

**REGIONAL PROBLEM SOLVING
FOR SOUTH DESCHUTES COUNTY**

**FINAL REPORT
FOR
THE OREGON LAND CONSERVATION &
DEVELOPMENT COMMISSION**

July 1999

DESCHUTES COUNTY

COMMUNITY DEVELOPMENT DEPARTMENT



REGIONAL PROBLEM SOLVING FOR SOUTH DESCHUTES COUNTY

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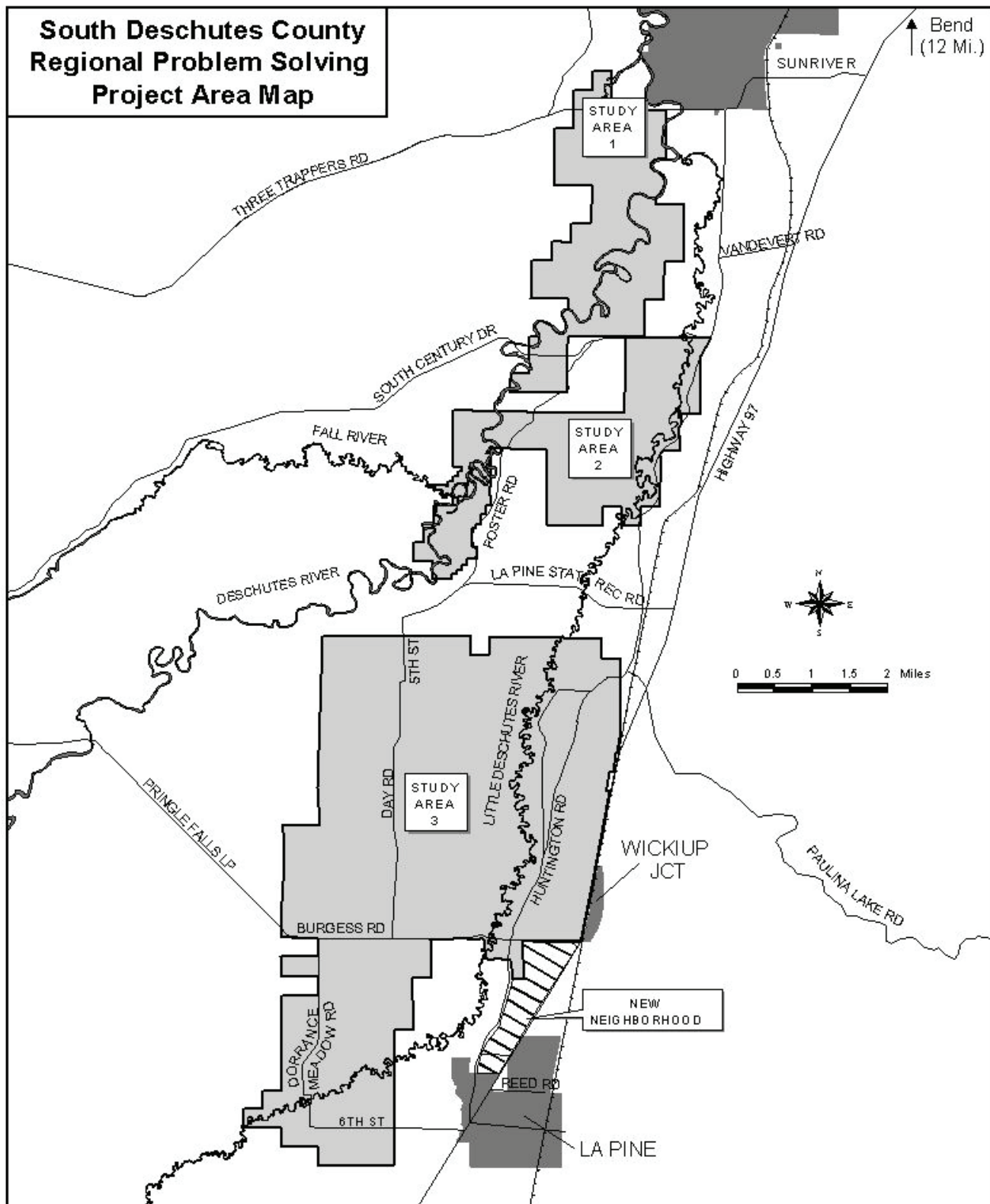
PREFACE

The Regional Problem Solving Project for South Deschutes County (RPS) began in July 1996 with the support of a grant from the Oregon Department of Land Conservation and Development (DLCD). DLCD awarded a second grant for the RPS project in October 1997. The project is one of four pilot projects authorized by the State Legislature (ORS 197.650).

South Deschutes County is the site of more than 12,000 residential lots platted in the 1960s and 70s. These lots are primarily served by on-site septic systems. The regional problems identified through the RPS program include potential pollution to groundwater, the primary source of drinking water in South Deschutes County, loss of wildlife habitat, increased threat of wildfire and degradation to air quality due to traffic on unpaved roads.

This report has been prepared for the Land Conservation and Development Commission in part to fulfill the County's obligations under the RPS grant. It will also serve as a guide for collaborative implementation of the regional solutions identified by the project stakeholders, including agencies and citizen groups. As stated in the report the stakeholders will monitor results to help ensure that desired outcomes are achieved.

The work to achieve these results is far from being completed. It will be a challenge to implement timely solutions in a region that continues to experience the largest growth rate on a percentage basis in the state. The County is indebted to DLCD and all of the RPS stakeholders for any future successes that may occur as a result of this project.



REGIONAL PROBLEM SOLVING PROJECT

Final Report 1997-1999¹

I. Problems in South Deschutes County

Deschutes County received funding through Regional Problem Solving (RPS) to identify solutions to problems that resulted from the platting of more than 12,000 lots in the La Pine basin. Most of these lots were created in the 1960's and early 70's, prior to the enactment of Oregon's statewide land use planning laws.

The RPS project area covers more than 30 sq. miles and includes more than 10,000 lots. (see map on next page) Many of the lots are in proximity to the Little Deschutes and Deschutes Rivers and are in areas of floodplains, wetlands, riparian areas, deer migration routes and lodgepole forests. The water table is shallow - less than six feet for most lots and less than two feet for many lots. Most are one-half acre lots, with few larger than two acres. Very few lots are serviced by sewer or water districts, or have paved roads.²

Existing development (4,071 lots) and continued development of vacant lots (4,901 lots less than 1.5 acres in size) could result in the following regional problems:

- Groundwater pollution that could affect drinking water and public health.³
- Additional loss of wildlife habitat, including mule deer migration corridors and riparian and wetland habitat .
- Increased threat of forest fire.
- More air pollution from traffic on unpaved roads.

Each of these problems is discussed in more detail in Appendix B of this report. The format for Appendix B follows the RPS statute and includes an outline of regional goals, optional techniques for achieving goals, performance indicators, incentives and disincentives to encourage implementation, monitoring activities and a process for correcting the techniques if necessary.

¹ The Regional Problem Solving Project has been funded in large part by the Oregon Legislature through the Oregon Department of Land Conservation and Development (DLCD). This is the county's final report pursuant to the RPS grant from DLCD.

² See Appendix A for land analysis data about lots and development in the entire project area and by Study Areas 1, 2 and 3.

³ Groundwater modeling based on the measurement of nitrate levels in well samples is the primary method used to predict future trends in water quality. The presence of nitrates may also indicate the existence of other pathogens. Additional testing and modeling over the next three years will help to refine the trend analysis for groundwater quality in South Deschutes County.

II. Collaborative Process

From July 1996 until June 1999, more than 50 representatives from local, state and federal agencies, local special districts, and concerned citizens met as stakeholders to provide education, examine problems and determine possible regional solutions to the problems.⁴ In January, 1998, the stakeholders chose a number of goals to reach these solutions. After review by the planning commission, the Board of County Commissioners adopted comprehensive plan goals in December, 1998, to achieve the following results in the RPS area:

- Preserve water and air quality, reduce wildfire hazards and protect wildlife habitat.
- Ensure that domestic water from groundwater meets safe drinking water standards.
- Develop a market-driven system to reduce development in flood plains, wetlands deer migration corridors and areas susceptible to groundwater pollution.
- Create a new neighborhood between La Pine and Wickiup Junction.
- Explore experimental sewage disposal methods.⁵

Throughout the collaborative process, the following educational and public processes took place:

- More than 30 stakeholder meetings;
- 4 newsletters, each mailed to over 6,000 property owners and interested people throughout the United States;
- RPS web site (<http://newberry.deschutes.org>) that provides background and current information and maps about the project;
- 12,000 surveys mailed to all property owners with over a 10% response;
- Surveys conducted in public meetings;
- 5 public forums with nearly 350 citizens participating in focus groups to identify options;
- 1 public workshop to provide further information on local problems and choices for solutions;
- 1 public workshop to present groundwater model and discuss groundwater pollution issues
- 3 days of public participation in preliminary new neighborhood design workshop, followed by a public workshop on final neighborhood design;
- 2 public meetings on a transferable development credits (TDC) program;
- 5 meetings on TDCs to realty, banking and development community;
- Presentations to the County Commissioners and Planning Commission and adoption of RPS Comprehensive Plan Goals and Policies through public hearing process;
- 4 meetings with the Oregon Water Wonderland II Sewer District Board and members;
- 4 meetings of interested citizens and experts on alternatives for sewers and cost comparison analysis between sewer and on-site disposal systems;
- 9 meetings of the Joint Working Group for Geographic Rule that included interested citizens, agency representatives and experts;
- 1 meeting of forestry agency representatives and experts to confirm commercial forest use of BLM property;
- 3 presentations to legislative committees or agency directors of Community Solutions Team at the state capital, and to Regional Community Solutions Team;

⁴ Appendix C is a list of official stakeholders (agency representatives) and active citizen participants.

⁵ Appendix D includes the full text of the comprehensive plan RPS goals and policies.

- 7 meetings with stakeholders to review each agency's or special district's memorandum of understanding for continuing work on RPS solutions.
- Adoption of final RPS report for LCDC by the County via public hearing process.

III. Summary of Regional Solutions

The solutions endorsed by the stakeholders of the RPS land use problems include:

- Reduce the potential density of septic systems at buildout in existing subdivisions.
- Develop a transferable development credit (TDC) program to use vacant lots in existing subdivisions as "sending" areas.⁶
- Design an attractive new neighborhood between La Pine and Wickiup Junction with a range in housing types as a "receiving" area for TDCs.
- Support the upgrade and expansion of the existing sewer system in Oregon Water Wonderland II subdivision.
- Coordinate with DEQ to continue to sample wells for water quality testing and test experimental on-site septic disposal techniques through the Environmental Protection Agency (EPA) grant.
- Work with DEQ and the U.S. Geological Survey (USGS) to improve the reliability of the regional groundwater model.
- Require inspection and upgrade (when needed) of on-site septic systems at time of property transfer.
- Consider amending County fence standards to reduce conflicts with migrating deer.
- Work with Department of Forestry on vegetation and fuels management to meet both fire and wildlife objectives.
- Map and adopt a wildfire hazard zone for Deschutes County under SB 360.
- Adopt and implement standards for fire retardant building materials.
- Identify improvements needed for access and evacuation from subdivision lots.
- Continue work with interagency fire organizations to educate property owners on fuel load management.
- Diminish the increasing rate of vehicle miles traveled and reduce trip generation.
- Reduce further degradation to paved and unpaved roads.
- Reduce air pollution from dust.
- Reduce conflicts with deer along Highway 97.
- Improve County road connections with Highway 97 at Burgess and Reed Roads.

Appendix F contains a list of the studies and reports produced during the past three years specifically for the South Deschutes County RPS project.

⁶ Appendix E includes a possible model for assigning and requiring TDCs in South Deschutes County.

IV. Implementation Steps

To implement the solutions endorsed by the stakeholders the following activities will be undertaken:

REGIONAL PROBLEM SOLVING IMPLEMENTATION WORK PROGRAM

| TASK | DATE |
|--|--|
| TRANSFERABLE DEVELOPMENT CREDIT (TDC) PROGRAM | |
| Complete calibration of TDC model | July 1999 |
| Create final map for TDCs | August 1999 |
| Decide on implementation details, i.e. banking, tracking, record maintenance | September 1999 |
| Develop covenant document | September 1999 |
| Set up system for tracking and monitoring | Fall 1999 |
| Develop public handout on voluntary program - mail as part of newsletter | Fall 1999 |
| Hold public hearing with Planning Commission and BOCC on TDC program | Fall 1999 |
| Determine policy for 0-2' water table, liability lots and county owned lots | Fall 1999 |
| Adopt TDC comp plan policy and implementing & monitoring program | Winter 1999-2000 |
| Conduct public meeting to explain program prior to issuance of TDCs | Spring 2000 |
| Distribute TDC to property owners | 2000 |
| NEW NEIGHBORHOOD | |
| BLM | |
| <ul style="list-style-type: none"> ▪ Notice Of Realty Action (45 days comment) published by BLM ▪ Appraisal ▪ FONSI by BLM | June 1999 July 1999 October 1999 |
| Land Purchase Decision by Deschutes County | |
| <ul style="list-style-type: none"> ▪ Determine funding opportunities for purchase ▪ Decision to purchase by County Commissioners | Fall 1999 Winter 1999-2000 |
| Evaluation of plan infrastructure and development costs. | Summer - Fall 1999 |
| <ul style="list-style-type: none"> ▪ Land cost - Appraisal by BLM ▪ Water system - Work with water district & Oregon Water Resources, conduct more detailed feasibility study and determine costs, develop facilities plan and engineer system, develop funding mechanism. ▪ Sewer system - Work with La Pine Sanitary Dist., complete final feasibility study & engineering, determine funding sources & construction timing. ▪ Roads - Work with ODOT & County Road Dep't. to complete planning, funding and construction of State highway interchange at Highway 97 and Burgess Road at Wickiup Junction. Conduct additional traffic impact analysis, determine need for light(s). Obtain ODOT approval, determine timing, funding & phasing of projects. ▪ Market feasibility ▪ Open space: determine ownership & maintenance responsibilities | |

| | |
|---|---|
| Design and Management Issues <ul style="list-style-type: none"> ▪ Depending how the new neighborhood pencils out decisions have to be made on the "who, what, when, where and how" for actual development and marketing. Where does the money go, which projects get funding, administration costs, development costs, etc? ▪ Housing - Provide for a range of market rate housing choices. Identify funding sources to assist in providing affordable housing. ▪ Meet community needs - Sr. Center, School, etc. ▪ Coordinate with Baldwin Trust. ▪ Determine governance. Who will be in charge of development decisions in early, middle and late stages? | Winter 1999-2000 |
| Plan and Zoning Amendments <ul style="list-style-type: none"> ▪ Draft exception to expand La Pine UUC boundary ▪ Obtain LCDC approval of exception (submit after decision to purchase) ▪ Finalize Draft Plan ▪ Finalize Draft implementing zoning code ▪ Planning Commission work sessions ▪ Planning Commission public hearing ▪ BOCC public hearing ▪ BOCC adoption | Summer 1999 Winter 1999-2000 Summer 1999 Summer 1999 Fall 1999 Fall 1999 Winter 1999-2000 January 2000 |
| Forest Plan - Grant Funded <ul style="list-style-type: none"> ▪ Community education - Work with High school and Park & Recreation District ▪ Identify native species for preservation ▪ Identify appropriate species for landscaping ▪ Create a plan for maintenance of open space, wildlife habitat and parks | September 1999 |

| WATER QUALITY | |
|---|--|
| Geographic Rule - DEQ <ul style="list-style-type: none"> • Recommendation from Local Advisory Committee to DEQ ▪ DEQ decision if geographic rule is needed ▪ If geographic rule needed, take to Oregon Environmental Quality Commission | April 1999 Summer 2000 Summer 2000 |
| EPA Grant - 5.5 million dollars <ul style="list-style-type: none"> ▪ Establish a monitoring program for sampling wells & testing water quality ▪ Install, test and monitor experimental on-site septic systems ▪ Develop three dimensional model for groundwater ▪ Establish a sanitary district for septic system maintenance | Ongoing through 2004 |
| Oregon Water Wonderland II Sanitary District <ul style="list-style-type: none"> ▪ Work with OWW II Sanitary Dist. on sewer system upgrade & expansion feasibility, hook up agreements ▪ Assist in obtaining funding for feasibility studies and construction | Ongoing |
| Require upgrade of failing on-site septic systems at time of property transfer <ul style="list-style-type: none"> ▪ Determine legal mechanism ▪ Consult with real-estate community ▪ Draft proposal for inspection and upgrade requirements ▪ Adopt program through Planning Commission & County Commissioner public hearings | Fall 1999 - Spring 2000 |

| INTERGOVERNMENTAL AGREEMENTS | |
|---|---|
| <p>Complete Intergovernmental Agreements with Stakeholders</p> <ul style="list-style-type: none"> ▪ La Pine Special Sanitary District ▪ La Pine Water District ▪ La Pine Rural Fire Protection District ▪ Oregon Water Wonderland II Sewer District ▪ Bend - La Pine School District ▪ State of Oregon: <ul style="list-style-type: none"> Economic Development Dep't. Dep't. of Environmental Quality Dep't. of Fish & Wildlife Dept. of Forestry Housing and Community Services Dep't. Dep't. of Parks & Recreation Dep't. of Transportation Water Resources Dep't. ▪ Forest Service - Deschutes National Forest ▪ Bureau of Land Management - Prineville District | July 1999 |
| ROADS | |
| <ul style="list-style-type: none"> ▪ Consult with DEQ on Potential Dust Pollution Problem at build out ▪ Work with County Road Dep't to distribute information about Local Improvement Districts | Spring 2000 |
| WILDLIFE | |
| <ul style="list-style-type: none"> ▪ Continue consulting with ODFW on fence standards ▪ Draft comp plan policies & zoning standards; amend County Code through public review process ▪ Work with ODFW & Forest Service on conducting systematic deer track counts and habitat surveys ▪ Work with ODFW and ODOF on vegetation management strategies for habitat protection and wildfire fuels management ▪ Consult with nonprofit organizations about possible transfer of conservation easements for long term management. | <p>Ongoing</p> <p>Winter 1999-2000</p> <p>Ongoing</p> <p>Winter 1999-2000</p> <p>Winter 1999-2000</p> |
| WILDFIRE HAZARD | |
| <ul style="list-style-type: none"> • Encourage development of building standards for use of fire retardant materials. • Adopt wildfire hazards map and building requirements through public review process with Planning Commission and County Commissioners. • Work with ODOF and La Pine RFPD - fuels management requirements in new neighborhood; maintain appropriate forest designation for new neighborhood. • Work with fire agencies to educate property owners about wildfire fuels management. • Work with County Road Dep't., ODOT and emergency service providers to identify access and evacuation improvements. | <p>Ongoing</p> <p>Winter 1999-2000</p> <p>Winter 1999-2000</p> <p>2000</p> <p>2000</p> |

| MONITORING | |
|--|--|
| <ul style="list-style-type: none"> ▪ County - recalibrate TDC model if it is not generating sales or meeting desired outcomes ▪ County - maintain records on TDCs, restricted covenants and new neighborhood development ▪ County - monitor & require upgrade of failing on-site septic systems ▪ DEQ - continue well sampling and water quality testing ▪ DEQ & County - analyze results from experimental on-site septic systems ▪ ODFW - continue to conduct deer track counts and habitat surveys ▪ Fire agencies - evaluate fire hazards and impact of risk reduction measures | <p>2001 or as needed</p> <p>2000 and beyond</p> <p>Ongoing</p> <p>1999-2001; possibly beyond</p> <p>1999-2004; possibly beyond</p> <p>Ongoing</p> <p>Ongoing</p> |
| PUBLIC INVOLVEMENT | |
| <ul style="list-style-type: none"> ▪ Keep Web site up to date ▪ Respond to requests for information, documents and maps ▪ Mail newsletters periodically to keep public informed ▪ Publish legal notice(s) of hearings for comprehensive plan and text amendments ▪ Planning Commission public hearing on zoning and comprehensive plan amendments ▪ County Commissioners public hearing on zoning and comprehensive plan amendments | <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>As needed</p> <p>Fall/Winter 1999-2000</p> <p>Winter 1999-2000</p> <p>Ongoing</p> |
| PERIODIC REVIEW - Task 17 | |
| <ul style="list-style-type: none"> • Draft Curry County findings to determine if RPS area is rural or urban • If urban, prepare necessary exception to statewide planning goals 14 and 11 • Complete unincorporated community designations or exceptions for Wildhunt, Spring River and Whistlestop • Coordinate with DLCD to review draft amendments. | <p>Summer 1999</p> <p>Fall 1999</p> <p>Ongoing</p> |

Appendix A

Land Analysis For RPS Project Area (30.4 Sq. Miles)¹

Existing Conditions

| Land Type | Number of Lots | Acres |
|--|----------------|--------|
| Total Project Area | 10,127 | 19,436 |
| Roads & Rivers | --- | 1,889 |
| Public Lands | 208 | 1,477 |
| Sewered Lands | 279 | 176 |
| Septic Disposal Lands | 9,640 | 15,888 |
| On-Site Septic | Number of Lots | Acres |
| Total Project Area | 9,640 | 15,888 |
| Developed Lands | 4,274 | 7,106 |
| Vacant, >= 1.5 Acres | 644 | 5,224 |
| Vacant, < 1.5 Acres | 4,722 | 3,713 |
| Vacant, < 1.5 Acres, On-Site Septic | Number of Lots | Acres |
| Total Parcels | 4,722 | 3,713 |
| 0-2' Water Table | 1,490 | 886 |
| > 2' Water Table | 3,232 | 2,676 |

Expanded OWW II Sewer Scenario

| Land Type | Number of Lots | Acres |
|--|----------------|--------|
| Total Project Area | 10,127 | 19,436 |
| Roads & Rivers | --- | 1,889 |
| Public Lands | 208 | 1,477 |
| Sewered Lands | 1,006 | 561 |
| Septic Disposal Lands | 8,913 | 15,509 |
| On-Site Septic | Number of Lots | Acres |
| Total Project Area | 8,913 | 15,509 |
| Developed Lands | 4,014 | 6,579 |
| Vacant, >= 1.5 Acres | 644 | 5,224 |
| Vacant, < 1.5 Acres | 4,255 | 3,310 |
| Vacant, < 1.5 Acres, On-Site Septic | Number of Lots | Acres |
| Total Parcels | 4,255 | 3,310 |
| 0-2' Water Table | 1,345 | 806 |
| > 2' Water Table | 2,910 | 2,516 |

¹ Land Analysis data updated June 13, 1999.

Study Area 1 - Expanded Oregon Water Wonderland II Sewer Alternative

| DESCRIPTION | NUMBER OF LOTS | ACRES | 0-2 FT. WATER TABLE | | ACRES | > 2 FT. WATER TABLE | | ACRES | TOTAL DWELLINGS |
|---------------------------------------|----------------|---------|---------------------|-----|-------|---------------------|-----|---------|-----------------|
| Total Land in Study Area 1 | -- | 3,068.3 | -- | -- | -- | -- | -- | -- | -- |
| Roads & Rivers | -- | 453.5 | -- | -- | -- | -- | -- | -- | -- |
| Parcels Within Study Area 1 | 3,504 | 2,614.8 | 1,332 | 202 | 904.1 | 2,172 | 888 | 1,710.7 | 1,090 |
| Public Lands | 65 | 78.3 | 51 | 0 | 70.8 | 14 | 0 | 7.5 | 0 |
| OWW - Existing Sewer | 279 | 176.1 | -- | -- | -- | -- | -- | -- | 134 |
| OWW - Expanded Sewer | 727 | 384.9 | 203 | 59 | 115.0 | 524 | 193 | 269.8 | 252 |
| Developed Lands, Septic | 777 | 770.9 | 151 | 151 | 115.5 | 626 | 626 | 636.4 | 799 |
| Vacant, Private, >= 1.5 Acres, Septic | 40 | 232.3 | 14 | 0 | 69.7 | 26 | 0 | 162.6 | 0 |
| Vacant, Private, < 1.5 Acres, Septic | 1,618 | 972.7 | 913 | 0 | 522.8 | 705 | 0 | 449.8 | 0 |

Study Area 1 - Existing Conditions

| DESCRIPTION | NUMBER OF LOTS | ACRES | 0-2' WATER TABLE | | > 2' WATER TABLE | |
|--------------------------------------|----------------|---------|------------------|-------|------------------|---------|
| Total Land in Study Area 1 | -- | 3,068.3 | -- | -- | -- | -- |
| Roads & Rivers | -- | 453.5 | -- | -- | -- | -- |
| Public Lands | 74 | 82.7 | 53 | 71.6 | 21 | 11.1 |
| Sewered Lands/Dwellings | 279/134 | 176.1 | -- | -- | -- | -- |
| Septic Disposal Lands | 3,287 | 2,521.2 | 1,335 | 896.4 | 1,952 | 1,624.8 |
| Developed Lands, Septic | 1,017 | 905.7 | 206 | 149.4 | 811 | 756.3 |
| Vacant, Private >= 1.5 Acres, Septic | 40 | 232.3 | 14 | 69.7 | 26 | 162.6 |
| Vacant, Private < 1.5 Acres, Septic | 2,085 | 1,211.9 | 1,058 | 602.7 | 1,027 | 609.3 |

Study Area 2

| DESCRIPTION | NUMBER OF LOTS | ACRES | 0-2' WATER TABLE | | > 2' WATER TABLE | |
|--------------------------------------|----------------|---------|------------------|-------|------------------|---------|
| Total Land in Study Area 2 | -- | 3,122.4 | -- | -- | -- | -- |
| Roads & Rivers | -- | 338.4 | -- | -- | -- | -- |
| Parcels Within Study Area 2 | 1,359 | 2,780.0 | 338 | 600.1 | 1,021 | 2,179.9 |
| Public Lands | 52 | 204.1 | 17 | 16.1 | 35 | 188.0 |
| Developed Lands, Septic | 407 | 852.7 | 38 | 111.3 | 369 | 741.4 |
| Vacant, Private >= 1.5 Acres, Septic | 230 | 1,205.3 | 91 | 335.3 | 139 | 869.9 |
| Vacant, Private < 1.5 Acres, Septic | 670 | 517.9 | 192 | 137.3 | 478 | 380.6 |

Study Area 3

| DESCRIPTION | NUMBER OF LOTS | ACRES | 0-2' WATER TABLE | | > 2' WATER TABLE | |
|--------------------------------------|----------------|----------|------------------|-------|------------------|----------|
| Total Land in Study Area 3 | -- | 13,244.9 | -- | -- | -- | -- |
| Roads & Rivers | -- | 1,096.0 | -- | -- | -- | -- |
| Parcels Within Study Area 3 | 5,263 | 12,148.9 | 386 | 479.3 | 4,877 | 11,669.6 |
| Public Lands | 82 | 1,190.5 | 41 | 57.7 | 41 | 1,132.8 |
| Developed Lands, Septic | 2,840 | 5,341.2 | 53 | 97.6 | 2,787 | 5,243.6 |
| Vacant, Private, >= 1.5 ac., Septic | 374 | 3,786.1 | 52 | 177.5 | 322 | 3,608.6 |
| Vacant, Private, < 1.5 Acres, Septic | 1,967 | 19,831.1 | 240 | 145.5 | 1,727 | 1,685.6 |

Appendix B

REGIONAL LAND USE PROBLEMS

PROBLEM #1: Water Quality Degradation from Existing Subdivision Lots

Of the 10,126 lots in the RPS project area, at least 4,071 are already developed, and most use on-site septic systems (only 279 are on sewer) and wells for drinking water. Continuing development in some areas could pollute groundwater and affect drinking water. In addition, there is a possibility that groundwater pollution could lead to water quality degradation to the Deschutes and Little Deschutes Rivers.

(A) Regional goals for resolution of regional problem:

- Protect groundwater quality for safe drinking water;
- Reduce number of potential new houses on existing subdivision lots to maintain rural character and reduce number of on-site septic systems on small lots;
- Maintain sufficient buildable lots in the region to meet projected population growth;
- Establish a sanitary district for septic system maintenance;
- Reduce potential for groundwater pollutants to reach rivers.

(B) Optional techniques to achieve the goals:

The participants in the regional problem solving process selected the following techniques to achieve the goals:

- Reduce the potential density of septic systems at buildout in existing subdivisions;
- Develop a transferable development credit (TDC) program to use vacant lots in existing subdivisions as "sending areas";
- Design an attractive new neighborhood between La Pine and Wickiup Junction with a range in housing types as a receiving area for TDCs;
- Support the upgrade and expansion of the existing sewer system in Oregon Water Wonderland II subdivision;
- Continue to sample wells for water quality testing and test experimental on-site septic disposal techniques through Environmental Protection Agency (EPA) grant;
- Improve the reliability of the DEQ groundwater model through the EPA grant.

Participants in the regional problem solving process also considered and evaluated the following techniques to achieve the goals, but determined not to recommend them at this time:

- Sewer all rural residential lots or certain subdivisions.
- Require an effective lot area of 1.5-acres for placement of an on-site septic system.
- Education program for the effective long-term use of on-site systems.
- Formation of septic system maintenance districts.
- Outright purchase of lots with less than a 2-foot water table.

(C) Measurable indicators of performance toward achievement of the goals. Progress will be measured with the completion of the following tasks:

- Purchase of the Bureau of Land Management land for the new neighborhood;
- Implementation of the TDC program;
- Expansion of the La Pine UUC boundary to include the new neighborhood;
- Adoption of the new neighborhood master plan and zoning standards;
- Completion of facility planning for new neighborhood;
- Funding of sewer and water infrastructure in new neighborhood;
- Platting of subdivisions in the new neighborhood;
- Expansion of the La Pine sewer and water systems;
- Measurement of nitrate level in groundwater;
- Adoption of a regional Geographic Rule by DEQ for specific standards for on-site septic systems;
- Completion of Periodic Review Task 17 by Deschutes County regarding the "Curry County Decision" and rural vs. urban development.

(D) A system of incentives and disincentives to encourage successful implementation of the techniques chosen by the participants to achieve the goals:

Incentives

- The TDC program is designed to be a voluntary, market-based program that provides financial compensation as an incentive to reduce density.
- The EPA grant provides opportunities for testing experimental on-site systems at low cost, sampling and testing of well water for nitrates and chlorides, and the refinement of the groundwater flow model by creating a three dimensional model (the current model is two dimensional).
- The new neighborhood will provide housing choices that are not currently available in the local market.
- Requirement to upgrade substandard septic systems at time of property sale.

Disincentives

- Existing development and unaltered development pattern on vacant subdivision lots could lead to groundwater pollution above regulatory limits (DEQ and EPA) and lead to a building moratorium.
- High cost to provide sewer throughout the region if mandated by DEQ.
- Statewide planning laws do not support region-wide sewer system.
- Property owners view a regional zoning restriction as a taking.

(E) A system for monitoring progress toward achievement of the goals:

- The County will maintain permanent records on restrictive covenants placed on property where TDCs are sold. These records will provide the number and location of TDCs issued and transferred.
- The County and DEQ will establish a well sampling program to monitor ground water quality on a semi-annual basis.
- The County and DEQ will monitor the installation and evaluate the performance of experimental on-site septic technology.

- The EPA grant will allow DEQ to continue to study and model groundwater movement.
- The County will track the number and type of on-site systems installed and compares this data with groundwater studies.
- The County and HCD will monitor the range of housing types in the new neighborhood.
- EDD will provide technical assistance for funding of sewer and water facility upgrades and expansion.

(F) A process for correction of the techniques if monitoring indicates that the techniques are not achieving the goals:

- TDC calibration can be changed to respond to inactivity in the market or the need to target a specific area because of ground water quality problems.
- A moratorium on new construction could be imposed by DEQ.
- A larger minimum lot size for on-site septic systems could be adopted.
- Other measures can be evaluated and adopted if appropriate.

PROBLEM #2: Wildlife Habitat

Many of the subdivision lots are one-half acre in size. Population density and further development on these lots will increase conflicts with wildlife, reduce botanical and animal habitat in wetlands and riparian areas, and infringe on Oregon's largest mule deer migration corridor.

(A) Regional goals for resolution of each regional problem:

- Maintain or improve habitat for deer migration by reducing potential density of new houses in identified high priority migration corridors (1263 vacant lots).
- Maintain riparian and wetland habitat (302 vacant lots).

(B) Optional techniques to achieve the goals:

The following techniques are considered achievable:

- Transferable Development Credit program to reduce density in priority migration corridor and riparian habitat areas;
- Use of conservation easements to protect habitat values;
- Blocking up large areas in corridors, riparian areas and wetlands and transferring ownership to public or non-profit ownership for management;
- Amend County fence standards to reduce conflict with migrating deer;
- Work with Department of Forestry on vegetation and fuels management to meet both fire and wildlife objectives.

The following techniques may not be achievable:

- Purchase of riparian and wetlands habitats;
- Adopt and enforce regulation on dog control;

(C) Measurable indicators of performance toward achievement of the goals:

- Restrictive covenants from sale of TDC's are placed on lots in priority deer migration corridors and riparian habitat areas;
- Use of priority migration corridors by deer increases;
- Deer populations are maintained to meet ODFW management objectives.
- Ownership of lots located in riparian areas, wetlands and migration corridors transferred to public or non-profit agency for management.
- Adoption and enforcement by the County of fence standards in priority migration corridors.
- Education and/or adoption of management standards for vegetation that reduce fire fuels but also maintain habitat values.

(D) A system of incentives and disincentives to encourage successful implementation of the techniques chosen by the participants to achieve the goals:

- Surveys of residents indicate strong support for wildlife values and concern for maintaining rural character.
- Reduction in density protects habitat.

(E) A system for monitoring progress toward achievement of the goals:

- Work with ODFW to track deer counts to measure use of migration corridors in areas where development is restricted due to TDC program.
- Monitor TDC sales and map lots with restricted covenants.
- Map habitat areas on a periodic basis to see if large tracts are being protected.

(F) A process for correction of the techniques if monitoring indicates that the techniques are not achieving the goals:

- Recalibrate TDC system to encourage increased sales of TDCs in priority areas.

PROBLEM #3: Wildfire Hazard

Much of the corridor of platted lots lies at the interface of federal and private lands, and many lots have high fuel loads. The potential of wildland fire is significant and could affect public lands, as well as personal life, residences and property.

(A) Regional goals for resolution of each regional problem:

- Map and adopt a wildfire hazard zone for Deschutes County under SB 360 and implement standards for fire retardant building materials;
- Identify improvements needed for access and evacuation;
- Continued cooperation with interagency fire organization to educate property owners on fuel load management.

(B) Optional techniques to achieve the goals:

- Reduce potential buildout density through TDC process.
- Coordinate with ODFW and ODOF on wildlife management objectives through vegetation management.
- Work with La Pine High School, La Pine Parks and Recreation District, and ODOF and ODFW in fuels management planning in new neighborhood.
- Support continuing education of property owners to reduce fire hazards on private property by the La Pine RFPD and ODOF.
- Coordinate with La Pine RFPD, ODOT, County Road Department, private road districts and owners associations to identify access/evacuation improvements.

(C) Measurable indicators of performance toward achievement of the goals:

- Adoption of a wildfire hazard map by the County Commissioners.
- Development of building standards and fuels management rules in the County Code.
- Participation by the public in fuels management education presentations.
- Inclusion of a fuels management component in the new neighborhood plan.
- Construction of access/evacuation improvements.

(D) A system of incentives and disincentives to encourage successful implementation of the techniques chosen by the participants to achieve the goals:

- Future reduction in fuels increases personal safety and reduces risks to property from wildland fire.
- Property owners could realize lower insurance rates due to building material standards and participation in a coordinated fuels reduction program.

(E) A system for monitoring progress toward achievement of the goals.

- Continued participation of County Planner and ODOF in SB 360 process.
- Monitoring the TDC program and the success of the new neighborhood as a means to redirect growth.

(F) A process for correction of the techniques if monitoring indicates that the techniques are not achieving the goals.

- Continued coordination with ODOF and La Pine RFPD on recommendation for changes in fuels management, access/evacuation improvements.

PROBLEM #4: Roads

Developers of many subdivisions did not provide paved roads for County maintenance. Of the nearly 200 miles of unpaved roads, only a few are maintained by Special Road Districts. These few would require costly upgrades to become part of the County road system. There is one Local Improvement District (LID), and most neighborhoods or subdivisions are unable to afford the cost of an LID.

Trip generation and the total number of vehicle miles traveled will increase as development continues. This contributes to further maintenance needs and more air pollution from dust, especially in the summer. For some, the dust creates a significant health hazard.

(A) Regional goals for resolution of each regional problem:

- Diminish the increasing rate of vehicle miles traveled and reduce trip generation.
- Reduce further degradation to paved and unpaved roads.
- Reduce air pollution from dust.
- Reduce conflicts with deer along Highway 97
- Improve County road connections with Highway 97

(B) Optional techniques to achieve the goals:

- Educate homeowner associations about the merit of LIDs.
- Reduce amount of future trip generation by development of the new neighborhood, where multi-modal transportation planning will occur and roads will be paved.
- Develop a proactive program for dust abatement.
- Construct Highway 97 intersection improvements at Burgess (grade separation of the highway over the railroad) and Reed (signalize) Roads.

(C) Measurable indicators of performance toward achievement of the goals:

- Formation of new LIDs;
- Construction of intersection improvements;
- Highway corridor planning.

(D) A system of incentives and disincentives to encourage successful implementation of the techniques chosen by the participants to achieve the goals:

Incentives

- State grants for improvements to unpaved roads or loans for LIDs.
- ODOT construction of intersection improvements.

Disincentives

- High costs for road improvements or establishment of LIDs.
- Low priority for many property owners.

(E) A system for monitoring progress toward achievement of the goals:

- Ongoing traffic counts by the County and ODOT will demonstrate the level of service at intersections.

(F) A process for correction of the techniques if monitoring indicates that the techniques are not achieving the goals:

- Continued coordination with ODOT and ODFW on highway project development and wildlife conflict mitigation.
- Evaluate road needs on an annual basis as part of the County budget cycle.

Appendix C

RPS Stakeholders and Active Citizen Participants

AGENCY

PARTICIPANTS

OREGON STATE DEPARTMENTS

Economic Development
Environmental Quality

Fish and Wildlife
Forestry
Housing & Community Services
Land Conservation & Development
Parks & Recreation
State Lands
Transportation
Water Resources

Robert Raimondi
Craig Costello; Robert Baggett;
Rodney Weick; Stephanie Hallock;
Tom Hall; Dick Nichols
Ted Wise; Steve George
John Jackson; Tom Keith; Katie Kouse
H. Jack Duncan
Brent Lake; Marguerite Nabeta
Jan Houck; Curtis Smith
John Lilly; Bob Brown
Mark Devony; Peter Russell
Bob Main; Kyle Gorman

FEDERAL AGENCIES

Bureau of Land Management
Deschutes National Forest

Ron Wortman; Shaaron Netherton
Phil Paterno
Mollie Chaudet; George Chesley;
Larry Chitwood

DESCHUTES COUNTY DEPARTMENTS

Public Works/ Road
Sheriff
Property Management
Environmental Health

Gary Judd; Dick Johnson
Pete Penzenik
Jim Bonnarens
Roger Everett; Dan Haldeman

OTHER DISTRICTS, AGENCIES AND CITIZEN PARTICIPANTS

La Pine Community Action Team
La Pine Chamber of Commerce
La Pine Industrial Park
La Pine Park District
La Pine Rural Fire Protection District
La Pine Senior Center
La Pine Special Sewer District
Bend/La Pine School District
Oregon Water Wonderland II Neighborhood Assoc.
Oregon Water Wonderland II Sanitary District
Fall River Water Company
Water Wonderland Improvement District

Jill Phillips-McLane; Randy Gordon;
Vickie Allen
Ted Scholer
Sylvia Shields
John Taylor; Marilyn Russell
Pat McVicker; Jim Gustafson
Andi Ferguson
Andrew Newton; Dennis Carter
John Rexford
Jill Sollenberg; Eric Wyman
Don Devine; George Oldham
Evan Pruitt
Walter Seaborn

Crescent Ranger District
Fall River Special Road District
Lazy River Special Road District
Ponderosa Pine East Special Road District
River Forest Acres Special Road District
Special Road District #1
Special Road District #8
Vandervert Acres Special Road District
Deschutes Basin Watershed Council
Sunriver Fire Department
Sunriver Utilities
Sunriver Homeowners Association

Phil Cruz

Glen Downey
Dick Decker
Lester Davis
Mary Wallace; June Sebastian
Bob Vaught; Jay Yowell
Jim Kendall
Barbara Lee
Era Horton
Terry Penhollow; Todd Penhollow
Gary Fiebeck; Bill Peck

Many citizens have also contributed to the project, including:

Ernie Poole, ArLuDeCo
Keith Sime, Realty Community
Steve Wert, Soils Consultant
Dan Rutherford, on-site information
Leon Shields, on-site information

Appendix D

Deschutes County Comprehensive Plan Goals and Policies For South Deschutes County Regional Problem Solving Project

Adopted by Ordinance No. 98-085 on December 30, 1998

GOALS:

1. To preserve water and air quality, reduce wildfire hazards and protect wildlife habitat.
2. To ensure that domestic water derived from groundwater meets safe drinking water standards.
3. To develop an equitable, market-driven system, that reduces the potential development of existing lots in floodplains, wetlands, mule deer migration corridors and areas susceptible to groundwater pollution.
4. To create a new neighborhood, primarily residential in character, between La Pine and Wickiup Junction, that provides services efficiently, sustains economic development and reduces adverse impacts to groundwater quality in South Deschutes County.
5. To explore experimental sewage disposal methods.

POLICIES:

1. The County shall continue to work with landowners, citizens, community organizations and governmental agencies at the local, state and federal level to:
 - a. Continue collaborative work on the Regional Problem Solving project.
 - b. Develop, review and implement land use policies and development standards that will ensure that agreed-upon solutions from the RPS project are enacted to the maximum extent possible.
 - c. Analyze the feasibility of acquiring land from the BLM between La Pine and Wickiup Junction, west of Highway 97, to develop as a new neighborhood.
 - d. Conduct feasibility studies regarding development of a new neighborhood. Such studies may include, but are not limited to: a master design plan, development costs and funding options, water and sewer system feasibility, traffic impacts, and zoning codes and governance issues.

2. The County shall continue to develop and analyze a Transferable Development Credit program as a possible means to redirect potential growth away from residential lots in subdivisions throughout the region into the new neighborhood.
3. The County shall continue to evaluate means to reduce nitrate loading from on-site sewage disposal systems by exploring experimental on-site sewage disposal technology, retrofitting of existing substandard disposal systems, expansion of sewer systems, development standards such as an effective lot area or variable lot area requirements, or other measures that will accomplish the goals.
4. New residential subdivisions and partitions in the Wickiup Junction Rural Service Center and the La Pine Urban Unincorporated Community shall be connected to a community water system and the La Pine Special Sewer District sewage disposal system.

Appendix E

Model for Assigning and Requiring Transferable Development Credits¹

Possible Method for Assigning TDCs in Sending Area (Existing subdivision lots)

| | # of Lots | | Size Factor | Other Factors | Total TDCs |
|---|--------------|-------------|----------------|------------------|---------------|
| Vacant Lots, <1.5 acre, > 2 ft water table | | | | | |
| Lot Size: 0.1 - .49 acre | 289 | | 1.00 | | 289 |
| .50 - .99 acre | 1321 | | 0.75 | | 991 |
| 1.0 - 1.49 acre | 1300 | | 0.50 | | 650 |
| Other Factors | | | | | |
| Nitrate plume > 1mg/l | | 759 | | 0.25 | 190 |
| Water table depth 2 - 6 ft | | 1310 | | 0.25 | 328 |
| Deer migration corridor only | | 657 | | 0.25 | 164 |
| Riparian habitat area only | | 98 | | 0.25 | 25 |
| Deer migration & Riparian | | 107 | | 0.50 | 54 |
| Past Actions, < 2' water table | | | | | |
| Septic Approvals | | 115 | | 1.50 | 173 |
| Priority existing houses | | 25 | | 3.00 | 75 |
| Total | 2910 | 2726 | | | 2937 |

Possible Method for Requiring TDCs in Receiving Area (New Neighborhood)

| | # of Units | Size Factor | Total TDCs |
|--|---------------|----------------|---------------|
| Single Family Dwelling | | | |
| Lot Size: Up to 7,000 sq. ft. | 344 | 1.00 | 344 |
| 7,001 - 10,000 sq. ft. | 344 | 2.00 | 688 |
| 10,001 - 15,000 sq. ft. | 300 | 3.00 | 900 |
| Over 15,000 sq. ft. | 120 | 4.00 | 480 |
| Multi-Family Units | | | |
| Single Family Attached (duplex) | 250 | 1.00 | 250 |
| Apartment Units: 2500- 5000 sq. ft, per unit | 146 | 0.75 | 110 |
| < 2500 sq. ft. per unit | 146 | 0.50 | 73 |
| Senior Housing | 150 | 0.00 | 0 |
| Total | 1800 | | 2845 |

¹ This model for assigning and requiring TDCs is modified from the "Summary of Phase II Work On a Transferable Development Credit System," completed for Deschutes County by Clarion Associates in June, 1999.

Appendix F

DOCUMENTS PRODUCED FOR REGIONAL PROBLEM SOLVING PROJECT FOR SOUTH DESCHUTES COUNTY

GROUNDWATER AND SEWAGE STUDIES

Haldeman, Dan. "Regional Problem Solving Project for South Deschutes County. Community Sewer/On-site Septic Cost Comparison." Deschutes County Environmental Health Department, 1999.

Sandison, Derek. Onsite Wastewater Treatment Technical Memorandum. Appendix B of KCM Final Report.

_____. Status Report, South County Wastewater Disposal Options Technical Memorandum. March, 1999.

REGIONAL STUDIES

Howe, Deborah A., and William A. Rabiega. "La Pine North: Two Futures." Center for Urban Studies, Portland State University, January 1998.

KCM, Inc. South County Regional Cost/Benefit Analysis, Regional Problem Solving Project, Final Report, August, 1997.

NEW NEIGHBORHOOD STUDIES

HGE, Inc. Water and Wastewater Feasibility Study for New Neighborhood and Cagle Subdivision. April, 1999.

Kimley - Horn and Associates, Inc. Traffic Impact Study, La Pine Mixed-Use Development. March, 1999.

Lennertz, Coyle & Associates. The La Pine New Neighborhood Code - A Tool for Building New Neighborhoods. May, 1999.

TRANSFERABLE DEVELOPMENT CREDITS

Clarion Associates. "Deschutes County, Oregon Regional Problem Solving Program -- Summary of Workshop Presentation, May 22, 1997." June, 1997.

_____. Presentation Materials, Obsolete Subdivisions and Transferrable Development Rights." May 22, 1997.

_____. "Deschutes County, Oregon Regional Problem Solving Program -- Summary of Phase II Work On a Transferable Development Credit System." June 30, 1999.

FIRE MANAGEMENT

Coyle, Douglas. Fire Management Recommendations for Southern Deschutes County. D & H Enterprises, April, 1997.