern edge of Bend; the west side of Redmond; the west edge of La Pine.

Deschutes County conducted extensive public outreach during the development of TSP, including three rounds of open houses around the County. The first round was a kick off to allow the public to identify local issue. The second round was to present technical reports on existing conditions and forecast traffic volumes, listing resulting deficiencies. The third round identified future projects and other transportation improvements. Additionally, the County held work sessions and public hearings before the Planning Commission and the Board of County Commissioners. Staff also participated in multiple community, homeowner, local associations, and the County's Bicycle and Pedestrian Advisory Committee (BPAC) meetings.

During the outreach described above, the public and other stakeholders raised the following issues:

- High speeds and/or cut-through traffic in rural communities and/or rural subdivisions
- Better accommodations for cyclists, including non-highway options between Bend and Sisters
- Creating a trail network between 1) Bend and Redmond to Smith Rock State Park; 2) Bend and Sisters; and 3) Bend and Sunriver
- Desire for various gravel roads to be paved
- Concerns about condition of various roads
- Safety issues at various intersections in the Bend, La Pine, Redmond, Terrebonne, Tumalo areas
- Secondary access to isolated subdivisions in South County
- Winter driving conditions on both County-maintained roads and State highways
- Desire to add local access roads to County-maintained system
- Traffic impacts of destination resorts

The TSP continues to support the evolution of State highways, particularly US 97, from two-lane roads with multiple direct accesses to an Expressway with frontage roads and grade-separated interchanges. The evolution is accomplished via an iterative “four-phase” approach that includes adding passing lanes which are later knitted together and adding raised medians.

The TSP meets the requirements of the Transportation Planning Rule (TPR) which implements Goal 12 of the statewide planning program. The TSP provides technical analysis to identify deficiencies and projects and/or policies to correct those deficiencies; prioritizes projects; and produce planning-level cost estimates over the 20-year life of the plan. The TSP addresses all modes.

The TSP planning-level cost estimates are summarized below; the list does not include projects from the Plan’s illustrative list (projects either not needed in the next 20 years or not expected to be funded).

- \$306.2 million for all projects (County roads and bridges, State highways, bike/ped, etc.)
- \$240.6 million for State highway projects
- \$61.3 million for County road projects
- \$3.4 million for County bridge projects

Winnowing the projects to only those identified as high priority results in:

- \$107.1 million for all high priority projects (County and State)
- \$75.9 million for State highway projects
- \$29.7 million for all County road projects
- \$1.5 million for County bridge projects

Neither the State nor the County has adequate funding to construct the \$306 million of projects identified in the TSP. Limiting the projects to the \$107 million of high priority projects still presents a formidable challenge, even spread over two decades. The State would need to raise nearly \$3.8 million every year for 20 years and the County would need approximately \$1.5 million annually for the same time period. Additionally, this does not consider the County’s backlog of roads needing operations, maintenance, and preservation which also requires increased funding.

At the time of this study, the Road Department is currently able to budget \$3.8M annually for pavement maintenance and preservation in the form of overlay and chip seal. The funding amount necessary to sustain the existing pavement condition is approximately \$5.4M based on an overlay interval of 30-years with mid-cycle chip seal surfacing approximately every seven years. At the rate of current investment, approximately \$1.6M in annual maintenance cost is deferred annually.

In the fall of 2011, the Board of County Commissioners convened a special Road Committee to evaluate operations and investment levels within the Road Department. The Committee developed five recommendations – with the fifth recommendation to explore alternative funding sources. The Committee was clear that the first four recommendations, which are focused on improved asset management efforts, internal efficiencies and regional partnerships, should be fully explored and exhausted before proceeding with alternative funding source development.

The goals and policies to coordinate and implement the TSP are as follows:

COORDINATION AND IMPLEMENTATION

Goal 1

- I. Achieve an efficient, safe, convenient and economically viable transportation and communication system. This system includes roads, rail lines, public transit, air, pipeline, pedestrian and bicycle facilities. The Deschutes County transportation system shall be designed to serve the existing and projected needs of the unincorporated communities and rural areas within the County. The system shall provide connections between different modes of transportation to reduce reliance on any one mode.

Policy 1

- I.1. Deschutes County shall protect approved or proposed transportation project sites through:
 - a. Access control measures;
 - b. Review of future large development and transportation projects that significantly affect the County's transportation system;
 - c. Requirement of conditions of approval on developments and transportation projects that have a significant effect on the County's transportation system.
 - d. Collection of transportation System Development Charges (SDCs) for approved land uses as proscribed under BOCC Resolution 2008-059
- I.2. The lead agency for review of transportation projects in Deschutes County shall be:
 - a. Deschutes County for projects completely outside UGBs;
 - b. The affected city for projects within its UGB; and
 - c. The State of Oregon, Deschutes County and affected cities on projects involving state-owned facilities that are both inside and outside of a UGB.

Goal 2

2. The Deschutes County TSP shall be continually updated in a timely fashion in order to ensure the transportation system serves the needs of County residents, businesses, and visitors.

Policy 2

- 2.1. Deschutes County shall:
 - a. Identify local, regional and state transportation needs;
 - b. Develop a transportation plan that shall address those needs;
 - c. Review and update the plan at least every five years;

- d. Continue to coordinate transportation planning with local, regional and state plans by reviewing any changes to Deschutes County local transportation plans, regional transportation plans, the Oregon Transportation Plan and ODOT's State Transportation Improvement Program (STIP); and
- e. Continue public and interagency involvement in the transportation planning process.

2.2. Transportation Projects

- a. The County shall have a list of transportation projects, adopted by the Board of County Commissioners in accordance with the policies set forth below.
- b. The initial Transportation Project List shall be set forth in Table 5.1.T1 of the Transportation System Plan adopted as part of the Resource Element of the Comprehensive Plan. The Board shall update the Transportation Project List periodically by resolution adopted by the Board, without need of a formal amendment to the TSP.
- c. New transportation projects shall be included on the County's Transportation Project List. A transportation project proposed for addition to the list shall be subject to an individual land use review only if applicable administrative rules or land use regulations require such review.
- d. Transportation or development projects that require a plan text amendment or a conditional use permit may be required to fulfill conditions or implement mitigation measures before approval is granted. Mitigation and conditions may include, but are not limited to:
 - Improvement of surrounding roads;
 - Limits on level of development;
 - Revision of development placement;
 - Addition or redesign of access;
 - Addition of traffic management devices such as traffic signals, medians, turn lanes or signage; and/or
 - Improvements that reduce transportation impacts.

Deschutes County acknowledges that land use designations have a significant impact on the overall transportation system and any alterations shall be completed with consideration to traffic impacts on the County road system and consistency with the TPR.

Goal 3

3. The transportation plan and facilities of Deschutes County shall be coordinated with the plans and facilities of incorporated cities within Deschutes County, adjacent counties and the State of Oregon.

Policy 3

- 3.1. Deschutes County shall notify ODOT concerning:
 - a. All land use proposals or actions that would create access onto a state highway or add more than 100 ADT to any County road intersection with a state highway;
 - b. Any proposed land use or development within 500 feet of a state highway or public use airport within the County; and
 - c. Require ODOT road approach permits.
- 3.2 Deschutes County shall coordinate local plans and land use decisions with state transportation plans, including the Oregon Transportation Plan, the Oregon Highway Plan and other modal plans. These plans provide ODOT policies and performance standards for State Highways within Deschutes County. These ODOT plans also provide the framework for access management on state facilities to protect the capacity and function of the highways.
- 3.3. The findings of compliance with applicable statewide planning goals, acknowledged comprehensive plan policies and land use regulations, shall be coordinated with the preparation of any Environmental Impact Statement (EIS) required for a proposed transportation facility that is identified on the Deschutes County Transportation System Plan.

ARTERIAL AND COLLECTOR ROAD PLAN

Goal 4

4. Establish a transportation system, supportive of a geographically distributed and diversified economic base, while also providing a safe, efficient network for residential mobility and tourism.

Policies

- 4.1. Deschutes County shall:
 - a. Consider the road network to be the most important and valuable component of the transportation system; and
 - b. Consider the preservation and maintenance and repair of the County road network to be vital to the continued and future utility of the County's transportation system.
- 4.2. Deschutes County shall not add any miles of new arterials or collectors to the County road system unless the following issues are satisfied:
 - a. The need for the road can be clearly demonstrated;
 - b. The County can financially absorb the additional maintenance requirements;

- c. The condition of the road proposed for acceptance into the County system must meet County road standards;
 - d. An accrued benefit can be shown to the County's economic growth;
 - e. The Board determines there have been adequate replacement revenues to off the loss of timber payments from the federal program;
 - f. An overall increase in efficiency in the County road network can be demonstrated.
- 4.3 Deschutes County shall make transportation decisions with consideration of land use impacts, including but not limited to, adjacent land use patterns, both existing and planned, and their designated uses and densities.
- 4.4 Deschutes County shall consider roadway function, classification and capacity as criteria for plan map amendments and zone changes. This shall assure that proposed land uses do not exceed the planned capacity of the transportation system.
- 4.5 Roads in Deschutes County shall be located, designed and constructed to meet their planned function and provide space for motor vehicle travel and bike and pedestrian facilities where required.
- 4.6 Deschutes County shall manage the development process to obtain adequate street right-of-way and improvements commensurate with the level and impact of development. New development shall provide traffic impact analysis to assess these impacts and to help determine transportation system needs. The guidelines for traffic impact analysis shall be located within Deschutes County Code ("DCC") Chapter 17.48, Deschutes County Road Design and Specification Standards.
- 4.7. Transportation system improvements in Deschutes County shall comply with the Americans with Disabilities Act.
- 4.8 Transportation safety in Deschutes County shall be improved for all modes through approved design practice and sound engineering principles.
- 4.9 Deschutes County shall acquire the necessary right-of-way through the development process to correct street intersections, substandard road geometry or other problems in order to improve the safety of a road alignment, consistent with constitutional limitations.
- 4.10 Deschutes County shall support efforts to educate the public regarding hazards related to travel on the transportation system.
- 4.11 Deschutes County shall support public and private efforts to acquire right-of-way for new secondary access roads to isolated subdivisions.

ACCESS MANAGEMENT

Goal 5

5. Maintain an access management system adequate to protect the quality and function of the arterial and collector street system.

Policies

- 5.1 Deschutes County shall designate access and land uses appropriate to the function of a given road.
- 5.2 Deschutes County shall require new development to minimize direct access points onto arterials and collectors by encouraging the utilization of common driveways.
- 5.3 Wherever practical, access to state highways shall be provided via frontage roads, alternative local roads or other means, rather than direct access to the highway.
- 5.4 A non-traversable median on state highways shall be installed by ODOT when operational or safety issues warrant installation as set forth by Policy 3B: Medians in the *Oregon Highway Plan*. Directional breaks in the median may be allowed as needed, provided traffic operations are still safe.
- 5.5 Access requests onto Deschutes County arterials and collectors for new partitions, subdivisions and commercial and industrial development shall be processed with the following access management classification system in mind:
 - a. Public road access spaced at no less than every 500 feet on arterials and 300 feet on collectors.
 - b. If either safety or environmental factors, or the unavailability of adequate distance between access points requires placing access points at lesser intervals, then access shall be denied or the best alternative placement shall be chosen. On road segments that are already severely impacted by numerous access points or on road segments that abut exception areas, adherence to the above standards may be either unreasonable or counterproductive to infill of exception areas. In such cases, these standards may be relaxed by the County Road Department Director to accommodate the aforementioned special conditions.

FUNCTIONAL CLASSIFICATION

Goal 6

6. Designate access and land uses appropriate to the function of a given road.

Policies

6.1 Deschutes County shall:

- a. Coordinate the County Transportation System Plan with the transportation system plans of the cities of Bend, La Pine, Redmond and Sisters. The County shall emphasize continuity in the classification of roads and appropriate design standards for roads that link urban areas with rural areas outside the urban growth boundaries. The County and affected city shall agree on the functional classification and design standards of County roads within the proposed UGB area.
- b. Request the transfer of, or an agreement to transfer with specific timelines and milestones, jurisdiction of County roadways within the urban growth boundaries to their respective cities at the time of annexation. County policy also directs that any developer of property who proposes annexation and who has frontage on a road that does not meet city standards shall have the primary responsibility for upgrading the road to applicable city specifications. Roads shall be upgraded prior to or at the time of annexation, or the developer shall sign an agreement with the city to upgrade the road, at the time of development. Transfer of road jurisdiction shall require the approval of both the County and affected city in accordance with the provisions in ORS 373.270.
- c. Future roads outside of city limits but within Urban Growth Boundaries shall have right-of-way dedications sufficient to meet the relevant city standards, but the road shall be constructed to County standards. The County will support a developer who chooses to build the road to the full urban standards of the relevant city instead of to County standard.
- d. Coordinate the County Transportation System Plan with surrounding counties' TSPs.

ROAD AND STREET STANDARDS

Goal 7

7. Update as needed DCC Chapter 17.48, Design and Construction Specifications, to ensure all aspects of construction related to roads, pedestrian walkways and bicycle facilities occurring outside designated urban growth boundaries in Deschutes County are adequate to meet the needs of the traveling public.

Policies

- 7.1 Any new or reconstructed rural roads shall be built to the standards set forth in DCC Chapter 17.48, Table A. Bicycle and pedestrian facilities shall be built to the standards set forth in DCC Chapter 17.48, Table B.
- 7.2 Road, pedestrian and bicycle projects occurring in unincorporated areas within urban growth boundaries shall be governed by the respective city's road and street standards. Those requirements shall be coordinated between the city, the County and the applicant during the land use process according to procedures to be identified in the Deschutes County Road Standards and Specifications document.

- 7.3 Review every three to five years the adopted criteria in DCC 17.16.115 for the requirement of various levels of traffic analysis for each new rural development.

ROAD MANAGEMENT SYSTEM

Goal 8

8. Maintain the County road network pavement in good to excellent condition.

Policies

- 8.1 Deschutes County shall continue to maintain and preserve the County road network through its pavement management system which guides a program of paving, repairing, reconstruction, drainage clearance and vegetation control.
- 8.2 After safety-related issues, the highest volume road segments shall be the next priority for County road maintenance and repair.
- 8.3 If and when gravel or dirt roads are paved by the County, the main controlling criteria shall be: re-establishment of adequate funding for long-term maintenance, density of surrounding development, traffic volumes, road classification, gap filling, potential school bus routing efficiency and emergency evacuation potential.

PERFORMANCE STANDARDS

Goal 9

9. Maintain a level of service of “D” or better during the peak hour throughout the County arterial and collector road system over the next 20 years.

Policies

- 9.1 Deschutes County shall continue to monitor road volumes on the County arterial and collector network. The County Road Department shall continue to be the department responsible for monitoring volumes and shall strive to count each arterial and collector at least once every four years. The Road Department shall periodically examine the traffic volumes to identify level of service deterioration.

Goal 10

10. Maintain the current arterial and collector system in the County and prevent degradation of the capacity of the system.

Policies

- 10.1 Deschutes County shall monitor County arterials and collectors to help in the determination of when road improvement projects are necessary.
- 10.2 Deschutes County shall continue to work with the ODOT, the Cities of Bend, La Pine, Redmond and Sisters, and neighboring counties to coordinate solutions to highway and non-highway road issues that cross over jurisdictional boundaries.
- 10.3 The County shall establish requirements and adopt standards for secondary access roads to isolated rural subdivisions.

BRIDGES

Goal II

- 11. Maintain a safe and efficient network of bridges on County roadways.

Policies

- 11.1. Deschutes County shall monitor the condition of County bridges on a regular basis, and perform routine maintenance and repair when necessary. The County shall also explore additional funding sources when major reconstruction or replacement of bridges is necessary.

TRUCK ROUTES

Goal 12

- 12. Develop a plan of designated truck routes on County arterials.

Policies

- 12.1. Deschutes County shall designate that long-haul, through trucks, be limited to operating on Principal Arterial and Rural Arterial roads as designated in the County transportation network, except in emergency situations and when no reasonable alternative arterial road is available for access to commercial or industrial uses.
- 12.2 Deschutes County shall support economic development by encouraging ODOT to prioritize modernization, preservation, and safety projects on highways designated as Freight Routes over non-Freight Routes

FACILITY/SAFETY MANAGEMENT

Goal 13

- 13. Maintain a safe and efficient network of roadways.

Policies

- 13.1 Deschutes County shall develop and maintain a prioritized inventory of safety-deficient facilities on the County road network and give highest priority to correcting safety issues.

PUBLIC TRANSPORTATION PLAN

Goal 14

- 14.1 Enhance the opportunity for intermodal connections throughout the County transportation system, and actively support the provision of public transportation throughout the County.
- 14.2 Increase the existing level of special services provided.
- 14.3 Establish rural transit service for Deschutes County residents.
- 14.4 Decrease barriers to the use of existing public transportation services.

Policies

- 14.1 Deschutes County shall work with ODOT, the cities of Bend, La Pine, Redmond and Sisters, and transit service providers to study Countywide rideshare facility needs, and investigate public transit possibilities including potential transit stops for a regional or commuter-based transit system. Those possibilities shall include bus and rail, and if economically feasible, the County shall seek services that are safe, efficient, and convenient in serving the transportation needs of the residents of Deschutes County.
- 14.2 Deschutes County shall continue to work with special service providers, ODOT, and the cities of Bend, La Pine, Redmond and Sisters to secure additional funding as well as increase promotion of those special transit services that may be underutilized.
- 14.3 Deschutes County shall identify and monitor the needs of the transportation disadvantaged and attempt to fill those needs.

Bikeway and Pedestrian Plan

Goal 15

- 15.1. Review every three to five years the adopted, Countywide system plan for bike and pedestrian facilities to ensure continued access to various destinations within unincorporated communities and between urban areas and unincorporated communities.
- 15.2 Provide and maintain a safe, convenient and economical bicycle and pedestrian system that is integrated with other transportation systems.
- 15.3 Support bicycle safety, education and enforcement programs for all ages, improve riding skills, achieve observances of traffic laws, increased awareness of cyclists' and pedestrians' rights, and monitor and analyze bicycle accident data to determine safety problem areas.

- 15.4 Coordinate on-road County bikeways with known existing and proposed State and City bikeways.
- 15.5 Work with Bike-Pedestrian Advisory Committee (BPAC) to identify a system of off-road paved and non-paved shared-use paths to be included in the County transportation system.
- 15.6 Maintain the existing development requirements for bicycle facilities in Deschutes County.

Policies

- 15.1 Deschutes County shall coordinate local plans for pedestrian and bicycle facilities with the most current edition of the *Oregon Bicycle and Pedestrian Plan*. The statewide plan provides a framework for a local bicycle and pedestrian system and design standards.
- 15.2 Deschutes County shall require bike facilities at locations that provide access within and between residential subdivisions, schools, shopping centers, industrial parks, and other activity centers when financially feasible.
- 15.3 Deschutes County shall:
 - a. Balance the plan with a variety of facilities to meet the needs of different cyclists;
 - b. Plan for bicycle access between the County’s urban and rural areas;
 - c. Develop a bikeway system, to be updated semi-annually and including a map for the public that describes the opportunities for bicycling in Deschutes County;
 - d. Establish priorities for facility construction and maintenance based on need and resource availability;
 - e. Evaluate the plan regularly to monitor how well the facilities meet the goals of the Plan;
 - f. Upgrade rural road shoulder widths to County standards during road modernization or maintenance projects involving overlays as funding allows, provided no additional purchase of right-of-way is required or substantial cut and fill or grading is needed;
 - g. Require bicycle and pedestrian facilities to satisfy the recreational and utilitarian needs of the citizens of Deschutes County;
 - h. Make potential use, safety and the cost of bikeway construction, the primary considerations when designing specific bikeways;
 - i. Emphasize the designation of on-road bikeways, where conditions warrant due to safety reasons and the cost of construction and maintenance of separate bike paths;
 - j. Expend resources for the maintenance of existing bikeways and to keep pace with the development of new bikeways;

- k. Designate that the Deschutes County Bicycle and Pedestrian Advisory Committee facilitate the coordination of all bicycle and pedestrian planning in the County to assure compatibility;
 - l. Designate that the Deschutes County Bicycle and Pedestrian Advisory Committee assure that the Plan remains up-to-date and that implementation proceeds according to the Plan;
 - m. Work with affected jurisdictions to acquire, develop, connect, and maintain a series of trails along the Deschutes River, Tumalo Creek, and the major irrigation canals so that these features can be retained as a community asset;
 - n. Adopt standards for trail system right-of-ways and trail improvements that are based on the type of planned trail use and reflect the standards of the most recent version of the *Oregon Bicycle and Pedestrian Plan*;
 - o. Pursue grant opportunities to plan or construct the Tumalo Trail between Tumalo State Park and the unincorporated community of Tumalo;
 - p. Work cooperatively with City parks and recreation districts to support grant applications to build or maintain trails in the rural County whether on public or private lands; and
 - q. Support the implementation of the Three Sisters Scenic Bikeway plan.
- 15.4. New public and private land developments in Deschutes County shall accommodate and tie into the bicycle system, and shall provide their residents and employees with appropriate bicycle facilities.
- 15.5 County arterials and collectors may use shoulder bikeways or shared roadways. These bikeways shall be upgraded to bike lanes when highway reconstruction occurs and the traffic volumes warrant lanes.
- 15.6 Deschutes County shall facilitate safe and direct bicycle and pedestrian crossings of arterial roads.
- 15.7. On-road bikeways shall be constructed in accordance with the specifications set forth in DCC Chapter 17.48, Table A.
- 15.8 Developers in Deschutes County shall be encouraged to design paths that connect to the Countywide bikeway system and that provide the most direct route for commuters. In some cases, it may be appropriate to relax a requirement, such as for a sidewalk on one side of a residential street, in favor of a comparable and relatively parallel bike path within the development. However, the developer's provision of a bike path shall not change the on-road bikeway requirement for arterials and collectors.
- 15.9 Deschutes County shall facilitate the development of mountain bike routes and the creation of paved off-road shared-use paths. The County shall work with its public agency and non-profit partners and the County Bicycle and Pedestrian Advisory Committee (BPAC) to identify such routes and incorporate them into its transportation system where appropriate. Particular

attention shall be given to obtaining and keeping rights-of-way for uninterrupted routes linking various residential, commercial, resort, and park areas within the County. Linear corridors such as rivers, irrigation canals, ridges and abandoned roadway and rail lines shall receive special attention. Proposed developments may be required to provide such identified trail and path rights-of-way as part of their transportation scheme in order to maintain the integrity and continuity of the Countywide system.

- 15.10 The County shall work with local agencies, jurisdictions, and affected property owners to acquire, develop, address trail-connectivity issues and maintain only those sections of trail that are located outside of UGBs that are consistent with the County's TSP but are part of a trail plan or map that has been adopted by the local jurisdiction and/or the County. Staff will work with local, state, federal agencies, and BPAC to determine the priority for trails that connect urban and rural areas.
- 15.11 Off-road paved shared-use paths shall be constructed in accordance with the guidelines set forth in the most current edition of the *Oregon Bicycle and Pedestrian Plan*.
- 15.12 Deschutes County shall maintain and update as necessary, the existing ordinance requirements for bicycle facilities found in DCC 18.116.031 and DCC Chapter 17.48, Table B, or such other location that it may be moved to within the Deschutes County Development Code.

AIRPORT PLAN

Goal 16

- 16. Protect the function and economic viability of the existing public-use airports, while ensuring public safety and compatibility between the airport uses and surrounding land uses for public use airports and for private airports with three or more based aircraft.

Policies

- 16.1 Deschutes County shall protect public-use airports through the development of airport land use regulations. Efforts shall be made to regulate the land uses in designated areas surrounding the Redmond, Bend, Sunriver and Sisters (Eagle Air) airports based upon adopted airport master plans or evidence of each airports specific level of risk and usage. The purpose of these regulations shall be to prevent the installation of airspace obstructions, additional airport hazards, and ensure the safety of the public and guide compatible land use. For the safety of those on the ground, only limited uses shall be allowed in specific noise impacted and crash hazard areas that have been identified for each specific airport.
- 16.2. Deschutes County shall:
 - a. Continue to recognize the Redmond (Roberts Field) Airport as the major commercial/passenger aviation facility in Deschutes County and an airport of regional significance. Its operation, free from conflicting land uses, is in the best interests of the citizens of Deschutes County. Incompatible land uses shall be prohibited on the County lands adjacent to the airport;

- b. Cooperate with the cities of Bend, Redmond and Sisters in establishing uniform zoning standards, which shall prevent the development of hazardous structures and incompatible land uses around airports;
- c. Take steps to ensure that any proposed uses shall not impact airborne aircraft because of height of structures, smoke, glare, lights which shine upward, radio interference from transmissions or any water impoundments or sanitary landfills which would create potential hazards from waterfowl to airborne aircraft;
- d. Allow land uses around public-use airports that shall not be adversely affected by noise and safety problems and shall be compatible with the airports and their operations;
- e. Work with, and encourage airport sponsors to work with the Federal Aviation Administration (FAA) to enforce FAA-registered flight patterns and FAA flight behavior regulations to protect the interests of County residents living near airports.
- f. Adopt regulations to ensure that developments in the airport approach areas shall not be visually distracting, create electrical interference or cause other safety problems for aircraft or persons on the ground. In addition, efforts shall be made to minimize population densities and prohibit places of public assembly in the approach areas;
- g. Continue efforts to prevent additional residential encroachment within critical noise contours or safety areas without informed consent;
- h. Specifically designate any proposed airport facility relocations or expansions within County jurisdiction on an airport master plan or airport layout plan map, as amended, and establish the appropriate airport zoning designation to assure a compatible association of airport growth with surrounding urban or rural development;
- i. Maintain geographic information system (GIS) mapping of the Airport Overlay Zones and provide timely updates;
- j. For those airports in Deschutes County without adopted master plans, the County shall, as a minimum, base any land use decisions involving airports on DCC Chapter 18.80 and Oregon Administrative Rule Chapter 660, Division 13, Airport Planning;
- k. Participate in and encourage the County-adoption of airport master plans for all public use airports and at least an airport layout plan for the remaining State-recognized airfields in Deschutes County;
- l. Encourage appropriate federal, state and local funding for airport improvements at public-owned airports; and
- m. Discourage future development of private landing fields when they are in proximity to one another, near other public airports and potential airspace conflicts have been determined to exist by the Federal Aviation administration (FAA) or the Oregon Department of Aviation.

RAIL PLAN

Goal 17

- 17.1 Maintain the existing levels of freight rail activity throughout the County while also encouraging expanded usage by commercial and industrial companies.
- 17.2 Increase the safety of existing at-grade crossings and work towards the eventual replacement of all at-grade crossings with gate-protected or grade-separated crossings according to the prioritized list from the 2009 *Report on Central Oregon Rail Planning*.
- 17.3 Re-establish passenger rail service to Central Oregon as soon as practical.

Policies

- 17.1 Deschutes County shall:
 - a. Work cooperatively with affected local jurisdictions and railroad operators to reduce land use conflicts and increase safety at all at-grade crossings;
 - b. Encourage efforts to improve the condition of rail lines throughout the County in order to retain the effectiveness and competitiveness of freight rail;
 - c. Not endorse the abandonment of any rail lines unless they are to be converted to trail use through the federal "Rails to Trails" program. Once converted, the trails shall be incorporated into the County Bikeway/Trail System;
 - d. Not endorse any activities that would diminish existing rail service; and
 - e. Work cooperatively with affected local jurisdictions, businesses and railroad operators to protect all rail spurs that currently serve businesses or have the potential to serve freight rail uses from abandonment or incompatible zoning.
- 17.2 Deschutes County shall work cooperatively with ODOT, area cities, and rail providers to identify and prioritize the actions needed to provide passenger rail service on the US 97 corridor.

TRANSPORTATION SYSTEM AND TRANSPORTATION DEMAND MANAGEMENT

Goal 18

- 18.1 In order to optimize the carrying capacity of the County road system, provide cost effective transportation improvements and implement strategies that shall improve the efficiency and function of existing roads.
- 18.2 Reduce peak hour traffic volumes on County roads and diminish the exclusive use of single-occupant vehicles.

Policies

- 18.1 Deschutes County shall adopt land use regulations to limit the location and number of driveways and access points on all collector and arterial roads;
- 18.2 Deschutes County shall ensure that land use actions support the access management policies of the Oregon Department of Transportation (ODOT) along State highways.
- 18.3 Deschutes County shall implement transportation system management measures to increase safety and reduce traffic congestion on arterial and collector streets, and protect the function of all travel modes.
- 18.4 Deschutes County shall promote safety and uninterrupted traffic flow along arterials via the following planning considerations:
 - a. Clustering of all types of development and provisions for an internal traffic circulation pattern with limited arterial access shall be encouraged;
 - b. A minimum setback of 50 feet from arterial rights-of-way shall be required;
 - c. Recommendations on speed limits shall be forwarded to the State Speed Control Board.
- 18.5 Deschutes County shall:
 - a. Encourage businesses to participate in transportation demand management efforts through the development of incentives and/or disincentives. These programs shall be designed to reduce peak hour traffic volumes by encouraging ridesharing, cycling, walking, telecommuting, alternative/flexible work schedules and transit use when it becomes available;
 - b. Work with business groups, large employers and school districts to develop and implement transportation demand management programs;
 - c. Continue to support the work of non-profit agencies working towards the same TDM goals as Deschutes County;
 - d. Encourage programs such as van or carpooling (rideshare) to increase vehicle occupancy and reduce unnecessary single-occupant vehicle travel;
 - e. Continue to pursue the development of park and ride facilities and consider the siting of a rideshare facility, based on identified needs, when realigning County roadways, considering the sale of surplus property, or reviewing land use applications for developments that could benefit from such a facility;
 - f. Pursue the development and utilization of telecommunication technologies that facilitate the movement of information and data;

- g. Support efforts to educate the public regarding the actual costs related to travel on the transportation system and encourage transportation demand management alternatives; and
- h. Establish and make available a transportation demand management program to County employees, to serve as a role model for the community.