

Urban Growth Management Study

Case Studies Report

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Oregon Department of Land Conservation and Development

FOREWORD

ECO Northwest, with assistance from David J. Newton Associates and MLP Associates, prepared this report under contract to the Oregon Department of Land Conservation and Development. This contract is one of four study contracts of the Department's Urban Growth Management Study. Other study reports examine annexation and urban growth management, local government infrastructure funding, and farm and forest property tax deferrals inside urban growth boundaries. Copies of the study reports are available by contacting the Department.

The views contained in this report are those of the contractor and not necessarily the views of the Department. Readers reviewing this report are encouraged to send comments to the Department at the address on the title page. The Department plans to issue a report summarizing the results of all four urban growth management study contracts and stating the Department's recommendations.

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SUMMARY

FINDINGS

- Urban growth can be largely contained in urban growth boundaries (UGBs). In the Portland area only 5% of residential growth occurred outside the UGB. But the policies of the statewide planning program have not, by themselves, ensured such containment. In the Bend area 57% of residential development occurred outside the UGB, in the Brookings area 37%, and in the Medford area 24%.
- In the Portland and Bend areas, the potential exists for large numbers of new residences outside the UGB: about 11,000 in the Portland area and 12,000 in the Bend area.
- In many parts of all case-study areas, the configuration and density of development now occurring in the urban fringe (land adjacent to but outside a UGB) will make future expansion of the UGB (if necessary) difficult and expensive.
- Because the density of residential development is falling substantially below densities allowed by applicable zoning, the Bend, Brookings, and Medford UGBs may have to be expanded earlier and, as a result, be larger than expected. Lots created by subdivision fell 67% short of allowed density inside the Bend UGB, 44% short inside the Brookings UGB, and 25% short inside the Medford UGB. In Portland, actual residential densities are not so much lower than planned densities that UGB expansion will have to occur sooner than planned. In all case study areas, low densities may be contributing to higher public facility costs and auto dependency.
- The density of development inside UGBs varies across case studies. Single family development in the Portland area averaged a consistent 5 units per net acre (lots of about 8,000 square feet) for all subareas: urban, urbanizable, city, county. (There were, however, significant differences among jurisdictions within the metropolitan UGB.) At the other extreme, the City of Bend averaged just over 2 units per net acre in single family residential zones inside the UGB (lots of about 20,000 square feet).
- Indicators of livability, though admittedly incomplete, suggest some areas for concern. Traffic congestion and real housing prices have increased in all case-study areas; air quality has improved; though parkland is being acquired in some case study areas, the amount of developed parkland is probably not increasing as fast as population.
- Based on our case studies, fast growing communities appear to be able to fund their sewer and water needs to accommodate growth, but not their street and road needs.

- Deferring infrastructure inside UGBs because funding is not available can contribute to development at densities that are lower than would occur with full services and below planned and zoned densities. In addition, it can contribute to deterioration in urban services levels (e.g., traffic congestion), higher infrastructure costs later, and market pressure on areas outside UGBs.
- Of total Oregon Highway Division expenditures in the Bend, Brookings, and Medford areas, 85 percent went outside urban areas. By their nature, the State's interurban highway investments have the effect of enhancing the attractiveness of homesites outside UGBs.

IMPLICATIONS FOR POLICY

At the most general level, the goal of existing state policy is to achieve growth through compact urban development. *If* the State determines that the development patterns described fall short of meeting this goal, *then* it should consider policy changes such as, but not limited to, the ones that follow.

To reduce the share of growth occurring *outside* UGBs

- Decrease, or at least avoid increasing, the amount of land outside UGBs where rural residential development would be allowed
- Require a larger minimum lot size in rural residential areas, giving local jurisdictions flexibility to be more restrictive (i.e., require larger minimums) if they choose
- Reduce ability to build homes on pre-existing, nonconforming lots that were created prior to county acknowledgement
- Establish strict, objective standards for farm and forest approvals; restrict the siting of non-farm and non-forest dwellings; increase minimum lot size in farm and forest zones
- Develop consistent statewide policy for unincorporated areas of pre-existing urban development outside of UGBs
- Allow, encourage, or require long-term UGB expansion areas based on 50-year public facility needs and plans. Within this area:
 - Adopt strict schedules and unambiguous standards for UGB expansion to ensure that the expansion area designation does not become a *de facto* expansion of the UGB

- Prohibit dwellings in exclusive farm or forest zones
- Establish 10-20 acre minimum lot size for rural residential areas
- Allow infill in areas whose pre-existing development makes full urban development unlikely
- Facilitate or require coordination between county and city planning

To manage growth *inside* UGBs

- **Limit or prohibit:**
 - Land divisions in urbanizable areas until urban services are available or imminent (i.e., require *concurrency*)
 - Serial partitioning, which avoids the planning the subdivision process is designed to provide
 - Single family development on commercial, industrial, or multiple family land
- **Require:**
 - Large minimum lot sizes (10-20 acres) for areas that do not have urban services now but are expected to have them eventually
 - Redevelopment plans (shadow plats) for developments or land divisions that are approved in the absence of full urban services
 - Detailed plans for the location, funding, and timing of public facilities to urbanizable areas
 - Minimum densities (in addition to maximums) for residential zones
- **Encourage:**
 - State programs to assist with the funding of local public services
 - Appropriate pricing of public services

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CHAPTER ONE

INTRODUCTION

A. PURPOSE

In June 1989 the Oregon Legislative Assembly approved funds for the Oregon Department of Land Conservation and Development (DLCD) for an Urban Growth Management Study to (1) evaluate the effectiveness of the growth management policies of Oregon's statewide planning program, and (2) determine how these policies could be improved. One component of that larger study is this study of urban growth in four representative urban areas across Oregon.

In April 1990, DLCD hired ECO Northwest, a consulting firm in land-use planning and economics, to study issues related to urban growth in four case-study areas: (1) the Portland Metropolitan area, (2) Bend, (3) Medford, and (4) Brookings. Figure 1-1 shows the location and approximate boundaries of the case study areas. The comprehensive plans for the central cities and counties of these jurisdictions were all initially acknowledged by LCDC between 1980 and 1984 (except for Medford).

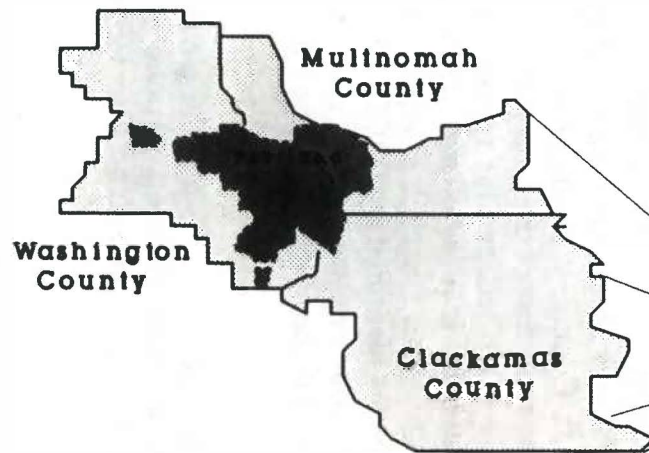
ECO's analysis occurred in two phases, each ending in reports: *Case Studies, Phase I: Methodology*, May 1990; *Supplement to the Methodology Report*, July 1990; and *Case Studies, Phase II: Portland, Bend, Medford, and Brookings*, November 1990. These reports describe in detail the purposes of the study, issues it addresses, and the data we used to describe the development patterns in the four case study areas.

This report summarizes and synthesizes information contained in the detailed case studies. (In doing so, it loses much of the detail in those studies, particularly in the Portland case study, which contains more detailed findings about our subarea analysis by city and county, including some information for Clark County, Washington.) As specified in our scope of work, we have gone beyond a simple reporting of the data to conjecture about the reasons for the development patterns we have described, and the types of policies the state might adopt if it desires to change those patterns. It is organized according to the issues specified by DLCD at the beginning of this project. For each group of issues, the report (1) defines the urban growth management issues identified by DLCD, (2) summarizes key findings regarding growth management in the four case study areas, and (3) describes ways in which statewide policies could be improved if the state determines that these findings suggest the need for such improvements.

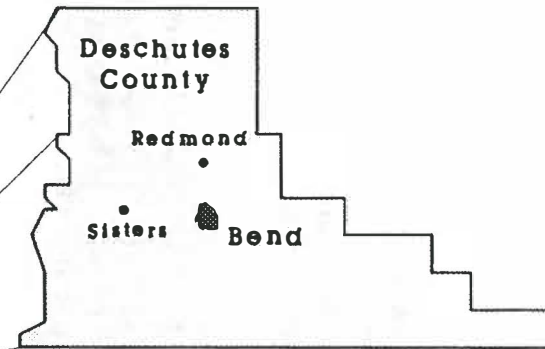
This study focuses on describing development patterns and the growth management policies that influence them. It does not examine many other related policies on annexation, taxing, infrastructure extension and finance, farm and forest land, and secondary land.

FIGURE I-1 URBAN GROWTH MANAGEMENT CASE STUDY AREAS

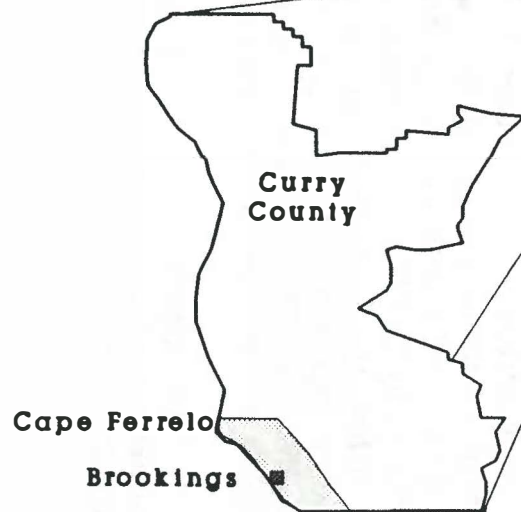
PORTLAND CASE STUDY AREA



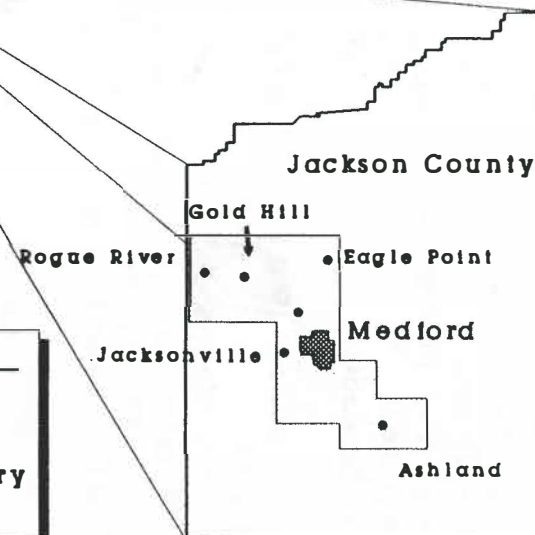
BEND CASE STUDY AREA



BROOKINGS CASE STUDY AREA



MEDFORD CASE STUDY AREA



Legend

- N ↑
- Study Area
- Not to Scale
- Primary UGB

DLCD has conducted other studies that examine many of these policies. It will use the results of those studies and this one to make recommendations about desirable changes to the statewide planning program.

Our charge from DLCD was to find *weaknesses* in the State's policies that relate to growth management. DLCD wanted to focus on *improving* the program, not on *justifying* it. Thus, our report talks much more about potential problems than likely successes. We caution against interpreting our report as a program evaluation: it was not. We did not try to determine whether the benefits of the program outweighed its costs. Such an evaluation is probably beyond the capabilities of any research that could be conducted within likely budget constraints. One would have to try to quantify some of the likely benefits that we did not. For example, it appears to us that Goal 10, Housing, and the administrative rules interpreting it have made Oregon a leader in reducing exclusionary zoning, increased housing opportunities, and probably kept housing prices from rising as quickly as they otherwise would have. In summary, our intent was to suggest ways to improve the program, not to impoverish it.

B. METHOD

The methodological problems associated with an analysis of this type are extensive; the documentation of how those problems got resolved is correspondingly extensive. Our previous reports contain that complete documentation. For a brief summary of the limitations of the data used in the case study analysis, see Appendix B of this report. In the rest of this section, we give just a brief overview of the methods we used.

For each case-study we gathered, evaluated, and presented data to describe urban growth in four analysis areas: (1) urban (areas inside UGBs with a high percentage of existing development), (2) urbanizable (areas inside UGBs with a high percentage of vacant land), (3) urban fringe (areas outside but close to (roughly, within 1-2 miles) the UGBs), and (4) rest of the exurban area: areas outside UGBs and beyond the immediate urban fringe, but within the rest of the county, meant to approximate a commuting distance to the central city).¹ We defined the boundaries of the case-study areas as follows (see Figure 1-1):

¹Thus, in this report the exurban area comprises the "urban fringe" and the "rest of the exurban area." This terminology is slightly different than that used in the four case studies from which the data in this report are drawn. In these case studies we used the terms "exurban" and "rest of urban region" interchangeably for the area we now refer to as the "rest of the exurban area." This clarification of terms has no effect on boundary definitions or the data reported.

Portland: The three metropolitan counties (Clackamas, Multnomah, and Washington). All the population within the three counties (about 1.1 million) and area (3,026 square miles) are included in the study area.

Medford: The populated portions of Jackson County along the Interstate-5 corridor, including the Bear Creek and Rogue River watersheds. The case study area consisted of eight incorporated cities and three unincorporated areas. The Medford area has a population of about 92,000 (or about 63 percent of Jackson County's total population of 145,000). The Medford area covers about 558 square miles (or about 20 percent of Jackson County's total area of 2,812 square miles).

Bend: Deschutes County, including Sisters and Redmond, but excluding unincorporated areas within their UGBs. The case-study area also includes the unincorporated areas of Sunriver, Black Butte, and Eagle Crest. All of the population (70,600) and area (3,060 square miles) of Deschutes County are in the study area.

Brookings: The area within commuting distances of Brookings in southern Curry County, excluding the cities of Gold Beach and Port Orford. The case study area was bounded by the California border on the south, the Pacific Ocean on the west, federally-owned land to the east, and Cape Ferrello to the north. The Brookings area has a population of about 7,300 (or about 38 percent of Curry County's total population of 19,200). The Brookings area covers about 150 square miles (or about 10 percent of Curry County's total area of 1,648 square miles).

Our analysis focuses on changes in the extent of developed areas between 1985 and 1989. We chose this five-year period because (1) it represents the period after acknowledgement of comprehensive plans by LCDC when most growth occurred (after the recession of the early 1980s), and (2) we wanted to have comparable data for all case studies. In this study, we refer to our case-study areas as "areas". For example, "the Portland area" means the three-county case-study area in which Portland is the central city, not the City of Portland.

We also discuss the causes of the development patterns and other findings the data describe. Study resources did not permit a rigorous definition of the causal relationships among growth, the forces that drive it, and applicable growth management policies. Instead, we relied on our intuitions, informed by our research, training, and experience, and by workshops conducted in each case study area. Knowledgeable local public officials, developers, and citizen activists that participated in these workshops (see Appendix F) suggested not only causes of the reported development patterns, but also many of the proposals contained in this report for improving the performance of Oregon's growth management program.

C. HOW THIS REPORT IS ORGANIZED

Chapter 2 summarizes our findings by issue: what happened, and what policies would change future growth patterns.

Appendix A is a glossary that defines some of the land-use terms we use in this report. **Appendix B** briefly describes limitations in data that affected our analysis. **Appendix C** provides a framework for thinking about growth management in Oregon and presents our explanations for observed growth patterns in the case study areas. **Appendix D** describes the methods we used to try to make consistent estimates of the potential for development outside urban growth boundaries. **Appendix E** contains our analysis of state investments in sewerage and roads, which is summarized in section D of Chapter 2. **Appendix F** lists the participants in workshops that reviewed the preliminary findings of the case studies.

CHAPTER TWO

FINDINGS

A. ISSUES 1 AND 2: GROWTH OUTSIDE URBAN GROWTH BOUNDARIES

1. DEFINITION OF THE ISSUE

Issues 1 and 2 address (1) the amount of post-acknowledgment residential and non-residential development outside urban growth boundaries, and (2) the density and configuration of development immediately outside and adjacent to the urban growth boundary as constraints on future development at urban levels.

Urban growth boundaries (UGBs) are required by Statewide Goal 14 to delimit areas for urban growth around all incorporated cities. They are intended to concentrate growth in urban areas. If UGBs are effective, one would expect our measurements to show small amounts of growth outside UGBs relative to the amount inside UGBs.¹

The area outside UGBs (exurban) is defined by commute time, the location of competing urban centers, data available, and county boundaries. Within this area is the urban fringe, which is defined by contiguity, proximity to the UGBs (1-2 miles), and available data. We describe development outside UGBs four ways: (1) by type of development, both as an absolute amount and as a percent of total regional growth; (2) by proximity to the UGB: development outside UGBs but in the urban fringe; (3) by type of land designation: resource (i.e., farm and forest zones) vs. nonresource; and (4) by the potential of additional development outside the UGBs.

2. FINDINGS

- a. **Except in the Portland area, large percentages of residential development occurred outside UGBs.** In the Bend area, 57% of total residential development occurred outside the UGB, in the Brookings area 37%, in the Medford area 24%, and in the Portland area only 5%. See Tables 2-1, 2-2, and 2-3. The Portland area had the lowest percentage of single family

¹This expectation is based in part on LCDC's definition of "rural lands," which reads: "Rural lands are those which are outside the urban growth boundary and are: (a) Non-urban agricultural, forest or open space lands or, (b) Other lands suitable for sparse settlement, small farms and acreage homesites with no or hardly any public services, and which are not suitable, necessary or intended for urban use." In *1000 Friends v. LCDC*, LCDC's acknowledgment of Curry County's Comprehensive Plan was overturned by the Oregon Supreme Court, in part because Curry County applied the same residential zone to land inside and outside the Brookings UGB.

TABLE 2-1
TOTAL RESIDENTIAL DEVELOPMENT, 1985-89
Number of Units

Location	Number of Units in Study Areas (SA)			
	Portland SA	Medford SA	Bend SA	Brookings SA
Inside UGBs ^a	41,104	1,694	2,023	443
Inside Primary UGB	40,879	804	1,822	443
Urban Area	25,637	341	474	N/A
Urbanizable Area	15,242	463	1,348	N/A
City(s)	28,979	785	1,201	347
Unincorporated	12,250	19	621	96
Other UGBs	225	890	201	0
Outside UGBs	2,051	529	2,705	256
Urban Fringe	713	49	192	109
Exception Areas	N/A	27	127	68
Resources Areas	N/A	22	65	5
Rest of Exurban Area	1,338	480	2,513	147
Exception Areas	N/A	284	2,074	141
Resources Areas	N/A	196	439	6
Study Area Totals	43,155	2,223	4,728	699

Percent of Total Units by Jurisdiction

Location	Percent of Units in Study Areas (SA)			
	Portland SA	Medford SA	Bend SA	Brookings SA
Inside UGBs ^a	95.2	76.3	42.8	63.4
Inside Primary UGB	94.7	36.2	38.5	63.4
Urban Area	59.1	15.3	10.5	N/A
Urbanizable Area	35.0	20.8	28.5	N/A
City(s)	66.8	35.3	25.4	49.6
Unincorporated	28.2	0.9	13.1	13.7
Other UGBs	0.5	40.0	4.3	0.0
Outside UGBs	4.8	23.8	57.2	36.6
Urban Fringe	1.7	2.2	4.1	15.6
Exception Areas	N/A	1.2	2.7	9.7
Resources Areas	N/A	1.0	1.4	0.7
Rest of Exurban Area	3.1	21.6	53.2	21.0
Exception Areas	N/A	12.8	43.9	20.2
Resources Areas	N/A	8.8	9.3	0.9
Study Area Totals	100	100	100	100

Source: Metropolitan Service District Underlying Zone Database; Jackson County Assessment Records; Deschutes County Assessment Records; Curry County Building Permit Records

^a Area inside UGBs consists of area inside (1) the primary UGB of each study area, and (2) all other UGBs. Area in the primary UGB is divided two ways: urban/urbanizable and city/unincorporated. Both sum to the same total (except in Portland, where some inaccuracies in building permit data lead to minor differences).

TABLE 2-2
SINGLE FAMILY RESIDENTIAL DEVELOPMENT, 1985-89
Number of Units

Location	Number of Units in Study Areas (SA)			
	Portland SA	Medford SA	Bend SA	Brookings SA
Inside UGBs*	18,793	1,426	1,598	277
Inside Primary UGB	18,628	676	1,445	277
Urban Area	11,127	222	310	N/A
Urbanizable Area	7,501	454	1,135	N/A
City(s)	12,887	657	897	181
Unincorporated	6,082	19	548	96
Other UGBs	165	750	153	N/A
Outside UGBs	1,928	529	2,702	220
Urban Fringe	713	49	189	73
Exception Areas	N/A	27	124	68
Resources Areas	N/A	22	65	5
Rest of Exurban Area	1,215	480	2,513	147
Exception Areas	N/A	284	2,074	141
Resources Areas	N/A	196	439	6
Study Area Totals	20,721	1,955	4,300	497

Percent of Total by Jurisdiction

Location	Percent of Units in Study Areas (SA)			
	Portland SA	Medford SA	Bend SA	Brookings SA
Inside UGBs*	90.8	72.9	37.1	55.7
Inside Primary UGB	90.0	34.6	33.6	55.7
Urban Area	53.3	11.4	7.2	N/A
Urbanizable Area	35.9	23.2	26.4	N/A
City(s)	61.7	33.6	20.9	36.4
Unincorporated	29.1	1.0	12.7	19.3
Other UGBs	0.8	38.3	3.5	N/A
Outside UGBs	9.2	27.1	62.8	44.2
Urban Fringe	3.4	2.5	4.4	14.7
Exception Areas	N/A	1.4	2.9	13.7
Resources Areas	N/A	1.1	1.5	1.0
Rest of Exurban Area	5.8	24.6	58.4	30.0
Exception Areas	N/A	14.5	48.2	28.4
Resources Areas	N/A	10.0	10.2	1.2
Study Area Totals	100	100	100	100

Sources: Metropolitan Service District Underlying Zone Database; Jackson County Assessment Records; Deschutes County Assessment Records; Curry County Building Permit Records

* Area inside UGBs consists of area inside (1) the primary UGB of each study area, and (2) all other UGBs. Area in the primary UGB is divided two ways: urban/urbanizable and city/unincorporated. Both sum to the same total (except in Portland, where some inaccuracies in building permit data lead to minor differences).

TABLE 2-3
MULTIPLE FAMILY RESIDENTIAL DEVELOPMENT, 1985-89
Number of Units

Location	Number of Units in Study Areas (SA)			
	Portland SA	Medford SA	Bend SA	Brookings SA
Inside UGBs*	22,311	268	425	166
Inside Primary UGB	22,251	128	377	166
Urban Area	14,510	119	164	N/A
Urbanizable Area	7,741	9	213	N/A
City(s)	16,092	128	304	166
Unincorporated	6,168	0	73	0
Other UGBs	60	140	48	0
Outside UGBs	123	0	3	36
Urban Fringe	0	0	3	36
Exception Areas	N/A	0	3	36
Resources Areas	N/A	0	0	0
Rest of Exurban Area	123	0	0	0
Exception Areas	N/A	0	0	0
Resources Areas	N/A	0	0	0
Study Area Totals	22,434	268	428	202

Percent of Total Units by Jurisdiction

Location	Percent of Units in Study Areas (SA)			
	Portland SA	Medford SA	Bend SA	Brookings SA
Inside UGBs*	99.2	100	99.3	82.2
Inside Primary UGB	99.0	47.8	88.1	82.2
Urban Area	64.5	44.4	38.3	N/A
Urbanizable Area	34.2	3.4	49.8	N/A
City(s)	71.5	47.8	71.0	82.2
Unincorporated	27.4	0.0	17.1	0.0
Other UGBs	0.2	52.2	11.2	0.0
Outside UGBs	0.7	0.0	0.7	17.8
Urban Fringe	0.2	0.0	0.7	17.8
Exception Areas	N/A	0.0	0.7	17.8
Resources Areas	N/A	0.0	0.0	0.0
Rest of Exurban Area	0.5	0.0	0.0	0.0
Exception Areas	N/A	0.0	0.0	0.0
Resources Areas	N/A	0.0	0.0	0.0
Study Area Totals	100	100	100	100

Sources: Metropolitan Service District Underlying Zone Database; Jackson County Assessment Records; Deschutes County Assessment Records; Curry County Building Permit Records

* Area inside UGBs consists of area inside (1) the primary UGB of each study area, and (2) all other UGBs. Area in the primary UGB is divided two ways: urban/urbanizable and city/unincorporated. Both sum to the same total (except in Portland, where some inaccuracies in building permit data lead to minor differences).

development occur outside of UGBs (9%), the Bend area had the highest (63%). More single family units (2,702) were developed outside the UGB in Deschutes County than in the three counties of the Portland metropolitan area.

- b. **The Oregon land-use program can but does not lead necessarily lead to effective urban containment.** This conclusion derives from a comparison of the four case studies and from one interpretation of the results of our limited study of Clark County, Washington, portion of the Portland metropolitan area. Based on measures of development densities, the pattern of exurban development in Clark County (i.e., development that occurs outside its "urban services boundary") does not clearly differ from that in Clackamas County (i.e., in exception areas outside the UGB). In both cases roughly 30% of development existing in 1985 and about 20% of new development between 1985 and 1988 occurred outside the boundaries. Only about 5% of new development occurred outside the UGB in Washington and Multnomah Counties. Our confidence in this conclusion is limited by the rough measures of development available to us.
- c. **Exurban development is not limited to building on lots that predated the statewide planning program.** Nearly 97% of all subdivision lots (which do not include lots created by partitions) created in each of the four case study areas between 1985 and 1989 occurred inside UGBs; but in Bend, about 17% of all lots created through subdividing occurred outside UGBs. Table 2-4 shows the results. These numbers do not include partitions, which may be a significant share of total land divisions, and further add to development capacity outside UGBs. For example, in the Medford study area more new lots were created by partitions in the exurban portions of the Medford study area than by the subdivision process.
- d. **Commercial and industrial development in each of the four case study areas between 1985 and 1989 was concentrated inside UGBs.** For example, less than 5% of the commercial and industrial developments that were constructed in the Medford and Bend areas were built outside of UGBs. Net employment changes in the Portland area between 1985 and 1989 outside UGBs were negative, implying no significant commercial or industrial development. There were a total of about 55 commercial and industrial developments created outside UGBs in the Bend, Brookings, and Medford areas.

TABLE 2-4
APPROVED SUBDIVISION LOTS, 1985-89
Number of Lots

Location	Number of Lots in Study Areas (SA)			
	Portland SA	Medford SA	Bend SA	Brookings SA
Inside UGBs*	14,272	1,267	1,476	295
Inside Primary UGB	14,079	1,267	1,476	295
Urban Area	9,707	193	762	N/A
Urbanizable Area	4,372	1,074	714	N/A
City(s)	9,455	1,267	N/A	251
Unincorporated	4,624	0	N/A	44
Other UGBs	193	N/A	N/A	N/A
Outside UGBs	175	51	299	4
Urban Fringe	151	44	75	0
Exception Areas	N/A	44	75	0
Resources Areas	N/A	0	0	0
Rest of Exurban Area	24	7	224	4
Exception Areas	N/A	7	191	4
Resources Areas	N/A	0	33	0
Study Area Total	14,447	1,318	1,775	299

Percent of Lots by Jurisdiction

Location	Percent of Lots in Study Areas (SA)			
	Portland SA	Medford SA	Bend SA	Brookings SA
Inside UGBs*	98.9	96.1	83.2	98.7
Inside Primary UGB	97.6	96.1	83.2	98.7
Urban Area	66.7	14.6	42.9	N/A
Urbanizable Area	29.7	81.4	40.2	N/A
City(s)	64.6	100.0	N/A	83.9
Unincorporated	31.7	0.0	N/A	14.7
Other UGBs	1.3	N/A	N/A	N/A
Outside UGBs	1.2	3.9	16.8	1.3
Urban Fringe	1.0	3.3	4.2	0.0
Exception Areas	N/A	3.3	4.2	0.0
Resources Areas	N/A	0.0	0.0	0.0
Rest of Exurban Area	0.2	0.5	12.6	1.3
Exception Areas	N/A	0.5	10.8	1.3
Resources Areas	N/A	0.0	1.9	0.0
Study Area Totals	100	100	100	100

Source: Special Subdivision Database, Brent Bishop; City of Medford Planning Department; Jackson County Planning Department; Bend Planning Department; Deschutes County Planning Department; City of Brookings Planning Department; Curry County Public Services Department

* Area inside UGBs consists of area inside (1) the primary UGB of each study area, and (2) all other UGBs. Area in the primary UGB is divided two ways: urban/urbanizable and city/unincorporated. Both sum to the same total (except in Portland, where some inaccuracies in building permit data lead to minor differences). Table 2-4 shows subdivision lots only, not partitions.

- e. **Although only 5 to 15 percent of residential units and partitions in the study areas were approved in the urban fringe, their location affects opportunities for expansion of the UGB.** For example, in the Medford area there were 49 dwelling units and 36 parcels approved from 1985 through 1989 in the urban fringe. Twenty-two of these dwellings and 23 parcels were approved on resource lands adjacent to the UGB. In 1990, when the City of Medford expanded its UGB there was opposition from owners of acreage homesites who effectively blocked the UGB expansion into their "neighborhood."
- f. **The Curry County decision has been effective in limiting quasi-urban development outside the Brookings UGB.** From 1985 through 1990, Curry County approved 57 single family dwelling units in its urban fringe. About 95% of the dwellings were built on lots of less than five acres. As a result of the Supreme Court's Curry County decision (1986), lands in the urban fringe were primarily rezoned with a 10-acre minimum lot size. Had such zoning been in place ten years ago, the number of single family residences built just outside the Brookings UGB would have been considerably smaller.
- g. **Any development in the urban fringe will make UGB expansion more difficult; but in some areas of the urban fringe in some case-study areas new development will not add significantly to the difficulties already created by existing development.** Some areas of the fringe already have development patterns that will make UGB expansion difficult regardless of current or future zoning. When Medford expanded its UGB it did not seriously consider including densely-developed exceptions areas, because these areas are effectively precluded from efficient urbanization already. It may be that little harm is done to the goal of efficient urbanization by allowing infill in a subset of rural residential areas already densely developed and divided into small parcels. But approving new parcels and houses as infill in largely developed exceptions areas may violate the Curry County decision, especially at densities of 1 to 2.5 units per acre.
- h. **Large amounts of development potential remain in rural residential areas outside study-area UGBs: there is the potential for about 11,250 additional dwelling units in the Portland area, 12,200 in the Bend area, about 1,500 in the Medford area, and about 200 in the Brookings area.** Table 2-5 shows the data in more detail. Except in Brookings, there appears to be potential to accommodate development for many years. When the development potential is standardized to account for the different populations of the study areas, the results are more dramatic: on a *per capita* basis, the Medford and Brookings areas have over two times the development potential of the Portland area; the Bend area over 16 times.

TABLE 2-5
DEVELOPMENT POTENTIAL OUTSIDE UGB, 1990-2000
Estimated Number of Lots^a

	Portland SA	Medford SA	Bend SA	Brookings SA
Rural Residential Exception Areas				
Vacant	8,100	N/A	12,200	270
Potential Divisions	6,00	N/A	N/A	0
Total	15,000	2,000	12,200	270
Adjusted Total	11,250	1,500	12,200	200
Resource Lands				
Average Annual	90	100	40	0
10-Year Growth	900	1,000	400	0
10-Year Potential Development	12,150	2,500	12,600	200
Years of Growth the Development Potential Could Accommodate (Rough Estimate) ^b	30	24	23	4
Potential Lots (10 Years)/1,000 Population in Study Area	11	28	179	29

Source: Compiled by ECO from various county sources. See case studies for full citations

- ^a Estimated lots equal vacant lots in exception areas, plus potential divisions of those lots (based on size and zoning), plus estimated development on farm and forest land (10-year projection based on average annual approvals during the study period).
- ^b Calculated as 10-year potential development divided by average annual growth outside UGBs, 1985-1989 (Table 2-1).

3. POLICY IMPLICATIONS

A. Issue 1: Development Outside UGBs

Statewide Planning Goal 14 (Urbanization) requires that urbanizable land be separated from rural land by an urban growth boundary. Rural land is defined as (a) resource land (farm and forest), or (b) sparsely settled areas. We assume that the intent of Goal 14 was to limit development outside of UGBs to protect resource land and concentrate development inside UGBs.

The percentages of residential development that occurred outside UGBs varied widely among case study areas: 5% in Portland; 23% in Medford; 37% in Brookings and 57% in Bend. These variations cannot be explained entirely by differences in market conditions. County regulations governing the amount and density of rural development differ among counties. Counties with less-restrictive rural residential development regulations had more rural residential development. Since each county plan was acknowledged by LCDC, LCDC either did not have, or did not apply, consistent standards across counties. If LCDC is concerned about the amount of development that is occurring outside UGBs, then it may wish to adopt policies for reducing such development, especially in some counties.

The development patterns the data describe result from the interaction of market forces and public policies that both abet and constrain those forces. We have not conducted the type of research that would allow us to comment on the unique contributions of specific market forces and policies to the development patterns we report, but a general description of the most important forces is straightforward.

The market forces for suburbanization are extremely strong--they have been working in Oregon and in the U.S. for a century. They include (a) increasing real incomes, (b) increasing mobility, (c) increased housing demand stimulated by maturing boom babies, (d) improved technology and the extension of urban services, (e) the deterioration of central-city services and amenities, (f) relatively lower land costs with distance from the city center, and (g) the resulting relative efficiency of suburban and exurban locations. As urban economists and planners, we acknowledge the tremendous influence those factors have on location decisions.

In many cases these market forces have been abetted, sometimes unintentionally, by public policy. Public facilities, particularly highways and roads, have allowed urban services to extend well beyond city limits. Some federal and state taxing policies, and differentials in tax rates between cities and counties, have encouraged development outside of cities.

These and similar forces were mentioned many times by reviewers of this study. We concur with the most basic conclusion: a strong market demand for homesites in rural areas--a result of the forces we have just described--explains much of the amount and type of development we report in exurban areas. Because of lower land, service, and tax costs, coupled with highway systems that allow only slight and acceptable increases in travel time to urban centers, rural land can give many households more land and amenity than equivalently priced urban land.

But, as we argue more fully in Appendix C, the fact that market forces are strong does not exculpate the State if its charge, as the Statewide Goals strongly suggest, is to control those market forces to achieve a different growth pattern than the one unconstrained market forces would provide. In the rest of this section we *assume* that, despite the market

forces for rural residential development, the State wants to control those forces with policies that will result in less of that development.

We divide those policies into five categories, based on the components of rural development that they affect.

1. *The amount of land that is planned and zoned for rural residential use as a result of the exceptions process.*

We did not identify the amount of land in each study area that was determined to be "built" or "committed" to nonresource use as a result of the LCDC acknowledgment process. We do know that (1) the number of vacant rural residential areas approved by LCDC varied substantially from county to county, and (2) rural residential exceptions areas in some counties (e.g., Curry and Washington) have been scrutinized more intensively than those in other counties (e.g., Deschutes).

There is no realistic policy option for dealing with the amount of land designated for rural residential use, other than to ensure that more such land is not so designated in the future. It is not a realistic option to reopen the county acknowledgment process, and reconsider whether all areas originally determined to have been "built" or "committed" to nonresource use are in fact so committed.

2. *The densities at which rural residential land is allowed to develop*

Permitted rural residential densities affect the amount of development that can occur, they vary significantly from county to county.² Some counties have no zoning restrictions on the development of pre-existing non-conforming lots, especially in subdivisions approved prior to acknowledgment. No consistent state standard has been applied to control rural residential densities.

First, the State could establish a floor for minimum lot size in rural residential areas. To the extent that LCDC is concerned about the amount of rural residential development that can occur in exceptions areas, the most effective way to reduce the number of new rural residences is to eliminate zoning that allows for minimum lot sizes of under 5-10 acres outside UGBs, rural centers, and destination resorts. Counties could adopt more restrictive policies if they chose.

²Rural residential densities allowed by zoning range from one- to ten-acre minimum lot sizes. Most counties also allow development on existing lots--regardless of the minimum lot size that is otherwise required under rural residential zoning. Several counties allow for increased rural residential densities over those otherwise allowed by zoning in special circumstances (e.g., Deschutes County allows for five-acre lots in the MUA-10 zone when the lot is located close to an UGB; Jackson County allows for lot divisions of less than the minimum lot size where there are existing dwelling units on a lot).

Second, the State could change its policy of allowing every substandard rural residential lot to have a residence located on it. Most county zoning ordinances allow construction or placement of a housing unit on rural residential lots of record, regardless of whether the subject lot is smaller than the applicable minimum lot size. In concept, there are at least two ways to limit such non-conforming development:

- a. Allow only one house when a number of non-conforming lots are contiguous and under common ownership. For example, if one person owned five one-acre lots in the same exception area, and the minimum lot size were ten acres, then one house (not five) would be allowed.
 - b. Allow for transferable development rights for pre-existing non-conforming lots in rural residential areas in proportion to the size of the lot. If the minimum lot size were ten acres, then each one-acre lot would be assigned a transferable development right of 0.1 units. A residence could be built on a parcel regardless of the parcel's size, but only if the owner accumulated the rights to 1.0 units. Overall, the net impact of this policy would be an average of 10 acres per dwelling unit.
3. *The amount and density of development allowed on land that is planned and zoned for exclusive farm or forest use*

A substantial amount of residential development has been permitted on resource lands in two of the case study areas. Some counties allow much more development in farm and forest zones than other counties, despite the fact that they work from the same statutory base.

Several different types of housing are authorized on resource lands: (a) farm dwellings; (b) non-farm dwellings, which are allowed on land generally unsuitable for agriculture; (c) forest dwellings, which are needed to manage forest operations; and (d) non-forest dwellings, which are allowed on relatively non-productive forest land.

If the State wants to decrease development on farm and forest land, the most direct method would be to establish strict and objective standards for farm and forest dwellings and to eliminate or reduce the authorization of nonresource dwellings.

The State could restrict the siting of non-farm and non-forest dwellings. In Jackson County, for example, many non-resource dwellings were sited on small (1-10 acre) parcels, probably creating acreage homesites.

The State could increase minimum lot sizes in resource zones, though this policy is not strictly necessary. Under current state laws and rules, ownership of a lot meeting the minimum lot size requirement does not entitle the owner to a farm and forest dwelling. Nonetheless, it may be that smaller minimum lot sizes permitted

in some resource zones tend to attract purchasers whose primary interest is in a rural homesite, not farming or forestry. For example, about 10% of the single family residential units built in Deschutes and Jackson Counties have been constructed on resource lands, many of them on land zoned EFU-20. Research now under way as part of DLCD's farm and forest land research project may be useful in determining the extent to which EFU zoning with minimum lot size is effective in maintaining land in commercial farm use.

These possible policies for further restricting the opportunity to build houses and divide land in rural areas touch on a controversial point, but the conclusions seem straightforward. If LCDC believes that the data we report show excessive or inappropriate development outside urban growth boundaries in some counties, then, at a minimum, it should not be *increasing* development opportunities outside UGBs through the adoption of a new category of Secondary Lands, at least unless it is simultaneously reducing other opportunities. The conditional statement illustrates one of the big problems LCDC must face on this policy: many counties do not subscribe to the premise that the development is excessive. The State must determine whether its policies of allowing for non-farm and non-forest dwellings and hundreds of thousands of acres of land in rural residential zones need to be restricted or expanded.

4. *The amount of land and allowable densities in unincorporated urban areas (e.g., "rural communities" or "urban containment areas")*

The State's urban containment policy does not differentiate between areas of low-density rural residential development and areas that exhibit many of the same characteristics as small towns but are not incorporated. These areas often have residential, commercial, and industrial uses that are urban in intensity and scale.

Some counties, including Jackson, Clackamas and Deschutes (1) recognize unincorporated urban areas, (2) contain them within a boundary, and (3) allow them to develop at urban densities on community sewer and water systems. For example, there are "urban containment areas" located just to the south and north of the Medford UGB. Curry County was able to retain a modified version of this approach in its "Rural Communities" designations within the legal framework of the Supreme Court's decision.

If it wants to address this issue, the State needs to develop consistent statewide policy for unincorporated areas of pre-existing urban development outside of UGBs. The policy should encourage counties to plan for and treat these areas differently from other exception areas that are less developed and lower in density.

B. Issue 2: Development in the Urban Fringe

Urban growth boundaries were established to separate urbanizable from rural land. UGBs were based on a 20-year planning period. Implied in the planning and acknowledgment process was that UGBs would be expanded to accommodate growth, based on the sometimes conflicting objectives of (1) preservation of farm land, and (2) efficient provision of urban services.

Major public facilities projects are typically designed to accommodate growth for 50 years. When designing an arterial street system, a sewage treatment plant or developing a regional water supply, engineers and planners must consider how much and where growth will occur beyond the 20-year urban growth boundary.

Goal 14 does not mandate such long-term facilities planning. Rather, its focus has been to draw a UGB and to require urban services as a precondition of development within the UGB. Its intent is to constrain land supply in the hopes of encouraging more efficient use of urban and urbanizable land.

We have documented the fact that rural residential development has occurred immediately outside UGBs, in both rural residential exceptions areas and in areas zoned for farm and forest use. We described the major causes of this type of development in our discussion of Issue 1 (Section 3.A above). In addition, often the most efficient areas to service are resource lands because they are unencumbered physically or politically by existing development.

Residential development in the urban fringe has resulted in a low-density residential ring around most or all of the UGB in each of the study areas. As a result of low-density (one to five acre) residential development, annexation to cities and extension of urban services will become more difficult in the future. Rural areas that might have been held in reserve for future urbanization have developed in ways that are neither urban nor rural and which will be extremely difficult to urbanize.

The 20-year planning horizon used to establish UGBs may have contributed to the problem.³ Once the UGB was established, there was no requirement that urban areas plan for long-term (e.g., 50-year) expansion needs, and no recognized obligation for counties to restrict development in areas that might be needed for long-term UGB expansion.

For example, sanitary and storm drainage master planning usually considers drainage basins. By drawing the UGB based on a 20-year land supply, portions of drainage basins that could have been efficiently served were placed outside UGBs and allowed to develop at rural residential densities because they were not, by definition, urbanizable.

³The only way the LCDC Goals consider the need to preserve land for future UGB expansion is by defining "rural lands" as those lands which are preserved for resource use or which are limited to "sparse settlement."

Moreover, cities and counties have not completely agreed on or planned for the direction of urban growth beyond the UGB. Nothing in the Goals requires counties to preserve land for future UGB expansion.

A package of policies the State could adopt if it believes there is a need to deal with development patterns in the urban fringe is:

1. Require that urban areas (usually cities) establish long-term UGB expansion areas based on 50-year public facilities needs. Jurisdictions in the Portland metropolitan area have begun discussions about the idea of an *urban reserve*. Include all areas that are "built and committed" to non-urban development and inventory the opportunities within these areas for urban levels of development. The political problems notwithstanding, the Goals would suggest policies that direct expansion of the UGB into rural residential areas first, and into lands still capable of commercial farm and forest use last. Strict timelines and unambiguous standards for UGB expansion into the reserves are critical. Without them an urban reserve designation may encourage the transfer of lands from commercial farmers and foresters to those who will seek accelerated inclusion of the lands into the UGB.
2. Prohibit the placement of dwellings on land planned and zoned for exclusive farm or forest use within this future UGB expansion area.
3. Establish a large (at least 10-acre, preferably 20-acre) minimum lot size for rural residential areas within this long-term UGB expansion area. Require notification to cities of development in this area. Restrict the placement of development such that it does not conflict with long-term public facilities projects. Require that any development or land division that is approved in the absence of urban services be conditioned upon an approved redevelopment plan (or shadow plat) that considers the future location of urban facilities.
4. Allow for infill and more efficient land use in areas that are already developed at quasi-urban residential densities (1-2 units per acre) and which are precluded from full urbanization in the future. Recognize that these areas are unlikely to have urban services or be annexed to a city, and give counties the authority to plan and provide an appropriate level of services to these areas.
5. Encourage cities to include within UGBs quasi-urban areas in the urban fringe. Such a policy would encourage cities and counties to work together to provide urban services to support infill and redevelopment in these areas. An impediment to achieving this is the state's strict requirement that land included in UGBs be justified based on 20-year need. That requirement

encourages the city not to include quasi-urban areas in UGBs, but instead to include vacant areas that can be more readily serviced and annexed to the city. Until the annexation process is streamlined, the state could relax its strict needs requirement so that cities can include both needed vacant land and quasi-urban areas, thus encouraging coordinated planning for these areas. The city must have strong conversion policies to ensure that these quasi-urban areas are not further developed without urban services.

B. ISSUES 3 AND 4: GROWTH INSIDE URBAN GROWTH BOUNDARIES

1. DEFINITION OF THE ISSUE

Issues 3 and 4 address development inside UGBs in *urban* and *urbanizable* areas: its density, the extent to which actual densities approximate planned densities, and whether the pattern of development will inhibit future development from reaching full urban densities. These issues are important for reasons stated in the statewide planning goals (e.g., efficiency of urban services) and because many cities believe that they need to expand urban growth boundaries.

Our scope of work required us to divide land inside UGBs into urban and urbanizable. The statewide planning goals define urbanizable land as vacant, buildable land within a UGB, and urban land as land developed with urban services at urban densities. Given this definition, in most cases urbanizable land becomes urban when it is developed. Since our study did not include any analysis of buildable lands, the approximation of these definitions that we used in our study was that urbanizable areas were primarily vacant, and urban areas were primarily developed. This definition is likely to overestimate the amount of land that the goals define as urban. Moreover, the working definitions of urban and urbanizable vary across study areas. For these reasons we also present data inside the UGBs divided by city/unincorporated, a distinction that many planners suggested would be more useful.

Our description of these issues focuses primarily on the amount and density of residential development in areas that were urban and urbanizable as of 1985, and how the actual density of development compares to the planned density.

2. FINDINGS

- a. **Because the density of residential development is falling substantially below densities allowed by applicable zoning, the Bend, Brookings, and Medford UGBs may have to be expanded earlier and, as a result, be larger than expected.** See Table 2-6. Lots created by subdivision fell 67% short of allowed density inside the Bend UGB, 44% short inside the Brookings UGB,

and 25% short inside the Medford UGB. Statewide, except for the Portland UGB, zoned density roughly conforms to the densities that were the means for determining the size of a UGB. Vacant residential land inside the Bend, Brookings, and Medford UGBs may not support the amount of development intended.

In Portland, actual residential densities are not so much lower than planned densities that UGB expansion will have to occur sooner than planned. Though lots created by subdivision fell 34% short of allowed density inside the Portland UGB, overall densities, including multiple family development, exceed the 6.23-units-per-acre assumed in justifying the size of the UGB. To help achieve affordable housing objectives within the Portland UGB, plan densities were set higher than the densities used in the UGB justification; actual densities need not meet planned densities to avoid premature UGB expansion. In Portland, as in all case study areas, however, low densities may contribute to unnecessarily high public facility costs and auto dependency.

TABLE 2-6
NEW SINGLE FAMILY RESIDENTIAL SUBDIVISION LOT DENSITY, 1985-89
Actual Density and Allowable Density

Location	Actual Single Family Lots Per Net Acre				Lots Per Net Acre Density Allowed by Plan/Zoning			
	Portland	Medford	Bend	Brookings	Portland	Medford	Bend	Brookings
Inside UGBs ^a	5.0	4.2	N/A	3.5	7.6	N/A	N/A	6.2
Primary UGB	5.0	4.2	2.0	3.5	7.6	5.6	6.0	6.2
Urban Area	5.0	3.6	2.5	3.6	7.2	6.3	6.6	6.0
Urbanizable Area	5.0	4.7	1.6	3.1	8.3	5.2	5.4	7.3
City(s)	5.0	4.2	2.2	3.6	7.2	6.5	6.8	6.0
Unincorporated	5.0	N/A	1.5	3.1	8.5	N/A	4.0	7.3
Other UGBs	5.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Outside UGBs	0.25	0.1	0.1	3.6				
Urban Fringe	0.25	0.1	0.2	N/A				
Exception Areas	N/A	0.1	0.2	N/A				
Resources Areas	N/A	N/A	N/A	N/A				
Rest of Exurban Area	0.29	0.2	0.1	3.6				
Exception Areas	N/A	0.2	0.2	5.0				
Resources Areas	N/A	N/A	N/A	2.9				

Source: Special Subdivision Database, Brent Bishop; City of Medford Planning Department; Jackson County Planning Department; Bend Planning Department; Deschutes County Planning Department; City of Brookings Planning Department; Curry County Public Services Department

^a Area inside UGBs consists of area inside (1) the **primary** UGB of each study area, and (2) all other UGBs. Area in the primary UGB is divided two ways: urban/urbanizable and city/unincorporated. Both sum to the same total (except in Portland, where some inaccuracies in building permit data lead to minor differences).

- b. **Based on our subarea analysis, the density of residential development varied substantially across jurisdictions in the Portland area.** In Washington County, average subdivision density varied from one lot per net acre in Sherwood to over five lots per net acre in Beaverton. Over 90% of newly created single family residential lots were in subdivisions. All of these findings suggest that not much development inside the UGB is "interim." No comparable data were available for Clark County. About 60% of the lots created by partitioning were smaller than one quarter acre in size.
- c. **In all case-study areas, single family subdivisions are occurring in multiple family residential zones.** For example, in the City of Bend, 190 subdivision lots were approved in areas zoned for multiple family use. On the one hand, the densities of these single family subdivisions were higher than the densities of subdivisions in single family zones. On the other hand, multiple family land is being used for single family development.
- d. **Amounts of redevelopment and infill may be insufficient.** In Bend and Medford, only small percentages of single family residential development occurred in urban areas. See Table 2-2. Single family development occurred primarily in subdivisions; subdivisions are easiest to accommodate on large vacant parcels, which are by definition more common in urbanizable areas. While most multiple family units built inside the Bend and Medford UGBs were in urban areas, the number of units was far below single family units. See Table 2-3.
- e. **The effects of partitioning inside the UGB varies across case-study areas.** For example, in Medford, 56% of all partitions resulted in densities of 4 units per acre or greater; in Brookings, only 8% achieve those densities (a finding due at least in part because of "serial partitioning.") Either lots will be developed at lower density, or they will continue to be redivided to higher densities but without benefit of the coordinated planning and public services that the subdivision process is designed to provide.
- f. **Except for the Portland area, multiple family residential development accounted for a relatively small proportion of total residential development within the primary UGB.** See Table 2-3. Multiple family units as a percent of total units: Portland 54%; Brookings 38%; Bend 21%; and Medford 15%.

3. POLICY IMPLICATIONS

Goal 14 defines urbanizable land as land that does not have urban services, but will be needed to meet long-term urban growth needs. Goal 14's four "conversion criteria"

address the need to efficiently use urbanizable land, and to avoid the premature, or interim, development of urbanizable land (i.e., before urban services are provided).

In general, the less development allowed in urbanizable areas in the absence of urban services, the better. Interim development creates several types of problems for future higher-intensity urban development. Interim land divisions mean that land must be consolidated in the future for larger-scale, more efficient development. Homes that are sited on five-acre lots exacerbate future subdivision design problems. Single family residences that are sited on industrial, commercial or multiple family land must be removed and their residents displaced. Any time residential development is approved without annexation to a city, there will be an incentive for county residents to remonstrate against future annexation.

Despite the importance of restricting interim development in urbanizable areas, there are major differences among case-study areas in how cities and counties have implemented Goal 14's conversion criteria. The Portland and Medford case-study areas have developed programs that effectively limit the land divisions and low-density development inside the UGB that can occur without urban services. In the Bend and Brookings UGBs, policies that limit interim residential development are less effective (e.g., single family residences are permitted without urban services on half-acre lots).

At least some of our case-study areas have some of the following problems, which raises the possibility that some of these problems exist in other jurisdictions. For each problem, we propose a policy to address it. Most of the policies could be adopted by local governments if they were so inclined, or could be required by LCDC through administrative rules and periodic review.

- a. Land divisions in urbanizable areas are creating lots of a size that will make efficient urbanization difficult.

Prohibit land divisions in urbanizable areas until urban services are available ("concurrency"). Alternatively, establish a large minimum lot size (10-20 acres) for areas that do not have urban services. Strict limits on interim development will increase the incentive to pay for the extension of urban services necessary to support more intensive land use.

- b. Single family residential development is permitted at relatively low densities.

Establish minimum as well as maximum densities permitted by zoning. Zoning ordinances could specify a density range that must be achieved, rather than establishing only a density ceiling.

- c. Approvals of land divisions and development fails to consider, or give proper weight to, the placement of urban infrastructure.

Require that any development or land division that is approved in the absence of urban services be conditioned upon an approved redevelopment plan (or shadow plat) that considers the future location of urban facilities.

- d. "Serial partitioning" (annual land divisions that avoid subdivision regulations) is permitted where urban services are not available.

Prohibit serial partitioning: require that land divisions occur through the subdivision process and that urban services be provided.

- e. Public facilities plans are insufficiently precise to be useful in future development planning.

Require jurisdictions that allow any interim development or land divisions in urbanizable areas to have detailed public facilities plans that specify the location, source of financing, and schedule of construction for future streets, sewer, water, and storm drainage facilities.

- f. Zoning allows for interim uses (such as single family residences) that are incompatible with planned urban land uses.

Require that local zoning ordinances not allow single family houses in urbanizable areas where land is zoned for commercial, industrial or multiple family use.

- g. Single family residential subdivisions occur on land planned for higher density, multiple family use.

Prohibit single family residential subdivisions on land planned for multiple family use, and establish minimum and maximum densities for multiple family development. For example, a medium-density residential zone could have a density floor of 10 units per net buildable acre, and a density ceiling of 20 units.

As with other policies we suggest in this report, these are conditional. They make sense only if the State determines that the types of problems we have identified are sufficiently problematic to require new policies from the State to redress them.

C. ISSUE 5: LIVABILITY

1. DEFINITION OF THE ISSUE

At the heart of the goals of the statewide planning program--and of most planning in the public sector--is a concern with the quality of life of the people for whom planning is being undertaken. Most planning projects assume implicitly a direct relationship between the successful implementation of the proposed plans and quality of life. For example, the statewide goals assume that the containment of urban growth improves the quality of life. But does it really? What is the chain of cause and effect that leads from higher density to greater "livability"? Ideally, that is what the study should address under this issue.

As we explained in our report at the end of Phase 1, that ideal is unachievable. Livability is difficult to define and, once defined, to measure. The professional literature on quality of life demonstrates that even more rigorous studies of livability than we could attempt as part of this project are fraught with methodological problems. Even if we could accurately measure quality of life, we would still not be able to attribute its increases or declines to components of urban growth management without extensive work. Due in part to the difficulty associated with drawing clear conclusions from the limited measurements we report, many who reviewed the case studies suggested that we drop these measures.

Others, however, despite the defects, felt that a step back from the details of growth management policies to look at some indicator of whether quality of life was improving or declining was essential. Thus, we present those indicators here, but with all the expected caveats: they are very general, they are not comprehensive, they do not control for any of the myriad factors that affect their values. Moreover, because they are single measurements of a complex, interrelated system, it is not even clear in some cases what the preferred direction of the indicator should be. For example, increases in traffic volume, or even congestion, could also be interpreted as indicators of economic growth (which might increase incomes and choices about jobs, personal growth, and leisure activities) and efficient use of capital facilities. The measurements we report are, at best, interesting: we caution against drawing conclusions about policy based on these indicators. *Oregon Benchmarks*, an ongoing research effort involving many state agencies, may provide a wider and more systematic discussion of some of these measurements.

Our analysis reports four factors suggested by DLCD as indicators of the livability of the four case study areas: housing costs; traffic congestion; air quality; and recreation opportunities as measured by the amount of parks and open space.

2. FINDINGS

Table 2-6 summarizes the results. In general, changes in livability measurements between 1985 and 1989 in the case study areas were mixed. While housing affordability

decreased in all four study areas and levels of traffic congestion increased, air quality in the case study areas generally improved. Although most of the case study areas acquired additional park land between 1985 and 1989, much of that park land is undeveloped. For any indicator, all four case-study areas showed the same general trend.

**TABLE 2-6
GENERAL TRENDS IN LIVABILITY MEASUREMENTS
1985-1989**

Measurement	Portland	Medford	Bend	Brookings
Housing Costs	More	More	More	More
Air Pollution	Less	Less	Less	Less
Traffic Congestion	More	More	More	More
Park Space ^a	More/Less	More/Less	More/Less	More/Less

^a While all areas acquired more park space, much of the new park land created in the case study areas has not yet been developed. In some areas, the average annual growth in developed park land was less than the annual growth in population, resulting in reduced developed park land per 1,000 residents.

- a. **In general, increases in home selling prices and multiple family rental rates in the four case study areas between 1985 and 1989 were greater than increases in personal and median family income during the same period.** This trend was most noticeable in the Brookings area, where increased demand for housing, fueled by people moving to the area, is contributing to increases in housing costs that are about twice the annual increase in personal income.
- b. **Traffic volumes and congestion increased on major intersections within the case study areas between 1985 and 1989.** Traffic congestion in the three case study areas (Portland, Bend, and Medford) increased at all intersections measured between 1985 and 1989. These increases ranged between about five and forty percent. Level of service decreased at all of the transportation links analyzed for the Portland and Bend areas.
- c. **Air quality in the case study areas, as measured by ambient air quality standards, either improved or continued to meet these standards.** Air quality in the Portland and Medford areas showed the most improvement between 1985 and 1989. The number of "good" days for air quality in Portland increased by about 22% between 1985 and 1988. The number of days rated as "unhealthful" with regards to air quality in Medford declined by about 54 percent between 1985 and 1989. Much of the improvement in air quality, especially in Medford, can be attributed to control strategies like changes in traffic patterns, vehicle inspection and maintenance programs, the gradual

reduction of older non-catalytic equipped cars, and wood-stove regulations. Air quality improved somewhat in the Portland area between 1985 and 1989, primarily in the downtown area--DEQ thinks suburban air quality also improved, but not as much. A portion of this increase in air quality may be attributed to the 1985 backyard-burning ban. Data for the Bend area are inconclusive. On the one hand, significant growth could increase problems with air pollution from woodstoves during stagnant winter months. On the other hand, (1) field and slash burns decreased during the period 1985-89; and (2) Bend recently instituted a volunteer woodstove curtailment program.

- d. **Although most of the case study areas acquired additional park land between 1985 and 1989, some areas are relying on previous acquisitions.** With the exception of the Brookings area, all of the case study areas added new park land between 1985 and 1989. For example, the City of Medford increased its developed park land space per 1,000 residents by about 5.4% between 1985 and 1989. In the Beaverton subarea portion of the Portland area, total park acreage in the Tualatin Hills Parks and Recreation District increased by about 6 percent between 1985 and 1989 (in contrast, Clackamas County has added almost no park land).

But much of the new park land created in the case study areas has not yet been developed. For example, while the total acreage of park land administered by the City of Bend increased by about 18 percent between 1985 and 1989, almost all of this increase was in the form of undeveloped park land. Thus, although new park land was acquired in each case study area, not all of that park land can be considered as usable recreation opportunities.

3. POLICY IMPLICATIONS

The data in this section are too thin to support recommendations for policy changes. But DLCD has asked us to hazard an interpretation.

In general, quality of life studies find that people measure the impact of growth primarily through traffic congestion, public safety, and the quality of schools. We provided a crude measurement for only one of those variables--traffic congestion--and it's getting worse. For other measures of livability, Oregon has made some progress--air quality in Medford is the strongest example.

What we see is that average housing prices have not increased in Oregon as quickly as they have in neighboring states on the west coast. While a part of this effect is attributable to differences in demand, another part is the result of the large amount of multiple family housing built in the Portland area.

In our opinion, these data are not inconsistent with our own observations as citizens of Oregon: livability in Oregon is still high compared to other states, but deteriorating compared to what it has been if measured only by the types of things most people associate with the concept of livability. It is not possible for us to argue that livability in Oregon has been improved or maintained. Nor is it possible to conclude that the statewide planning program has failed to have an effect on livability, since it could have kept livability from deteriorating even more.

Some indicators suggest decreases in components of livability should be a concern of a comprehensive program to manage growth. If a majority of people in Oregon believe that growth reduces the quality of their lives, then what's the point of growth? One answer is that people tend to ignore all the benefits they get from growth when they get asked questions about quality of life. Even so, we see the kind of focus on livability contained in *Oregon Benchmarks* to be useful.

Finally, we caution against believing that good growth management will ensure livability unless the design of that growth is a part of growth management. Growth management policies, as practiced in local governments around the country, tend to focus on the amount, type, timing, and location of development. Those factors are probably necessary but not sufficient conditions for livable growth. The *design* of that growth, both on site and as it relates to the urban area, and the services and amenities that accompany it are critical.

D. ISSUES 6 AND 7: STATE AND LOCAL FINANCING OF INFRASTRUCTURE

1. DEFINITION OF THE ISSUE

Issues 6 and 7 address the relationship of local and state infrastructure investments to the statewide program for growth management. The issues derive from two assumptions. First, appropriate planning for urban growth requires a correspondence between the development of buildings and the development and maintenance of the infrastructure that supports them. Deferring infrastructure inside UGBs because funding is not available can have a number of effects. It can contribute to development at densities lower than would occur with full services and below planned and zoned densities.⁴ It can also contribute to deterioration in the quality of urban services (e.g., to traffic congestion and school overcrowding), higher infrastructure, and market pressure on areas outside UGBs.

Second, appropriate urban growth management should ensure that state financing of key infrastructure facilities (i.e., roads, sewers, and water systems) is consistent with growth management objectives (i.e., that they direct growth toward urban rather than rural areas).

⁴This effect can occur (1) because the price of land with partial services is lower, lowering the density of development that is most profitable, and (2) because of the lack of critical services (like sewers).

Our analysis of local infrastructure investment included all of the case study areas except Portland. We skipped Portland because (1) our analysis required that we work closely with individual jurisdictions and service providers to obtain data describing infrastructure investment, and (2) the Portland case-study area had too many municipalities and districts for us to cover. We were able to collect data on state infrastructure investments in Oregon.

2. FINDINGS

- a. **All case study areas have developed funding mechanisms that will finance projected sewer and water infrastructure improvement over to the year 2000.** In Medford, of the \$113 million in planned projects, about 73% are either built, under construction, or assured of funding. The City of Brookings has passed general obligation bonds and secured federal funding for about \$10 million in sewer and water facilities. The City of Bend has secured funding for about \$13 million in sewer and water projects.
- b. **The case-study areas have been less successful in funding transportation projects.** The City of Medford has funding for only about 40% of its planned transportation projects; Bend for about 50%, Brookings for about 20%.
- c. **Over the past 20 years, municipalities in Oregon invested about \$60 million per year in 1988 dollars in sewerage facilities.** Less than 10 percent of this total investment was in the collection component; most of the rest was in treatment plants. All of the 261 sewage treatment plants in Oregon are either in or owned by cities.
- d. **State investments in sanitary sewerage supports the statewide growth management policies because (1) state funds for sanitary sewers are invested primarily in treatment facilities, and (2) all these facilities are within UGBs.**
- e. **The majority of state highway expenditures in the Bend, Brookings, and Medford case-study areas occur outside of UGBs and may work against state land use policies to concentrate urban growth inside UGBs.** In the three less-urbanized counties (Curry, Deschutes, and Jackson), rural areas accounted for about 85 percent of state highway expenditures, versus only 24 percent in the three Portland area counties. ODOT's mission of connecting urban areas requires expenditures on highway in rural areas. Such expenditures enhance the attractiveness of rural housing opportunities by aiding access to them.
- f. **Existing local public facilities plans are probably not up to the tasks that long-run growth management wants them to perform.** Based on our review of these plans, we conclude that (1) the State does not have a consistent state standard for the review of public facilities plans, (2) responsibility for

determining needed public facilities projects (and estimating their costs and timing) is sometimes unclear, and (3) acknowledged public facilities plans have not been prepared at a sufficient level of detail or accuracy to make useful cost comparisons. For example, in the Bend area, the City looked only at City sewer and water facilities in developing its public facility plan--it did not consider facilities provided by special districts or private development companies. Bend's most expensive transportation project--the Bend Bypass--is not identified on the PFP. Other case-study areas have similar problems.

3. POLICY IMPLICATIONS

One of the several studies being funded by DLCD on different aspects of urban growth in Oregon concerns the problems of financing infrastructure and urban services. We have not come close in this study to covering issues of infrastructure in the depth that study will. Thus, we limit ourselves to a few general conclusions and refer interested readers to that study, which is scheduled to be available at about the same time as this one.

Unfunded transportation improvement projects are a major impediment to effective growth management. Transportation congestion normally results from higher-density development, making it especially important to have funding mechanisms in place to support urban growth. The State should focus even greater attention on helping local governments fund transportation improvements that support higher-density development, and manage the demand for different transportation modes.

LCDC should determine the level of accuracy and detail that is appropriate in public facilities plans, and develop an understandable standard to be met by local governments. If the intent is to be able to rely on public facility plans to limit the negative effects of interim development in urbanizable areas, then their level of detail and accuracy needs to be substantially higher than what now occurs in the case-study areas, and the more detailed plans need more frequent updates.

State policy should recognize that interurban state highways have the effect of enhancing the attractiveness of rural living outside UGBs in Oregon. As a category of facility supported by the largest single dedicated source of state tax revenues (motor-vehicle fuel taxes) the power of this effect may be strong. Policies to protect against inappropriate exurban residential development need to be strong as well. In addition, the State should take full advantage of methods to reduce the impact of its interurban highway improvements, such as access controls and careful review of interchanges. These actions can protect the interurban travel function of state highways as well as limit impacts on land use.

APPENDIX A

GLOSSARY

Planning and Analysis Area

Urban Area: Areas inside the primary UGB whose land area is primarily developed at urban levels.

Urbanizable Area: Areas inside the primary UGB whose land area is primarily vacant. The distinction between urban and urbanizable land in this study is a relative one; the areas get defined somewhat differently for different study areas. In all case-study areas, the definitions differ from those of Goal 14 which, in our opinion, implies conflicting definitions of the two terms.

Urban Fringe: Areas outside but close to (within 1-2 miles) the primary UGB. Distances vary because of the way data are available.

Exurban Area: Also called the urban region, refers to the area outside both the primary UGB and other UGBs. All land outside UGBs is exurban and is either in the urban fringe or "the rest of the urban region" (i.e., all land in the study area beyond the urban fringe of UGBs). The exurban area, can also be divided into one of the following two categories:

Resource Land: For the purpose of this study, all areas outside of UGBs not in exception areas. These areas are generally zoned for exclusive farm and forest use.

Exception Areas (Non-resource Land): Areas outside UGBs not included as resource land because existing development prevents profitable farm or forest use. Includes urban containment areas, which are areas unincorporated areas in Jackson County developed at urban densities with urban services outside of UGBs, in exception areas.

Development Potential: The number of single family residential dwelling units buildable under current zoning. We calculated development potential by (1) determining the number and size of vacant parcels in each zone, (2) dividing each parcel by the maximum amount allowed by the zone, and (3) counting the resulting number of potential vacant parcels.

Land Divisions

Partition: The division of a parcel of land into two or three parcels.

Subdivision: The division of a parcel of land into four or more lots. Includes plans for access and open space.

Density

Net Density: Dwelling units per net acre where a net acre does not include land dedicated to streets or open space. For example, we calculated net density in subdivisions as (number of lots)/(gross subdivision acres - acres in streets - acres of open space). In areas where acreage dedicated to streets and open space was unavailable, we assumed 25% of gross acreage to be used as streets and open space, i.e., net acres equals 75% of gross site acres. Net density is always greater than gross density, because the acreage used in the denominator of the ratio (units/acre) is calculated to be 100% buildable.

Gross Density: Dwelling units per gross acre where a gross acre includes lots, streets, and dedicated open space. See "Net Density."

Actual Density: The density at which units were actually built. In this study we evaluated only single family density, which we estimate by using subdivision data. The actual densities we report are net densities, since our calculations used individual lot sizes (net of streets and open space), not gross acre entire subdivisions.

Allowable Density: The maximum density allowed by zoning or the comprehensive plan. Usually calculated using minimum lot size standards, which means allowable density is also a net density.

APPENDIX B

LIMITATIONS OF THE ANALYSIS

We intend this appendix as more than the standard disclaimer consultants put in reports to distance themselves from any errors it may contain. We have had the opportunity to learn first-hand, and in more detail than we ever cared to, about the problems of getting consistent measures of growth across jurisdictions. That knowledge strongly affects our interpretation of those data; we believe it should affect the interpretations made by others as well.

Our previous report on methodology and the detailed case studies for the four jurisdictions describe these limitations in much more detail. In this appendix we will restrict ourselves to a brief summary of some of the most important points.

Our study is primarily a *descriptive* analysis (how did growth occur between 1985-89). Study resources did not allow us to conduct a rigorous analysis of the causes of the growth patterns we observed and the relative importance of those causes. Thus, we acknowledge that our comments about explanations and prescriptions do not derive unambiguously from the data we report. They are our interpretations of the data based on our perspective about the appropriate role of state and local land-use controls in Oregon; others with different perspectives will favor different explanations and prescriptions.

Several reviewers of the case studies commented that the findings would be more useful if in addition to describing *actual growth* we compared it to *planned growth*. For example, do the actual densities we found conform to the densities that we expected at the time plans were acknowledged, and upon which estimates of land for the UGB were based? We agree that this and similar questions are important, but our scope of work did not address them.

Data vary substantially across case-study areas in kind and quality. Though we have been compulsive about documenting sources, assumptions, and data manipulations, some problems will certainly remain. Though any particular number in the study could be in error, we believe that (1) our documentation in the detailed case-study reports should allow readers of this study to determine whether and to what extent estimates are inaccurate, and (2) the basic development patterns that we report are unlikely to change because of refinements to our estimates. A discussion of some of the principal problems with data that we encountered gives a feel for the extent to which estimates of development patterns based on those data are accurate indicators of actual growth.

We used four primary sources for our analysis of the amount, density, and configuration of development: (1) county assessment records; (2) building permit data; (3)

subdivision data; and (4) partition data. Below we present a brief discussion of the limitations of each of these data sources.

We used county assessment records in the Medford and Bend case-study areas to estimate the amount of development during the period from 1985-89. To perform our analysis we needed information on the location (tax map and lot), year built, area, zoning, and type of structure. We did not use county assessment records in the Portland case-study area because of the volume of data within and data inconsistencies between the assessment records of the three counties included in the area. We were unable to use Curry county assessment records because they provided no year-built data.

The Jackson County assessment records were the most accurate. The records provided complete data on location, year-built, area, and building type. Deschutes County is currently in the process of entering area information into the assessment database. As a result, area data were incomplete in Deschutes County and we were unable to analyze density from assessment records. Deschutes County assessment records provided up to ten year-built figures with up to ten factor-book codes. We used the combination of this data to determine the most recent dwelling unit placed on a tax lot.

We obtained building type from factor book codes and property classification codes in assessment records. This information also differed across jurisdictions. For example, Jackson County property classifications included mobile home classifications. Thus, we included mobile-homes in our figures for single family residences. Deschutes County records provided no property classification for mobile homes.

We used zoning (and plan designation in the Portland case study) to determine allowable densities and to estimate development potential outside the UGB. Zoning information generally was adequate.

Building permit data was our second source of information on development in the case study areas from 1985-89. These data were also inconsistent. As one example, we compared building permit data inside the Bend UGB with County assessment records as a cross reference on the amount of development. Our analysis showed little correlation between the two data sets. Deschutes County assessment records indicated a significantly higher number of single family residences in the Bend UGB than that of the building permit data (1,445 v 396). We did our best to eliminate or adjust for these anomalies by working with county staff.

Subdivision and partitioning records proved to be the most accurate and comparable data sources across the four case study areas. The Portland subdivision data are particularly reliable. Therefore, we have confidence in the accuracy of estimates of average lot size for single family development in all of the case-study areas.

In addition to the primary UGB, several other UGBs are located within the Portland, Medford, and Bend case study areas. For example, the Redmond and Sisters UGBs are within the Bend case study area. For these UGBs, we generally were able only to obtain data for the amount of development within city limits rather than for entire UGBs. To estimate development in Redmond and Sisters, we used building permit data from the State Housing Authority as a proxy of single and multiple family development within the Redmond and Sisters city limits. However, this method did not provide us with estimates of the amount of development in unincorporated areas in the Redmond and Sisters UGBs. Thus, even if all our data are correct, we will have slightly over estimated the amount of development in Deschutes County that occurred outside UGBs.

The list of limitations goes on, but the ones we have described so far should allow readers to make a judgment about the confidence they should have in the results we report. We do not intend our description of these limitations to be interpreted as a debunking of the research we have conducted. On the contrary, we hope that it conveys a sense of the thought and care that we have put into this research, and encourages readers to judge our results as good approximations of the growth that actually occurred in the case-study areas between 1985 and 1989.

APPENDIX C

FRAMEWORK FOR EVALUATING EXPLANATIONS OF DEVELOPMENT PATTERNS AND POLICY RECOMMENDATIONS

To describe and evaluate rigorously potential policy changes that would improve growth management in Oregon requires the demonstration or assumption of causal relationships among growth, the forces that drive it, and the policies that might affect them both. Our study was never intended to be that type of rigorous evaluation. Our comments derive from our *intuitions* (informed by research, experience, and interviews) about causality. They also reflect assumptions we make about the environment in which land-use planning occurs:

1. *There is market demand for many types and locations of land uses that appear incompatible with a reasonable interpretation of the intent of the statewide planning goals and with good growth management.* In our opinion, the goals are clearly against land uses that cause urban sprawl, put urban uses outside of UGBs, and convert productive farm and forest land outside of UGBs to low-density residential uses. Yet market forces for these kinds of uses are strong; the forces for suburbanization have been working in Oregon and in the U.S. for a century. They include (a) increasing real incomes, (b) increasing mobility, (c) increased housing demand stimulated by maturing boom babies, (d) improved technology and the extension of urban services, (e) the deterioration of central-city services and amenities, (f) relatively lower land costs with distance from the city center, and (g) the resulting relative efficiency of suburban and exurban locations. As urban economists and planners, we acknowledge the tremendous influence those factors have on location decisions.
2. *Many, perhaps most, property owners feel they have a right to do what they want on their land; in addition, anti-government sentiments appear to have increased in the last decade.*
3. *Simultaneously, there is the increasing belief by many people that market forces can create problems not accounted for in market transactions.* Those problems include environmental pollution, deterioration and reduction of our natural resource base, and inefficient urban services (for example, because of sprawling development patterns).
4. *There is no compelling technical evidence or political consensus to tell state and local decision makers what the appropriate balance is between points "1" and "2," and point "3."* Conflict exists.

5. *The conflict in government over the proper extent of regulation gets more acute the closer one gets to the people who will be affected by those regulations. As a result, local governments have to deal more with the short-run repercussions of land-use regulations than the state does.*

It is in this context that the people of Oregon fight out their land-use policies: developers, planners, interest and neighborhood groups, elected and appointed officials, and the courts. And it is from this perspective that we view the question, What explains the development patterns we have described?

Many people who reviewed the drafts of our case studies felt that the growth described indicated that the state's growth management policies had been successful in some places (e.g., increasing densities in urban areas) but not in others. For example, they felt that the data showed:

1. Too much development outside UGBs
2. Inefficient development at the urban fringe that would make the future expansion of UGBs difficult
3. Some inefficiencies in the pattern and density of development inside UGBs.

In the framework we developed above, the general explanation for these problems is that government was not completely successful controlling market forces to achieve the state's growth management objectives. That explanation leads to a more interesting question for public policy: *why* were government policies and actions unsuccessful? Before we give our answer to that question, we comment on answers that we think are inaccurate or incomplete:

1. *The policies are working--their apparent failure is an artifact of the methods and measurements of this analysis. We gave this answer serious attention. Appendix B of this report summarizes our analysis of the limitations of the study--the case studies themselves describe our methods in yet more detail. Our conclusion is that while any individual measurement is unlikely to reflect perfectly what actually happened during the five years of our study period, it is very unlikely that the general picture of growth we describe is incorrect. In Bend, for example, we feel confident in saying that a lot of single family development is occurring outside of UGBs. If it is not as much as the 57% we estimated, it is unlikely to be any less than 40%. For the purposes of evaluating whether policies need to be changed and, if so, how, the difference between 5% and 40% is probably unimportant. Absent any hard evidence about systematic bias in our data, we dismiss this possible explanation.*

2. *The policies are working--the failures observed are a carryover from pre-acknowledgment planning problems.* This argues that most of the low-density development inside and outside UGBs results from pre-existing development patterns and parcelization. But in the framework of our analysis, those pre-existing problems are exactly what the statewide program was created to address. For example, though it is certainly true that many vacant parcels existed outside of UGBs at the time plans were acknowledged, it is also true that it was within the purview of the program to establish rules on how those vacant parcels could be developed. The fact is that much of that land went into exception areas, which allowed development to continue on vacant land outside UGBs. Moreover, using acknowledgment as a baseline understates the amount of time the statewide planning program has had to try to effect these issues--the Goals have been in place for 15 years. In our view, if that pattern of development outside UGBs was not what the state had in mind (and our reading of the Goals suggests that it was not), then the program has failed, because it failed to address significant (admittedly pre-existing) planning problems.

3. *The policies do not give the state or local governments the authority or tools to manage growth well.* We disagree. The goals gave ample latitude to local governments to put together plans and implementing ordinances that were much more restrictive than those that got adopted in many jurisdictions. Similarly, LCDC has had ample opportunity to adopt rules to clarify goals and set standards for local compliance. If the program failed because the goals were not clear, is the failure that of the program's designers, or the program's implementers, who were given the responsibility and authority to clarify the goals?

This last point leads to our explanation of what many people see as failures of the statewide planning program: state and local governments are unwilling or unable to implement available policies for managing growth. They are doing less than the goals of the statewide land-use program would allow them to do. So, why?

The unwillingness could exist for any of several reasons. For local governments (public officials and planners), some are unwilling to manage certain types of growth differently because they want the type and location of growth that their current policies give them. They do not subscribe to the basic assumption that the growth patterns we have described are a problem. Others may not like the pattern, but believe that it is the price to pay for achieving other goals like economic development. For DLCD, the unwillingness to become a heavy-handed enforcer should be expected from an agency that has had a continuing history of having to fight for its survival at the legislature and at the polls. For either group, a lack of knowledge and the uncertainty about impacts always tilts the balance toward the status quo: leave things as they are.

Even if state and local governments would like to direct market forces and public investments more forcefully, they may not be able to. The reasoning may seem circular here--they are unable because they lack will, which means they're unwilling--but we believe there is a distinction worth making. It is that even given good intentions and a clear conception of public good, it may be politically too difficult for some governments to implement stronger growth management policies without help. At every level of government, it is always advantageous to be able to blame a higher authority for requiring distasteful medicine: the counties want to point to DLCD, DLCD to LCDC, LCDC to the courts, the courts to the legislature. In fact, the chain may go full circle, in that the legislature, the highest authority, may act only if it is assured that local governments will support its enactments. Without strong pressure for change from one or more of the links, the chain will probably remain in tense equilibrium.

Having wandered this far into the theory of governance with our attempts to explain development patterns, we have little to lose by taking the last step. At the root, the problems the statewide planning program faces in implementing growth management policies are the problems faced by any agency whose task it is to find the public interest in a capitalist democracy. Decentralized decision making by local governments will not lead inevitably to actions that are the best for the citizens of Oregon in the long run. The amount and quality of the theoretical and empirical work on market failure, common-resource problems, and political economy make this conclusion axiomatic. But central control risks bureaucratization and a stifling of innovative local solutions. Is a statewide land-use program for local control a canny compromise, or an unworkable one?

Is the preceding explanation of the problems of the statewide planning program, general as it is, of any use in identifying policies that will improve the performance of the statewide planning program? We think so.

It suggests *some general conditions that have to be met* before one would expect substantial changes in the way growth is now managed by local jurisdictions (primarily counties):

1. *A consensus that the development patterns we have described are sufficiently bad to warrant the development of new policies to change them.* We use the term *consensus* loosely, since much of what we have said in this appendix suggests that a real consensus--that is, agreement, however begrudgingly given--is not likely. A vision (and perhaps a visionary) must exist around which agreement can gather. At a minimum, there should be agreement among the executive branch (including key agencies) and key legislative committees on the direction of state land-use policies. Absent this kind of agreement, we would expect growth and growth management to occur about as it has in the past.

2. *A coordinated effort among key state agencies to address the problems.* Consensus without action is idle. Key state agencies (at a minimum, LCDC, EDD, and ODOT; perhaps Revenue, Forestry, Agriculture, and DEQ as well) must decide on a land-use/growth-management agenda and coordinate their policies so that a consistent message is given to the market about where Oregonians want growth to occur.
3. *A commitment among these agencies to resolving a subset of problems.* Trying to solve every problem related to growth and land-use is too much: too complex, and too much room for differences of opinion. Set priorities and move forward on only one front.
4. *The development of specific policies and standards to direct local governments toward the furtherance of state objectives.* When LCDC has adopted specific rules and standards (e.g., the Goal 10 (housing) rule) it has got more of the results that it thought in the state interest. Where it has demurred from making these kinds of decisions, it has got the differences in local interpretation and action that one would expect. Consistent with the program's emphasis on local solutions, the state should specify *outcomes*, offer *suggestions* about policies likely to lead to those outcomes, and let local governments specify the *methods* for achieving those outcomes. If the outcomes are specific and are not achieved, then LCDC may be in a stronger position to enforce the land-use laws. In some cases, the outcome may in fact, define the policy; for example, if the outcome desired is no development on parcels less than 10 acres outside UGBs, then a policy of 10-acre minimum lot sizes is likely to be required.

The first three points are only general recommendations; they require answers to more specific questions if they are to be acted on. For example, what steps should be taken to develop consensus, should the consensus include local governments, should the state decide to act on statewide issues even without the support of local governments, and so on? We do no comment further on the policies that we lead the state to answer these questions.

The last point leads us to more specific recommendations about policies that the State could adopt to change the pattern of growth. On the one hand, we have said that such policies are superfluous, since local jurisdictions already have the power to manage growth and LCDC has the power to encourage them to do so. On the other hand, a new policy may signal a new way of doing business, or it may make a requirement of what was previously a suggestion. We identify and describe those policies in Chapter 2 of this report.

In closing, we repeat: the policies we suggest derive from our assumption that the state sees problems with growth as we have described it, and wants to do something to have more control over the amount, type, location, and timing of growth that market forces would choose in the absence of new policies. If that assumption is not correct, then either no policy changes are needed (in which case, ignore our suggestions) or growth controls should be decreased (in which case, as a first approximation, consider doing the opposite of what we suggest).

APPENDIX D

DEVELOPMENT POTENTIAL OUTSIDE URBAN GROWTH BOUNDARIES

In Phase 1 we developed a methodology for determining development potential outside UGBs. The preferred methodology was:

1. Determine the number of vacant lots outside UGBs that are in approved "built and committed" exceptions areas and zoned for residential use.
2. Determine the number of additional lots that can be created through land divisions under existing zoning.¹
3. The sum of (1) and (2) is the development potential for residentially zoned land in exceptions areas.²
4. Subtract 25% from (3) to account for market factors, topographical limitations and service limitations (e.g., inadequate area for septic drainfield).
5. Determine the number of non-farm and non-forest dwelling permits approved on land zoned for exclusive farm and forest (resource) use, for the study period (1985-89)
6. Determine the average annual number of non-resource dwellings approved during the study period, and multiply this number by 10 to determine the development potential on resource land outside UGBs.³
7. The sum of (4) and (6) is the development potential outside of UGBs for the period 1990 to 2000.

This method required modification in the field because of data limitations. We describe those modifications below.

¹For example, consider two lots: Lot 1 has 22 acres, is zoned RR-10 and is vacant; Lot 2 has 18 acres, is zoned RR-5 and has a house on it. Lot 1 has the potential for one additional dwelling unit and Lot 2 has the potential for two additional dwelling units.

²Note that residentially zoned land outside UGBs includes (a) destination resorts, (b) rural centers, and (c) urban containment areas.

³Note that we did not consider farm and forest dwelling approvals in most instances, under the assumption that such dwellings were "necessary and accessory to" farm and forest operations.

Portland

We worked with planners from Multnomah, Washington and Clackamas Counties in filling out the rural development potential tables for these three counties. The Portland case study area included all of Multnomah, Clackamas and Washington Counties. (See Section 5, Development Potential, of the Portland Case Study.) In general, we followed the method described above.

Medford

The Medford case study area did not include all of Jackson County. It did include most of the County's populated areas, and included surrounding UGBs. In the Medford case study area, we took a 15% sample of rural residential exceptions areas to determine rural residential development potential in exceptions areas.

We reviewed non-farm dwelling approvals in the study area from 1985 through 1989, and non-forest dwelling approvals for the period 1983-87. (See Section 6, Development Potential, of the Medford Case Study.)

Brookings

The Brookings case study area includes only the southern portion of Curry County around Brookings. Our data for determining vacant rural residential lots in exceptions areas came from a Curry County report analyzing 11 exceptions areas in the vicinity of the Brookings UGB. We determined that there was negligible potential for land divisions in these 11 exceptions areas because of the recent rezoning of these areas to 10 and 5 acre minimum lot sizes.

We recommend caution when comparing Brookings with other case study areas for two reasons: (1) the Brookings case study area is small relative to other case study areas; and (2) we had data for only two-thirds the Brookings case study area. The Brookings estimates for development potential outside UGBs is low relative to the other case study areas. (See Section 6, Development Potential, of the Brookings Case Study.)

Bend

The Bend case study area includes all of Deschutes County, and in this sense is comparable to the Portland case study area.

In Deschutes County we calculated development potential outside UGBs differently because of data limitations. County assessors' records were the only data available for rural residential exceptions areas. Only 25% of the tax lot records include a field for acreage, and the zoning field has limited reliability. Because data on lot size and zoning were not

reliable, we could not calculate land division potential for residentially zoned land outside UGBs. We adjusted our method in two significant ways: (a) we did not estimate the potential for additional lots created through the land division process; and (b) we did not subtract 25% from the sum of vacant lots and potential new lots resulting from land divisions. We conservatively assumed that these two figures would cancel each other out.⁴

We also modified our methodology for determining dwelling potential on resource lands. Until 1987, Deschutes County did not have a non-resource dwelling approval process. All dwellings on resource land were considered to be farm or forest dwellings, and all lots zoned for farm or forest use (including lots that did not conform with the minimum lot size) were considered to be buildable lots. To arrive at our five-year figure for non-resource dwellings, we added farm dwellings approved from 7/85-6/86 to non-resource dwellings approved from 9/87-8/90.⁵

Summary

Table 2-5 in this report summarizes our results. We caution readers to interpret these numbers as rough estimates. However, even if the estimates are overestimated by as much as 25% (which seems high, since the assumptions we made are more likely to underestimate than overestimate development potential), the conclusions are the same: in some case study areas, there is substantial potential for development outside UGBs.

⁴In the Portland case study area, 54% of the 15,000 potential lots in exceptions areas were vacant, and 46% were the result of potential land divisions. We decreased this 15,000 figure by 25% to account for market, topographical and service limitations, and arrived at an adjusted estimate of 11,250 lots. In the Bend case study area, 100% of the 12,200 potential lots in exceptions areas were vacant. As an example, if we were to have applied the Portland ratio of vacant to divisible lots to Bend, then Bend would have had a potential for 22,600 lots; subtracting 25% would have reduced this figure to 16,950 lots. Because of the large but undocumented number of "sagebrush subdivision lots" in Deschutes County, the Portland ratio is probably too high.

⁵The total number of dwellings approved on resource lands from 7/85 to 8/90, according to LCDC records, was 280. But according to County assessors' records, there were over 500 dwelling units approved on lands zoned for farm or forest use. We cannot explain this discrepancy. We used the LCDC records for our analysis.

APPENDIX E

STATE INVESTMENTS IN URBAN INFRASTRUCTURE

Issue 8 of the original scope of work specified by DLCD (renumbered to Issue 7 in this report) was "the impact of state agency actions on accomplishment of urban growth management objectives." The Issue was to be measured by looking at "post-acknowledgment state agency road and sanitary sewerage expenditures which increase capacity within urbanized areas in comparison with elsewhere in the case study area." In short, to what extent are road and sewerage investments consistent with state land-use policies to concentrate urban growth inside UGBs?

We did not address this issue in our individual case studies because (1) we had to get the data related to this issue from state, and it was not available at the time we completed our draft case studies, and (2) since the data came from state agencies, for all jurisdictions, it made more sense to report it in one place than to disaggregate it in to four case studies and then reaggregate it for this report.

STATE EXPENDITURES ON SANITARY SEWERAGE

Public sanitary sewer systems contain three major components--collection, transportation, and treatment.

Most of the collection system is built by developers at the time land is converted from vacant (or low-density) to urban (or higher-density) uses. After construction the system is deeded to the municipal sewer agency, which is then responsible for operating, maintaining, and eventually replacing it. Because the decision to build additions to the sewerage collection system is made as part of the development and land-use review process, the sewer system should be expanded in conformance to local land-use policies. More important for our study, because the developer pays for the collection system, state investment is not an issue.

The sewer transportation and treatment components, however, are usually publicly financed and constructed. The transportation network connects the smaller collection components (e.g., of a residential subdivision) to the treatment plant. Transportation facilities consist of large sewer pipes, pump stations, and pressure sewer lines. Additions to this component are built in anticipation of development of vacant or low-density areas at the urban fringes. The transportation component of a municipal sewerage system is usually extended only within the designated urban growth boundaries, though this is not the case in all of our case-study areas.

The sewage treatment plant is publicly owned and constructed. This component is the single most expensive component to build and to operate. Its high costs result in declining costs per million gallons of sewage treated as the size of the plant and volume of sewage increases. In economic terms, the treatment plant is subject to scale economies. Scale economies have resulted in nearby cities building a single, shared treatment plant (e.g., Unified Sewerage Agency in Washington County; City of Portland which treats waste from Lake Oswego; the Bear Creek Valley Sanitary Authority).

The decision to expand a treatment plant is based on available capacity compared to current and expected flows of sewage. Expected flows to a treatment plant are determined by the cumulative effects of land-use decisions and actual development over several years. To the extent that expansion of the collection and transportation components comply with land-use regulations, then expansion of the treatment plant also will comply with land-use regulations.

Over the past 20 years, municipalities in Oregon invested approximately \$59 million per year in 1988 dollars in sewerage facilities. Less than 10 percent of this total investment was in the collection component; most of the rest was in treatment plants. *All of the 261 sewage treatment plants in Oregon are either in or owned by cities.*

The federal EPA Construction Grants Program, which provided federal grants amounting to about 50 percent of the total public investment, has been replaced by a State Revolving Loan fund. The SRF can make long-term low-interest loans to municipalities for sewerage facilities, but it will provide only about 25 percent of the financial assistance the CGP had provided. The balance will have to be made up by the municipalities.

Our conclusion is that state investments in sanitary sewerage supports the statewide growth management policies because (1) state funds for sanitary sewers are invested primarily in treatment facilities, and (2) that all these facilities are within UGBs.

STATE EXPENDITURES ON HIGHWAYS

The Oregon Department of Transportation (ODOT), Highway Division, provided data on highway expenditures by county for the period 1985-89. State highway expenditures are of three types: (1) preliminary engineering (2) estimated right-of-way costs and (3) estimated construction costs. The expenditure estimates presented in this section are for all projects approved by the Highway Division between 1985 and 1989.

The Highway Division classifies projects as either urban or rural based on location. Bill Ciz of the Highway Division stated that the urban/rural classification closely approximates areas inside and outside city limits. He added that with the exception of the

Portland area the urban/rural classification would provide a reasonable estimate of expenditures inside and outside of UGBs.

Table E-1 summarizes estimated state highway expenditures for the period 1985-89. All expenditures are presented in thousands of current dollars (that is, dollars in the year they were spent, unadjusted for inflation). In the four case-study areas about \$428 million were invested in highway projects between 1985 and 1989. Expenditures in urban areas accounted for about 63 percent of total highway expenditures.

Urban and rural expenditures vary widely by case study areas. In the three less-urbanized counties (Curry, Deschutes, and Jackson), rural areas accounted for the majority of highway expenditures. The reverse is true in the Portland area counties.

The data in Table E-1 do not suggest clear conclusions to us. Unlike sanitary sewerage, roads are supposed to go into rural areas. A large part of ODOT's mission is to connect urban areas, which requires expenditures on highways in the rural areas in between.

TABLE E-1
ESTIMATED EXPENDITURES FOR STATE HIGHWAY PROJECTS
1985-89

Case Study Area	Estimated Expenditures (Current \$ in 000s)			Percent of Expenditures		
	Urban	Rural	Total	Urban	Rural	Total
Portland	257,711	82,109	339,820	75.8	24.2	100.0
Clackamas County	24,606	25,803	50,409	48.8	51.2	100.0
Washington County	64,976	14,618	79,594	81.6	18.4	100.0
Multnomah County	168,129	41,688	209,817	80.1	19.9	100.0
Jackson County	5,739	44,843	50,582	11.3	88.7	100.0
Deschutes County	7,197	26,359	33,556	21.4	78.6	100.0
Curry County	0	3,859	3,859	0.0	100.0	100.0
Total	270,647	157,170	427,827	63.3	36.7	100.0

Source: Oregon Department of Transportation, Highway Division, Program Section.

APPENDIX F

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