Urban Growth Management Study

Medford Case Study

Prepared by
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with
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November 1990

Oregon Department of Land Conservation and Development

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CHAPTER ONE
INTRODUCTION

A. PURPOSE

In June 1989 the Oregon State Legislature 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 they could be improved. One component of that larger study is this study of urban growth in four urban areas.

This report presents our analysis of urban growth in the Medford case study area. This report was reviewed by planners, policy-makers, and other interested citizens in the Medford case study area. Comments and suggestions by these reviewers have been considered in the final case study report.

B. METHODS

For a detailed description of the issues this case study is designed to evaluate, and the methods for making that evaluation, see the previous reports that were part of this project: *Case Studies, Phase 1: Methodology*, May 1990; and *Supplement to the Methodology Report*, July 1990. For details on specific methods and sources used for this case study, see the Appendix to this report.

This case study defines the Medford case-study area as the more populated portions of Jackson County generally along the Interstate 5 corridor. *Note that the Medford case-study area does not include all of Jackson County.* (See Chapter 2 for a more detailed description of the study area). The study area includes the Bear Creek and Rogue River watersheds.

We analyzed data describing urban growth in the Medford area by city and county. To describe growth across all parts of the Medford case-study area, we analyzed data that describe urban growth in four analysis areas: (1) urban (developed inside the UGB), (2) urbanizable (largely undeveloped inside the UGB), (3) urban fringe (just outside the UGB), and (4) exurban (outside UGB, and within commuting distance of Medford). For some issues we added another analysis area, other UGBs, to account for development that occurred inside the UGBs of other cities besides Medford. We did no detailed evaluation in these other UGBs -- our focus inside UGBs was on the city of Medford exclusively.

To define urban and urbanizable areas within the Medford Urban Growth Boundary (UGB), we used Jackson County assessment data that estimate acreage and square footage of improvements by tax map (293 tax maps in the Medford UGB). We reviewed a distribution of improved square feet per acre in 1985 to determine if any clear breaks existed in the density measure. Steve Terry, city planner, estimated that 60 percent of the land area within the Medford UGB was urbanized in 1990. Taking this back five years and analyzing the data, we determined that about 2,500 improved square feet per acre provided a reasonable point at which to divide urban from urbanizable land. Approximately 50 percent of the tax maps fell above this mark. Finally, we compared our determinations with existing zoning to see if any anomalies existed.

We defined the Medford urban fringe generally as that area at least one, must not move more than two miles outside the Medford UGB. We defined the fringe area using tax maps adjacent or near the UGB. In the cases where the UGB cut through a tax map, we put the data for the map inside or outside the UGB based on where the majority of area fell. The Central Point UGB was not included in the definition of "urban fringe."

We defined the rest of county (exurban area) as all areas that met all of the following criteria: (1) outside the Medford UGB, (2) outside other urban growth boundaries (e.g., Ashland, Central Point), (3) within

the study area, and (4) with Jackson County zoning. The study area includes the cities mentioned below, and land along the I-5 corridor from Ashland to the city of Rogue River.

We defined the other UGB area as (1) all non-Medford land with city zoning classifications, plus (2) all county land inside the UGB as estimated by a city-by-city analysis to correlate the UGB boundaries to tax-map identification numbers (see the Appendix, Section 3, for details). Other UGBs included the cities of Ashland, Talent, Phoenix, Central Point, Jacksonville, Rogue River, Gold Hill, and Eagle Point.

Our analysis focuses on changes in urban growth 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 occur, and (2) we wanted to have comparable data for all case studies. We organize to address the seven urban growth management issues identified by DLCD.

C. HOW TO READ THIS REPORT

Readers not familiar with the Medford area should begin with **Chapter Two**, which gives a brief overview of growth in the area. Readers wanting a summary of the findings should go to **Chapter Three**, which describes changes in three classes of issues of concern to DLCD: (1) land development, (2) livability, and (3) infrastructure investment between 1985 and 1989.[1] The data in Chapter Three are all contained in more detail in an **Appendix**, which describes sources, methods, and our analysis of all the data we collected. The full Appendix will probably be of interest only to a technical audience; others may want to scan it or turn to it for more detail about issues of interest to them.

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[1] We provide these three classifications to help organize the report. DLCD's concerns remain the individual issues that compose these classes, not the classes themselves.

CHAPTER TWO
CASE-STUDY AREA PROFILE

In this chapter we provide an overview of the Medford case-study area. We describe the following key characteristics that affect growth in Medford case study area: (1) jurisdictions included in this case study, (2) size (e.g., population, employment, and land area), (3) base economic activities; and (4) historic population and employment growth.

A. BOUNDARIES

This report defines the Medford case study area as the populated areas generally along the Interstate 5 corridor. This study area was defined as those regions of Jackson County that are currently or could potentially experience urban development pressures. The Medford case study area includes the following incorporated cities: Medford, Ashland, Talent, Phoenix, Jacksonville, Gold Hill, Rogue River, Central Point. The study area also includes three unincorporated "urban containment areas" that lie outside any UGB areas: White City, Gibbons/Forest Acres, and Highway 99 between Medford and Phoenix.

Our analysis lumps all development in cities other than Medford into a single category: "Other UGBs." This allows us to make accurate statements about development inside and outside UGBs on a county basis. But for a more detailed analysis of development on urban and urbanizable land we look inside the UGB of Medford only. Thus, our analysis of growth on urban, urbanizable, and urban fringe land is for Medford only.

B. SIZE

Jackson County covers 2,812 square miles, 13th among Oregon's 36 counties. Roughly 20 percent of the county is in the study area. As of 1989, the Portland State Center for Population Research and Census (CPRC) estimated that Jackson County had a population of about 145,000, 6th among Oregon counties. Jackson County's overall population density in 1989 was 51.6 persons per square mile. By the year 2000, Jackson County's population is expected to grow to about 175,000. Medford had a population of just over 45,000 in 1989, 5th among Oregon cities.

According to Oregon's State Employment Division, Jackson County had an annual average employment of about 66,000 in 1988, 6th among Oregon counties. Accurate employment data for Medford are not available.

C. ECONOMIC BASE

The study area's principal industrial sectors are agriculture, lumber and wood products, tourism, and other export-based industries like electrical equipment and health care. According to data collected for the 1987 U.S. Census of Agriculture, Jackson County had a total of 298,000 acres of farmland. In 1988 the farm sector averaged about 2,100 jobs in Jackson County, although agricultural employment may range between 3,000 and 3,500 during peak season. In 1989, there were about 6,000 Jackson County residents employed in the lumber and wood manufacturing industry. Jackson County's retail trade sector has experienced strong growth over the past ten years. As of 1987, Jackson County ranked 3rd among Oregon's counties with respect to retail sales per resident ($7,400)

As Jackson County moves into the 1990s, employment in the lumber and wood products industry is likely to decrease. However, some of the anticipated job loss in the timber industry will be offset by increases in

employment in the retail and service industries. Tourism and recreation, along with retirement income, will also likely become more important economic sectors in Jackson County during the next ten years[2].

D. GROWTH INDICATORS

Table 2.1 shows historic population and employment growth in Medford and Jackson County (historic employment data are not available for Medford). Both Medford and Jackson County have experienced a higher annual population growth rate over the past nine years than has the state as a whole. Jackson County's total employment also grew faster than the state as a whole between 1980 and 1988.

TABLE 2-1

HISTORIC POPULATION AND EMPLOYMENT GROWTH FOR MEDFORD AND OREGON, 1980-89

Jurisdiction	1980	1988 Employment	1989 Population	Average Annual Growth Rate
Population				
Medford	39,746	NA	45,290	1.5%
Jackson County	132,456	NA	145,000	1.0%
Statewide	2,633,156	NA	2,791,100	0.8%
Employment				
Jackson County	56,560	66,470	NA	2.1%
Statewide	1,188,000	1,343,000	NA	1.5%

Source: Population Estimates for Oregon 1980-89, Portland State Center for Population Research and Census; Oregon Resident Labor Force, Oregon Employment Division, 1990.

NA - Not Applicable

[2]Business and Employment Outlook, State Employment Division, 1990.

CHAPTER THREE
FINDINGS AND CONCLUSIONS

This chapter presents key findings and conclusions about (1) land development, (2) livability, and (3) infrastructure investment issues in the Medford case study area. See the Appendix for a more detailed description of the data that led us to the conclusions.

A. DEVELOPMENT ISSUES

We use data from 1985 through 1989 (year built, partitions, subdivisions) to address each development issue. For more detail see the tables in the Appendix that are referenced. Our primary study objective is to evaluate growth in Medford, the central city of the region, and its surrounding exurban area (generally defined as a commuting distance). We have limited data for all cities and their UGBs within the study area. We have more extensive data for all land in Medford and the Medford UGB, the Medford urban fringe, and the remainder of Jackson County outside UGB's and within the study area.

Our discussion of development is organized according to the four development issues identified to DLCD, which correspond roughly to the four analysis areas we used for this study: outside the Medford UGB but within commuting distance (*rest of county*), outside and adjacent to the Medford UGB (*urban fringe*), urbanizable land inside the UGB, and urban land inside the UGB.

DEVELOPMENT OUTSIDE URBAN GROWTH BOUNDARIES VERSUS DEVELOPMENT INSIDE URBAN GROWTH BOUNDARIES

Summary. About 27% of the residential units sited in the Jackson County study area from 1985 through 1989 were outside UGBs. About 4% of commercial and industrial developments were located outside UGBs. At its present rate of rural residential development, Jackson County has a 33-year supply of land in exceptions areas. Table 3-1 summarizes the results.

About 27% of the 1,955 dwelling units built or placed in the Medford study area from 1984 through 1989 were sited outside of urban growth boundaries. About 4% of the 157 commercial and industrial developments were constructed outside of UGBs.

There are 7,689 developed lots in rural residential exceptions areas, and the potential for 2,027 more such lots, an increase of 25%. "Exceptions areas" are located outside UGBs and are not zoned for farm or forest protection. There were 313 dwelling sited in exceptions area during the five years from 1984 through 1989. If the current rate of rural residential development in exceptions areas were to continue, and every land was used for its maximum potential under zoning, then there would be a 33-year land supply.

TABLE 3-1

BUILDING AND LAND DIVISIONS
IN THE MEDFORD CASE STUDY AREA
1985-89

Analysis Area	Residential				Subdivision/ Partition Lots		Commercial/Industrial	
	Single-Family Units		Multiple Family Units					
	# of Units	%	# of Units	%	# of Lots	%	# of Com/Ind Developments	%
Inside UGBs	1,426	72.9	268	100.0	1,523	87.1	151	96.2
Inside Medford UGB	676	34.6	128	47.7	1,523	87.1	103	65.6
Urban	222	11.4	119	44.4	273	15.6	50	31.8
Urbanizable	454	23.2	9	3.3	1,250	71.5	53	33.8
City	657	33.6	128	100.0	N/A	-	67	65.0
County	19	1.0	0	0.0	N/A	-	36	35.0
Inside Other UGBs	750	38.3	140	52.2	N/A	-	48	30.6
Outside UGBs	529	27.1	0	0.0	225	12.9	6	3.8
Medford Urban Fringe	49	2.5	0	0.0	98	5.6	3	1.9
Exception Areas	27	1.4	0	0.0	57	3.3	3	1.9
Resource Areas	22	1.1	0	0.0	23	1.3	0	0.0
Rest of Urban Region	480	24.6	0	0.0	127	7.2	3	1.9
Exception Areas	284	14.5	0	0.0	77	4.4	3	1.9
Resource Areas	196	10.0	0	0.0	40	2.3	0	0.0
Total	1,955	100.0	268	100.0	1,748	100.0	157	100.0

Source: Jackson County Assessment Records.

Of the 529 residential units sited outside UGB's, 41% (218) were sited in resource zones. Of these, 196 were located in the rest of urban region and 22 were located in the urban fringe.

Commercial, industrial, and multiple family residential development is concentrated inside UGBs. About 96% of new commercial and industrial construction, and 100% of new multiple family construction in the Jackson County study area took place within UGBs.

The Medford urban growth area accounted for about 85% of the new lots created in the study area. Land division data were not readily available for other cities in the study area. Exclusive of cities other than Medford, there were 1,748 lots created through subdivisions and partitions from 1985 through 1989. Most (69%) of these lots were created through the subdivision process within the Medford UGB. Subdivision activity was limited to 51 lots (4%) for the remainder of the unincorporated area. The number of parcels

(429) created through the partitioning process was roughly the same for the Medford urban growth area (54%) and the remainder of the County (46%).

Residential development densities are significantly lower outside UGBs than inside. In Medford, average single family residential development densities exceeded four units per acre. In all other UGB's, the average single family residential density was 2.5 units per acre. On rural lands, the average single family residential density was one unit for every four acres.

About 34% of partitioned parcels in residential zones between 1985 and 1989 occurred outside the Medford UGB. Between 1985 and 1989, 83 residential parcels were created through the partitioning process outside the Medford UGB. There were 192 residential parcels created within the Medford UGB, or 66% of the new parcels in the study area. A total of 153 non-residential parcels were created in all analysis areas. Of these, 75% occurred outside the Medford UGB (see Tables A-12a and A-12b for more detail).

About 50% of residential development outside the Medford UGB occurred at a density of less than one dwelling unit per acre. Of the 381 dwelling units constructed in residential zones outside the Medford UGB, 192 were built at densities of less than 1 unit per acre. Much of this development occurred in "Rural Containment Areas."

DEVELOPMENT OUTSIDE OF AND ADJACENT TO URBAN GROWTH BOUNDARIES

Summary. During the period from 1985 through 1989, 49 dwelling units were constructed in Medford's urban fringe: 27 in exceptions areas and 22 in resource zones. About 45% of the units built in the urban fringe were built on resource land. There were 98 lots created: 48% were subdivision lots and 52% were approved through the partitioning process.

Although residential construction activity was limited (49 dwelling units) and fairly evenly distributed around the Medford UGB, the impacts of development on future UGB expansion potential varied. Single family residential units were equally divided between resource and exceptions areas at the UGB Fringe. In existing exceptions areas, Jackson County zoned land to match existing land division patterns. The effect of limited infill development in areas that are developed and zoned at densities of one to five acres is usually not significant, since efficient urban development in these areas is already largely precluded. However, scattered rural residential development (nonresource dwellings) in otherwise undeveloped resource areas can have a major negative impact on future UGB expansion.

TABLE 3-2

RESIDENTIAL DEVELOPMENT IN THE MEDFORD URBAN FRINGE
1985-89

Analysis Area	Number of DU of Lots				Average Lot Size (Acres)
	< 1 Acre	1-2 Acres	2-5 Acres	> 5 Acres	
Total Dwelling Units	4	7	9	29	5.1
Residential in Resource Zones	1	1	4	18	7.1
Residential in Exceptions Areas	3	6	4	12	3.5
Residential in UR-6 (UCA)	0	0	0	0	-
Partitions	7	17	26	34	9.7
Resource Zones	0	0	0	23	23.7
Residential Exceptions Areas	2	11	7	4	2.0
Residential in UR-6 (UCA)	0	0	0	0	0.0
Subdivisions	28	0	0	16	4.3
Resource Zones	0	0	0	0	-
Residential in Exceptions Areas	0	0	0	0	-
UR-6 (UCA)	28	0	0	16	4.3

Source: Jackson County Assessment Records, Jackson County Planning Department, City of Medford Planning Department.

The Urban Fringe area immediately to the east and south of the Medford UGB accommodated 15 non-farm dwellings during the study period. These are areas that Medford is now considering for UGB expansion.

About 3% of subdivision lots approved between 1985 and 1989 occurred in the urban fringe. Forty-four subdivision lots were approved in the Medford urban fringe between 1985 and 1989. One of these subdivisions (28 lots) was developed at urban densities with public sewer and water service in an Urban Containment Area. In Jackson County, UCAs are allowed to develop at urban densities because they have many urban services. The other 16 lot subdivision was developed on lots in excess of ten acres each, and occurred at the edge of the Urban Fringe area as defined in this study. Although this sort of development pattern is inefficient from a land use perspective, it probably did not have a negative impact on future expansion of the Medford UGB because of its distance from the UGB.

Partitioning activity in the Urban Fringe was evenly divided between exceptions areas and resource zones. In exceptions areas, the 24 parcels that were created averaged two units per acre. While this average lot size would be an impediment to future urbanization in most instances, the fact that it has occurred as infill (or to allow the separation of two residences on the same parcel) in areas that are already developed at this density minimizes the negative impact. Non-resource dwellings are usually partitioned off from the remainder of the resource land for tax purposes. The fact that there were 23 partitions in resource zones is probably related to non-resource dwelling proposals.

Partitions in the urban fringe between 1985 and 1989 were typically created at a lower density than partitions in other analysis areas (the average partitioned parcel size in the urban fringe was 9.7 acres). Between 1985 and 1989, the average parcel size of residential partitions within the urban fringe was comparable to that of the rest of county analysis area, but much higher than partitions created within the Medford UGB. The average parcel size for non-residential partitioned parcels in the urban fringe was about 12 acres (see Table A-12a).

For all lands inside the UGB (urban plus urbanizable): multiple family development accounted for about 16% of all new units inside the Medford UGB. The average single family density based on new subdivision lots was 4.2 lots per net acre. Residential development (year-built data), however, averaged 4.9 units per net acre. This means that average lot sizes are increasing in new subdivisions in Medford.

DEVELOPMENT IN URBANIZABLE AREAS (MEDFORD)

Summary. Single family development on urbanizable lands in Medford is generally occurring at densities greater than 90% of allowable density, and at densities higher than in Medford urban areas. Table 3-1 and 3-3 summarize the results of our analysis.

TABLE 3-3

ACTUAL VS. ALLOWABLE DENSITY OF RESIDENTIAL DEVELOPMENT
Dwelling Units Inside the Medford UGB
1985-89

Analysis Area	Single-Family			Multiple Family		
	Actual Density	Allowable Density	% of Allowable	Actual Density	Allowable Density	% of Allowable
Medford UGB	4.9	5.6	87.5	15.5	21.6	71.8
Medford Urban Area	5.1	6.3	80.9	15.5	21.6	71.8
Medford Urbanizable Area	4.8	5.2	92.3	-	-	-
Medford Urban Fringe	0.33	0.4	82.5	-	-	-

Source: Jackson County Assessment Records.

About 67% of single family dwelling units built inside the Medford UGB between 1985 and 1989 were constructed in urbanizable areas. A total of 454 dwelling units were constructed in urbanizable areas between 1985 and 1989. Of these, 449 (98.9%) were located in residential zones (see Table A-4a and A-4b).

Over 82% of subdivision lots approved inside the Medford UGB between 1985 and 1989 occurred in urbanizable areas. This is predictable; because large, vacant parcels are located on urbanizable land. A total of 1,074 subdivision lots were approved between 1985 and 1989 in urbanizable areas. Of these, 1,041 (96.9%) were located in residential zones (see Tables A-8a and A-8b).

Nearly 41% of partitioned parcels approved inside the Medford UGB between 1985 and 1989 were located in urbanizable areas. A total of 176 parcels were partitioned in urbanizable areas between 1985 and 1989. Of these, 133 were located in residential zones (see Tables A-12a and A-12b).

About 92% of all single family residences constructed in the urbanizable area between 1985 and 1989 were built at densities greater than or equal 90% of allowable densities. By comparison, about 81% of residential development in the Medford urban area occurred at densities over 90% of that allowed (see Table A-6b).

About 92% of subdivision lots created in residential zones in urbanizable areas between 1985 and 1989 were created at densities greater than 90% of allowable density. By comparison, less than 70% of residential subdivision development within the urban area and urban fringe between 1985 and 1989 occurred at densities more than 90% of that allowed (see Table A-10b).

About 70% of partitioned parcels in urbanizable areas between 1985 and 1989 were partitioned at greater than 90% of allowable density. By comparison, only 37% of residential partitions in the urban area occurred at densities greater than 90% of that allowed. Within the urbanizable area, all developments in the MFR-20 and SR-2.5 zones occurred at over 90% of allowable density (see Table A-14b).

DEVELOPMENT IN URBAN AREAS

Summary. Assessment records for built units suggest that actual construction of dwelling units in urban areas is meeting urban growth management objectives (i.e., building at or near planned densities). However, recent subdivision and partition data indicate that about 34% of subdivisions and 62% partitions in urban areas are being approved at densities of less than 90% of those allowable.

About 33% of residential development in the Medford UGB between 1985 and 1989 occurred in urban areas. A total of 222 dwelling units were constructed in urban areas zoned residential. No dwelling units were constructed in non-residential zones in the urban area between 1985 and 1989 (see Tables A-4a and A-4b).

About 15% of subdivision lots created inside the Medford UGB between 1985 and 1989 were approved in urban areas. A total of 193 subdivision lots were created in urban areas between 1985 and 1989. Of these 175 were located in residential zones (see Tables A-8a and A-8b).

About 31% of partitions approved inside the Medford UGB between 1985 and 1989 were located in urban areas. A total of 80 partitioned parcels were created in urban areas between 1985 and 1989. Of these, nearly 75% (59 parcels) were located in residential zones (see Tables A-12a and A-12b).

About 80% of all single family residences constructed in the urban area of Medford between 1985 and 1989 were built at densities greater than or equal 90% of allowable densities. A higher percentage of residential development in each of the other three analysis areas took place at densities higher than 90% of allowable. Figure 3-3 compares dwelling units per acre by analysis area for each of our three measurements of development (year built, subdivisions, and partitions). All three development types show higher densities inside the Medford UGB than outside. Partitions in urban areas occurred at less than half the average densities of year built and subdivisions. Subdivisions in urbanizable areas occurred at densities higher than subdivisions in urban areas. Figure 3-3 shows actual versus allowable density for year built, subdivisions, and partitions between 1985 and 1989. The figure clearly shows that all development types occurred predominantly between 90 and 100% of allowable densities.

About 63% of subdivision lots created in residential zones in the Medford urban area between 1985 and 1989 were created at densities greater than 90% of allowable density. By comparison, about 92% of residential subdivision lots created in urbanizable areas were at densities greater than 90% of allowable (see Table A-10b). The lower densities in urban areas can be explained by the fact that subdivisions are occurring as "infill" on smaller parcels.

About 62% of partitioned parcels in urban areas between 1985 and 1989 were partitioned at less than 90% of allowable density. With the exception of SFR-10, MFR-20, and SR-2.5 zones, this indicates that partitions are generally occurring at densities less than those allowed (see Table A-14b).

B. LIVABILITY ISSUES

Below we address the preservation of urban livability issue by describing changes in housing affordability, traffic congestion, parks, and air quality in the Medford case study area between 1985 and 1989.

Summary. Between 1985 and 1989 both housing costs and traffic congestion increased in the Medford study area, expenditures for parks in Medford more than doubled, and several control strategies led to improvements in overall air quality in the Medford area.

Average multiple family rental rates in the Medford area increased at a rate similar to the state as a whole between 1986 and 1988. Average multiple family rental rates increased by about 28% in the Medford/Grants Pass area between 1986 and 1988. This increase was less than rental increases over the same time period in Bend and Portland (see Table A-15). One way to describe housing affordability is to compare the increase in housing costs to the increase in median family income over a given time period. In Jackson County between 1986 and 1988, the median family income increased by a total of 15.9%. This increase was about 12% less than the reported average annual increase in multiple-family rental rates in the Medford/Grants Pass area during the same period.

The average home sales price in Medford increased by about 25% between 1986 and 1989. The average home price in Medford grew from $56,592 in 1986 to $69,637 in 1989. Home prices in Medford between 1986 and 1989 grew at a rate similar to home prices in Portland, but at a much slower rate than home prices in Bend. While the average home price in Medford increased by about 25% between 1986 and 1989, median family income in Jackson County increased by only about 22% over the same period (see Table A-16).

Average daily traffic volumes increased between 3 and 26% at selected intersections in Medford. Traffic volumes in Medford increased at all intersections we analyzed. The largest increase (26.8%) occurred at the intersection of Crater Lake Highway and North Pacific Highway (see Table A-17).

The number of days rated as "unhealthful" with regards to air quality in Medford declined by 54% between 1985 and 1988. The data show that the number of days classified as "good" in terms of air quality increased from 58 in 1985 to 150 in 1988. The number of days classified as "unhealthful" decreased from 35 in 1985 to 16 in 1988. According to the Department of Environmental Quality, much of the improvement in Medford's overall air quality can be attributed several control strategies including (1) traffic patterns changes, (2) a vehicle inspection and maintenance (I/M) program, and (3) the gradual reduction of older non-catalytic equipped cars (see Table A-18).

Budgeted expenditures for parks improvements by the City of Medford increased by 127% between 1985 and 1989. Expenditures for park improvements by the City of Medford increased from $167,500 in 1985 to $380,000 in 1989 (see Table A-23). The City of Medford had a total of 333 acres of parkland in 1989. About 52% (175 acres) is improved parkland. This represents an increase of about 5.2% in

improved acres/1,000 population within the Medford UGB between 1985 and 1989. In 1989, the Medford UGB contained about 158 acres of undeveloped parkland, about 4.4% less than in 1985.

C. INFRASTRUCTURE INVESTMENT ISSUES

Below we address infrastructure investment issues by describing expenditures for transportation, sewer, water, and storm drainage improvements in the Medford case study area between 1985 and 1989. We will address the issue of state investments in urban infrastructure in our final report, which will summarize across case studies.

The City of Medford has developed a system of user fees, systems development charges, local improvement districts and developer contributions that provide an assured funding source for needed sewer, water and storm drainage improvements through the year 2005. Of $112.7 (1989 dollars) worth of sewer, water, storm drainage and transportation projects, 73% ($82.8 million) are either built, under construction, or have an assured funding source. All of Medford's $64.9 million worth of sewer, water and storm drainage projects are either constructed, under construction or have a known funding source. Medford's comprehensive plan supports the concept of "paying as you go" for these key public facilities.

In contrast, for transportation projects the City has planned $47.8 worth of such projects, but only $17.9 million worth are under construction or have a known funding source. The remaining $29.9 million worth of projects have no known funding source. For this reason, the City is considering a street user fee to supplement state and federal funding sources. Medford expects to receive $1.7 million annually from this street user fees.

Medford is well-positioned to finance needed infrastructure improvements that support its growth management program. Because Medford has sought out local mechanisms to fund planned growth, its growth management program can count on the provision of sewer, water and storm drainage improvements in a timely manner. If Medford is successful in securing a local, long-term funding source for street improvements, the City will be far ahead of most Oregon communities in planning, programming and funding infrastructure improvements its infrastructure needs.

APPENDIX
DESCRIPTION AND EVALUATION OF DATA

A. PREFACE

This appendix describes and evaluates the data we used to address urban growth issues in the Medford case study area. We focus on data that describe changes in land development, livability, and infrastructure investment between 1985 and 1989.

We organize the appendix by data source. For each source we describe the data source, evaluate its reliability, and show the data. We organize the data into six categories, corresponding to the six sections of this appendix:

1.0 Data describing historic socioeconomic conditions

2.0 Data describing growth management policies

3.0 Data describing changes in land development

4.0 Data describing changes in livability indicators

5.0 Data describing infrastructure investment

6.0 Data describing residual development potential

In Chapter Three we use the data in this Appendix to develop conclusions about the amount and type of urban growth that occurred between 1985 and 1989 in the Medford case study area.

1.0 SOCIOECONOMIC INDICATORS

1.1 SOURCE *Population Estimates for Oregon 1980-89*, Portland State University Center for Population Research and Census, 1990; *Business and Employment Outlook*, State Employment Division, 1990.

Description Population estimates for each case study area and Oregon for the years 1980 and 1989 (by Portland State University's Center for Population Research and Census (CPRC). Estimates are driven by area births, deaths, and net migration. Table A-1 shows historic population growth for the Medford case study area and other case study areas across Oregon. Employment estimates for each case study area and Oregon for the years 1980 and 1988. Table A-2 shows historic employment growth for Jackson County and counties within other case study areas across Oregon.

Evaluation The population estimates by the CPRC are the only source available for all case study areas. Although the CPRC does not actually count people, it periodically updates the data to ensure a close approximation to actual population trends. The 1980 Census of Population is used as a base. Medford officials believe that the PSU estimates are low.

Employment data are extrapolated from the Bureau of Economic Analysis (BEA), U.S. Department of Commerce, and Oregon unemployment insurance files. The BEA estimates are the best available for time-series analysis. The BEA's employment data for each county are estimated jointly, and thus are comparable with one another.

ANALYSIS Tables A-1 and A-2 below show that the total population and employment of Jackson County grew at faster rates between 1980 and 1988 than for the state as a whole. Medford's population also grew at an annual rate that was higher than the state as a whole between 1980 and 1988.

TABLE A-1

HISTORIC POPULATION GROWTH
1980-89

Jurisdiction	1980	1989	% Change
Medford	39,746	45,290	13.9
Jackson County	132,456	145,000	9.4
Other Case Study Areas			
Portland	368,139	432,175	17.3
Washington, Clackamas, and Multnomah	1,050,418	1,114,500	8.7
Bend	17,263	19,510	13.1
Deschutes County	62,142	70,600	13.6
Brookings	3,384	4,465	31.9
Curry County	16,992	19,200	12.9
Statewide Total	2,633,156	2,791,000	5.9

Source: Population Estimates for Oregon 1980-89, Portland State Center for Population Research and Census, 1990.

TABLE A-2

HISTORIC EMPLOYMENT GROWTH
1980-88

Jurisdiction	1980	1988	% Change
Jackson County	56,560	66,470	17.5
Other Case Study Areas			
Portland Metro	595,600	618,200	3.8
Deschutes County	27,340	34,330	25.6
Curry County	6,230	8,730	40.1
Statewide Total	1,188,000	1,343,000	13.1

Source: Oregon Resident Labor Force, State Employment Division, 1990.

2.0 GROWTH MANAGEMENT POLICIES AND REGULATIONS

2.1 SOURCES *Medford Comprehensive Plan*, City of Medford, "Urbanization Policies," and "Public Facilities Element" and "Limited Service Area" policies; *Land Development Code*, City of Medford (Ordinance No. 5785, as amended November 16, 1989); *Jackson County Comprehensive Plan*, "Urban Lands."; *Jackson County Code*, Chapter 16 "Minor and Major Partitions" and Chapter 20 "Subdivisions."; *Jackson County Zoning Ordinance*.

Interviews with Jackson County planning staff, City of Medford Planning staff, Medford Water District staff and Bear Creek Valley Sanitary Authority (BCVSA) staff.

Description The documents reviewed have been adopted by their respective agencies, and have been acknowledged by the Land Conservation and Development Commission as being in compliance with the Statewide Planning Goals.

Evaluation These documents were recommended to us by Jackson County and City of Medford planning staffs as being the important sources of growth management policies. Our experience in reviewing comprehensive plans and implementing ordinances confirms this opinion.

ANALYSIS **Jackson County**

The Jackson County Comprehensive Plan recognizes that urban growth boundaries will define the limits of urban development, which will occur through annexation to one of Jackson County's 11 cities. The County reviews development within unincorporated urban growth areas, and "coordinates" (i.e., notifies) affected cities of land divisions and quasi-judicial land use applications. (County Urban Lands Element, p. 555).

The County has also established three "urban containment boundaries" (UCB's) for densely developed areas outside of the eleven urban growth boundaries. In effect, these are urban growth boundaries without cities, because sewer and water service are available to these areas through BCVSA and the Medford Water Commission. Urban level zoning and development are allowed to take place within these urban containment boundaries. Two of these urban containment areas located just outside the City of Medford. (County Urban Lands Element, p. 560).

Outside of urban growth or containment boundaries, the County's policy is to limit subdivision activity and to zone rural exceptions areas consistent with the existing pattern of development. (County Urban Lands Element, p. 561.) Our examination of land division patterns confirmed the fact that zoning does not allow for significant intensification; i.e., the applicable minimum lot sizes (R-1, R-2.5, R-5, etc) are similar to the existing lot sizes, leaving few opportunities for land divisions.

In areas designated for resource use, Jackson County does allow for non-farm and non-forest dwellings on small acreages on less productive soils. (Jackson County Zoning Ordinance)

Jackson's County's land division standards do not consider the possibility that land immediately outside existing UGBs may eventually be included within a UGB. Similarly, County land division standards for unincorporated areas within UGBs do not include provisions for

development at urban densities. The County is required to notify affected cities of land divisions within their respective UGBs. (Jackson County Code, Chapter 16.)

Medford

The *Medford Comprehensive Plan* is "Urbanization Policies" complement the Jackson County Comprehensive Plan and serve as the basis for the City's growth management program. Urban development is limited to within the Medford UGB, and must occur through annexation to Medford when key urban services are available. Non-urban land use designations will apply to unincorporated land within the UGB until an urban designation is approved by the City through the annexation process.

In areas with adopted "conversion plan regulations," the County shall comply with these regulations. For example, the "Lone Pine/Foothills Limited Service Area" development outside the City is restricted by county zoning to one unit for each five acres because of public water limitations. Before an urban zoning district may be applied, specific transportation and drainage improvements must be made.

The City and County have established an area of "mutual concern" for an area outside the urban growth boundary, within which the County will notify the City of land use actions. The intent of the boundary is explicitly not UGB expansion (Policy 13). However, the City is explicit in its policy of agricultural land protection just outside the UGB (Policy 10).

Sanitary sewer service through BCVSA is permitted outside of UGB and UCA only for health hazard reasons. In such situations, the sewer may serve only affected areas, even if it means running a sewer line past existing developed areas to get to the health-hazard area (Policy 7).

The Medford Water Commission contracts with neighboring cities and the "White City" UCA to provide water service. Its service areas are strictly delineated, and their modification would require City Amendment by Resolution No. 531. Such an amendment is unlikely according to city officials.

The "Public Facilities Element" of the *Medford Comprehensive Plan* makes it clear that "essential urban services," including sanitary sewer, water, storm drainage, and streets must be provided to urban development (Goal 3). When these services are not available to an area within the UGB, then the City must designate it as a "limited service area." This means that development will be limited until a facilities plan is implemented and the deficient service has been adequately provided.

When the City receives land division requests from the County for the unincorporated area within the UGB, the review is limited to whether there are conflicts with existing public facilities and transportation plans. The county approves few subdivision requests, because urban services can only be provided upon annexation to the City.

As with the area outside the UGB, partitioning is limited by county zoning, which limits partitioning. In areas that were heavily partitioned prior to acknowledgment of the *Medford Comprehensive Plan*, the County review of land division requests varies little from the review process for exception areas, i.e., the County reviews for a rural level of services, adequate access, and zoning consistency. If streets or utilities are required to support a land division, they must be designed to City standards (Policy 4).

3.0 LAND DEVELOPMENT DATA

3.1 SOURCE *Jackson County Assessment Data 1985-89*, Jackson County Assessor's Department.

Description The Jackson County assessment records provide information on the amount and configuration of development in the Medford case study area. Jackson County provided all "year built" records for tax lots from 1985 through 1989. A property is assessed and recorded in the assessment records in the year it is constructed, thus the year-built designation. We used the following information from this data base in our analysis of development in the Medford case study area and analysis areas (Tables A-4 through A-7): location information (map I.D. and tax lot number), size of lot or parcel, square feet of improvements, zoning, and number of dwelling units for residential properties.

Table A-4a and A-4b show the amount and percent of development by type and analysis area. Tables A-5a and A-5b show the distribution and percent of residential development density (in dwelling units) for single and multiple-family dwellings by analysis area. Tables A-6a and A-6b show actual versus allowable density (as specified by the Medford and Jackson County zoning codes) in terms of number of dwelling units constructed and percent by density class by analysis area. Table A-7 compares maximum allowable density with actual density by zone and analysis area in terms of actual average lot size and average percent of allowable density.

Evaluation The Jackson County assessment records are the most complete and consistent source of information available to us on the amount, configuration, and density of development in the Medford case study area. However, not all records in the data base are complete. Some records did not include the number of dwelling units or acreage. This information is instrumental in development of density measures. We did not include incomplete records in our analysis of development density.

METHODS Jackson County Assessment records do not specifically count dwelling units; rather, land use on a specific parcel is designated by property classification and a factor book code. Tim Birchfield, Jackson County Assessor suggested that factor book code would provide us with the most accurate estimate of dwelling units. To calculate the number of dwelling units on County-zoned tax lots, we developed a computer routine to count dwelling units by factor book code. Note that the accuracy of this method is limited by the accuracy of the factor book code in the Assessor's records. However, Tim Birchfield stated that the factor book code is generally accurate.

Table A-4 shows the amount of development by type and analysis area. We summed dwelling units (DU) by analysis area and zone (for example all zones permitting single family uses were included in the single family residence) to determine the amount of development by type for single and multiple-family dwellings. The number of DUs were then divided by the number of acres in each analysis area to derive a measure of overall development density (DU/acre). To determine the amount of commercial and industrial development, we aggregated data in commercial and industrial zones by analysis area. Square feet of improvements was divided by square feet of land to develop the lot coverage ratios.

Table A-5 shows the distribution of residential development density (in dwelling units) for single and multiple-family dwellings by analysis area. To develop the figures presented in Table A-5, we created a density field for residential zones (DU/acre) and then summed the number of dwelling units for each density class by analysis area.

Table A-6 shows actual versus allowable density (as specified by the Medford and Jackson County zoning codes) in terms of number of dwelling units constructed by density class by analysis area. To develop our estimates of actual versus allowable densities in residentially zoned areas, we aggregated the number of dwelling units by zone and analysis area. We then compared actual density (as a percent of allowable densities) with the maximum allowable density for each zone designation as specified in the Medford and Jackson County zoning codes.

Table A-7 compares maximum allowable density with actual density by zone and analysis area in terms of actual average lot size and average percent of allowable density. The data presented in Table A-7 summarize the raw data presented in Table A-6. The maximum allowable densities (in DU/acre) were converted into a minimum lot size (the reciprocal of DU/acre) and compared with the average actual lot size from the year built data. We then present the average percent of allowable density by zone. The total number of dwelling units which had the corresponding acreage figures are also presented.

ANALYSIS

We used year-built data as one indicator of the amount and configuration of development that occurred in the Medford case study area from 1985 through 1989. Our analysis also considered approved subdivisions and partitions as measures of development.

Tables A-4a and A-4b provide an overview of the amount of development by type and analysis that occurred in the Medford case study area from 1985 through 1989. A total of 1,955 single-family dwelling units were constructed in the study area from 1985-89. About 88 percent of this development occurred in urban/exception areas. The remaining 12 percent occurred in resource zones. Overall, our analysis of county assessment records shows that the majority of development is occurring inside the Medford UGB. Over 38 percent of single family residences constructed between 1985 and 1989 were built inside the Medford UGB. However, about 82 percent were constructed within all UGBs within the study area. The largest portion (26.0 percent of all single-family DUs in the Medford UGB) occurred in areas we identified as urbanizable. About 48 percent of all multiple family DUs were built inside all UGBs in the study area. In addition, a total of 157 commercial and industrial developments occurred in the study area, with nearly 65 percent of these developments occurring inside the Medford UGB, and about 96 percent within all study area UGBs combined.

Tables A-5a and A-5b show the number and percentage of dwelling units constructed by density class and analysis area. Our analysis of the distribution of dwelling densities for single-family residences suggests (1) housing constructed inside the Medford UGB is built at higher densities than outside the UGB (over 90 percent were built at densities between 2 and 8 DU/acre), (2) little single family housing construction occurred in the urban fringe area between 1985 and 1989 (a total of 49 dwellings were constructed in the urban fringe area), (3) residential development in the urban fringe occurred at densities lower than any other analysis area (over 90 percent occurred at a density of less than 1 DU/ac), and (4) housing in the rest of county analysis area is being constructed at densities ranging from less than 0.2 DU/ac to 8 DU/ac.

Tables A-6a and A-6b show actual versus allowable density for residential development in the Medford case study area. Overall, 85.8 percent of dwelling units constructed between 1985 and 1989 were built at over 90 percent of the maximum allowable density. This figure provides a strong indication that residential development in the Medford case study area is occurring at densities at or near the density allowed by the zoning code.

Eighty percent of the dwelling units constructed in the Medford urban area were built at over 90 percent of allowable density. This figure is fairly consistent over individual zones. Over 90 percent of single-family dwelling units were constructed in Medford SFR-4 and SFR-6 zones. However, a significant portion (31.8 percent) of the DUs constructed in the SFR-4 zone were built at less than 90 percent of allowable density.

In the Medford urbanizable area, 90.2 percent of all DUs constructed between 1985 and 1989 were built at 90 percent or more of allowable density. The majority (98.4 percent) of construction activity in urbanizable areas occurred on lots with city zoning.

Our analysis shows 49 dwelling units constructed in the Medford urban fringe area between 1985 and 1989. Twenty-two of these dwellings were constructed in resource zones. This figure indicates that (1) little development has occurred in the fringe area relative to inside the UGB and the rest of county area, and (2) about 45 percent of development in the urban fringe area occurred in non-residential zones.

A total of 480 dwelling units were constructed in the exurban area outside UGBs. Of these, 284 were constructed in exceptions areas. The remaining 196 were constructed in resource zones.

Table A-7 provides a comparison of actual and allowable density in DU/acre. Our analysis shows that the actual density in city zones is ranges between 49.1 and 93 percent of allowable density. However, development in many county zones are exceeding allowable densities, particularly in zones with lots sizes greater than one-acre.

TABLE A-4 a

AMOUNT OF DEVELOPMENT BY TYPE
1985-89

Building Type	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]	Exurban[d]	Other UGBs[e]	Total
Single-Family						
Dwelling Units						
Urban Exception Area	222	449	27	284	746	1728
Resource Zones	0	5	22	196	4	227
Total	222	454	49	480	750	1955
Density (DU/AC)						
Urban Exception Area	4.24	3.83	0.29	0.39	2.51	
Resource Zones	-	0.20	0.14	0.02	.12	
Average	4.24	3.31	0.20	0.24	2.25	
Multiple Family						
Dwelling Units	119	9	0	0	140	268
DU/acre	18.17	14.06	-	0	N/A	
Commercial/Industrial						
Number of developments	53	50	3	3	48	157
Improved square feet	395,512	263,587	18,100	15,200	234,294	926,693
Acres	76.89	53.48	N/A	8.91	50.5	189.78
Lot coverage ratio	11.8%	11.3%	-	3.92%	10.64	11.2

Source: Jackson County Assessment Records, 1985-89.

N/A - Not Available

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre.

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre.

[c] Medford urban fringe is defined as tax maps from one to two miles of the Medford UGB.

[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

[e] Other UGBs includes Ashland, Talent, Phoenix, Central Point, Jacksonville, Gold Hill, Eagle Point, and Rogue River.

TABLE A-4 b

AMOUNT OF DEVELOPMENT BY TYPE
Percent by Analysis Area, 1985-89

Building Type	Medford Urban Area[a]	Medford Urbanizable Area[b]	Other UGBs[e]	Total UGB	Medford Urban Fringe[c]	Exurban[d]	Total Rural
Single-Family							
Dwelling Units							
Urban Exception Area	12.8%	26.0%	42.0	82.0	1.6	16.4	18.0
Resource Zones	0.0	2.2	1.8	13.7	9.7	86.3	86.3
Average	11.4	23.2	38.4	72.9	2.5	24.6	27.1
Multiple Family							
Dwelling Units	44.4	3.4	52.2	100.0	0.0	0.0	0.0
Commercial/Industrial							
Number of developments	33.8	31.8	30.6	96.2	1.9	1.9	3.8

Source: Jackson County Assessment Records, 1985-89.

N/A - Not Available

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre.
[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre.
[c] Medford urban fringe is defined as tax maps from one to two miles of the Medford UGB.
[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.
[e] Other UGBs includes Ashland, Talent, Phoenix, Central Point, Jacksonville, Gold Hill, Eagle Point, and Rogue River.

TABLE A-5 a

DISTRIBUTION OF RESIDENTIAL DEVELOPMENT DENSITY
Number of Dwelling Units by Density Class
1985-89

Density (DU/acre)	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]		Exurban[d]		Other UGB
			Exception Areas	Resource Areas	Exception Areas	Resource Areas	
Single Family							
0 - .2	4	1	15	17	60	142	154
.2 - .5	0	2	5	3	54	22	11
.5 - 1	0	4	6	1	41	25	11
1 - 2	10	16	1	1	26	7	28
2 - 4	60	75	0	0	34	0	68
4 - 6	99	300	0	0	14	0	125
6 - 8	32	46	0	0	55	0	87
8 - 10	5	0	0	0	0	0	75
> 10	12	14	0	0	0	0	191
Total	222	449	27	22	284	196	750
Multi-Family							
< 5	1	0	0	0	0	0	0
5 - 10	2	0	0	0	0	0	0
10 -15	3	6	0	0	0	0	0
15 - 20	112	3	0	0	0	0	0
> 20	0	0	0	0	0	0	0
Total	119	9	0	0	0	0	0

Source: Jackson County Assessment Records, 1985-89.

N/A - Not available

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre.
[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre.
[c] Medford urban fringe is defined as tax maps from one to two miles of the Medford UGB.
[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.
[e] Other UGBs includes Ashland, Talent, Phoenix, Central Point, Jacksonville, Gold Hill, Eagle Point and Rogue River.

TABLE A-5 b

DISTRIBUTION OF RESIDENTIAL DEVELOPMENT DENSITY
Percent of Dwelling Units by Density Class
1985-89

Density (DU/acre)	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]		Exurban[d]		Other UGBs[e]	
			Exception Areas	Resource Areas	Exception Areas	Resource Areas	Exception Areas	Resource Areas
0 - .2	1.8	0.2	55.5	77.4	21.1	72.4	20.2	75.0
.2 - .5	0.0	0.4	18.5	13.6	19.0	11.2	1.3	25.0
.5 - 1	0.0	0.9	22.2	4.5	14.4	12.8	1.5	0.0
1 - 2	4.5	1.3	3.8	4.5	9.2	3.6	3.8	0.0
2 - 4	27.0	16.7	0.0	0.0	12.0	0.0	9.1	0.0
4 - 6	44.6	66.8	0.0	0.0	4.9	0.0	16.7	0.0
6 - 8	14.4	10.2	0.0	0.0	19.3	0.0	11.7	0.0
8 - 10	2.3	0.2	0.0	0.0	0.0	0.0	10.0	0.0
> 10	5.4	3.1	0.0	0.0	0.0	0.0	25.6	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Multi-Family								
< 5	0.8	0.0	-	-	-	-	-	-
5 - 10	1.7	0.0	-	-	-	-	-	-
10 -15	2.5	66.7	-	-	-	-	-	-
15 - 20	94.1	33.3	-	-	-	-	-	-
> 20	0.0	0.0	-	-	-	-	-	-
Total	100.0	100.0	-	-	-	-	-	-

Source: Jackson County Assessment Records, 1985-89.

N/A - Not available

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre.
[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre.
[c] Medford urban fringe is defined as tax maps from one to two miles of the Medford UGB.
[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.
[e] Other UGBs includes Ashland, Talent, Phoenix, Central Point, Jacksonville, Gold Hill, Eagle Point, and Rogue River.

TABLE A-6 a

RESIDENTIAL DEVELOPMENT: ACTUAL VS. ALLOWABLE DENSITY
Number of Dwelling Units
1985-89

Analysis Area/ Zone	Number of Units Built By Density Class						Total
	Percent of Allowable Density						
	1-25%	25-50%	50-70%	70-80%	80-90%	90-100+%	
Medford Urban Area[a]							
City of Medford							
SFR-4	0	10	12	6	22	107	157
SFR-6	0	0	2	1	6	44	53
SFR-10	0	0	1	3	0	2	6
MFR-20	0	0	1	0	3	112	116
MFR-30	0	0	0	0	0	3	3
Subtotal	0	10	16	10	31	268	335
Medford Urbanizable Area[b]							
City of Medford							
SFR-4	2	5	15	3	14	398	437
SFR-6	0	0	0	4	0	0	4
Jackson County							
RR-5	1	0	0	0	0	0	1
SR-1	0	0	0	0	0	2	2
SR-2.5	0	0	0	0	0	5	5
Subtotal	3	5	15	7	14	405	449
Total Medford UGB	3	15	31	17	45	673	784

Source: Jackson County Assessment records, 1985-89.

N/A - Not applicable

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

TABLE A-6 b

RESIDENTIAL DEVELOPMENT: ACTUAL VS. ALLOWABLE DENSITY
Percent of Dwelling Units by Zone
1985-89

Analysis Area/ Zone	Number of Units Built By Density Class Percent of Allowable Density 1-25%	25-50%	50-70%	70-80%	80-90%	90-100+%	Total
Medford Urban Area[a]							
City of Medford							
SFR-4	0.0%	6.4%	7.6%	3.8%	14.0%	68.2%	100.0%
SFR-6	0.0%	0.0%	3.8%	1.9%	11.3%	83.0%	100.0%
SFR-10	0.0%	0.0%	16.7%	50.0%	0.0%	33.3%	100.0%
MFR-20	0.0%	0.0%	0.9%	0.0%	2.6%	96.5%	100.0%
MFR-30	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Subtotal	0.0%	3.0%	4.8%	3.0%	9.2%	80.0%	100.0%
Medford Urbanizable Area[b]							
City of Medford							
SFR-4	0.5%	1.1%	3.4%	0.7%	3.2%	91.1%	100.0%
SFR-6	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Jackson County							
RR-5	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
SR-1	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
SR-2.5	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Subtotal	0.7%	1.1%	3.3%	1.6%	3.1%	90.2%	100.0%
Total Medford UGB	0.4%	1.9%	4.0%	2.2%	5.7%	85.8%	100.0%

Source: Jackson County Assessment records, 1985-89.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

TABLE A-7

RESIDENTIAL DEVELOPMENT: ACTUAL VS. ALLOWABLE DENSITY
Comparison of Actual and Allowable Lot Size
1985-89

Analysis Area/ Zone	Maximum Allowable Density		Actual Average Density (DU/Acre)	Average Percent of Allowable Density	Total Dwelling Units
	Units/Gross Acre	Units/Net Acre [1]			
Medford Urban Area[a]					
City of Medford					
SFR-4	4	5.3	3.7	69.8%	157
SFR-6	6	8	6.6	82.5%	53
SFR-10	10	10.6	6.9	65.1%	6
MFR-20	20	20	18.6	93.0%	116
MFR-30	30	30	N/A	-	3
Medford Urbanizable Area[b]					
City of Medford					
SFR-4	4	5.3	2.6	49.1%	437
SFR-6	6	8	4.7	58.8%	4
Jackson County					
RR-5	0.2	0.2	0.07	35.0%	1
SR-1	1	1	N/A	-	2
SR-2.5	0.4	0.4	1.0 ac	40.0%	5
Medford Urban Fringe[c]					
Jackson County					
F-5	0.2	0.2	0.21	105.0%	11
RR-5	0.2	0.2	0.24	120.0%	6
SR-1	1	1	0.68	68.0%	5
SR-2.5	0.4	0.4	0.5	125.0	2
Resource Zones	N/A	N/A	0.14	N/A	22
Rest of County[d]					
Jackson County					
F-5	0.2	0.2	0.27	135.0%	27
RR-5	0.2	0.2	0.49	245.0%	183
SR-2.5	0.4	0.4	0.42	105.0%	31
SR-1	1	1	0.96	96.0%	37
Resource Zones	N/A	N/A	0.10	N/A	196

Source: Jackson County Assessment records, 1985-89.

N/A - Not Available

[1] Units/net acre assumes 25 percent of gross acreage deeded to streets, etc. This means that a net acre has 43,560 square feet of buildable land.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

[c] Medford urban fringe is defined as tax maps within two miles of the Medford UGB

[d] Rest of county is defined as tax lots outside all UGBs and the Medford Urban Fringe with Jackson County zoning

3.2 SOURCE *Jackson County and City of Medford Subdivision Records 1985-89*, Jackson County and City of Medford Planning Departments.

Description This data source includes all approved subdivisions in Medford and Jackson County from 1985-89. Subdivision include all land divisions of 4 or more lots. This data base was used to analyze the amount, configuration, and density of approved subdivisions in the Medford case study area (Tables A-8 through A-11). This analysis is presented by analysis area (defined on the tax map level). To analyze approved subdivisions we analyzed zoning, number of lots, acreage, and density (lots/acre).

Table A-8a shows the total number of lots and the average lot size created by analysis area for the period 1985-89. Table A-8b shows the percentage of subdivision lots created by analysis area. Table A-9a shows the distribution of new subdivision lots by density class for each analysis area. Table A-9b shows the percentage of subdivision lots created by density class. Table A-10a shows actual versus allowable density for the number of subdivision lots created as a percent of allowable density by zone and analysis area. Table A-10b shows the percentage of lots as a percent of allowable density by analysis area and zone. Table A-11 presents a comparison of actual versus allowable lot size by zone and analysis area.

Evaluation This data base is the best source of approved subdivisions in the Medford case study area. However, not all records in the data base are complete. Some records did not have information on zoning, lots, or acreage. We did not include these records in the density calculations so as not to bias our analysis.

METHODS Table A-8 shows the total number of lots and the average lot size created by analysis area for the period 1985-89. To develop these figures, we totaled the number of subdivision lots created by analysis area during the period 1985-89. We then divided the total subdivision acreage for each analysis area by the total subdivision lots created to obtain our estimate of average lot size.

Table A-9 shows the distribution of new subdivision lots by density class for each analysis area. To develop the figures presented in Table A-9, we calculated the overall density of each subdivision and then summed the number of lots created by density class and analysis area.

Table A-10 shows actual versus allowable density for the number of subdivision lots created as a percent of allowable density by zone and analysis area. To develop our estimates of actual v. allowable densities for residential subdivisions, we aggregated the number of lots created by zone and analysis area. We then compared actual density (as a percent of allowable density) with the maximum allowable density for each zone designation as specified in the Medford and Jackson County zoning codes.

Table A-11 presents a comparison of actual versus allowable lot size by zone and analysis area. The data presented in Table A-11 summarize the raw data presented in Table A-10. The maximum allowable densities (in DU/acre) were converted into a minimum lot size (the reciprocal of DU/acre) and compared with the average actual lot size from the subdivision data. We then present the average percent of allowable density by zone. The total number of lots which had the corresponding acreage figures are also presented.

ANALYSIS We analyzed approved subdivisions in the Medford case study area as an alternative measure of the amount and configuration of residential development.

Our analysis shows that 1,318 subdivision lots were approved in the Medford case study area between 1985 and 1989. Over 96 percent of approved subdivision lots occurred in residential zones.

The majority (81.5 percent) of approved residential subdivision lots occurred in urbanizable areas. Lots approved in urbanizable area had an average size of .21 acres, the smallest of any analysis area.

The large lots size in the urban fringe area may not be representative of the entire urban fringe. This figure is based on one 16-lot subdivision. We were not provided with acreage figures for other subdivision in this analysis area.

Tables A-9a and A-9b show the number of subdivision lots created by density class. Note that densities are in lots per net acre. In the Medford urban area, 97.7 percent of approved subdivision lots fell between 2 and 8 lots per acre. Over 77 percent of lots approved in the urbanizable area were between 4 and 6 lots per acre.

Tables A-10a and A-10b summarize the extent to which approved subdivisions are reaching allowable densities. Of the 1,267 residential subdivision lots created, 87.8 percent attain densities of 90 percent or more of allowable density.

Table A-11 compares actual versus allowable density in lots created per net acre. For city zones, actual densities are generally in the 60 percent of allowable net density range.

TABLE A-8 a

APPROVED SUBDIVISION LOTS
1985-89

Subdivisions	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]	Exurban Area[d]
Number of lots				
Urban/Exception Areas	175	1,041	44	7
Resource Zones	18	33	0	0
Total	193	1,074	44	7
Average lot size (acres)				
Urban/Exception Areas	0.24	0.21	11.8	6.7
Resource Zones	0.63	N/A	-	-
Average	0.28	-	11.8	6.7

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

[c] Medford urban fringe is defined as tax maps from one to two miles of the Medford UGB

[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

TABLE A-8 b

PERCENT OF APPROVED SUBDIVISION LOTS BY ANALYSIS AREA
1985-89

Subdivisions	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]	Exurban Area[d]
Number of lots				
Urban/Exception Areas	13.8%	82.2%	3.5%	0.5%
Resource Zones	35.3%	64.7%	0.0%	0.0%
Total	14.6%	81.5%	3.4%	0.5%

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

[c] Medford urban fringe is defined as tax maps within two miles of the Medford UGB

[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

TABLE A-9 a

DISTRIBUTION OF NEW SUBDIVISION LOTS
Number of Lots by Density Class
1985-89

Density (Lots/Net Acre[1])	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]	Exurban Area[d]
Single-Family				
0 - .2	0	0	16	7
.2 - .5	0	0	0	0
.5 - 1	0	0	0	0
1 - 2	4	11	0	0
2 - 4	61	76	0	0
4 - 6	80	805	28	0
6 - 8	30	149	0	0
8 - 10	0	0	0	0
> 10	0	0	0	0
Total	175	1,041	44	7

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

[c] Medford urban fringe is defined as tax maps within two miles of the Medford UGB

[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

[1] Lots/Net Acre assumes 25% of gross acreage is deeded for streets, etc.

TABLE A-9 b

DISTRIBUTION OF NEW SUBDIVISION LOTS
Percent of Lots by Density Class
1985-89

Density (Lots/Net Acre[1])	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]	Exurban Area[d]
Single-Family				
0 - .2	0.0%	0.0%	36.7%	100.0%
.2 - .5	0.0%	0.0%	0.0%	0.0%
.5 - 1	0.0%	0.0%	0.0%	0.0%
1 - 2	2.3%	1.1%	0.0%	0.0%
2 - 4	34.9%	7.3%	0.0%	0.0%
4 - 6	45.7%	77.3%	63.3%	0.0%
6 - 8	17.1%	14.3%	0.0%	0.0%
8 - 10	0.0%	0.0%	0.0%	0.0%
> 10	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

[c] Medford urban fringe is defined as tax maps within two miles of the Medford UGB

[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

[1] Lots/Net Acre assumes 25% of gross acreage is deeded for streets, etc.

TABLE A-10 a

RESIDENTIAL DEVELOPMENT: ACTUAL VS. ALLOWABLE DENSITY
Number of Subdivision Lots Created as Percent of Allowable Density
1985-89

Analysis Area/ Zone	Number of Lots Created by Density Class						Total
	Percent of Allowable Density						
	1-25%	25-50%	50-70%	70-80%	80-90%	90-100+%	
Medford Urban Area[a]							
City of Medford							
SFR-4	0	0	52	0	9	96	157
SFR-6	0	0	0	0	0	18	18
Subtotal	0	0	52	0	9	114	175
Medford Urbanizable Area[b]							
City of Medford							
SFR-4	0	11	76	0	0	815	902
SFR-6	0	0	0	0	0	139	139
Subtotal	0	11	76	0	0	954	1,041
Total Medford UGB	0	11	128	0	9	1,068	1,216

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

TABLE A-10 b

RESIDENTIAL DEVELOPMENT: ACTUAL VS. ALLOWABLE DENSITY
Percent of Subdivision Lots Created as Percent of Allowable Density
1985-89

Analysis Area/ Zone	Number of Lots Created by Density Class						Total
	Percent of Allowable Density						
	1-25%	25-50%	50-70%	70-80%	80-90%	90-100+%	
Medford Urban Area[a]							
City of Medford							
SFR-4	0.0%	0.0%	33.1%	0.0%	5.5%	61.1%	100.0%
SFR-6	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Subtotal	0.0%	0.0%	29.1%	0.0%	1.1%	63.7%	100.0%
Medford Urbanizable Area[b]							
City of Medford							
SFR-4	0.0%	1.2%	8.4%	0.0%	0.0%	90.4%	100.0%
SFR-6	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Subtotal	0.0%	1.1%	7.3%	0.0%	0.0%	91.6%	100.0%
Total Medford UGB	0.0%	0.9%	10.5%	0.0%	0.7%	87.8%	100.0%

Source: City of Medford Planning Department, Jackson County Planning Department.

a Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

b Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

TABLE A-11

SINGLE-FAMILY RESIDENTIAL ACTUAL VS. ALLOWABLE DENSITY
Comparison of Actual and Allowable Lot Size
1985-89

Analysis Area/ Zone	Maximum Allowable Density		Actual Average Lot Size	Average Percent of Allowable Density	Number of Subdivision Lots Created
	Lots/Gross Acre	Lots/Net Acre[1]			
Medford Urban Area[a]					
City of Medford					
SFR-4	4	5.3	3.0	56.6%	157
SFR-6	6	8	5.2	65.0%	18
Medford Urbanizable Area[b]					
City of Medford					
SFR-4	4	5.3	3.2	60.4%	902
SFR-6	6	8	5.0	62.5%	139
Medford Urban Fringe[c]					
Jackson County					
UR-6	6	8	0.23		44
Exurban Area[d]					
Jackson County					
RR-5	0.2	0.2	1	500.0%	14

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

[c] Medford urban fringe is defined as tax maps within two miles of the Medford UGB

[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

[1] Net acre - assume 43,560 buildable square feet per acre.

3.3 SOURCE *Jackson County and City of Medford Partition Records 1985-89*, Jackson County and City of Medford Planning Departments.

Description The Jackson County and City of Medford partition data provide information on all approved partitions in the Medford case study area during the period 1985-89. Partitions include all land divisions resulting in three or fewer parcels. We analyzed partition data by analysis area using Jackson County tax maps. Our analysis of the amount, configuration, and density of approved partitions in residential areas is based on zoning, number of parcels, and acreage of new parcels. Tables A-12 through A-15 present the results of this analysis.

Table A-12a shows the number of residential partitions and the average parcel size by analysis area for the period 1985-89. Table A-12b shows the percent of parcels created by analysis area. Table A-13a shows the distribution of new parcels for single and multi-family zoning by analysis area. Table A-13b shows percent of parcels created by density class. Table A-14a shows actual versus allowable density for new parcels created as a percent of allowable density by analysis area and zone. Table A-14b shows percentage of parcels created as a percent of allowable density by analysis area and zone. Table A-15 shows actual versus allowable parcel size by analysis area and zone.

Evaluation The Jackson County and City of Medford partition data are the best available source for approved partitions in the Medford case study area. However, not all records in the data base provided complete information. Some records did not include zoning, lots, or acreage figures. Because this information is instrumental in our analysis of density, we did not include incomplete records in our analysis so as not to bias our analysis.

METHODS Table A-12 shows the number of residential partitions and the average parcel size by analysis area for the period 1985-89. We derived the figures presented in Table A-12 by summing the number of parcels by analysis area. We summed the total acreage of partitioned parcels and divided it by the number of parcels for each analysis area to obtain our estimate of average parcel size.

Table A-13 shows the distribution of new parcels for single and multi-family zoning by analysis area. To develop the figures presented in Table A-13, we summed the number of parcels in each density class by analysis area.

Table A-14 shows actual versus allowable density for new parcels created as a percent of allowable density by analysis area and zone. To develop our estimates of actual v. allowable densities for residential partitions, we aggregated the number of parcels created by zone and analysis area. We then compared actual density (as a percent of allowable density) with the maximum allowable density for each zone designation as specified in the Medford and Jackson County zoning codes.

Table A-15 shows actual versus allowable parcel size by analysis area and zone. The data presented in Table A-15 summarize the raw data presented in Table A-14. The maximum allowable densities (in DU/acre) were converted into a minimum lot size (the reciprocal of DU/acre) and compared with the average actual parcel size from the partition data. We then present the average percent of allowable density by zone. The total number of lots which had the corresponding acreage figures are also presented.

ANALYSIS Our analysis of partitions in the Medford case study area indicate that during the period 1985 through 1989, a total of 429 parcels were created through land partitions. Over 64 percent of partitions occurred on parcels in residential zones.

In the Medford urban area, 80 parcels were created accounting for 18.7% percent of all partitions in the study area. Parcels sizes averaged 1.05 acres overall, and .55 acres for residential partitions. Our analysis of the Medford urbanizable area shows 176 parcels created, accounting for 41 percent of the study area total. The average parcel size is 1.1 acres overall and .35 acres in residential zones.

Our analysis shows 54 parcels were created in the Medford urban fringe area. Parcels created in the urban fringe averaged 11.8 acres overall, and 3.7 acres in residential zones. Of the 119 parcels created in the rest of county area, 70 were in residential zones.

Our analysis of approved partitions shows a pattern of increasing parcel size from the urbanizable area outward. Parcels created in the urban area were about the same size (1.05 acres overall) as those in urbanizable areas.

Tables A-13a and A-13b show the distribution of new parcel size by density class. As one might expect, parcels in urban and urbanizable areas are occurring at higher densities than in the less-developed urban fringe and rest of county areas.

Tables A-14a and A-14b show actual versus allowable density for new parcels for City zones in the study area. Forty-one percent of partitions in City zones occurred at less than 90 percent of allowable density. The overall distribution is much more even across percentage categories than either the year-built or subdivision data.

Table A-15 shows a comparison of actual versus allowable density for partitioned parcels from 1985-89. Overall, no patterns emerge from this analysis. Considerable variation is shown between both analysis areas and zones.

TABLE A-12 a

APPROVED PARTITIONS
1985-89

Partitions	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]	Exurban Area[d]
Number of parcels				
Residential Zones	59	133	13	70
Resource Zones	0	6	23	40
Other Zones	21	37	18	9
Total	80	176	54	119
Average parcel size (ac)				
Residential Zones	0.55	0.35	3.70	3.40
Resource Zones	2.46	32.6	23.40	35.3
Other Zones	2.46	2.56	2.4	1.4
Average	1.05	1.10	11.8	13.9

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre
[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre
[c] Medford urban fringe is defined as tax maps within two miles of the Medford UGB
[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

TABLE A-12 b

APPROVED PARTITIONS
Percent of Approved Partitions by Analysis Area
1985-89

Partitions	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]	Exurban Area[d]
Percent of Parcels				
Residential Zones	73.8%	75.6%	24.1%	58.8%
Resource Zones	0.0%	3.4%	42.6%	33.6%
Other Zones	26.2%	21.0%	33.3%	7.6%
Total	100.0%	100.0%	100.0%	100.0

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre
[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre
[c] Medford urban fringe is defined as tax maps within two miles of the Medford UGB
[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

TABLE A-13 a

DISTRIBUTION OF NEW SINGLE FAMILY PARCELS BY SIZE
Number of Parcels by Density Class
1985-89

Density (Parcels/Gross Acre)	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]		Exurban Area[d]	
			Exception Areas	Resource Areas	Exception Areas	Resource Areas
0 - .2	0	3	6	16	12	40
.2 - .5	0	6	5	7	27	0
.5 - 1	5	12	0	0	24	0
1 - 2	7	5	2	0	2	0
2 - 4	27	16	0	0	3	0
4 - 6	5	70	0	0	0	0
6 - 8	0	0	0	0	0	0
8 - 10	0	0	0	0	0	0
> 10	9	21	0	0	2	0
Total	53	133	13	23	70	40

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

[c] Medford urban fringe is defined as tax maps within two miles of the Medford UGB

[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

TABLE A-13 b

DISTRIBUTION OF NEW PARCELS BY SIZE
Number of Parcels by Density Class
1985-89

Density (Parcels/Gross Acre)	Medford Urban Area[a]	Medford Urbanizable Area[b]	Medford Urban Fringe[c]		Exurban Area[d]	
			Exception Areas	Resource Areas	Exception Areas	Resource Areas
0 - .2	0.0%	2.3%	46.2%	69.6%	17.1%	100.0%
.2 - .5	0.0%	4.5%	38.5%	31.4%	38.6%	0.0%
.5 - 1	9.4%	0.9%	0.0%	0.0%	34.3%	0.0%
1 - 2	13.2%	3.8%	15.4%	0.0%	2.9%	0.0%
2 - 4	50.9%	12.0%	0.0%	0.0%	4.3%	0.0%
4 - 6	9.4%	52.6%	0.0%	0.0%	0.0%	0.0%
6 - 8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8 - 10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
> 10	17.1%	15.8%	0.0%	0.0%	2.9%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

[c] Medford urban fringe is defined as tax maps within two miles of the Medford UGB

[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

TABLE A-14 a

RESIDENTIAL DEVELOPMENT: ACTUAL VS. ALLOWABLE DENSITY
Number of New Parcels by Density Class
1985-89

Analysis Area/ Zone	Number of Parcels Created by Density Class						Total
	Percent of Allowable Density						
	1-25%	25-50%	50-70%	70-80%	80-90%	90-100+%	
Medford Urban Area[a]							
City of Medford							
SFR-4	0	0	5	2	0	7	14
SFR-6	5	5	6	0	3	5	24
SFR-10	5	6	0	0	0	4	15
MFR-20	0	0	0	0	0	6	6
Subtotal	10	11	11	2	3	22	59
Medford Urbanizable Area[b]							
City of Medford							
SFR-4	5	6	6	0	0	72	89
SFR-6	4	7	6	2	0	5	24
MFR-20	0	0	0	0	0	10	10
Subtotal	9	13	12	2	0	87	123
Total Medford UGB	19	24	23	4	3	109	182

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

TABLE A-14 b

RESIDENTIAL DEVELOPMENT: ACTUAL VS. ALLOWABLE DENSITY
Percent of New Parcels by Density Class
1985-89

Analysis Area/ Zone	Number of Parcels Created by Density Class						Total
	Percent of Allowable Density						
	1-25%	25-50%	50-70%	70-80%	80-90%	90-100+%	
Medford Urban Area[a]							
City of Medford							
SFR-4	0.0%	0.0%	45.5%	18.2%	0.0%	36.3%	100.0%
SFR-6	11.1%	2.8%	16.7%	0.0%	16.7%	27.8%	100.0%
SFR-10	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
MFR-20	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Subtotal	16.9%	18.6%	18.6%	3.4%	5.1%	37.3%	100.0%
Medford Urbanizable Area[b]							
City of Medford							
SFR-4	5.8%	7.0%	7.0%	0.0%	0.0%	80.2%	100.0%
SFR-6	0.0%	42.9%	0.0%	28.6%	0.0%	28.6%	100.0%
MFR-20	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Subtotal	7.3%	10.6%	9.8%	1.6%	0.0%	70.7%	100.0%
Total Medford UGB	10.4%	13.2%	12.6%	2.2%	1.6%	60.0%	100.0%

Source: City of Medford Planning Department, Jackson County Planning Department.

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre

[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre

TABLE A-15

RESIDENTIAL DEVELOPMENT: ACTUAL VS. ALLOWABLE DENSITY
Actual and Allowable Parcel Size
1985-89

Analysis Area/ Zone	Maximum Allowable Density		Actual Average Density (Parcels/Gross Acre)	Average Percent of Allowable Density	Number of Parcels
	Parcels/Gross Acre	Parcels/Net Acre			
Medford Urban Area[a]					
City of Medford					
SFR-4	4	5.3	3.0	56.6%	14
SFR-6	6	8	2.1	26.2%	24
SFR-10	10	13.3	14.2	114.9%	15
MFR-20	20	20	N/A	N/A	6
Jackson County					
Urbanizable					
City of Medford					
SFR-4	4	5.3	3.2	60.4%	89
SFR-6	6	8	4.9	61.3%	24
MFR-20	20	20	N/A	N/A	10
Total Medford UGB					

Source: City of Medford Planning Department, Jackson County Planning Department.

N/A - Not applicable

[a] Medford urban area is defined as tax maps inside the Medford UGB with greater than 2,500 sq. ft. of improvements per acre
[b] Medford urbanizable area is defined as tax maps inside the Medford UGB with less than 2,500 sq. ft. of improvements per acre
[c] Medford urban fringe is defined as tax maps within two miles of the Medford UGB
[d] Exurban is defined as tax lots outside all UGBs and the Medford Urban Fringe within the study area.

4.0 URBAN LIVABILITY ISSUES

4.1 SOURCE

Oregon Rent and Vacancy Survey, 1986-88, U.S. Department of Housing and Urban Development; *Home Selling Price Listings*, Oregon Multiple Listings Service, Portland, Medford, Bend, and Brookings.

Description The U.S. Department of Housing and Urban Development (HUD) conducts an annual rent and vacancy survey of multifamily apartments in selected cities throughout Oregon. The survey includes a random selection of conventionally-built apartments from one to eleven years old and from one to three stories in height. Table A-15 shows average rents between 1986 and 1988 for Medford (including Grants Pass), the Portland Metro area, Bend, and the state as a whole

Oregon Multiple Listings Service (OMLS) is an organization that compiles information about the housing market for specific areas across the state. OMLS collects its housing sales information from realtors who sell houses. Once a participating realtor sells a home, they provide information including (1) sales price, (2) number of days on the market, and (3) type of house sold to the OMLS. OMLS uses this information to issue monthly reports that include the following data: (1) number of homes sold by type during the previous month; (2) average sales price by type for the previous month; and (3) current average selling time for homes, by type. Table A-16 shows the average selling price for homes in Medford, Bend, Portland, and Brookings between 1985 and 1989.

Evaluation The HUD apartment survey is only a representative sample and is not inclusive of all multifamily rental structures which may be available in any of the surveyed localities. However, the HUD survey is the best statewide comparison we could identify. Although the OMLS home sales price data does not include all homes sold in a particular area over time, it is the most complete standard source available that allows comparison between different parts of the state.

ANALYSIS

Table A-16 below shows that the average monthly rent per multi-family dwelling unit in the Medford/Grants Pass area increased from $304 to $390 between 1986 and 1988, resulting in an increase of about 28 percent. This increase was slightly less than the state as a whole over the same period, and less than each of the other case study areas. One measure of housing affordability is to compare median family income to average housing costs. According to the Bureau of Economic Analysis, median family income in Jackson County increase by a total of about 16 percent between 1986 and 1988. This increase was about 12 percent less than the increase in rental rates in the Medford/Grants Pass area.

Table A-16 below shows that the average home selling price in Medford increased from $56,381 to $69,637 between 1985 and 1989, an increase of about 24 percent. This increase was significantly less than experienced in Bend, but similar to the increase experienced in Portland. Between 1986 and 1989, average home prices increased by a total of about 25 percent. By comparison, the median family income for Jackson County increase by about 22 percent over the same period.

In short, the data show that, since 1985, the average Jackson County family is spending an increasing percentage of their monthly income on housing costs.

TABLE A-16

AVERAGE MULTI-FAMILY DWELLING UNIT RENTAL RATES BY CASE STUDY AREA AND STATEWIDE 1986-88

Jurisdiction	1986		1987		1988		% Change	
	Avg. Rent	$/Sq. Foot	Avg. Rent	$/Sq. Foot	Avg. Rent	$/Sq. Foot	Avg. Rent	$/Sq Foot
Medford/Grants Pass	$304	.398	$324	.404	$390	.464	28.3	16.6
Bend	248	.293	277	.321	325	.376	31.1	28.3
Portland Metro	337	.416	376	.458	458	.540	35.9	29.8
Statewide	325	.411	344	.429	419	.507	28.9	23.4

Source: Oregon Rent and Vacancy Survey, U.S. Department of Housing and Urban Development.

TABLE A-17

AVERAGE HOME SELLING PRICE BY CASE STUDY AREA 1985-89

Jurisdiction	1985	1986	1987	1988	1989	% Change
Medford	$56,381	$55,592	$57,245	$59,410	$69,637	23.5
Bend	45,594	53,926	51,901	57,286	67,583	48.2
Portland	70,015	NA	73,382	76,883	85,546	22.1
Brookings	NA	NA	NA	89,000	107,000	20.2

Source: Oregon Multiple Listings Service Annual Summary Reports, OMLS; Phone interview with Chuck Leahy, Medford realtor, 773-9449.

4.2 SOURCE *Traffic Volume Tables, 1988*, Oregon Department of Transportation. *City of Medford Traffic Counts*, City of Medford Public Works Department.

Description Traffic volume counts are regularly gathered by both ODOT and the City of Medford for highways and streets inside the Medford UGB. Our analysis presents average daily (weekday) traffic (ADT) for selected streets in Medford.

Evaluation Level of service (LOS) data is not compiled on a regular basis by ODOT, thus restricting the availability of LOS data. However, ODOT calculates LOS for highway improvement projects. The data presented in Table A-18 represent the only time-series data ODOT has for level of service in the Medford UGB. Level of service is a function of PM-peak traffic volumes and capacity.

Traffic volume counts are compiled on a regular basis and represent a larger data base than the level of service data.

ANALYSIS Table A-18 shows average daily traffic volumes for selected links in the Medford area. Our analysis shows average Daily Traffic volumes in the Medford area increased between 3 and 26 percent at selected intersections in the Medford Area. The largest increase in traffic volumes at intersections we analyzed was on Crater Lake Highway, North of Delta Pacific Highway. Overall, traffic volumes increased in the Medford area between 1984 and 1989.

TABLE A-18

HISTORIC TRAFFIC VOLUMES
1984-88

Intersection or Link	Average Daily Traffic		
	1984	1988	Percent Change
Crater Lake Hwy, N. of Delta Waters Road	21,900	29,900	26.76
McAndrews Rd W. of Crater Lake Ave.	15,200	18,900	19.58
Main Street E. of Geneva St.	10,577	11,883	10.99
I-5, Pacific Hwy, S. approach of Medford Viaduct	26,924	33,205	18.92
Barnett Rd @ I-5	22,800	25,400	10.24
Biddle Rd., S. of McAndrews Rd.	19,400	20,100	3.48

Source: ODOT Traffic Volume Tables, 1988, City of Medford Public Works Department.

4.3 SOURCE *Oregon Air Quality, 1985-88 Annual Reports*, Oregon Department of Environmental Quality, Air Quality Control Division.

Description Data that describe (1) the number of days various communities experienced pollution levels above the National Ambient Air Quality Standards, (2) annual area and point emission levels for Jackson County and other case study counties across Oregon.

Table A-19 shows the number of good, moderate, and unhealthful air quality days for 1985 and 1988 for Medford and Portland.

Table A-20 shows the number of days Medford, Bend, and Portland exceeded pollution levels above the National Ambient Air Quality Standards between 1984 and 1988.

Table A-21 shows the amount (tons) of (1) carbon oxide, (2) nitrogen oxides, and (3) total suspended particulates emitted by area and point source in Jackson County and other case study counties across Oregon between 1984 and 1988. Point sources (e.g., rock quarries, and lumber mills) emit volumes of pollutants from a single stationary source. Area sources (e.g., wood-stoves and slash burns) emit pollutants over a broad geographic area.

Evaluation The State Department of Environment Quality collects and maintains the most accurate air quality indicator data available. However, differences in area and point source emissions between 1985 and 1988 may be due, in part, to differences in measuring techniques.

ANALYSIS Table A-19 below is probably the best indicator of Medford's air quality over time. This table shows that the number of days classified as "good" in terms of air quality increased from 58 in 1985 to 150 in 1988. The number of days classified as "unhealthful" decreased from 35 in 1985 to 16 in 1988. According to the DEQ, Much of the improvement in Medford's overall air quality can be attributed to several control strategies including (1) traffic patterns changes, (2) a vehicle inspection and maintenance (I/M) program, and (3) the gradual reduction of older non-catalytic equipped cars.

TABLE A-19

AIR POLLUTION INDEX VALUES
1985 and 1988

Number of Days	Medford		Portland	
	1985	1988	1985	1988
Good	58	150	186	227
Moderate	259	199	162	122
Unhealthful	35	16	5	6

Source: Oregon Air Quality Annual Report 1984 and 1988, Oregon Department of Environmental Quality.

TABLE A-20

NUMBER OF DAYS EXCEEDING STANDARDS FOR CASE STUDY CITIES
1984-88

City	1984	1985	1986	1987	1988
Fine Particulate (PM10)					
Medford	5	13	2	5	7
Bend	0	1	0	1	0
Portland	0	0	1	0	0
Carbon Monoxide (CO)					
Medford	18	35	16	4	2
Portland	2	1	1	1	1
Ozone					
Medford	0	0	0	0	0
Portland	2	2	3	1	2

Source: Oregon Air Quality 1988 Annual Report, Oregon Department of Environmental Quality.

TABLE A-21

EMISSION INVENTORY SUMMARY BY COUNTY
1984 and 1988
(tons per year)

County	Type	Carbon Oxide		Nitrogen Oxides		Total Suspended Particulates	
		1984	1988	1984	1988	1984	1988
Jackson	Area	121,733	344,922	1,182	14,474	19,119	68,598
	Point	3,236	4,811	614	1,156	1,306	1,391
Deschutes	Area	40,284	101,231	3,197	4,718	8,252	17,683
	Point	917	686	259	206	1,136	1,028
Curry	Area	29,813	22,177	1,037	1,144	3,782	3,457
	Point	545	589	154	136	497	499
Portland Metro Area	Area	364,840	322,743	40,079	43,914	41,902	44,287
	Point	13,617	11,835	2,155	1,819	3,060	2,888
Clackamas	Area	101,923	81,593	10,609	10,837	14,880	14,729
	Point	625	500	306	331	571	493
Multnomah	Area	175,849	156,700	21,101	23,125	16,835	18,100
	Point	12,301	11,006	1,580	1,372	1,905	1,865
Washington	Area	87,068	84,450	9,079	9,952	10,167	11,458
	Point	691	329	269	116	584	530

Source: Oregon Air Quality Annual Report 1984 and 1988, Oregon Department of Environmental Quality.

4.4 SOURCE *Medford Park Acreage and Expenditure Data*, Medford Parks and Recreation Department.

Description The Medford park acreage data present acreages of developed and undeveloped park lands in the Medford UGB in 1989. Parks expenditure data were obtained from the Medford Parks and Recreation Department's capital improvement budget for the years 1985 and 1989. No state or county parks are located within the Medford UGB.

Table A-22 shows the amount (acres) of developed and undeveloped park acreage in the Medford UGB for 1985 and 1989.

Table A-23 shows annual expenditures for parks improvements for publicly-owned parks inside the Medford UGB for 1985 and 1989.

Evaluation The Medford Parks and Recreation Department is the best data source for park acreage and expenditures in the Medford UGB.

ANALYSIS Table A-22 shows that the City of Medford had a total of 333 acres of parkland in 1989. About 52 percent (175 acres) was developed in 1989. This represents an increase of about 5.4 percent in developed acres/1,000 population within the Medford UGB between 1985 and 1989. In 1989, the Medford UGB contained about 158 acres of undeveloped parkland, about 4.4 percent less than in 1985.

Table A-23 shows that expenditures for parks improvements by the City of Medford increased by about 127 percent during the period 1985-89 from $167,500 to $380,000. There are no state or county parks located inside the Medford UGB.

TABLE A-22

PUBLICLY OWNED PARKS INSIDE THE MEDFORD UGB
Developed and Undeveloped Park Acreage

	1985	1989	Percent Change
Acres			
Developed	155	175	11.4
Acres/1,000 Population	3.7	3.9	5.2
Undeveloped	165	158	-4.4
Acres/1,000 Population	3.9	3.5	-11.4

Source: City of Medford Parks & Recreation Department.

N/A - Not available

TABLE A-23

PUBLICLY OWNED PARKS INSIDE THE MEDFORD UGB
Annual Expenditures for Park Improvements

Jurisdiction	Budget		
	1985	1989	% Change
State	N/A	N/A	-
Jackson County	N/A	N/A	-
Medford	$167,500	$380,000	126.9%

Source: City of Medford Parks & Recreation Department.

NA - Not Applicable, no state or county parks are located within the Medford UGB.

5.0 INFRASTRUCTURE INVESTMENT

5.1 SOURCE *City of Medford Comprehensive Plan*, Public Facilities Element, Table F, Public Facilities Projects, Category A Facilities.

Discussions with City of Medford Public Works and Planning staffs, and Director of Medford Water District.

Description The Public Facilities Element of the Comprehensive Plan was prepared in 1985, as part of LCDC Periodic Review. Many of the listed projects have actually been completed or are under construction. Interviews with City staff and the Medford Water District Director clarified the status of each listed project.

Evaluation This section of the case study focuses on major sewer, water, storm drainage and transportation projects that have been deferred because of limited financing capability. In some of the case studies, the PFP process has not been completed, and this fact will be noted.

In each study, we have conferred with the local planning and public works staff to categorize each project identified in the PFP as follows:

(1) Projects that have been constructed or are under construction. If the project falls in this category, it's funding has not been deferred for lack of funding.

(2) Projects that have an assured funding source. Goal 14 requires that growth be "orderly and efficient," which implies geographic phasing of public facilities to support planned growth. Many communities rely on utility fees, local improvement districts, systems development charges and other means to make sure that projects are built to support development over time. Thus, the fact that a project has not yet been built, or that a project has been scheduled in the future, does not mean that the project has been "deferred" for lack of funding. For the purposes of this study, we assume that if funding will be available when the project is scheduled for construction in the PFP, then the project has not been deferred for lack of funding.

(3) Projects that are necessary to support growth during the planning period, but have no assured source of funding. If the project does not fall into categories 1 or 2 above, then, for the purposes of this study, the project has been "deferred because of limited funding capability."

The capital costs for each project in the unfunded (deferred) category will be determined in 1990 dollars. The sum of the deferred capital costs then will be determined for each type of facility (sewer, water, storm drainage and transportation).
Once this gross figure has been determined, it will be compared with existing population and planned population growth, to determine the ratio of unfunded public facilities liabilities to size of the present and planned urban growth area.

ANALYSIS Oregon law requires that cities and urban counties prepare and adopt "pubic facilities plans" (PFP's) for their respective urban growth areas. The PFP must identify sanitary sewer, water, storm drainage, and transportation projects needed to accommodate growth through the 20-year planning period. Each PFP must also describe the project's cost, probable funding source and schedule. Longer-range PFP's are intended to serve as a basis for local capital improvements programming, which in turn serve as a basis for the annual capital improvements budget.

One of the principal tenets of Oregon's land use program (see Goal 14: Urbanization) is that growth should be concentrated within urban growth boundaries (UGB's). As noted above, urban services are provided within UGB's consistent with the PFP. If public facilities needed to support urban growth cannot be provided by local governments in a timely manner because there is insufficient funding, growth pressures outside UGB's will increase, resulting in a less compact urban growth form.

Growth management means providing urban services in areas where growth is planned in a timely manner. Critical measures of the effectiveness of a growth management program are whether:

(1) There has been a valid assessment of public facilities projects, their costs and their timing that are needed to accommodate long-range growth (i.e., has the community done a good job with the required PFP); and

(2) Realistic funding sources for planned urban services have been identified.

To the extent that local governments have not determined public facilities needs and costs, or have relatively large unfunded public facilities liabilities, they are not effectively managing their growth.

With the exception of transportation facilities, the City of Medford has developed local mechanisms to fund the majority of the services needed to accommodate planned growth over the next 20 years.

Major sewer projects have been funded by a 1983 bond measure, supplemented by systems development charges and user fees. Of $6.9 million (1989 dollars) worth of planned sewer projects, just over half ($3.65 million) are constructed or under construction, and just under half ($3.25 million) have a known local funding source.

Storm drainage projects have been analyzed based on their respective drainage basins. These projects will be funded as development occurs through drainage utility fees, systems development charges and direct developer contributions. Storm drainage projects are estimated at $42 million over the next 20 years. All of these projects fall into the "known funding source" category.

Water projects amount to $16 million. Of these, $2.5 million have been constructed or are under construction. The remaining $13.5 million worth of projects will be funded through the Medford Water District's service charges and local improvement districts.

Transportation projects represent Medford's only major unfunded public facilities liability. The estimated costs for constructing major transportation projects (in 1989 dollars, from 1985 through 2005) is $47.8 million. $10.3 million worth of projects have been constructed or are now under construction. $7.5 million worth of projects have a known funding source (state and federal grants, local improvement districts and developer commitments.)

However, the remaining $29.9 million worth of major transportation projects have no known funding source. For this reason, the City of Medford actively participates in State highway planning and is considering a City transportation utility.[1] As with other Oregon communities, the lack of funding for key transportation facilities is a significant impediment to planned growth.

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[1]A fee would be charged to all City residents based on estimated vehicle trips per day. Such a fee would be consistent with Medford's approach to funding sewer, water and storm drainage projects.

TABLE A-24
MEDFORD AREA PUBLIC FACILITIES FUNDING

Project	Status	Cost (1989$)	Funding Source
SANITARY SEWER			
Digester	C	1,824,000	Bond, SDC, Sewer Rates
Chlorine Storage	C	114,000	Bond, SDC, Sewer Rates
Grit Tank	C	570,000	Bond, SDC, Sewer Rates
Digester	C	1,824,000	Bond, SDC, Sewer Rates
SUBTOTAL - UNDER CONSTRUCTION (C)		0	
Secondary Clarifier	F	912,000	Bond, SDC, Sewer Rates
Sludge Lagoons	F	1,083,000	Bond, SDC, Sewer Rates
Chlorine Contact Tank	F	342,000	Bond, SDC, Sewer Rates
Secondary Clarifier	F	912,000	Bond, SDC, Sewer Rates
SUBTOTAL - KNOWN FUNDING SOURCE (F)			
DRAINAGE			
Regional Detention Basin	F	402,000	Drainage Utility
Canal Diversions	F	16,080	Drainage Utility
Main Channel Culverts	F	335,000	Drainage Utility
Tributary Pipes in Developed Areas	F	670,000	Drainage Utility
Canal Diversions	F	13,680	SDC
Tributary Pipes	F	912,000	SDC & Developers
Crooked Creek & Bear Creek South	F		
Pipe in Developed Areas	F	3,082,000	Drainage Utility
Elk Creek	F		
Larson Creek	F		
Pipe Construction	F	7,370,000	Drainage Utility
Overflow Channels	F	160,800	Drainage Utility
Bear Creek West	F		
Tributary Pipes in Growth Areas	F	3,082,000	SDC & Developers
Pipe in Growth Areas	F	7,236,000	SDC & Developers
Upper Main Channel Pipes	F	938,000	SDC & Developers
Tributary Pipes	F	3,216,000	SDC & Developers
Lower Main Channel Pipes	F	2,412,000	SDC & Developers
Channel Improvements	F	637,840	SDC & Developers
Midway Drainage Basin	F		Improvements are almost entirely to support future growth. Most improvements will be installed by developers at their cost with some participation by the City out of Drainage SDC funds.

Project	Status	Cost (1989$)	Funding Source
Pipes in undeveloped portion of basin	F	2,166,000	SDC & Developers
Lone Pine Creek Basin	F		Improvements in developed areas to be funded by the city. Improvements in growth areas to be funded by developers and the SDC.
Canal Diversion Structures	F	28,140	SDC
Detention basin upstream of Hillcrest Rd.	F	114,000	Drainage Utility
Pipes in developed portion of basin	F	1,026,000	Drainage Utility
Canal Diversions	F	19,380	Drainage Utility
Lazy Creek	F		
Bear Creek East	F	7,068,000	Drainage Utility
Culverts along main channel	F	228,000	Drainage Utility
Tributary pipes	F	912,000	SDC & Developers
SUBTOTAL - KNOWN FUNDING SOURCE (F)		0	
WATER SYSTEM			
Vilas Road Pipeline	C	474,240	Service Charges
Midway to Hanley Hill Pipeline	C	1,653,000	Service Charges
Midway Pump Station	C	285,000	Service Charges
Cedar Links Road Pipeline	C	36,480	Service Charges, LID's
SUBTOTAL - UNDER CONSTRUCTION (C)		0	
Midway to Hanley Hill Pipeline	F	1,653,000	Service Charges
Lone Pine Pipeline	F	262,200	Service Charges, LID's
Bullis High Level Pump Station	F	68,400	Service Charges, LID's
Southwest Reservoir Pipeline	F	262,200	Service Charges, LID's
Rossanley Drive Pipeline	F	62,700	Service Charges, LID's
Lone Pine Reservoirs 1, 2, 3, 4, & 5	F	1,482,000	Service Charges, LID's
Southwest Reservoir	F	741,000	Service Charges, LID's
Hanley Hill Reservoir	F	3,192,000	Service Charges
Four Corners Pump Station	F	285,000	Service Charges
Water Treatment Regional Plant	F	2,850,000	Service Charges
Lone Pine Pump Stations 1, 2, 3, 4, & 5	F	582,540	Service Charges, LID's
Hanley Hill Pump Station	F	228,000	Service Charges
Rossanley Pipeline	F	61,560	Service Charges
Hanley Hill Pump Station to Columbus Pipeline	F	1,824,000	Service Charges
SUBTOTAL - KNOWN FUNDING SOURCE (F)		0	
SUBTOTAL - UNKNOWN FUNDING SOURCE (U)		0	
TRANSPORTATION - ARTERIAL STREETS			
Crater Lake Avenue, Grandview to Crater Lake Hwy.	C	1,368,000	Federal Grants
McAndrews Road, Columbus Avenue, to Court Street	C	4,332,000	GO Bond

Project	Status	Cost (1989$)	Funding Source
McAndrews Road, Jacksonville Hwy. to Columbus Ave.	C	1,539,000	County Funds
Stewart Avenue, Oakdale Avenue to Peach Street	C	889,200	Federal Grants & City Funds
Stewart Avenue, Riverside Avenue to Oakdale Avenue	C	615,600	Federal Grants & City Funds
Jackson Street, Biddle Road to Riverside Avenue, including bridge replacement	C	1,596,000	Federal Grants & City Funds
SUBTOTAL - UNDER CONSTRUCTION (C)		0	
McAndrews Road, Brookdale Avenue to Hillcrest	F	6,384,000	Developers & LID's
McAndrews Road, Springbrook Road to Brookdale Ave.	F	798,000	Developers & LID's
Columbus Avenue	F	342,000	Federal Grants & City Funds
SUBTOTAL - KNOWN FUNDING SOURCE (F)		0	
Stewart Avenue, Riverside Avenue to Oakdale Avenue	U	615,600	Federal Grants & City Funds
Cottage Street Bridge over Bear Creek	U	1,710,000	Federal Grants & City Funds
Jackson Street, Central Avenue to Holly Street	U	649,800	Federal Grants
Main Street, Columbus Avenue to Western UGB	U	2,850,000	Oregon D.O.T.
Stewart Avenue, Barnett Road, to Riverside Avenue	U	581,400	Federal Grants & City Funds
Stewart Avenue, Peach Street to Columbus Avenue	U	1,254,000	Federal Grants & City Funds
Columbus Avenue, Sage Road to McAndrews	U	798,000	Federal Grants
Columbus Avenue, Sage Road to McAndrews	U	2,394,000	Developers & LID's
Front Street, 2nd Street to 10th Street	U	2,394,000	Federal & State Grants
Kings Highway, S. Stage Road to Stewart Avenue	U	2,622,000	Developers & LID's
North Phoenix & Foothill Roads, Northern UGB to Southern UGB	U	11,970,000	Developers & LID's
Main Street, Hawthorne Avenue to Riverside Avenue, including bridge replacement	U	2,052,000	Federal Grants & City Funds
SUBTOTAL - UNKNOWN FUNDING SOURCE (U)		0	

6.0 DEVELOPMENT POTENTIAL

6.1 SOURCE *Jackson County Exception Area Work Files 1983*, Jackson County Planning Department. *Jackson County Assessment Data 1990*, Jackson County Assessor's Department.

Description Residual development within exception areas are shown for 1983 and 1990. The data show the number of developed residential lots and the number of potential residential lots that can be developed. Potential lots include the number of vacant lots, as well as the maximum number of new lots that can be created under zoning through land divisions.

Evaluation There exists no precise count of residual development with exception areas in Jackson County. The data for 1983 was extrapolated from work maps from the Jackson County Planning Department. This data is the best available.

METHOD Although there exists no data pertaining to residual development in exception areas since 1983, estimates were extrapolated from a random sample of lots that were vacant in 1983. A random sample of 15 percent of the vacant lots within each map area was compared with tax assessors data to determine the percentage of these lots that have been developed since 1983. This percentage was then applied to the all vacant lots to estimate development since 1983.

ANALYSIS There is a total of 167 exception areas within the Jackson County study area. These exception areas consist of 7,689 developed lots and the potential for 2,027 more developed lots that could result if land were divided to the smallest lots possible under zoning. Most of this growth potential is in the unincorporated areas in the vicinity of Medford.

TABLE A-25

EXCEPTION AREA RESIDUAL DEVELOPMENT
JACKSON COUNTY STUDY AREA
1983 and 1990

Map Area	Number of Exception Areas	1983		1990	
		Developed Lots	Potential Developed Lots	Developed Lots	Potential Developed Lots
Ashland	16	318	153	378	93
Phoenix	45	1325	459	1440	344
Medford	47	1345	546	1509	382
White City/Seven Oaks	30	2175	871	2419	627
Dodge Br./Modoc	35	534	416	655	295
Rogue/Gold Hill	29	1149	425	1289	285
Total	167	6846	2870	7689	2027

Source: Jackson County Exception Area Work Files 1983, Jackson County Planning Department

6.2 SOURCE *Narrative for Jackson County Mapping Project: Land Use Approvals in Resource Zones 1983-1988*, 1000 Friends of Oregon, January 1990. Data compiled by Ms. Patti Acklin from Jackson County Recorder.

Description The number of non-forest and non-farm dwellings that were approved in resource zones for the period of 1983 through 1989 is shown in Table A-26. The yearly average of approvals during this period is also shown.

Evaluation The data for non-farm and non-forest dwelling approvals in Jackson County compiled by 1000 Friends of Oregon and Ms. Patti Acklin are the most current available. The figures were derived from reviewing all applications for a dwelling in resource zones which were approved between January 1, 1983 and December 31, 1989.

METHOD Estimates for the number of future approvals was derived by calculating the yearly average of approvals during the period of 1985 to 1989. This figure was then multiplied by ten to estimate the number of approvals for the period of 1990 to 2000. The estimates for future approval do not consider market conditions.

ANALYSIS For the period of 1985 to 1989 a yearly average of 68 nonfarm dwellings and 31 nonforest dwelling were approved in Jackson County. If this rate continues through the 1990's, then 680 nonfarm dwellings and 310 nonforest dwellings will be approved. If it is assumed that these tax lots are not used for resource production, then almost 1000 residential lots will be created outside of the Urban Growth Boundary and outside of exception areas.

TABLE A-26

NON-FARM AND NON-FOREST DWELLING APPROVALS
ALL JACKSON COUNTY
1983-1989

Year	Non-Farm Dwellings	Non-Forest Dwellings
1983	68	46
1984	59	45
1985	86	21
1986	76	23
1987	59	24
1988	60	29
1989	N/A	N/A
Total Approvals 1983-89	408	188
Yearly Average 1983-89	68	31
Estimated number of Approvals 1990-2000	680	310

Source: Narrative for Jackson County Mapping Project: Land Use Approvals in Resource Zones 1983-1988, 1000 Friends of Oregon, January 1990; research data from Ms. Patti Acklin, 1990.