

Urban Growth Management Study

Portland Case Study

Prepared by
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with
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Oregon Department of Land Conservation and Development

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URBAN GROWTH
MANAGEMENT STUDY

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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.

In April 1990, DLCD hired ECO Northwest, a consulting firm in land-use planning and economics, to study issues related to urban growth in the four case-study areas in Oregon. ECO's previous report (*Case Studies, Phase 1: Methodology*, May 1990) describes in more detail the purposes of the study and the issues it is to address.

This report presents our preliminary analysis of urban growth in the Portland case study area. This report serves as a working paper that will be reviewed by planners and officials in the Portland case study area. Comments and suggestions by these reviewers will be included in the final case study report as appropriate. To facilitate comments, we have printed the report as a draft with a wide right margin.

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.

We defined the Portland case study area as the three metropolitan counties (Clackamas, Multnomah, and Washington). These counties are rough proxies for Oregon's portion of what we call the Portland *urban region*: the area within commuting distance of Portland-area employment. In addition, for some of our measurements, we included Vancouver and part of Clark County, Washington.

Over thirty cities and counties are responsible for land use planning and growth management in this area. We could not collect and analyze data from every jurisdiction. Therefore, we had to rely on standard data sources for our area-wide analysis. The Metropolitan Service District (Metro) in Portland and the Intergovernmental Resource Center (IRC) in Vancouver collect and analyze data from an area that covers our study area.

Our analysis focuses on changes in urban growth from 1985 through 1989. This time period was chosen because (1) it represents the period of greatest growth since comprehensive plan acknowledgement, and (2) it allows for the greatest possible comparability between case studies as data are not generally available for earlier periods. When we could not obtain data even for this time period, we obtained data for the longest subset of that period possible.

Using the Metro and IRC data, we defined four *analysis areas* based on (1) the density of development in 1985, measured as population plus employment per acre, and (2) location with respect to the UGB. For Oregon, Metro reports population and employment data by *Underlying Zone* (UZ): the 1806 UZs in the three-county study area, defined for transportation analysis purposes, aggregate to census tracts. In Oregon, the *urban area* consists of UZs containing high density development inside the UGB in 1985. In practice, the cut-off

density between urban and urbanizable was about five people (population plus employment) per acre. Our hope is that the definition is such that most new development in the urban area consists of infill or redevelopment. The *urbanizable area* consists of the remaining UZs in the UGB. Low density is our proxy measure for the real variable of concern that was not readily available: vacant land. UZs outside and within about a mile of the UGB define the *urban fringe*. The *rest of the urban region* consists of the remaining UZs in the study area. For convenience we sometimes refer to the combination of the urban fringe and the rest of the region (i.e., all land outside the UGB) as the *exurban area*. Figure 1-1 shows roughly our analysis area as defined by 1985 densities and the UGB.

In Clark County, the IRC collects data for 123 Transportation Analysis Zones (TAZs) which also aggregate to census tracts. In Clark County, TAZs replace UZs and the urban/rural service boundary replaces the UGB in the analysis. As we explain in more detail in the Appendix (section 3), using the Clark County service boundary is a poor proxy for an urban growth boundary, but the best available to us. Compare Oregon and Washington data about development inside and outside the urban/rural boundaries with care.

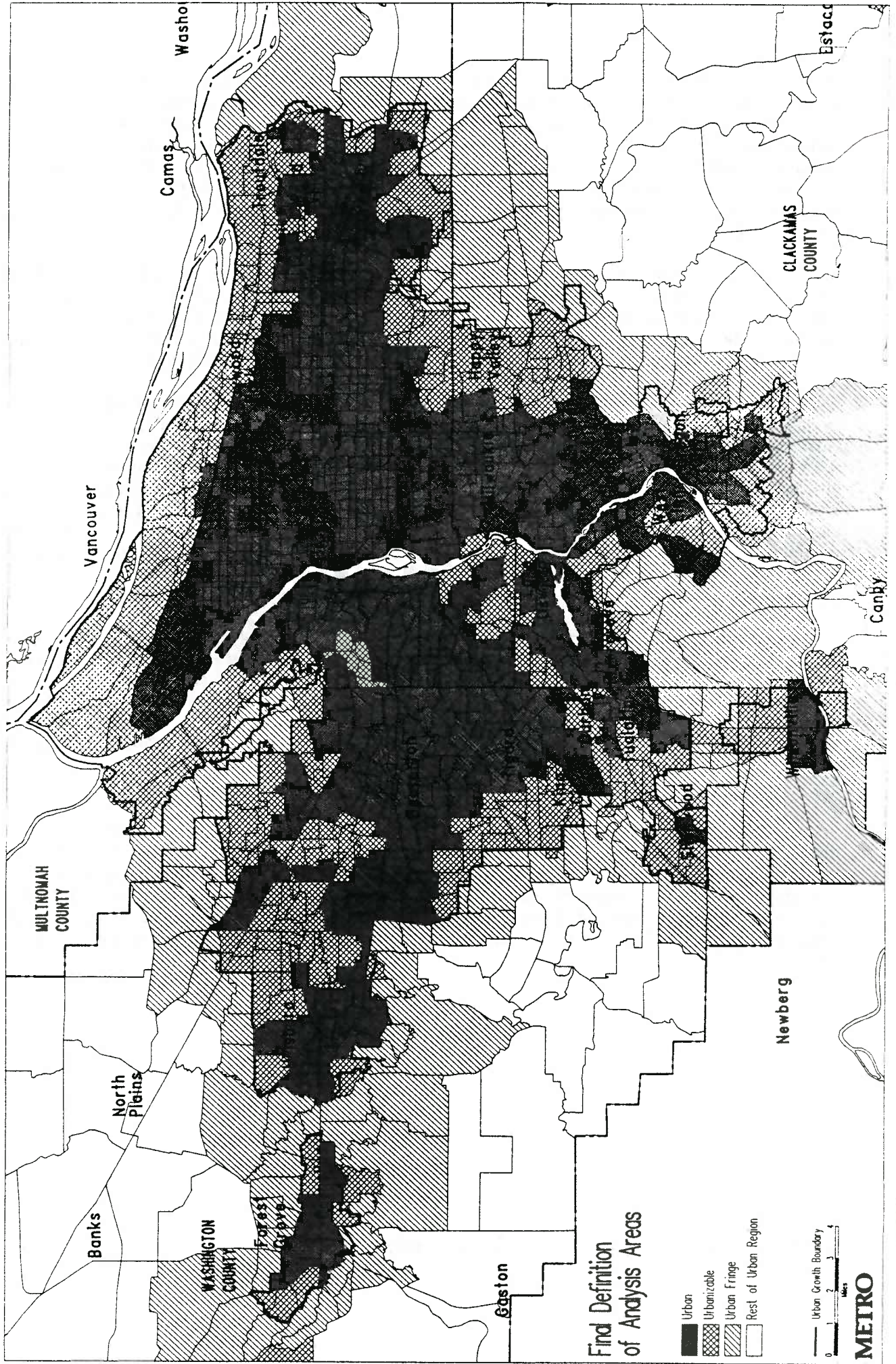
We used several databases to describe growth in the study area. Metro provided residential building permit data by UZ from 1985 through 1989, as well as employment and population data by UZ from the first quarter of 1985 to the first quarter of 1988. The IRC supplied employment and population data by TAZ from 1985 through 1988. Brent Bishop, a real estate analyst and property management consultant, maintains a database which, among other things, shows lot size for every subdivision built in the study area from 1985 through 1989. 1000 Friends of Oregon supplemented the Bishop data with zoning data collected as part of their housing study in progress. Brent Bishop also provided a database containing information on every apartment complex containing thirty or more dwelling units. 1000 Friends also supplemented this database by adding smaller complexes and as well as zoning information. We also were provided preliminary data, from work in progress, by Clackamas County concerning development patterns near the UGB.

In addition to our regional analysis, we conduct a more detailed analysis of building and land division for a subarea of the region. We chose an area in Washington County that we felt would give data about three of our four analysis areas (urban, urbanizable, and fringe,). It includes the unincorporated Metzger area east of Beaverton, most of the City of Beaverton, the unincorporated Cooper Mountain area west of Beaverton and inside the UGB, and the unincorporated Cooper Mountain area outside the UGB. In this subarea, we look at all land partitions, subdivisions, and multiple family developments. This subarea study is not statistically representative of the entire study area: readers will have to draw their own conclusions about the extent to which the development patterns we report are representative of other subareas in the region.

The Portland case study is unlike the other three case studies (Bend, Brookings, and Medford) in that the metropolitan area has a single UGB that applies to 24 cities and 3 counties. We could not evaluate policies and data for each of those jurisdictions: we had to use consolidated data from state and regional agencies. As a result, we did not address some of the issues that we addressed in other case studies. In particular, an analysis of local infrastructure finance--which in other case-study areas required, at a minimum, an evaluation of local public facility plans and interviews with city and special district planners and engineers--was not possible in Portland.

Figure 1-1

ANALYSIS AREAS



C. HOW TO READ THIS REPORT

Readers not familiar with the Portland 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 from 1985 through 1989¹. 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.

¹We 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 Portland case-study area. We describe the following key characteristics that affect growth in the Portland 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 Portland case study area as Clackamas, Multnomah, and Washington Counties. We also analyze data from Clark County in Washington state. Large parts of all three counties and 24 cities are contained by a single urban growth boundary for the Portland metropolitan area. Smaller incorporated areas exist outside this main UGB.

B. SIZE

The metropolitan area, consisting of Multnomah, Washington, and Clackamas Counties, covers 3,026 square miles, with Clackamas County comprising about 60 percent of this total. As of 1989, the Portland State Center for Population Research and Census (CPRC) estimated that the metropolitan area had a population of about 1.1 million, making it the most heavily populated portion of Oregon. Multnomah County had about 600,000 residents in 1989 (83% of which live the Portland) making it the most populous county in Oregon. The metropolitan area's overall population density in 1989 was about 377 persons per square mile. By the year 2000, the metropolitan area's population is expected to grow to about 1.3 million.

C. ECONOMIC BASE

The area economy is the largest urban economy in Oregon. Its industrial base is a highly diversified manufacturing sector, business and personal services, and trade. The manufacturing sector produces a wide range of products including computers, instruments, transportation equipment (e.g., trucks, barges, and rail cars), paper, electrical and non-electrical equipment. Portland service firms in the medical and financial markets export to other national and international markets, particularly to Pacific Rim countries. Warehouses in Portland serve manufacturers and retailers throughout the Pacific Northwest. Portland has one of the most diversified economies on the Pacific coast, which makes it attractive to a broad cross-section of expanding industries and reduces the local effects of national recessions.

D. GROWTH INDICATORS

Table 2-1 shows population and employment growth in the metropolitan area from 1985 to 1988 (the last year for which Metro has data). The area had an annual employment growth rate of over 4% since 1985 and annual population growth of 1.3%. The fastest growing areas are in Washington and Clackamas Counties.

TABLE 2-1

HISTORIC POPULATION AND EMPLOYMENT GROWTH FOR
PORTLAND METROPOLITAN AREA AND OREGON, 1985-89

| Jurisdiction | 1985 | 1988 | % Change | Average Annual Growth Rate |
|-------------------|-----------|-----------|----------|----------------------------|
| Population | 1,076,975 | 1,119,710 | 4.0 | 1.3% |
| Clackamas | 248,991 | 262,044 | 5.2 | 1.7% |
| Multnomah | 563,996 | 568,486 | 0.8 | 0.3% |
| Washington | 263,988 | 289,180 | 9.5 | 3.2% |
| Employment | 553,940 | 627,676 | 13.3 | 4.4% |
| Clackamas | 85,070 | 99,107 | 16.5 | 5.5% |
| Multnomah | 347,653 | 387,841 | 11.6 | 3.9% |
| Washington | 121,217 | 140,728 | 16.1 | 5.4% |

Source: Metropolitan Service District Underlying Zone Database.

CHAPTER THREE FINDINGS AND CONCLUSIONS

This chapter presents key findings and conclusions about land development and livability issues in the Portland metropolitan 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 (principally building permits, subdivision development, multiple family development, and densities allowed by zoning) to address each development issue. Our analysis is necessarily general: we could not do a case study for each of the 24 cities and three counties with land inside the metropolitan urban growth boundary (UGB).

In other case study areas in Oregon we relied heavily on assessment data, both because other data sources were not available and the areas we were evaluating were of a small enough size to make the manipulation of those data manageable. In the Portland case study areas neither of those conditions applied. We were fortunate to have very good data available from the Metropolitan Service District (Metro) and from two privately maintained databases on metropolitan subdivision and multiple family development activity.

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 UGBs but within commuting distance (which we refer to as either the *exurban area* or *rest of urban region*), outside and adjacent to the UGB (*urban fringe*), *urbanizable* land inside the UGB, and *urban* (largely developed) land inside the UGB. Figures 3-1, 3-2, and 3-3 give an overview of the pattern of residential growth in these areas between 1985 and 1989.

DEVELOPMENT OUTSIDE URBAN GROWTH BOUNDARIES VERSUS DEVELOPMENT INSIDE URBAN GROWTH BOUNDARIES

About 5% of the 43,155 single and multiple family dwelling units built or placed in the three-county study area from 1985 through 1989 were located outside of UGBs. See Table 3-1 for a breakdown of these units by type and by location.

About 9% of the 20,721 single family dwelling units built or placed in the three-county study area from 1985 through 1989 were located outside of UGBs. This percentage varied from about 20% exurban development in Clackamas County to about 4% in Multnomah and Washington County. The amount of exurban growth between 1985-89 in each county as a percent of its existing exurban in 1985 was about the same in all three counties: about 12%.

Figure 3-1

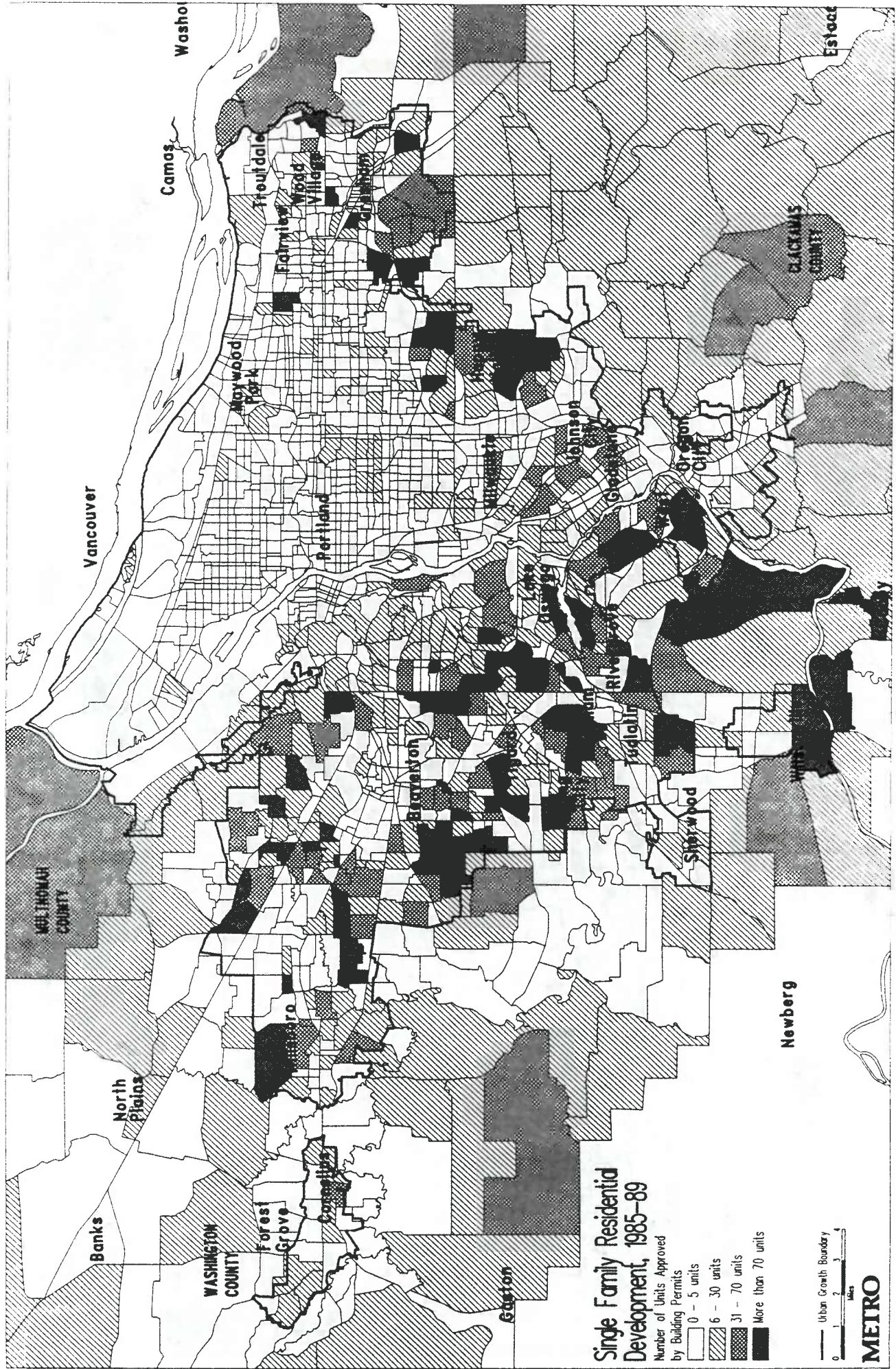


Figure 3-2

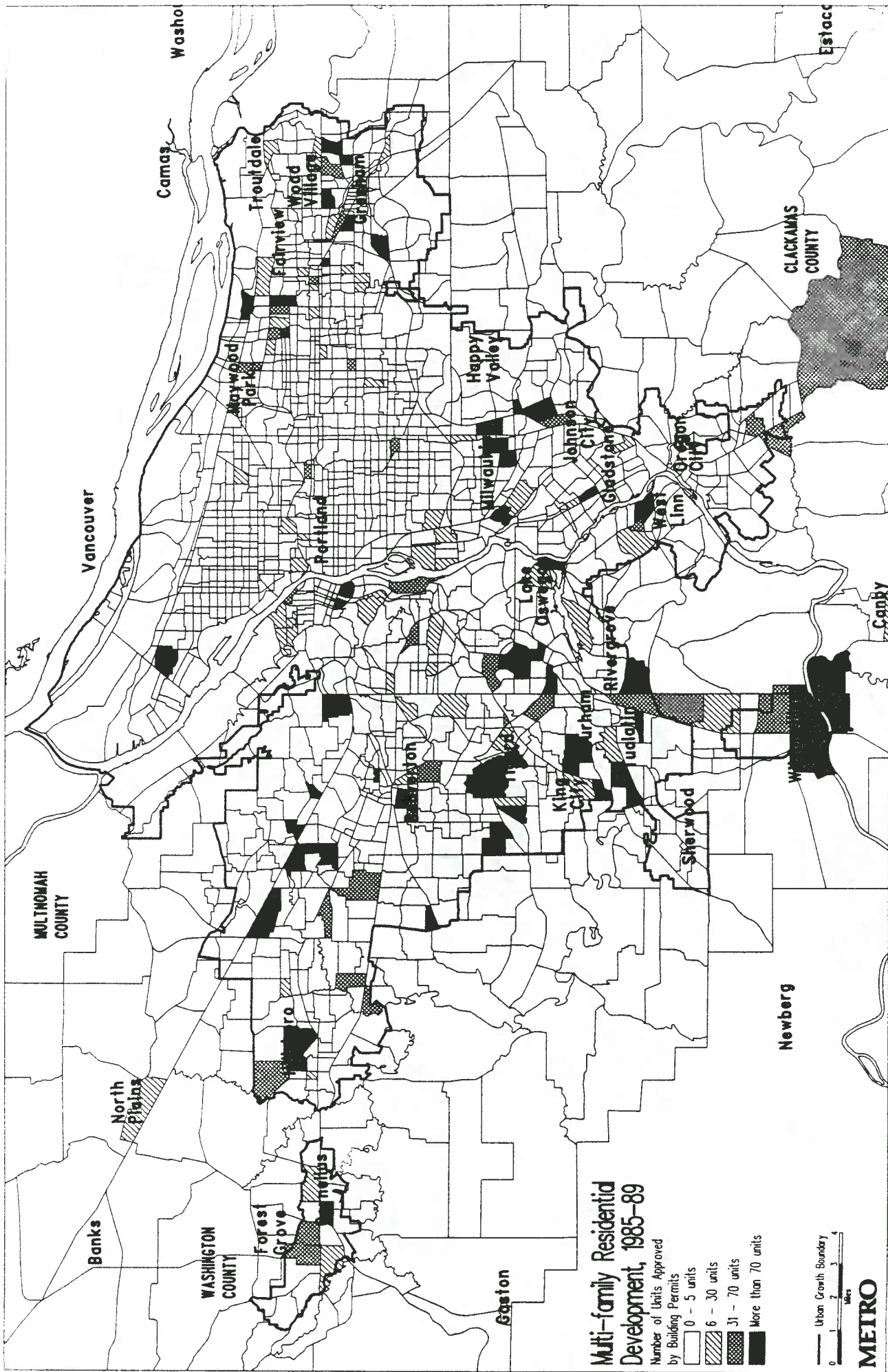
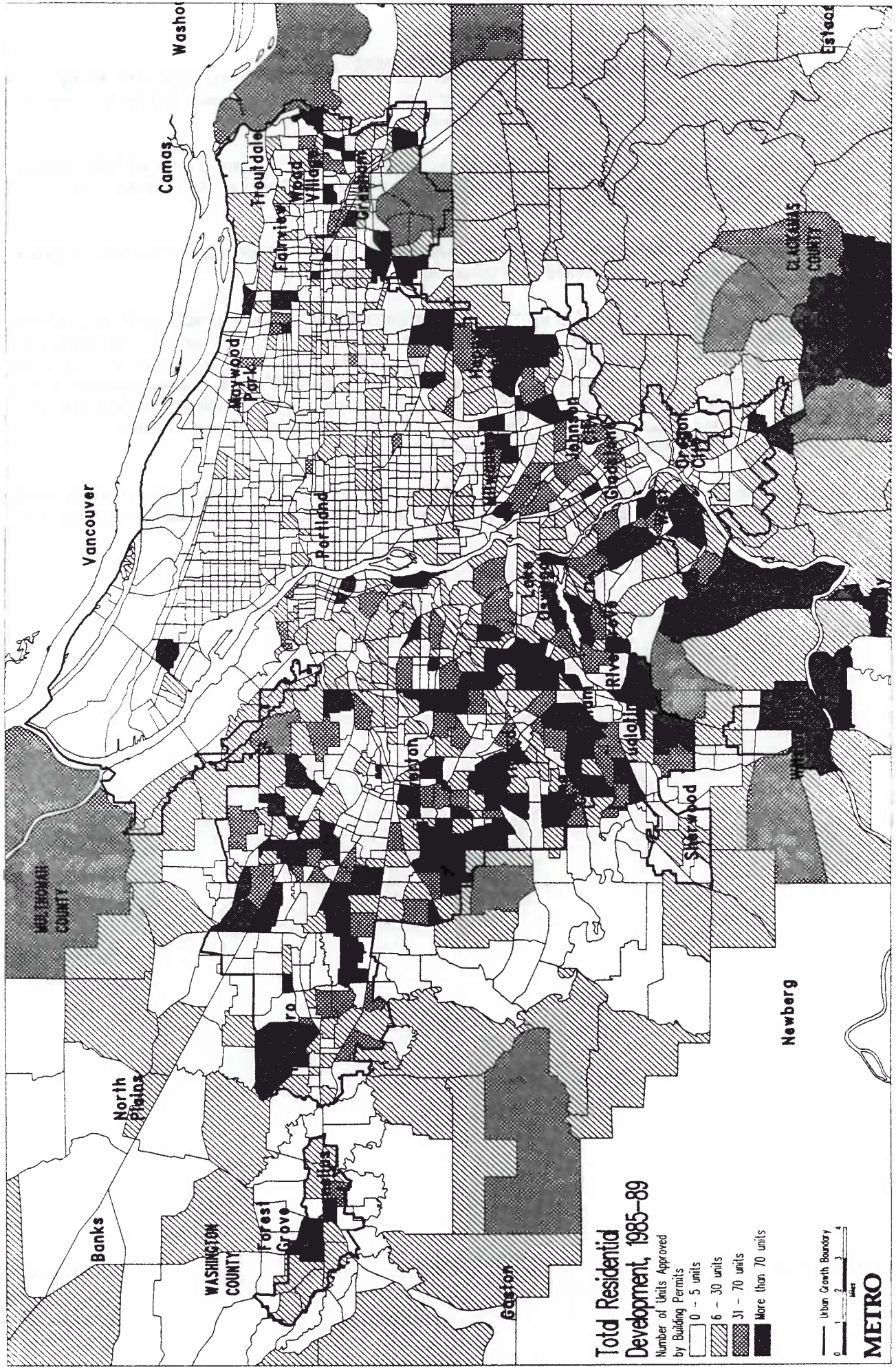


Figure 3-3



Less than 1% of the 22,434 multiple family units built in the three-county area from 1985 through 1989 were located outside of UGBs. This percent varied from 2% in Clackamas County to about 0% (rounded) in Multnomah and Washington Counties.

About 1% of subdivision lots developed in the three-county area between 1985 and 1989 occurred outside UGBs. This percent varied from about 3% in Clackamas County to 0% in Multnomah County (about 1% in Washington County).

Net employment changes in the three-county area between 1985 and 1989 outside UGBs were negative, implying no significant commercial or industrial development.

The potential exists to develop up to 11,600 dwelling units in the three-county study area outside UGBs. At the current rate of development, this represents over a 20 year supply of developable land outside UGBs. Roughly 60% of the development potential is on existing vacant lots in exception areas, 30% results from the creation of new lots in exception areas, and 10% results from our assumption that historical rates of housing development on resource land (nonfarm and nonforest dwellings, will occur between now and the year 2000. About 62% of the development potential is in Clackamas County, 26% in Washington County, and 12% in Multnomah County.

Based on our Washington County Subarea analysis, less than 1% of the new lots created were the result of the partitioning process. About half of the lots occurred at densities of greater than four lots per acre.

TABLE 3-1
BUILDING AND LAND DIVISIONS
1985-89

| Analysis Area | Residential Building Permits | | | | Subdivisions | |
|-----------------------|------------------------------|--------------|-----------------------|--------------|---------------|--------------|
| | Single-Family Units | | Multiple Family Units | | # of Lots | % |
| | # of Units | % | # of Units | % | | |
| Inside UGBs | 18,793 | 90.7 | 22,318 | 99.5 | 14,272 | 98.8 |
| Inside Portland UGB | 18,628 | 89.9 | 22,251 | 99.2 | 14,079 | 97.5 |
| Urban | 11,127 | 53.7 | 14,510 | 64.7 | 9,707 | 67.4 |
| Urbanizable | 7,501 | 36.2 | 7,741 | 34.5 | 4,372 | 30.1 |
| Inside Other UGBs | 165 | 0.8 | 67 | 0.3 | 193 | 1.3 |
| Outside UGBs | 1,928 | 9.3 | 116 | 0.5 | 175 | 1.2 |
| Portland Urban Fringe | 713 | 3.4 | 0 | 0.0 | 151 | 1.1 |
| Rest of County | 1,215 | 5.9 | 116 | 0.5 | 24 | 0.1 |
| Total | 20,721 | 100.0 | 22,434 | 100.0 | 14,447 | 100.0 |

Source: Metro underlying zone database; special subdivision database.

DEVELOPMENT OUTSIDE OF AND ADJACENT TO URBAN GROWTH BOUNDARIES

Of the dwelling units built or sited outside UGBs in the three-county area, about 36% occurred in the urban fringe around the Portland UGB. (We defined the fringe as Metro underlying zones contiguous to the UGB--see Map 6 and section 3 of the Appendix for more information). Of 713 single family residential building permits issued for sites in the urban fringe, 60% were for sites in Clackamas County, 19% in Multnomah County, and 21% in Washington County.

Of the subdivision lots developed outside UGBs in the three-county area, about 86% occurred in the urban fringe around the Portland UGB. Of the 151 lots developed in the urban fringe, 57% were developed in unincorporated Clackamas County, all with lot sizes greater than two acres, and with 71% on lots of five acres or larger. The remaining 65 subdivision lots were developed in Washington County with an average lot size of about one acre.

Of the multiple family units developed outside UGBs in the three-county area, none occurred in the urban fringe around the Portland UGB.

The rural residential pattern of development in the urban fringe will make efficient urbanization difficult in the future. In the few subareas we reviewed, residential development immediately outside the UGB often occurs on long, narrow lots of from two to five acres in strips along county roads (see e.g., the Rock

Creek area in Clackamas County). Due to access limitations, newer development often occurs in a "panhandle" configuration. Larger lots often have poor access, and are located behind developed strips. Homes appear to be sited in a random fashion, making future road extensions difficult. Those who now enjoy rural residential living can be expected to oppose UGB expansion and subsequent development in their neighborhoods.

All three counties in the study area have adopted rural planned unit development ordinances that allow for clustering of housing on smaller (one to two acre) lots, leaving the remainder of the property undeveloped and potentially available for future urbanization. The PUD process allows for more dwelling units that have lower impact than traditional rural residential patterns.

DEVELOPMENT IN URBANIZABLE AREAS

Of the 41,111 single family and multiple family residential building permits approved for sites inside the UGB, 37% (15,242) occurred in urbanizable areas.

Of the 18,793 single family residential building permits approved for sites inside the UGB, 40% (7,501) occurred in urbanizable areas. About 30% of these were approved in Clackamas County, 17% in Multnomah County, and 53% in Washington County. (Note that because of the way data were available and our definition of urbanizable land, we probably under allocate units to "urbanizable" and overallocate to "urban." We believe that the combined totals for inside the UGB (urbanizable plus urban), however, are very accurate.

Of the 22,434 total multiple family dwelling unit construction approvals inside the UGB, about 35% (7,741) occurred in urbanizable areas. About 21% of these were approved in Clackamas County, 8% in Multnomah County, and 71% in Washington County.

Multiple family housing accounted for about 51% of all building permits approved between 1985 and 1989 in the urbanizable areas. Average densities were highest in Clackamas County (26 units per acre). Multnomah County averaged 17 units per acre, and Washington County averaged 14.

TABLE 3-2

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

| Analysis Area | Single-Family | | | Multiple Family | | |
|--------------------------|----------------|-------------------|----------------|-----------------|-------------------|----------------|
| | Actual Density | Allowable Density | % of Allowable | Actual Density | Allowable Density | % of Allowable |
| Clackamas County | 4.2 | 6.1 | 69 | 15.6 | 21.5 | 73 |
| Urban | 4.0 | 5.4 | 93 | 13.8 | 17.8 | 76 |
| Urbanizable | 4.8 | 7.7 | 62 | 25.9 | 42.3 | 61 |
| Multnomah County | 4.7 | 6.2 | 76 | 27.7 | 41.1 | 68 |
| Urban | 4.7 | 6.3 | 75 | 28.3 | 42.2 | 67 |
| Urbanizable | 4.4 | 5.5 | 80 | 17.1 | 18.1 | 94 |
| Washington County | 5.2 | 8.4 | 62 | 15.8 | 19.2 | 82 |
| Urban | 5.5 | 8.3 | 66 | 17.1 | 20.1 | 85 |
| Urbanizable | 4.7 | 8.6 | 55 | 13.9 | 18.0 | 77 |
| Study Area Total | 4.9 | 7.5 | 65 | 16.5 | 21.3 | 77 |
| Urban | 4.9 | 7.2 | 68 | 16.9 | 21.2 | 80 |
| Urbanizable | 4.7 | 8.3 | 59 | 15.6 | 21.5 | 73 |

Source: Special Subdivision Database (see Appendix 3)
 Special Apartment Database (see Appendix 3)

Single family lots (in subdivisions) developed from 1985-89 averaged just under five lots per net acre in the urbanizable area. The average lot size in each county was from 9,000 to 10,000 square feet. The consistency of average lot sizes across counties in urbanizable areas, compared to allowable densities, suggests strongly that zoning has not been a major constraint on achieving higher development densities. There appears to be a clear market preference for large lots in suburban areas.

Actual development for single family lots was about 59% of allowable densities. Table 3-2 shows the distribution by county: Clackamas 62%, Multnomah 80%, Washington 65%. Note that because actual densities are similar in each county, these percentages show that Clackamas and Washington Counties allow higher density development than Multnomah County.

Multiple family units developed from 1985-89 averaged about 17 units per net acre in the urbanizable area. Clackamas County's urbanizable area, which allowed an average of 41 of units per acre (three projects were developed in zones allowing 60 units per acre), achieved actual densities 50% greater than urbanizable areas in the other two counties.

Actual development for multiple family units was about 73% of allowable densities. Table 3-2 shows the distribution by county: Clackamas 61%, Multnomah 94%, Washington 77%. These figures do not

account for single family residential development that may have occurred on land zoned for multiple family use.

DEVELOPMENT IN URBAN AREAS

Of the 18,628 single family residential building permits approved for sites inside the UGB, about 60% occurred in urban areas. About 27% of these were approved in Clackamas County, 24% in Multnomah County, and 49% in Washington County.

Of the 22,251 total multiple family dwelling unit construction approvals inside the UGB, about 65% occurred in urban areas. About 27% of these were approved in Clackamas County, 24% in Multnomah County, and 49% in Washington County, the same as for single family permits.

Multiple family housing accounted for about 57% of all building permits approved between 1985 and 1989 in the urbanizable areas.

Single family units (in subdivisions) developed from 1985-89 averaged about five lots per net acre in the urban area--about 68% of allowable densities. Table 3-2 shows the distribution by county: Clackamas 93%, Multnomah 75%, Washington 66%.

Multiple family units developed from 1985-89 averaged almost 17 units per net acre in the urban area--about 80% of allowable densities. Table 3-2 shows the distribution by county: Clackamas 76%, Multnomah 67%, Washington 85%.

For all land inside the UGB (urban plus urbanizable):

Multiple family development accounted for about 54% of all new units between 1985 and 1989. This finding supports assumptions made in the adopted findings for the metropolitan UGB: that future development would be split 50/50 between single family and multiple family dwelling units.

The average single family density was 4.9 units per acre; the range was 4.2 in Clackamas County to 5.2 in Washington County.

Single family units were built in subdivisions at an average of about 65% of allowable density: Clackamas 93%, Multnomah 75%, Washington 66%.

B. LIVABILITY ISSUES

Below we address the preservation of urban livability issue by describing changes in housing affordability, traffic congestion, and air quality in the metropolitan case study area between 1985 and 1989. For parkland, we looked only at the Beaverton subarea.

The average home sales price in Portland increased by about 33% between 1985 and 1989. The average home selling price in the Portland metropolitan area increased from \$70,015 to \$92,763 between 1985 and 1990. The largest increases occurred in (1) Oregon City/Mollala, (2) Tigard-Wilsonville, and (3) West Portland.

Average multiple family rental rates in the Portland area increased by about 32% between 1985 and 1989. Rental rates increased the most during this period in (1) Milwaukie/Oregon City, and (2) Tigard/Lake Oswego.

Both the average home selling price and the average monthly rental rates for multiple family dwelling units in the Portland metropolitan area grew at a slightly faster rate between 1985 and 1988 than did per capita income in the metropolitan area. While both home prices and monthly rents increased by about 30 percent over this period, per capita income in the metropolitan area increased by about 25 percent over the same period. Though income data for 1989 are not available, our guess is that housing prices will be shown to have increased faster than incomes during that period.

Traffic congestion is increasing in the Portland area. Between 1985 and 1989, level of service (LOS) decreased on all highway links we examined. On many links, LOS decreased from LOS E to LOS F (LOS F is the lowest level of service ranking, indicating severe traffic congestion). All links had a LOS of D or lower in 1989. Traffic volumes also increased on all links between 1985 and 1989.

The number of "good" days for air quality in Portland increased by about 22% between 1985 and 1988. "Good" days increased from 186 in 1985 to 227 in 1988. "Unhealthful" increased from 5 in 1985 to 6 in 1988.

In our Beaverton subarea, total park acreage in the Tualatin Hills Parks and Recreation District (THPRD) increased by about 6 percent between 1985 and 1989. Total park acreage in THPRD increased by 50 acres from 900 to 950 acres between 1985 and 1989. The number of park sites also increased from 100 to 125 from 1985 to 1989.

The evidence about "liveability" in Portland compared to other western U.S. cities is mixed, though generally favorable. When compared to seven other western U.S. cities of similar size (Sacramento, Seattle, St. Louis, Denver, San Francisco, Phoenix, and Tucson), Portland's population, population density, employment per acre, and daily round-trip commute time are all less than the average for each of these urban density measurements. Portland has more city-owned park acres per 1,000 residents (24.2) than most of the seven other cities. Although Portland is expected to have a lower urban freeway congestion severity index (total delay/million vehicle-miles of travel) over the next decade than most of the other seven comparable cities, the index is expected to grow five times greater by 2005 because delays are expected to increase much faster than vehicle-miles.

**APPENDIX
DESCRIPTION AND EVALUATION OF DATA**

A. PREFACE

This appendix describes and evaluates the data we used to address urban growth issues in the Portland case study area. We focus on data that describe changes in land development and livability 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 residual development potential
- 6.0 Data comparing Portland to other urban areas

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 Portland 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 Portland 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 the Portland metropolitan area and counties within other case study areas across Oregon.

Evaluation The population estimates by the CPRC are the best available. 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. 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 population of Portland and metropolitan counties grew at faster rates between 1980 and 1989 than for the state as a whole. All other counties of our study, and the state as a whole, had a greater rate of employment growth between 1980 and 1988.

TABLE A-1
POPULATION GROWTH
1980-89

| Jurisdiction | 1980 | 1989 | Change | % Change |
|--------------------------------------|-----------|-----------|---------|----------|
| Medford | 39,746 | 45,290 | 5,544 | 13.95 |
| Jackson County | 132,456 | 145,000 | 12,544 | 9.47 |
| Portland | 368,139 | 432,175 | 64,036 | 17.39 |
| Washington, Clackamas, and Multnomah | 1,050,418 | 1,114,500 | 64,082 | 6.10 |
| Bend | 17,263 | 19,510 | 2,247 | 13.02 |
| Deschutes County | 62,142 | 70,600 | 8,458 | 13.61 |
| Brookings | 3,384 | 4,465 | 1,081 | 31.94 |
| Curry County | 16,992 | 19,200 | 2,208 | 12.99 |
| Statewide Total | 2,633,156 | 2,791,000 | 157,844 | 5.99 |

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

TABLE A-2
EMPLOYMENT GROWTH
1980-88

| Jurisdiction | 1980 | 1988 | Change | % Change |
|------------------|-----------|-----------|---------|----------|
| Jackson County | 56,560 | 66,470 | 9,910 | 17.5 |
| Portland Metro | 595,600 | 618,200 | 22,600 | 3.8 |
| Deschutes County | 27,340 | 34,330 | 6,990 | 25.6 |
| Curry County | 6,230 | 8,730 | 2,500 | 40.1 |
| Statewide Total | 1,188,000 | 1,343,000 | 155,000 | 13.1 |

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

2.0 GROWTH MANAGEMENT POLICIES AND REGULATIONS

2.1 SOURCES Interviews with Brent Curtis of the Washington County planning staff and Larry Conrad of the City of Beaverton planning staff. Washington County's "Urbanization" policies and Article V (Public Facilities and Services) of the county development code were also reviewed.

ANALYSIS There are 27 jurisdictions in the Portland metropolitan area, each of which has a growth management program. We focus on describing, in general terms, the growth management programs of the City of Beaverton and Washington County.

The Portland Metropolitan Urban Growth Boundary

In 1977, LCDC required that a common urban growth boundary (UGB) be established for the 24 cities in the Portland Metropolitan region. This boundary was intended to accommodate growth through the year 2000.

As the regional planning agency, the Metropolitan Service District (Metro) was assigned the responsibility for working with Multnomah, Clackamas and Washington Counties and affected cities to establish and prepare findings to justify the regional UGB. This growth boundary was modified, conditioned and finally approved by LCDC in 1979.

Under a coordination contract with DLCD, Metro also reviewed the comprehensive plans of cities and counties under its jurisdiction for compliance with LCDC goals and Metro's growth management policy guidelines. Early in the LCDC acknowledgment process it was determined that cities would plan for their city limits only--and that counties would develop "complementary" plans for unincorporated areas between city limits and the regional UGB.

This meant that each of the three metropolitan counties prepared comprehensive plans that provided for urban levels of development outside of city limits. It also meant that a high level of coordination was required between cities and counties on how urbanization would take place in areas that may ultimately be annexed to cities. In Washington County, "planning area agreements" were negotiated with each city and approved by Metro and LCDC. Among other things, these agreements spelled out how cities could comment on near-by developments, and how county zones would be converted to city zones upon annexation.

The Portland Metropolitan Area has scores of special districts that provide fire protection, sewer, water and other services such as recreation. Over the last several years many of the smaller districts were merged with some of the larger districts. In Washington County the Wolf Creek Water District now serves a much larger area than any of the individual cities. The Unified Sewerage Agency serves all of Washington County and the Board of County Commissioners is the board of that sewerage agency. The Tualatin Hills Recreation District provides services to Beaverton and much of the unincorporated urbanized areas. Despite the importance of these and smaller special districts in the urbanization process, there was no State requirement that special districts be a party to planning area agreements.

Finally, each city and county within the UGB was required to comply--through zoning--with minimum density standards (ranging from six to ten units per net buildable acre, depending on the size of the jurisdiction) and to allow for at least 50% of all dwelling units to be attached or multiple family. Despite the fact that local zoning allows for higher densities

through PUD and other density transfer provisions, market demand has maintained average lot sizes in the 8,000 to 10,000 square foot range.

Washington County

Washington County had by far the largest area of undeveloped urbanizable land of the three counties in the Portland Metropolitan Area. Because of this fact, Washington County was required by LCDC to preserve vacant land within the UGB and to prevent it from being cut up into small parcels that result in inefficient development patterns.

One of the conditions of "acknowledgment" of the UGB was that Washington County develop special growth management policies for urbanizable land. The intent of these policies was to retain agricultural land in large productive blocks until urban services could be provided to accommodate urban (as opposed to rural) levels of development. These policies remained in effect until the Washington County Comprehensive Framework Plan (CFP) was acknowledged by LCDC in 1983.¹

Washington County's basic growth management policy is relatively simple: development (except for single family residences on lots of record) is prohibited unless urban services can be provided. The County requires a 10-acre minimum lot size for unserved areas within the planning areas of cities.

Growth Management Policy 14 categorizes urban facilities and services as "critical" (public water, sewer, fire, drainage and local access)," "essential" (schools, major streets, transit improvements, police protection and sidewalks), and "desirable" (parks, pedestrian and bicycle paths and public transportation). Critical services are required for development approval. Essential services are generally required within five years of development approval. Desirable services may be required as a condition of development approval.

One of Washington County's most pressing growth management problems has been coordinating the provision of services with cities and special districts. Policy 14(f) calls for the County to prepare a "unified capital improvements plan, program and budget" which serves as a basis for setting service area priorities. This unified program is intended to be updated annually. If public facilities are extended at the developer's cost and meet County standards as outlined above, then the development may proceed.

Washington County does not mandate minimum densities. So, despite the fact that the County provides for relatively high subdivision densities in its development regulations, lots of 9,000 square feet (rather than the 5,000 square feet typically allowed by zoning) are the norm. Similarly, single family residential development often occurs on land planned and zoned for multiple family use. Thus, market pressures appear to be causing development at densities below those allowable by zoning, which could result in inefficient land use and premature UGB expansion.

¹In "specially regulated areas" (SRA's), Washington County prohibited land divisions prior to the provision of fire protection, sanitary sewer, public water and local street services. Building permits for single family residences were limited to lots of record at the time of County acknowledgment. In industrially-designated areas, the County established a 30-acre minimum lot size, until modified by application of the "Special Industrial District."

Outside the UGB, Washington County does not regulate development activity with the intent of preserving land in large parcels for future UGB expansion. When reviewing partitions, for example, zoning determines the minimum lot size. If rural services are available, there are no additional requirements for siting of dwellings or other development. The County does have a PUD ordinance that allows for clustering of development, which could have the effect of reserving large, undeveloped portions of property for future urbanization.

Boundary Commission

The three-county Portland Metropolitan Area also has a Boundary Commission, a State agency whose mission is to make sense out of overlapping and sometimes competing service areas for special districts and cities. The Portland Metropolitan Area Boundary Commission reviews changes in boundaries of cities and special service districts.

One of the major effects of the Boundary Commission's actions has been the enlargement of some special service districts and the elimination of some smaller districts. As special districts have become larger and more efficient, they have been able to successfully compete with cities in providing services to both incorporated and unincorporated areas within the regional UGB.

Beaverton

Beaverton's pre-acknowledgment comprehensive plan extended beyond its City Limits into urbanizable Washington County. However, this plan was never adopted by Washington County. Beaverton, like other metropolitan cities, has a "city limits only" acknowledged plan.

Since acknowledgment, Beaverton has been working with Washington County, Tigard and Portland to establish "urban service," or potential annexation areas. The goal is to negotiate agreements with Washington County, neighboring cities and special districts to ensure that development occurs under City auspices within the Beaverton planning area.

The City of Beaverton requires annexation and the coordinated provision of key urban services before urban development can occur. Development on individual sewage disposal systems is not permitted. The City's efforts at managing growth through the annexation process has been frustrated by State annexation laws (which make annexation difficult) and by the availability of services provided by the large special districts that service Washington County. Virtually all residential development in Beaverton has occurred through the subdivision (single family) or site plan review (multiple family) processes.

Partitioning activity inside the City does not appear to be a problem. Beaverton's partitioning ordinance requires that parcelization be consistent with the future efficient use of land, and prohibits serial partitioning activity. The high cost of land within the Portland Metropolitan Area makes it impractical to develop large home sites through the partitioning process. Because land in and around Beaverton is expensive, it is most cost effective to develop it with sewer and water services provided by sewerage agencies or through annexation.

Recently, the city of Beaverton has been working with Washington County to bring their two transportation plans for arterial and collector streets into mutual conformance. Prior to the last few years there had been competing, sometimes conflicting, transportation plans. Conflicts between the two plans had been worked out through the development approval process, as opposed through the legislative planning process, the way it occurs now.

Beaverton has been successful in recent years in negotiating service area agreements with special service districts. There are actually four water districts that serve Beaverton and the surrounding area, all of which purchase water from the City of Portland. Beaverton has negotiated intergovernmental agreements with three of those districts and is working on one with the fourth. Agreements for service provision have been arranged with the Unified Sewerage Agency (USA) which manages the treatment plant for much of the urbanizable area in Washington County. The City controls connection to the system within the City Limits.

3.0 LAND DEVELOPMENT DATA

3.1 SOURCE

Metropolitan Service District Underlying Zone Database, 1985-89. Intergovernmental Resource Center Transportation Analysis Zone Database, 1985-88.

Description The database consists of data on 1806 underlying zones (UZs) covering the three-county Portland metropolitan area. UZs, defined for transportation planning purposes, aggregate to census tracts. The data include residential building permits issued, 1985-1989; employment and population estimates, 1985 and 1988; land area in each comprehensive plan designation; and land area in each political jurisdiction.

The IRC database contains data on 123 Transportation Analysis Zones (TAZ's). TAZ's, defined for transportation planning purposes, aggregate to census tracts. The data by TAZ include employment and population estimates 1985 and 1988, land area, and land area in each zoning designation.

Evaluation Metro collects building permit data from the jurisdictions that issue the permits, then geocodes the data to UZ. The data is reliable at the census tract and larger jurisdiction level, but less reliable at the UZ level and for rural areas.

To produce annual population estimates, Metro updates 1980 census data by multiplying the number of occupied dwelling units by the average number of individuals per dwelling unit. Metro updates the number of dwelling units using residential building permit and demolition data. Metro estimates dwelling unit vacancies using data supplied by the U.S. Postal Service and Portland General Electric. Metro estimated the number of individuals per dwelling unit by survey in 1985. For later years Metro adjusts the individuals per dwelling unit estimate until the Metro population estimate agrees with PSU population estimates. Population is allocated to Uzs in proportion to the housing stock.

To produce the 1985 and 1989 population estimates, IRC updates 1980 census data by multiplying the number of dwelling units by the average number of individuals per dwelling unit. IRC coded the 1980 census block group data to TAZ's. IRC collects building permit data by census tract, then allocates these to TAZ's according to development pattern. Addition of the 1980 census estimate of the number of dwelling units to 1981 through 1988 building permit data gives estimates of 1985 and 1988 housing units by TAZ. Dividing the Washington State Office of Financial Management Forecasting Division Clark County population estimate by the number of dwelling units gives an estimate of the average number of individuals per dwelling unit. IRC adjusts this average in proportion to the 1980 census ratios of individuals per dwelling unit.

Metro estimates employment using unemployment insurance data from the State Employment Division. Metro geocodes this data to the census tract level, then allocates employment to Uzs in proportions constant over time.

To produce the 1988 employment estimates, IRC updated an employment database developed in 1985. IRC developed the 1985 database by filling in a partial list of employers in Clark County purchased from the Dun & Bradstreet Company. IRC updated the 1985 database in 1988 using several sources and surveys. The database does not include self-employment which is estimated to be about 7% of total employment.

The Metro and IRC databases are the best sources of population, employment, and building data covering the entire metropolitan area that we could find. The two databases are quite comparable as the IRC estimates population and employment for Clark County in a manner very similar to Metro's process.

METHOD

We use the Metro and IRC data first to define four analysis areas, then to show the amount and location of growth in the study area.

We divided the study area into four analysis areas: urban, urbanizable, urban fringe, and the rest of the urban region. These analysis areas are defined on the basis of (1) the density of development in 1985, and (2) location with respect to the UGB. The urban area consists of Uzs containing high density development inside the UGB in 1985. The urbanizable area consists of the remaining Uzs within the UGB. Uzs outside and within about a mile of the UGB define the urban fringe. The rest of the urban region consists of the remaining Uzs in the three metropolitan counties.

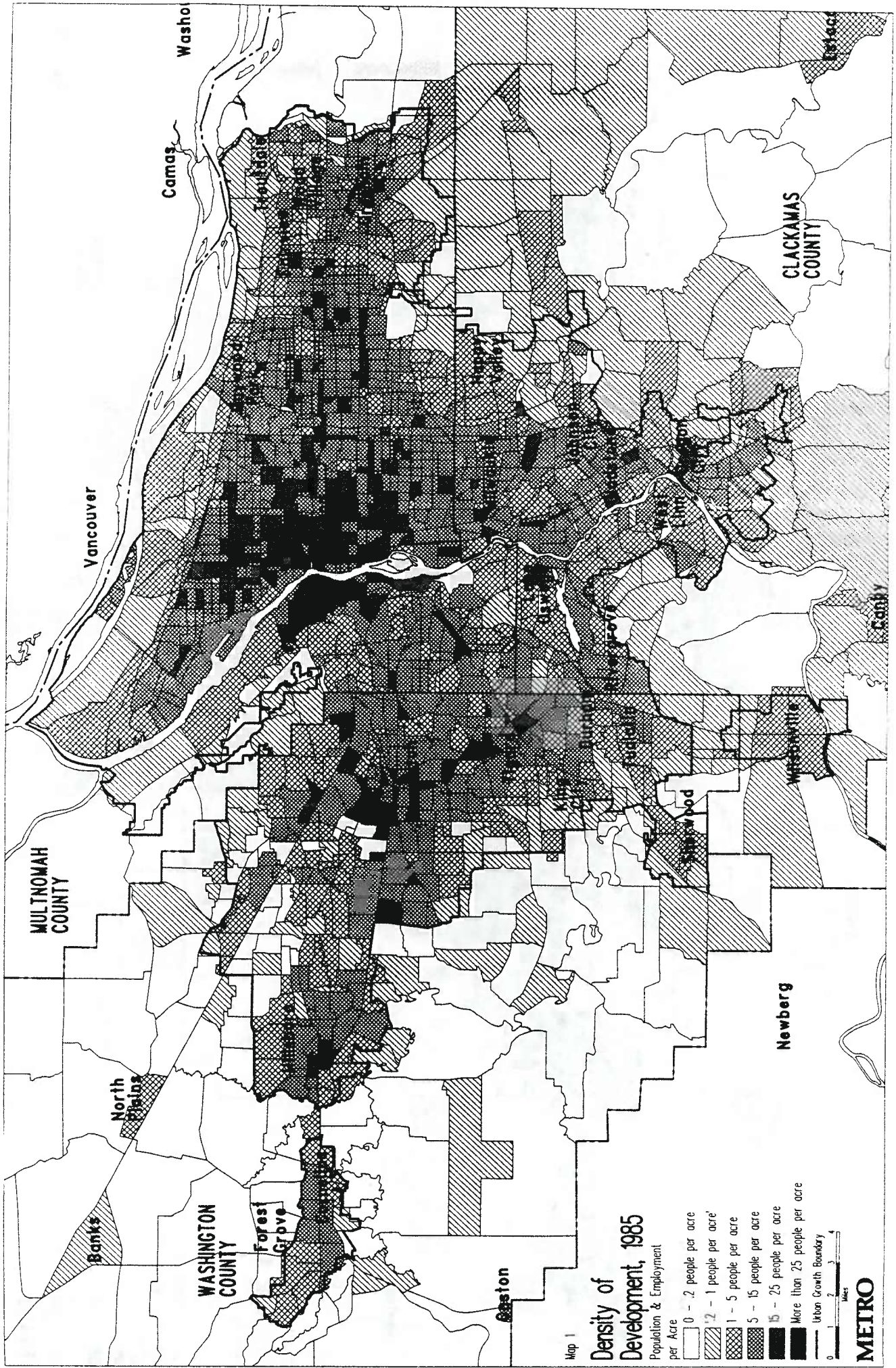
We tried three measures of development density to define urban and urbanizable land: population per acre, employment per acre, and population plus employment per acre. Metro provided the land area of each UZ in acres. We subtracted the number of acres in Open Space/Natural Environment zone. Land in this zoning category is generally not developable. The results are shown on Maps 1 through 3. We chose population plus employment per acre as the best proxy for development density because of its intuitive appeal and because the resulting pattern appeared to coincide well with the actual pattern of development.

Next, we reduced the number of density classes inside the UGB and identified the Uzs constituting the urban fringe. Map 4 shows (1) the number of density classes reduced to three inside the UGB and (2) the urban fringe. We cannot show the urban fringe precisely because many UZs are split by the UGB. Referring to Map 1 and Map 4 we consulted with Metro staff to define the urban area as the area with densities of 5 or more people (population plus employment) per acre. We included some UZs developed at densities less than 5 people per acre to make the urban area more continuous for mapping. Map 5 shows the final definition of analysis areas.

Note that (1) the analysis areas are defined based on densities in 1985 (because we want to measure change since 1985), and (2) because UZs are large, gross density per acre is at best a crude measure of the amount of development and its inverse, vacant land. We would have preferred to define urban and urbanizable as based on built and vacant land, but those measures were not available.

With the analysis area defined we show the amount and location of development since 1985. Maps 6 through 10 show the distribution of residential building permit approvals by UZ, and the estimated changes in population and employment. Tables 3-1 through 3-6 show this data in more detail.

We followed a nearly identical process to define the analysis areas in Clark County using TAZs. The results are shown on Maps 11 through 14. Though not ideal, we used Clark County's urban service boundary in place of the UGB. A better method would involve first estimating, under the circumstances faced by Oregon planners, the location of a Clark County UGB had one been required, then defining our analysis areas with respect to the estimated line. We did not have the budget to draw that line so we used the existing line instead. The



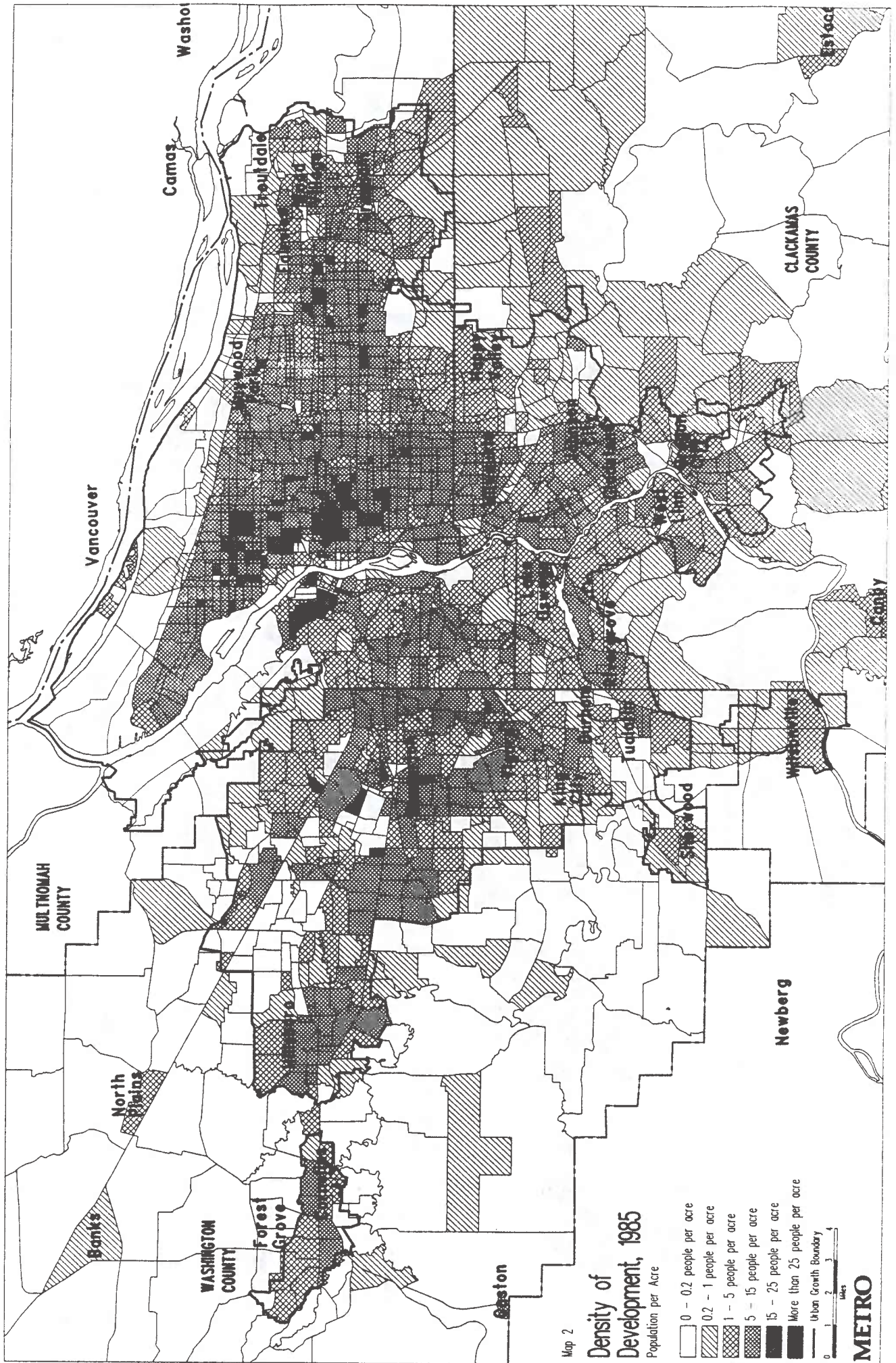
Map 1

Density of Development, 1985

- Population & Employment per Acre
- 0 - 2 people per acre
 - 2 - 1 people per acre
 - 1 - 5 people per acre
 - 5 - 15 people per acre
 - 15 - 25 people per acre
 - More than 25 people per acre
- Urban Growth Boundary



METRO



Map 2

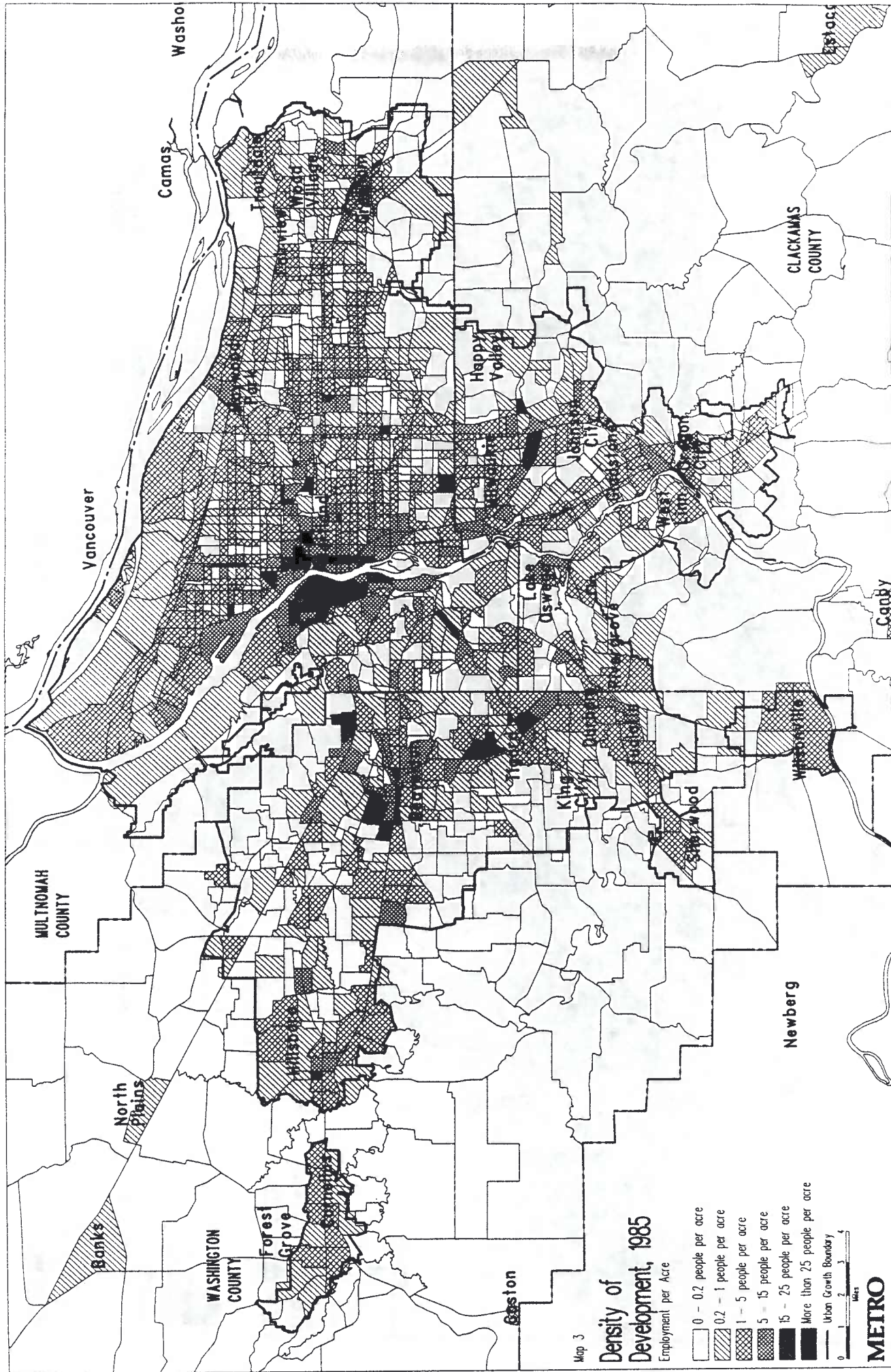
Density of Development, 1985

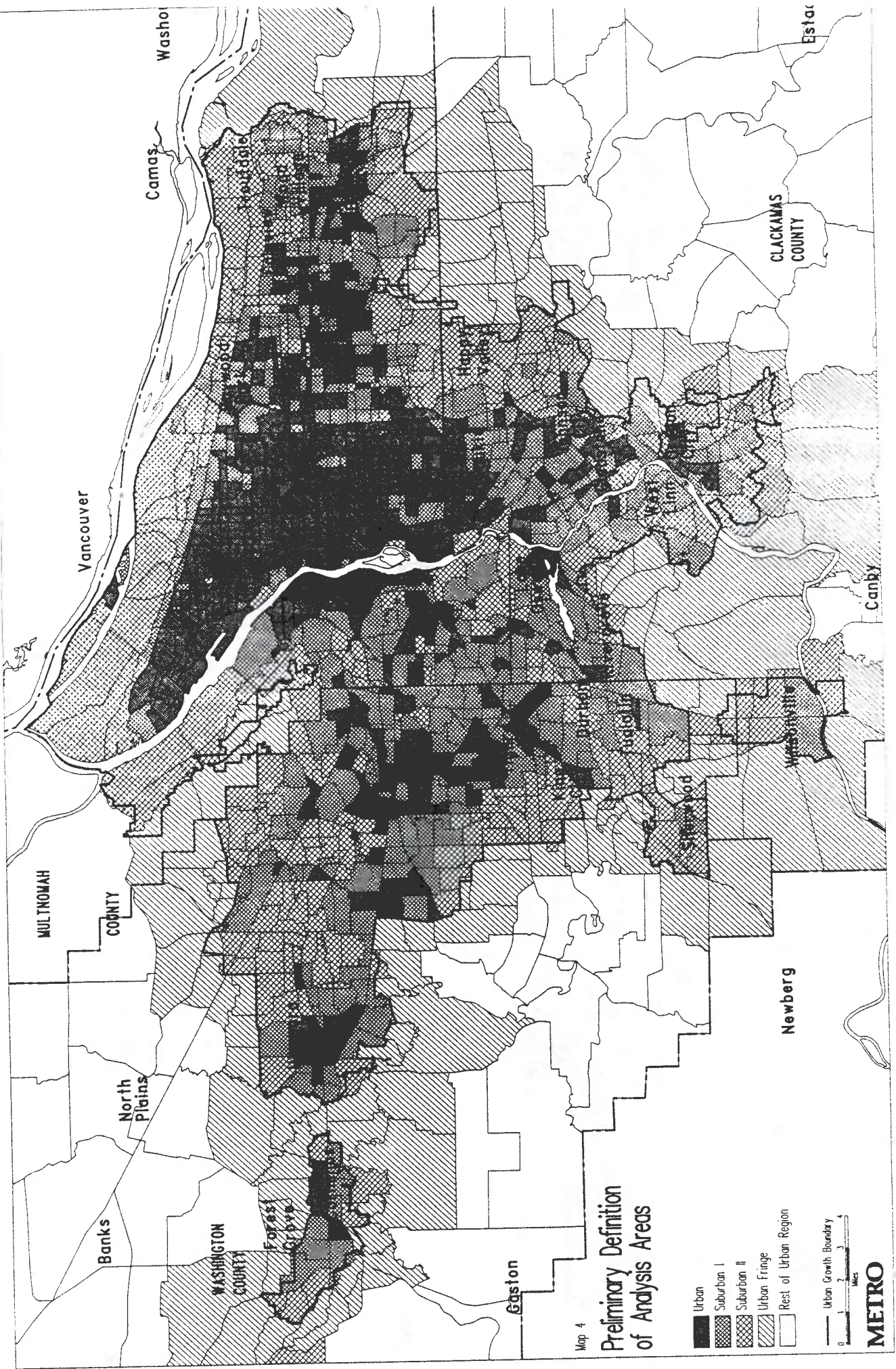
Population per Acre

- 0 - 0.2 people per acre
- 0.2 - 1 people per acre
- 1 - 5 people per acre
- 5 - 15 people per acre
- 15 - 25 people per acre
- More than 25 people per acre
- Urban Growth Boundary



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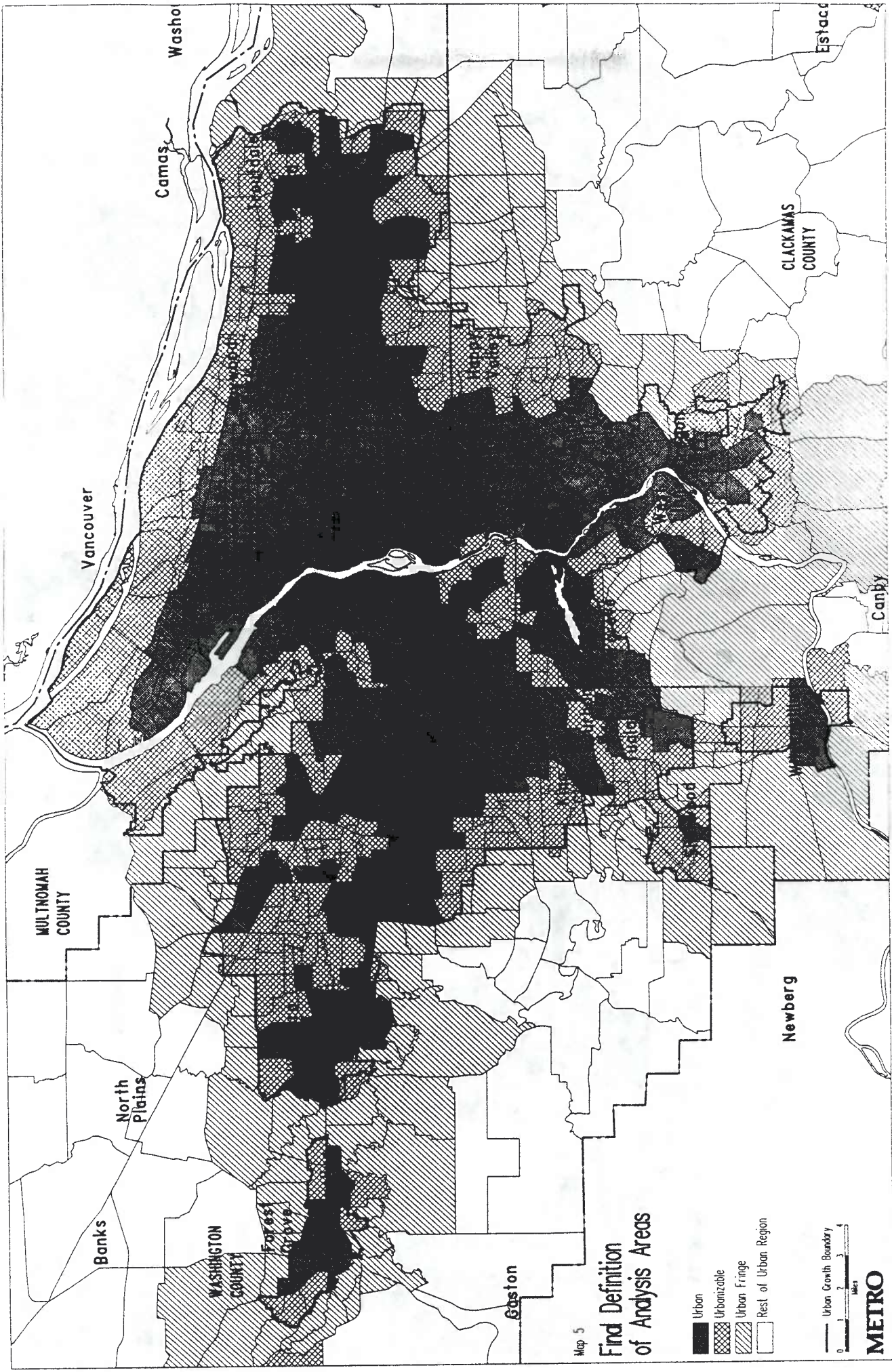


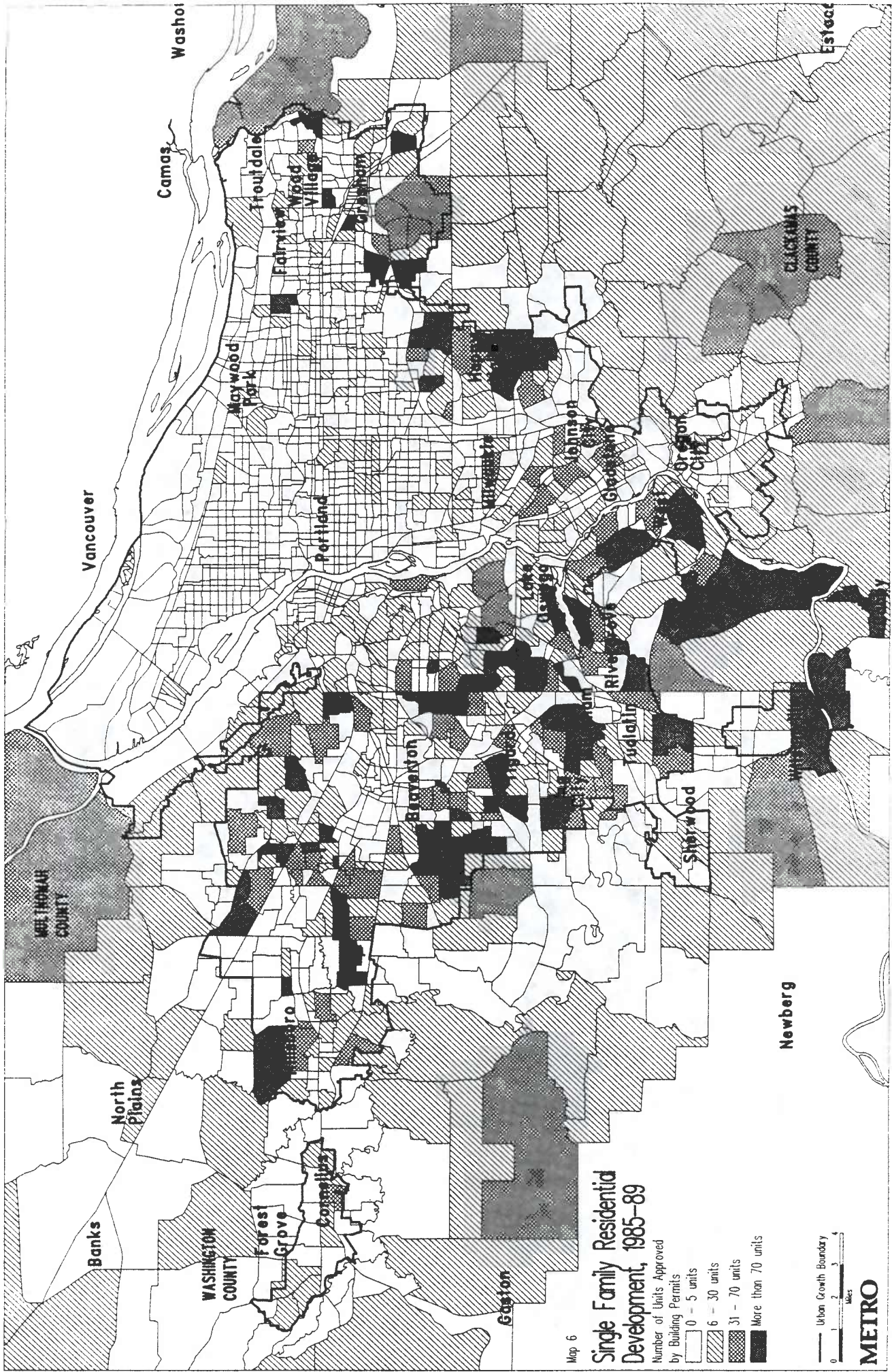
Map 4
**Preliminary Definition
of Analysis Areas**

- Urban
- Suburban I
- Suburban II
- Urban Fringe
- Rest of Urban Region

Urban Growth Boundary
0 1 2 3 4
MILES

METRO





Map 6

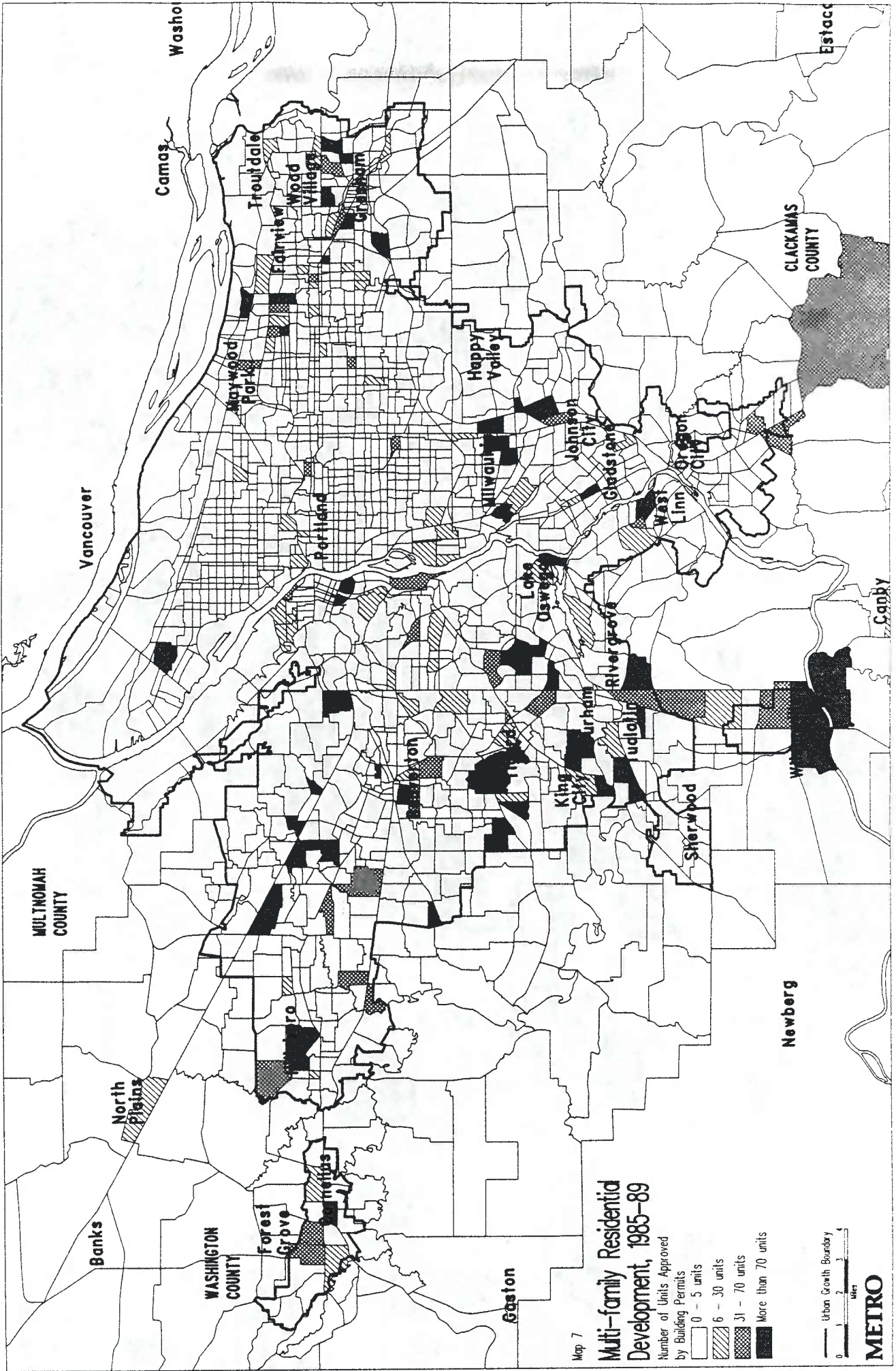
Single Family Residential Development, 1985-89

Number of Units Approved by Building Permits

- 0 - 5 units
- 6 - 30 units
- 31 - 70 units
- More than 70 units

Urban Growth Boundary
0 1 2 3 4
Miles

METRO



MULTNOMAH COUNTY

Vancouver

Washou
 Camas

Trousdale

Fairview

Wood Villages

Clackamas

Maywood Park

Portland

Happy Valley

Wilson

Johnson City

Clatsop

Washou

Linn

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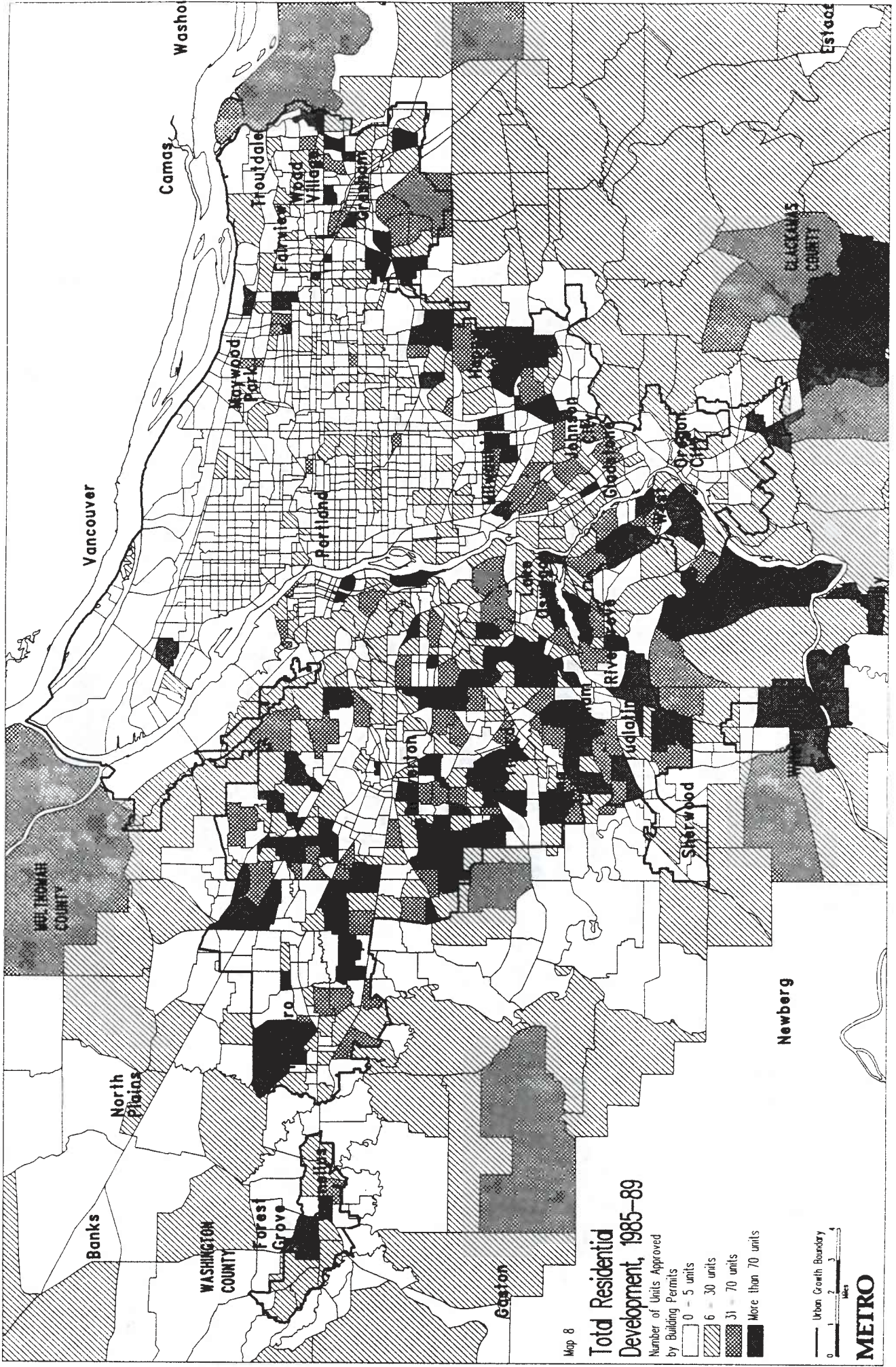
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Forest Grove

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Map 8

Total Residential Development, 1985-89

Number of Units Approved by Building Permits

- 0 - 5 units
- 6 - 30 units
- 31 - 70 units
- More than 70 units

Urban Growth Boundary
0 1 2 3 4
miles

METRO

