

# *Growth and Its Impacts in Oregon*

*A Report from Governor  
Kitzhaber's Task Force on  
Growth in Oregon*



*JANUARY 1999*

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## **CHAPTER 1 Introduction**

Growth management, like all public policy, is ultimately about getting agreement on some painful and complicated tradeoffs. This study is intended to help clarify what those tradeoffs are. The study's purpose is not to determine whether growth is good or bad. Rather, it provides a descriptive analysis of both positive and negative impacts of growth, and provides an overview at the state level that is illustrated by local examples.

The technical focus of this study is on existing studies of growth and growth management, particularly recent studies and those done in Oregon. The Task Force appointed by the Governor to help review and develop the products of this study met six times between April and December of 1998. Interested organizations and members of the general public had opportunities to participate in addition to testimony at Task Force meetings. All interim material produced for the Task Force was also sent to anyone requesting it. People commented by letter, phone, e-mail, or fax.

This report starts with a framework for evaluating the impacts of growth, and then covers growth trends in Oregon, the impacts of growth, and policies that can affect growth and its impacts. It ends with conclusions from the Task Force about future policy direction at the state and local level.

## **CHAPTER 2 Framework**

In its broadest sense, growth management covers most of what concerns citizens and governments. Growth has impacts, for good or ill, on every aspect of quality of life that people care about: environmental quality, social amenity, economic welfare, and cost of living.

This report defines growth in terms of population, employment, and the built space that accommodates them. Because all are correlated, it focuses on population growth. In Oregon, 70% of population growth is from people moving here. They locate primarily in urban economic centers: especially the Willamette Valley, and increasingly recreation and retirement areas.

Migration into and out of a region is driven by its relative performance on the factors related to economics and quality of life. Any region that temporarily has relatively high wages and environmental and social amenity, and relatively low cost of living can expect (1) in-migration, and (2) changes in those variables that will reduce the pressure for in-migration.

No amount of definition and data will make discussions and decisions about growth easy. People approach growth from different perspectives. Most people involved with state and local policy accept that both markets and government play a role in creating an Oregon where people want to live. The debate is that some think market forces have too much impact on what Oregon will look like, while others think the net result would be better with less government regulation.

Whether growth is good or bad for Oregon cannot be determined definitively because of the complexity of growth relationships, uncertainty, and the diversity of interests and perspectives. Characterizing the choices confronting citizens in the region as pro-growth versus no-growth is wrong both politically and technically. We have a lot of choices in between. The long-run questions about how much Oregon population will grow in 20 or 50 years, and what the impacts of that growth will be, will get answered not by policies that dictate what the future will look like, but by decisions we make today to deal with issues that we determine are affecting, or will affect, quality of life in Oregon communities.

### *CHAPTER 3 Growth in Oregon*

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Of Oregon's 1997 population (3,217,000), almost 70% is located in the Willamette Valley, which contains only 14% of the state's land area. The State's Office of Economic Analysis predicts continued population growth: Oregon is expected to add one million people by 2015 and another million by 2040. Most of that growth comes from migration. In this decade, over 70% of Oregon's total population growth is from net migration (in-migration minus out-migration), not natural increase (births minus deaths).

When talking about the impacts of growth, both the amount and rate of growth matter. Slow growth rates in the Portland metropolitan area still add a lot of people to the state. Very high or very low growth rates in small communities may not have much impact on state growth, but may have big impacts on the local economy and quality of life.

The pattern of employment growth is similar to that of population growth. As for population, over 70% of Oregon's employment is located in the Willamette Valley. Employment has grown more rapidly than population in Oregon because of increasing labor force participation rates (especially among women), a larger share of the population of working age, and an increasing number of people holding more than one job. Employment varies more than population because employment is more closely tied to economic conditions.

Many forces have affected, and will continue to affect, growth in Oregon. These changes have occurred not only because of national and international economic and demographic factors, but also because of government action in Oregon.

### *CHAPTER 4 Impacts of growth*

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The impacts of growth can be negative or positive. This chapter attempts to discuss impacts comprehensively, and divides them into two categories: (1) the direct costs of providing public facilities to the development (housing, buildings, and public services) that new growth requires; and (2) other impacts on economic welfare, quality of life, and cost of living.

Regarding the direct costs of supplying public facilities (infrastructure) to new development, the report finds that (1) on-site infrastructure costs (e.g., for local streets, sidewalks, sewer, water lines and meters) for a single-family housing unit are on the order of \$15,000 to \$20,000, (2) the construction costs of off-site facilities (e.g. improvements to arterial streets, sewer and water trunk lines and treatment plants, schools, fire stations) are on the order of \$15,000 to \$30,000 per housing unit for new development at the urban fringe, (3) these average costs may vary widely for particular developments because of the specifics of site and locational characteristics relative to existing off-site facilities, local standards, and other factors, (4) in rough terms, it is probably the case that for on-site and off-site public facilities (setting aside schools and major upgrades to the regional transportation system) new residential development directly pays on the order of 50% to 90% of their capital costs (through developer provided infrastructure, hookup fees, SDCs and other impact fees, special assessments, exactions, and user charges), and (5) any summary like this one is necessarily approximate and needs to be used only with a clear understanding of the assumptions required to develop it (as described in Chapter 4 and Appendix E).

Good public policy about growth must consider more than the direct costs of building the infrastructure it requires. It must

consider other impacts, positive and negative, that are no less real because they cannot be measured in dollars, or perhaps cannot be measured well at all. Growth also affects many aspects of what people see as their quality of life, and these impacts (real or perceived) are often the source of the strongest sentiments about of growth: for example, impacts on jobs, income, traffic congestion, environmental quality, and crime.

## ***CHAPTER 5 Tools for Growth Management***

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The report uses “tools” or “policies” generally to mean any legislation, administrative rules, programs, investments, or other actions by some unit of government that affect the way growth occurs. Those policies may affect growth directly (e.g., a limitation on building permits) or indirectly (e.g., by requiring pollution control devices that increase costs of new business development and, thus, reduce the amount of new development, at least in the short run).

Growth management tools can be categorized in many different ways. The categorization used in this report is based on the question: What aspects of growth can public policy influence? (which, in turn, may affect the amount, location, and type of growth itself).

With the exception of policies that allow state or local governments to place direct limits on natural increase or migration, governments in Oregon have about every type of tool that has been tried anywhere in the country to manage growth. They address land use or intensity, design, public facilities, other aspects of environmental quality, other fees, taxes and incentives; and the process of how decisions are made. Any community that can get an agreement on how much and what type of growth is desirable can assemble a consistent package

of tools to encourage or discourage growth, and to shape its form, provided, of course, that it can convince its citizens (or others: state and federal agencies, developers) to pay for the form they want.

Nonetheless, there are actions that the state could take that would allow or encourage local governments to address growth issues more thoroughly. They include policies to revise tax codes, add local flexibility, and create new funding sources or increase state funding to local government.

This chapter and the previous one make it clear that there is no single package of growth management tools that will be right for every jurisdiction. Communities differ in many ways (size, location, socioeconomic characteristics and desires of citizens, to name a few), and those differences will lead to different opinions about the amount and type of growth that is desirable, and what constitutes a fair way to pay for that growth. Despite differences in desired results, the process for agreeing on growth policies is likely to be similar across jurisdictions. It will have to include some level of public debate that considers, among other things, alternative futures; full benefits and costs, and who they fall on; tradeoffs; and state requirements and regional implications.

## ***CHAPTER 6 Conclusions and Recommendations***

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This chapter summarizes how the Task Force interprets information in Chapters 2, 3, 4 and 5 in the context of public policy. Only conclusions and recommendations on which the Task Force members agreed unanimously are included in this chapter

The Task Force agreed on three categories of conclusions:

- How communities and regions within Oregon are growing.
- How and when communities pay for, and benefit from, development.
- Tools communities may use to address growth-related issues.

The Task Forces recommendations address regional problem solving, protection of natural resources, better financing and some new financing mechanisms, state-funded technical assistance to local governments, and the creation and funding of a subsequent task force to address in more detail certain growth issues identified in this report.

# Chapter 1

## Introduction

### **SUMMARY**

Growth management, like all public policy, is ultimately about getting agreement on some painful and complicated tradeoffs. This study is intended to help clarify what those tradeoffs are. The study's purpose is not to determine whether growth is good or bad. Rather, it provides a descriptive analysis of both positive and negative impacts of growth, and provides an overview at the state level that is illustrated by local examples.

The technical focus of this study is on existing studies of growth and growth management, particularly recent studies and those done in Oregon. The Task Force appointed by the Governor to help review and develop the products of this study met six times between April and December of 1998. Interested organizations and members of the general public had opportunities to participate in addition to testimony at Task Force meetings. All interim material produced for the Task Force was also sent to anyone requesting it. People commented by letter, phone, e-mail, or fax.

This report starts with a framework for evaluating the impacts of growth, and then covers growth trends in Oregon, the impacts of growth, and policies that can affect growth and its impacts. It ends with conclusions from the Task Force about future policy direction at the state and local level.

In the 1990s, Oregon grew rapidly: more people, more jobs, more buildings, more cars. In the early 1980s, Oregon grew not at all: in fact, in some years its population decreased, and the number of jobs in several industries (particularly in lumber and wood products) plummeted.

Growth and change—whether too much or too little—are never far from the center of debates about government policy. People do not agree on what the right amount of growth is, in part because of different values people have about development, government, the environment, other aspects of quality of life.

There is little any study, including this one, can do to determine whose values should take precedence: that decision has been, and will continue to be resolved through our political process. But that process is informed, or should be, by facts. In Oregon, as elsewhere, we disagree about some of those facts: about why growth has occurred, its desirability, its impacts, and how to manage it.

Recognizing the importance of the topic of growth to Oregonians, and the disagreement among them on many of its causes and impacts, Governor Kitzhaber saw a need for better information about growth in Oregon. He formed a Task Force to assemble that information. This report is a result of their participation.

### ***Objectives of the study***

As originally outlined, the Governor asked the Task Force for a report describing:

- How communities and regions within Oregon are growing
- How and when communities pay for and benefit from growth
- Tools communities may use to address growth-related issues.

The Governor wanted a statewide study with a local focus. The study was to be accessible and useful to multiple audiences. He wanted a study that would provide a framework for discussing and making local decisions about growth. Such a framework would have clear descriptions of what people mean by growth, its causes, its impacts (both in general, and for different agencies or groups—i.e., who benefits and who pays), and the tools local and state governments can use to manage it (not just regulatory, but also financial).

*Growth management, like all public policy, is ultimately about getting agreement on some painful and complicated tradeoffs. This study is intended to help clarify what those tradeoffs are. The study's purpose is not to determine whether growth is good or bad. Rather, it provides a descriptive analysis of both positive and negative impacts of growth, and provides an overview at the state level that is illustrated by local examples.*



### ***The process for the study***

This study is a synthesis and interpretation of existing studies about growth; it does not include new empirical work. It includes a review of studies from around the country on state and local growth management issues, but focuses on recent work in Oregon. Just in this decade there has been more technical work done in Oregon by state agencies and local governments on growth (either directly, or indirectly

on problems that are in part a result of growth) than can be summarized in this report.

The Task Force made key decisions about the format and content of this study, which was prepared by Task Force staff. The staff consisted of policy analysts from both state agencies and consulting firms (Appendix F describes the participants in more detail). The Task Force guided staff work to ensure that it provided useful, objective information to aid local and state decisions related to growth issues. The goal was to develop a document that the Task

Force could recommend to the Governor, legislators, state agencies, and local governments to help make decisions about growth.

To that end, the Task Force met six times between April and December of 1998. Meetings were open to the public and testimony was taken. The principal topics at these meetings were:

- 1. April.* Purpose of study; Task Force mission, roles, and responsibilities; Task Force procedures; review of draft outline and table of contents for final report
- 2. June.* A framework for discussing growth issues in Oregon; definition of growth; revised outline and table of contents for final report; extensive public comment by invited speakers and anyone else signing up on all aspects of growth (in general, what should the Task Force and this study be focusing on?).
- 3. July.* Growth trends: how much growth has occurred and is likely to occur in different parts of Oregon? Final decisions on content and format of the final report.
- 4. September.* Video conference with Task Force members listening to testimony from Ashland, La Grande, Bend, and Salem.
- 5. October.* Impacts of growth and tools for managing it; Discussion of preliminary draft of the first five chapters of this report.
- 6. December.* Discussion of full draft of this report.
- 7. January.* Discussion of sub-committee recommendations regarding conclusions and recommendations. Approval of text and format for final report.

Interested organizations and members of the general public had opportunities to participate in addition to testimony at Task Force meetings. All interim material produced for the Task Force was also sent to anyone requesting it. Some people commented in writing, others by phone, e-mail, or Fax.

### ***How to read this report***

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The purposes and audience for this report influenced its content, format and size. It is designed to provide (1) a logical and understandable framework for discussing growth, (2) brief summaries of the best information available about the impacts of that growth on things people in Oregon care about, (3) a description of the range of policies (existing and potential) that can be used to control or manage growth, and (4) conclusions about future directions (to the extent that the Task Force members agreed on those conclusions).

The chapter titles convey the logic of the organization:

- *Chapter 2, A Framework for Discussing the Impacts of Growth.* How is growth defined for this study, and how does growth impact things that people care about?
- *Chapter 3, Growth in Oregon: Trends and Forecasts.* Where has growth occurred in Oregon, where is it expected to occur, and why?
- *Chapter 4, Impacts of Growth.* What evidence is there about how growth impacts quality of life (environmental resources, societally produced amenities, jobs and income, and cost of living)?
- *Chapter 5, Tools for Growth Management.* What policies do state and local governments use now, and which new ones might help?

- *Chapter 6, Conclusions and Recommendations.* What does the Task Force conclude and recommend?

Appendices provide more detail:

- *Appendix A, Endnotes*
- *Appendix B, Bibliography*
- *Appendix C, Glossary*
- *Appendix D, Why Cities Grow*
- *Appendix E, Details on the Direct Costs of Growth*
- *Appendix F, Acknowledgements*



# Chapter 2

## *A Framework for Discussing the Impacts of Growth*

### ***SUMMARY***

In its broadest sense, growth management covers most of what concerns citizens and governments. Growth has impacts, for good or ill, on every aspect of quality of life that people care about: environmental quality, social amenity, economic welfare, and cost of living.

This report defines growth in terms of population, employment, and the built space that accommodates them. Because all are correlated, it focuses on population growth. In Oregon, 70% of population growth is from people moving here. They locate primarily in urban economic centers: especially the Willamette Valley, and increasingly recreation and retirement areas.

Migration into and out of a region is driven by its relative performance on the factors related to economics and quality of life. Any region that temporarily has relatively high wages and environmental and social amenity, and relatively low cost of living can expect (1) in-migration, and (2) changes in those variables that will reduce the pressure for in-migration.

No amount of definition and data will make discussions and decisions about growth easy. People approach growth from different perspectives. Most people involved with state and local policy accept that both markets and government play a role in creating an Oregon where people want to live. The debate is that some think market forces have too much impact on what Oregon will look like, while others think the net result would be better with less government regulation.

Whether growth is good or bad for Oregon cannot be determined definitively because of the complexity of growth relationships, uncertainty, and the diversity of interests and perspectives. Characterizing the choices confronting citizens in the region as pro-growth versus no-growth is wrong both politically and technically. We have a lot of choices in between. The long-run questions about how much Oregon population will grow in 20 or 50 years, and what the impacts of that growth will be, will get answered not by policies that dictate what the future will look like, but by decisions we make today to deal with issues that we determine are affecting, or will affect, quality of life in Oregon communities.

Most people agree that Oregon can benefit from more family-wage jobs in environmentally responsible businesses, and that congestion has made driving and some of their favorite recreation sites less pleasant. Growth can lead to both. Growth can mean more jobs, households, workers, income, houses, cultural facilities, shopping centers, cars, pavement, and pollution: in short, more of many things people want and don't want.

In everyday conversations about growth, there is no requirement and little incentive to define terms. But the Task Force is charged to be more rigorous in its discussion of growth. What, exactly, is growing? Is it growth or its effects that are of concern? What are the important cause-and-effect relationships between what grows and its impacts? For the public debate about growth to go beyond opinions, we need to define the terms and describe the causal relationships.

### ***Growth means more people (but other things grow too)***

Local policy debates about growth focus on the growth and management of people (as residents and workers), the development that they require, and the public services that the development requires (which end up affecting these and other aspects of our quality of life). In its broadest sense, growth management covers most of what concerns citizens and governments, including:

- *Economic development*: the growth of jobs; the incomes, security, and opportunity those jobs generate; the buildings in which those jobs are located; the infrastructure that allows the buildings to function.
- *Land use*: the location and pattern of population and employment; the design of the buildings and neighborhoods that accommodate it; the policies about the infrastructure that supports it.

*“Oregon families already make decisions to limit growth: they have far less than the twenty or more children possible during a couple’s lifetime. They decide to value other things more than increased family size. Similarly, the difference between ‘no-growthers’ and ‘pro-growthers’ is not about a basic belief in growth limits, but about how much growth is valuable.”*

*Oregon state agency planner*

- *Public facilities*: the type, amount, quality, location, and price of facilities that allow and encourage growth to occur, and mitigate its impacts; the tax and fee system that funds the infrastructure.
- *Public safety*: protection from crime, fire, other natural hazards; emergency medical service.
- *Natural resources and environmental quality*: the health of ecosystems that are the ultimate sources of the resources that growth requires.
- *Markets*: the extent to which society should rely on individual decisions and unfettered markets in determining the amount, timing and location of our growth.
- *Social justice*: programs to deal with the people growth adds, and the impacts it creates on those already here.

No report can cover all these aspects of growth in the detail they deserve. This report narrows the definition of growth to focus on:

- Growth in Oregon and its communities
- Growth of population and employment
- Growth in and around urban areas, where most of the people are (while considering impacts on natural systems, farm land, and forest land).

For some people, the growth of population and employment, per se, is a primary concern. But for most, the problem is that population and employment growth are associated with and suspected to be the primary causes of the growth of other things they don’t like: growth of development (primarily housing units, secondarily non-residential space); of resource consump-

tion, both natural (e.g., farm and forest land) and social (e.g., infrastructure); and of impacts on people and government. They see a clear chain of cause and effect: more people, more development, more resources consumed, more impacts.

### ***Many things contribute to growth, and growth has many different impacts***

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As defined for this study, growth has multiple causes. Many of the things that cause growth are affected by growth itself: there are feedbacks. Descriptions of the relationships can be too simple (growth is good for the economy) or too complex (computer models of urban growth) to be of much use to local and state policy making. This section attempts to illustrate the basic relationships.

The population of a region grows because of natural increase (more births than deaths among the resident population) and migration (more people moving in than people moving out). In Oregon, on average and over the long run, roughly a third of its growth has been from natural increase: births exceed deaths. There are policies that can reduce that component of growth (for example, information about and access to birth control devices, education for young adults), and there is some evidence that in the US and Oregon some progress is being made to reduce fertility rates, especially for teenagers. But that component of growth and growth management is not part of this study.

When people describe local growth problems as being too many people, they are more likely to be referring to the other 70% of growth: people moving to Oregon. Figure 2-1 shows that people are drawn to a region for two general reasons: both apply to some extent to all moves, but different people

weigh the components differently. The majority opinion among those who study economic growth and migration is that most people move to Oregon for a job, but quality of life is attracting more people who choose Oregon as a place to live and assume a job will follow.

As important as the amount of growth is its location: where do people move to in Oregon? Figure 2-2 shows where cities and highways have located. Chapter 3 shows most of the growth goes to urban areas. Large urban areas tend to be found in valleys or on plains, and at historical transportation hubs. These factors explain the concentration of growth in the Willamette Valley: it provides large amounts of buildable, arable land, and is easily served by infrastructure, especially transportation.<sup>1</sup>

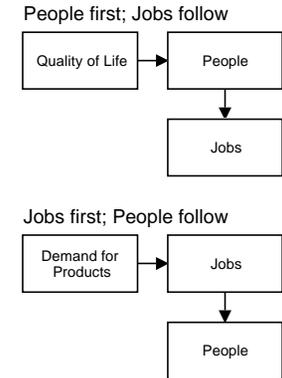
The causes and impacts of growth are multiple and interact in complex ways. Figure 2-3 illustrates a full-cost framework in concept.<sup>2</sup> A complete discussion of the impacts of growth would not only look at all impacts (both positive and negative), but also would evaluate those impacts across area, time, and type of household impacted. In practice, a comprehensive accounting of all costs and benefits of growth is impossible. Chapter 4 explains why.

Figure 2-4 gives an example of the complexity of growth issues. It shows factors that influence a typical concern about growth: its effect on the cost of real estate. A more complete model would have to be disaggregated by type of use (e.g., residential, industrial) type of product within each use (e.g., single-family dwelling, multi-family) and type of household with effective demand for those uses (e.g., by household size, age of household head, income). Yet public debates about the impacts of growth on real estate prices are often based on much simpler models than that in Figure 2-4.

And growth affects much more than the cost of development. It potentially has impacts, for good or ill, on almost every aspect of what people care about—of what constitutes their quality of life: environmental quality, social amenity, economic welfare, and cost of living. Each of these general factors comprises many others. Economic welfare, for example, comprises wages, job opportunity, job security, job diversity, and other factors. Chapter 4 describes how growth impacts these elements of quality of life, and attempts to quantify those impacts for Oregon where possible.

Given these many factors and their many interrelationships, there are few conclusions one can draw about the impacts of growth

**Figure 2-1: People follow jobs, and jobs follow people**



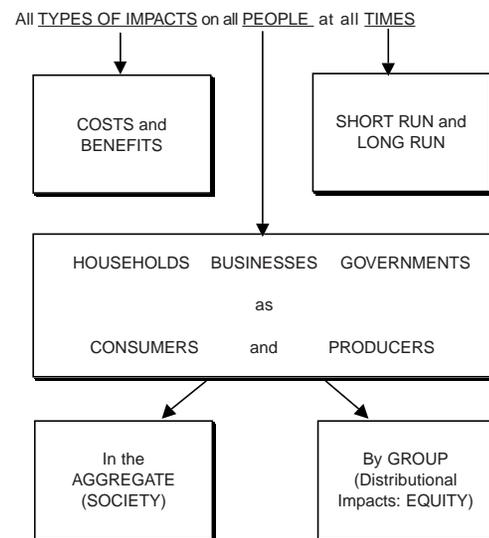
**Figure 2-2: Growth goes primarily to urban areas; for several reasons, the biggest urban areas in Oregon have been, and will continue to be, in the Willamette Valley**



ECONorthwest  
UO Geography Department, InfoGraphics Lab, 1998

Sources: Oregon Department of Transportation  
Oregon School Atlas Project

**Figure 2-3: In theory, good answers to questions about the net impacts of growth require a full-cost framework. In practice, calculating and summarizing full impacts is extremely difficult**



based on theory: measurement is required. Nonetheless, most analysts of regional and metropolitan growth believe that inter-regional growth—i.e., migration into and out of a region—is driven by the relative performance of regions on the factors of quality of life just described. Any region that temporarily has relatively high wages and environmental and social amenity, and relatively low cost of living can expect (1) in-migration, and (2) changes in any or all of those variables that will reduce the pressure for in-migration. An implication of this dynamic is that if Oregon succeeds in maintaining its quality of life (and enhancing it relative to other regions) then it should expect more growth pressure. If it tries to use public policy to curb that growth, it should expect increases in cost of living as people wanting what Oregon has try to outbid one another for the places available.

***Many state and local policies attempt to manage growth in Oregon***

Public policy can have a big influence on growth. It can try to affect the amount of growth directly, either positively (e.g., business recruitment and incentives) or negatively (e.g., limits on building permits). But most policies affect growth indirectly, by affecting any or all of the key variables mentioned above that make Oregon more or less attractive relative to other regions. Policies tend to aim less at growth per se, and more at its impacts (e.g., on the environmental, social, and economic aspects of quality of life).

Chapter 5 describes in more detail the kinds of policies available to state and local jurisdictions to manage growth. Most of them are available in Oregon. Some are implemented by

state agencies, many by local government. The State allows and has encouraged the use by local governments of a wide range of tools to manage growth. They include direct controls through regulation, indirect controls through pricing and taxing, and incentives. Most are applied via the land use process (e.g., zoning, planning, urban growth boundaries), development design (e.g., planned-unit developments, transit-oriented development, site standards), or public facilities (e.g., level of service standards and codes, pricing of hookups and use).

In addition to these policies, all kinds of variations in taxing and spending policies by state and local government can affect the amount, type, location, and impacts of growth.

***No amount of definition and data will make discussions and decisions about growth easy***

People approach growth from different perspectives. The sidebars show some of the dimensions of those differences. Among them is a fundamental difference about the relative importance of preserving natural systems and enhancing economic opportunity.

Advocates of slow growth tend to start from an ecological perspective: they emphasize limits to growth, carrying capacity, and the inadequacies of technological fixes. Many of them see an impending collision of consumption and resources at a global scale: increased population and per capita consumption are approaching, or have exceeded, the limits of natural systems to sustain the consumption. Their concerns are not only technical; for many we have a moral obligation to reduce consumption and conserve natural systems.<sup>3</sup>

People who favor growth tend to start from an economic perspective. They emphasize the historic ability of technology to

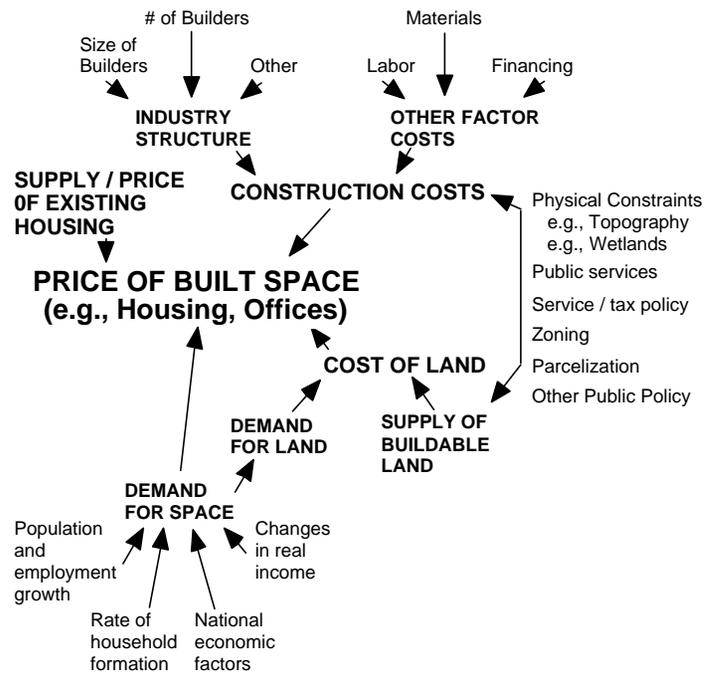
sustain a larger population at a higher standard of living, the benefits to societies and individuals of increased and more efficient production, the ability of proper pricing to signal resource scarcity, and the inequity and impacts on freedom of government controls on economic development.

There is evidence, however, that markets have not always led to wise use of resources. The problem occurs when market prices faced by individuals in a transaction do not reflect the value of all the impacts of that transaction on third parties: when there are *external impacts*. The savings and loan debacle of the early 1990s, the collapse of US fisheries, the loss of salmon in Oregon streams are all examples. Problems with externalities and public goods are not usually addressed completely without collective action, which usually means government actions. Such actions can supplant the market, or work with it to adjust the prices at which resources are being traded to more accurately reflect their full (collective) value.

Thus, the debate about growth is a debate about tradeoffs and philosophies. Most people involved with state and local policy accept that both markets and government play a role in creating an Oregon where people want to live. Focus groups on growth reveal other similarities among people who otherwise differ in their opinions about the desirability of growth: they that quality of life is extremely important and should be protected, that development should pay its full costs, and that there is a wide range of the policies available to control growth to protect quality of life.

The debate is that some people think market forces have too much impact on what Oregon will look like, while others think the net result would be better with less government regulation. The debate is less about general goals than about which policies best achieve those goals: do we have the right policies

Figure 2-4: Growth has many components, and many that interact



and, even if we do, are they being implemented in a way that effectively achieves their desired objectives?

That Oregon communities can have a debate about growth implies that people believe that government actions can influence that growth and their communities' futures. Oregon has many possible futures, many of them including higher standards of living for its residents. Who its residents will be, what jobs they will be doing, and what the world in which they live and work will look like depends in part on decisions made now about what we hope that future will be.

### Attitudes differ about growth in Oregon

Many surveys have been conducted regarding public attitudes toward growth. Though generalizations are risky, here they are:

- People tend to emphasize the negative impacts of growth over the positive ones.
- Attitudes depend on how much growth an area is experiencing: recessions raise people's concerns about deteriorating economic opportunities and shift attitudes toward activities that stimulate growth (economic development policies).
- In random samples (as opposed to surveys of a particular interest group), a majority of people favor some type of government policy to manage growth (though there is less agreement as the policies get more specific).

In Oregon, several recent surveys have been conducted. Portland General Electric sponsored three statewide surveys on "Growth and the Economy" in 1996 and 1997. Some of the key findings:

- Oregon is on the right track (about 55%)
- The biggest problem facing Oregon is school funding, but "growth and overpopulation" rose steadily for each successive survey as the top answer (5%, 10%, 15%)
- People are about evenly split on whether growth has been good or bad for Oregon. There is only a small amount of variation across regions of the state, and none for areas classified as "high-growth." The trend statewide in successive interviews is for average responses to shift slightly from good to bad.
- If people believed the economy had improved their quality of life, they were much more likely to say growth was good for the state.
- On a scale of 1 to 10, people consistently gave Oregon about 5 as a rating for how well it is managing growth.
- Lower-income households felt growth had not improved their quality of life; higher-income households felt it had.

Choosing a future implies also choosing public policies that contribute to its reality. Those policies include ones about how to manage growth (i.e., about the proper scope of government action in a process of growth that is primarily driven by private actions). Some of the issues to consider when evaluating growth impacts and growth management policies follow.

### Growth and its impacts

Ultimately, it is growth's impacts—how something affects the welfare of Oregon's residents by affecting things they value—that matter. Will we be most effective at getting the impacts we want by aiming at growth per se, or at the impacts themselves?

### Full benefits and costs

The impacts of growth may be positive (benefits) or negative (costs). As Chapter 4 shows, *there is no way to unambiguously calculate some net social impact of growth.*

In many circumstances, not all costs or benefits are captured in the monetary costs—the prices—at which goods transact. For example, even if a new house pays for a sewer treatment plant through a hookup fee, if that treatment plant is of a type or size that it still allows pollution to occur, then the housing is not paying its full costs. For efficiency and fairness, those *spillover* or *external costs* need to be estimated and included in the price the housing pays: to build a bigger or better treatment plant, or to compensate downstream users (either directly or through fines that regulatory agencies should impose).

### Aggregate impacts and sub-area or sub-group impacts

Even if one could demonstrate that a government's decisions to manage growth were, in the aggregate, beneficial to its citizens, it would still be the case that not all citizens would perceive themselves as better off. If one assumes that people are the best judges of their individual interest, then one only has to look at city council records and votes on ballot measures to see that no action to stimulate, manage, or curb growth is going to please everyone. That message also came across in the public meeting on growth in September: some areas wanted more, others less.

It is hard to identify supporters and opponents of growth as groups. One might expect people with poor or no jobs to favor growth. But one might also expect that many lower income people want to preserve quality of life or a rural life style, or believe that Oregon's economic boom is a boon for someone else (for example, middle- and upper-income professionals moving to Oregon). Similarly, it seems likely that upper-income residents are of mixed opinions: some will see growth as critical for their businesses and economic objectives; others may be comfortable with what they have and want to protect it from the negative impacts of growth (e.g., traffic congestion, overcrowding of public services).

#### **Current residents and new ones**

Some of the complaints about growth might more accurately be categorized as complaints about change, though the two are intertwined. Many current residents of a city moved there because of the way it was; newcomers are attracted by the way it is; few of either group are making location choices based on what it might become.

#### ***The debate about global growth in the long run only becomes relevant when we adopt policies today***

The Governor did not ask the Task Force to come to a conclusion about whether growth was good or bad. He asked it to assemble facts about the impacts of growth to help people form their own conclusions about the amount, type, location, and rate of growth that would be desirable or acceptable. The question about the net impacts of growth cannot be answered definitively by reference to a few numbers. The complexity of growth relationships, uncertainty, and the diversity of interests and perspectives allow reasonable people to come to dif-

ferent conclusions. Characterizing the choices confronting citizens in the region as pro-growth versus no-growth is wrong both politically and technically. We have a lot of choices in between.

Even if the question did have a definitive and politically acceptable answer, public policy does not have complete control over the amount or rate of growth. Growth management tools can discourage or encourage growth, but they cannot, by themselves, quickly stop or double population growth in Oregon.

Thus, the long-run questions about how much Oregon population will grow in 20 or 50 years, and what the impacts of that growth will be, will get answered not by policies that dictate what the future will look like, but by decisions we make today to deal with issues that we determine are affecting, or will affect, quality of life in Oregon communities. A vision of a future can create an impetus for those policies, but most of them will be about things that affect quality of life now.

Thus, a key question about growth should be: Given our best guess about what the future will be like (in terms of the amount of growth and its impacts) what should we do today to prepare for or change that future? How do we agree on a desired future and a set of policies consistent with that future, and with each other?

#### **Many factors contribute to those different views**

- *Location*: urban compared to rural; western compared to eastern; Willamette Valley compared to the rest of Oregon; Portland compared to the rest of the Willamette Valley
- *Socioeconomic characteristics*: income, presence and age of children
- *Occupation*: growth dependent, resource dependent
- *Views on markets and government*: markets work compared to markets fail; government is inefficient and unfair compared to government is necessary
- *Local economic circumstances*: growing compared to stagnating areas
- *Views on the environment and the economy*: ecosystem preservation vs. use; ultimate limits vs. technological improvements; consumption as waste vs. consumption as satisfaction



# Chapter 3

## Growth In Oregon: Trends and Forecasts

### SUMMARY

Of Oregon's 1997 population (3,217,000), almost 70% is located in the Willamette Valley, which contains only 14% of the state's land area. The State's Office of Economic Analysis predicts continued population growth: Oregon is expected to add one million people by 2015 and another million by 2040. Most of that growth comes from migration. In this decade, over 70% of Oregon's total population growth is from net migration (in-migration minus out-migration), not natural increase (births minus deaths).

When talking about the impacts of growth, both the amount and rate of growth matter. Slow growth rates in the Portland metropolitan area still add a lot of people to the state. Very high or very low growth rates in small communities may not have much impact on state growth, but may have big impacts on the local economy and quality of life.

The pattern of employment growth is similar to that of population growth. As for population, over 70% of Oregon's employment is located in the Willamette Valley. Employment has grown more rapidly than population in Oregon because of increasing labor force participation rates (especially among women), a larger share of the population of working age, and an increasing number of people holding more than one job. Employment varies more than population because employment is more closely tied to economic conditions.

Many forces have affected, and will continue to affect, growth in Oregon. These changes have occurred not only because of national and international economic and demographic factors, but also because of government action in Oregon.

Chapter 2 defined growth in terms of population and employment, and the built space that accompanies them. Figure 3-1 shows the growth of these components since 1977, adding vehicles (because complaints about growth are often about traffic congestion). Since these four components of growth have generally grown in unison, this chapter focuses on population as the measure of growth.

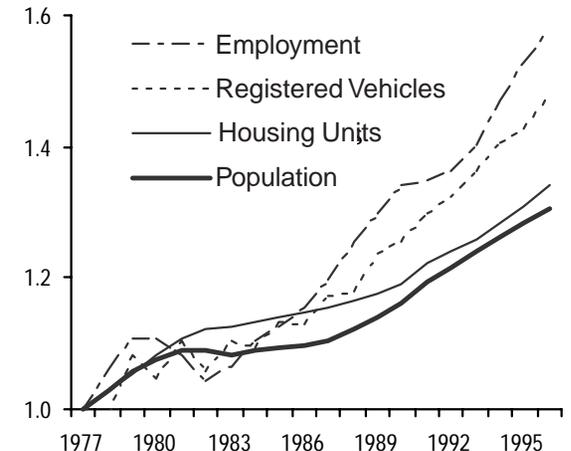
### *The Willamette Valley has always been Oregon's growth engine*

Figure 3-2 shows the long-run trend for population growth in Oregon and the Willamette Valley, which has always been the center of growth in Oregon.<sup>1</sup> The population growth rate in the Willamette Valley has exceeded that of the state in every decade except 1970–80, when population in Southern and Central Oregon grew at a rapid rate. Figure 3-3 shows almost 70% of Oregon's population (3,217,000 in 1997) is located in the Willamette Valley, which contains only 14% of the state's land area. Most of the Willamette Valley's population is in the metropolitan areas of Portland, Salem, and Eugene.

Population growth in every region slowed in 1980–90, primarily because of out-migration prompted by poor economic conditions. Oregon's population growth regained momentum in 1987, growing at annual rates of 1.4%–3.1% between 1988 and 1996. While the Willamette Valley received most of the population growth during this period (72%), Central Oregon had the fastest annual population growth rates.

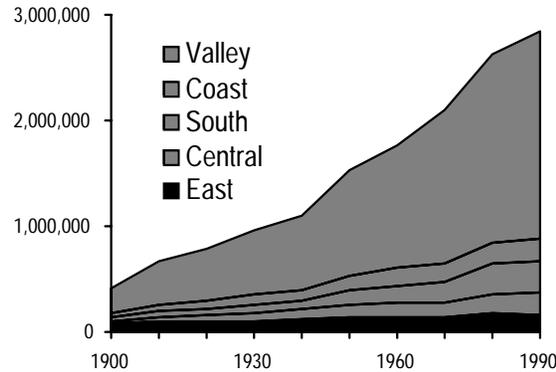
Population growth for Oregon and its regions has slowed in 1997, to 1.1% statewide, the slowest rate since 1987. Net migration into Oregon dropped from 34,000 in 1996 to 21,000 in 1997. The reasons most often cited for this slowing of population growth are the recovery of the California

Figure 3-1: Housing units, vehicles, and employment in Oregon have grown with population



Sources: U.S. Department of Commerce, Bureau of the Census, Intercensal Estimates of Population and Housing Units; U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System; Oregon Division of Motor Vehicles, Motor Vehicle Registrations by County. Indexed by ECONorthwest.

**Figure 3-2: Oregon's population has doubled roughly every 30 years, and the share of its population in the Willamette Valley has grown over time**



Source: U.S. Department of Commerce, Bureau of the Census. (1995). Population of Counties by Decennial Census: 1900 to 1990. <http://www.census.gov/population/cencounts/or190090.txt> Counties grouped into economic regions by ECONorthwest.

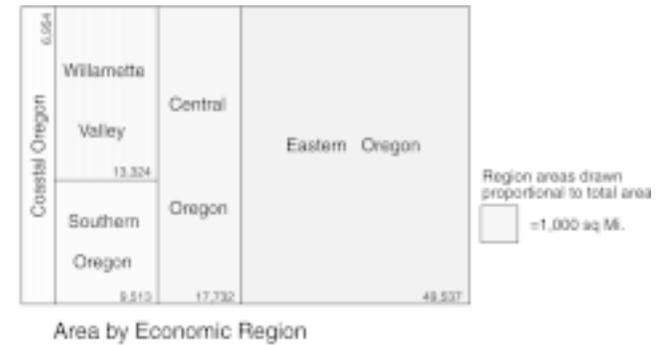
economy, the combination of a high cost of living (especially housing) and low wages in Oregon, and the perception of a decline in the quality of Oregon's schools.

The figures above illustrate a point well known to demographers: annual variations in a state's population growth rate average out to relatively stable long-run growth rates. The lowest the growth rate has been for any decade since 1900 is 0.8% (1980-90); the highest is 5.0% (1900-1910). The average annual growth rate for population since 1990 is about 2.2%, which means that, on average, population doubles every 30 years. For example, Oregon's population was close to one million at the 1940 census, and two million at the 1970 census, 30 years later. If the trend had continued,

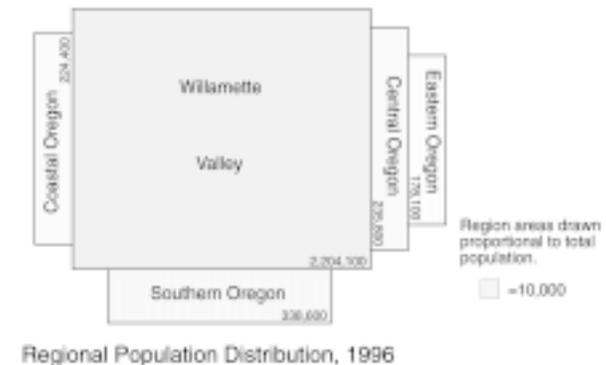
that two million would have doubled to four million in 2000. The 1997 estimate for population is only 3.2 million, so Oregon is unlikely to be at four million by 2000, primarily because of slow growth during 1988-90. That point illustrates another demographic truism: exponential population growth does not occur indefinitely.

Most of that growth comes from migration. Between 1990 and 1997, over 70% of Oregon's total population growth was from net migration (in-migration minus out-migration); 30% was from natural increase (births minus deaths). Net migration contributed a substantially larger share of population growth in the Coastal, Southern, and Central regions than for the state as a whole. Virtually none of Coastal Oregon's population growth was from natural increase. The only counties in

**Figure 3-3: The Willamette Valley has a disproportionate share of Oregon's population**



Area by Economic Region



Regional Population Distribution, 1996

ECONorthwest  
UO Geography Department, InfoGraphics Lab, 1996

Source:  
Center for Population Study and Research, PSU  
Oregon State Service Center for GIS

Oregon to lose population in the 1990–97 period were in Eastern Oregon: Harney and Sherman.

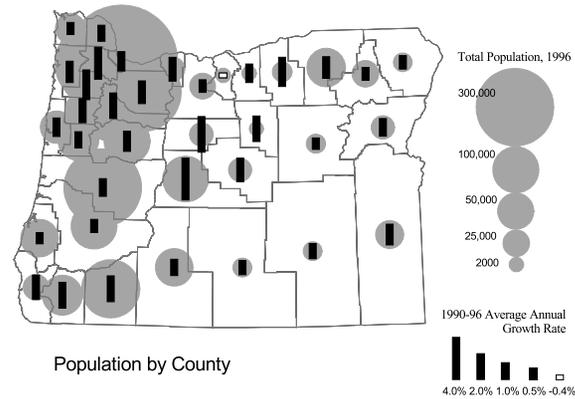
When talking about the impacts of growth, both the amount and rate of growth matter. Slow growth rates in the Portland metropolitan area still add a lot of people to the state; very high or very low growth rates in small communities may not have much impact on state growth, but may have big impacts on the local economy and quality of life. Figure 3-4 illustrates amounts and rates of growth by county. Figures 3-5 and 3-6 show Oregon's fastest growing cities, and their relative contributions to Oregon's population increase.

***New residents look a lot like us (only more so)***

One can find plenty of households in Oregon like the ones that are moving here. The differences only emerge when one compares average characteristics at a state or regional level. For example, Oregon has many young and well educated households, but on average the households moving to Oregon are younger and more educated than the average Oregon household. Recent in-migrants to Oregon have the following characteristics:<sup>3</sup>

- Most in-migrants are from California (43%), followed by Washington (12%), other states west of the Mississippi (18%), states east of the Mississippi (13%), and other countries (9%).
- Washington is the only state that attracts more people from Oregon than it sends.
- Compared to Oregon's population as a whole, in-migrants during the 1985–1990 period were, on average, younger and more educated, and were more likely to hold professional or managerial jobs.

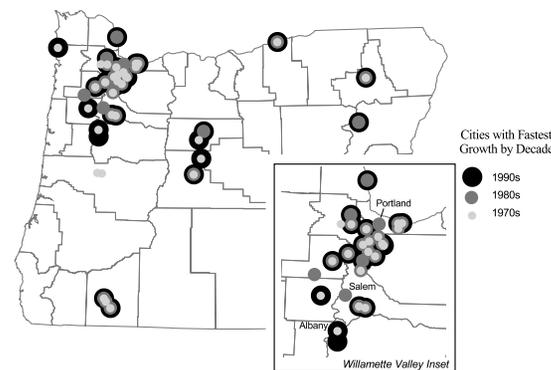
**Figure 3-4: Large amounts of growth do not necessarily mean high growth rates**



ECONorthwest  
UO Geography Department, InfoGraphics Lab, 1998

Sources: Center for Population Study and Research, PSU.  
Oregon State Service Center for GIS.

**Figure 3-5: Between 1970 and 1990, the fastest growing cities in Oregon change a little bit**



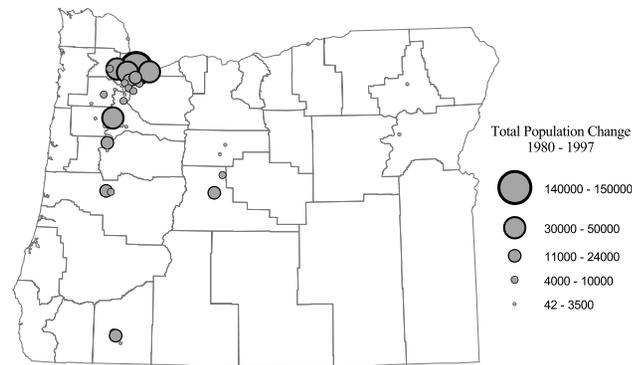
30 Cities with Fastest Rate of Growth by Decade

ECONorthwest  
UO Geography Department, InfoGraphics Lab, 1998

Sources: Center for Population Study and Research, PSU.  
Oregon State Service Center for GIS.

*“For every three newcomers trekking into the state, two native Oregonians have left. The result is a fast changing population mix. Fewer than half of the citizens in Oregon were born here.”<sup>2</sup>*

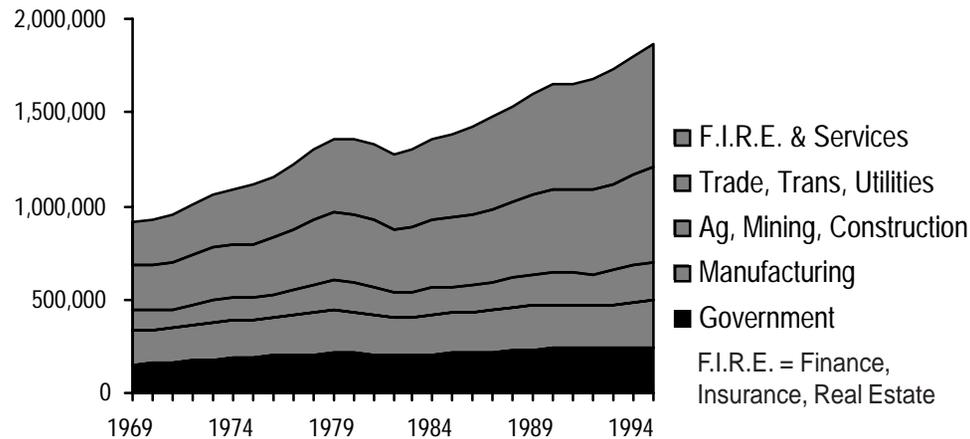
**Figure 3-6: But for cities as for counties, western Oregon—primarily the Willamette Valley—has gotten most of Oregon's growth**



ECONorthwest  
UO Geography Department, InfoGraphics Lab, 1998

Sources: Center for Population Study and Research, PSU.  
Oregon State Service Center for GIS.

**Figure 3-7: Finance and Services have led employment growth in Oregon**



Source: U.S. Department of Commerce, Bureau of Economic Analysis. 1997. Regional Economic Information System 1969-94. May. Employment grouped into sectors by ECONorthwest.

- The race and ethnicity of in-migrants generally mirrors Oregon's established pattern, with one exception: Hispanics made up 9% of in-migrants but only 3% of the state's population.
- The number-one reason cited for coming to Oregon was family, followed by livability, job, and cost of living.

Migrants come to different parts of Oregon for different reasons, and migrants to these regions have different characteristics:

- In-migrants to the Portland metropolitan area are typically younger persons or families (aged 20–34) with a professional or technical occupation; they tend to come to Oregon for job-related reasons. They generally share the values of existing residents—they are career-driven and family-oriented, with a deep affinity for the environment and a higher-than-average belief in education and the value of government services.
- In-migrants to central Oregon are older-than-average, wealthier, more highly educated people than their neighbors, with much stronger pro-environment beliefs.
- Southern Oregon in-migrants are, on average, “midlife elite,” the oldest newcomers (many are over 65), with slightly higher incomes and considerably more education than their established neighbors. They are more interested in funding education and government services than the typical southern Oregonian.
- Retirees and visitor industry representatives are adding economic diversity to coastal communities that have traditionally relied on timber and fish for their income. The impact of new arrivals is especially intense in low-population coastal communities, and the pressure on watersheds and affordable housing may become an issue in the near future.

- Two areas are the primary destinations for very wealthy immigrants: the central Oregon counties of Deschutes, Crook, and Jefferson, and Clackamas County in the Portland area.

***The number and types of jobs in Oregon have changed significantly***

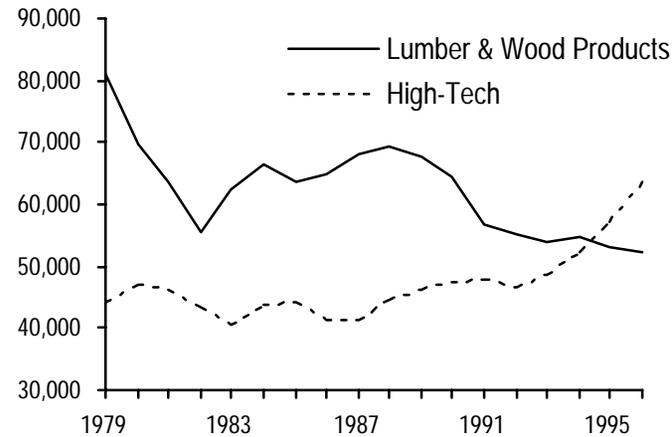
Trends for employment growth have been similar to those for population growth. Employment has grown more rapidly than population in Oregon because of increasing labor force participation rates (especially among women), a larger share of the population of working age, and an increasing number of people holding more than one job. Employment varies more than population because employment is more closely tied to economic conditions.

As for population, over 70% of Oregon's employment is located in the Willamette Valley. Accordingly, the Valley experienced the largest loss of employment in the recession of the early 1980s. The dominance of the Valley labor force means that the state trends described below are dictated by trends in the Willamette Valley: a more detailed analysis by county would show more variation.

Employment between 1969 and 1994 grew most rapidly in the 1970s, with annual employment growth above 5% in 1972–73 and 1977–78. More recently, employment growth rates peaked to just over 4% per year in 1988–89 and in 1994; the average annual employment growth rate in the 1990–95 period was 2.5%.

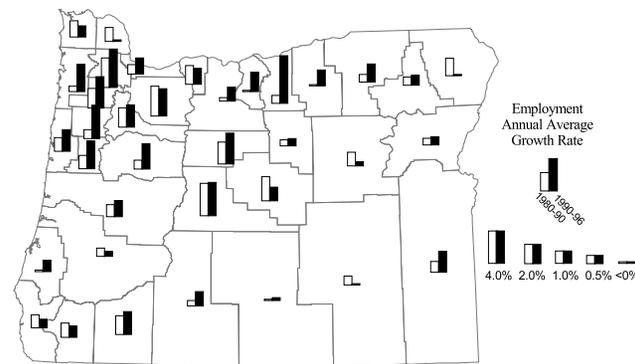
The composition of employment has changed since 1969. Figure 3-7 shows the level of employment by sector in Oregon over the 1969–1995 period. This figure clearly shows the domi-

**Figure 3-8: Employment in high-technology has surpassed lumber and wood products in Oregon**



Source: State of Oregon, Employment Department. Various years. Covered Employment and Payrolls. High-tech consists of the Industrial Machinery, Electronic Equipment, and Instruments industries.

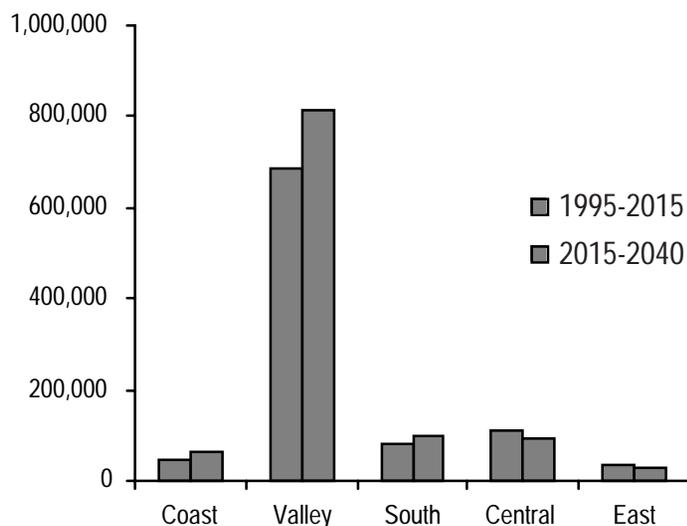
**Figure 3-9: Patterns of employment growth look a lot like patterns for population**



ECONorthwest  
UO Geography Department, InfoGraphics Lab, 1998

Sources: Center for Population Study and Research, PSU.  
Oregon State Service Center for GIS.

**Figure 3-10: Most of Oregon's future population growth will occur in the Willamette Valley**



Source: Oregon Department of Administrative Services, Office of Economic Analysis. 1997. Long-Term Population and Employment Forecasts for Oregon. Salem: State of Oregon. January.

nant change in the composition of employment over this period—employment growth has been led by the Finance, Insurance and Real Estate (F.I.R.E.) and Services sectors. The share of total employment in these sectors increased from 25% to 35% between 1969 and 1995. Slow growth in Manufacturing caused its share of total employment to decline from 20% to 13% over this period, while other sectors grew at rates close to the statewide average.

Looking at employment data by general sector masks another significant change in the composition of Oregon's employment—the decline of employment in the Lumber and Wood

Products industry and the concurrent growth of employment in high-technology industries (Industrial Machinery, Electronic Equipment, and Instruments). All of these industries are included in the Manufacturing sector shown in Figure 3-7. Figure 3-8 shows employment levels in these industries over the 1979–1996 period. It shows Lumber and Wood Products employment declining from its 1979 peak, and high-tech employment surpassing Lumber and Wood Products employment in 1995.

The changing composition of employment has not affected all regions of Oregon evenly:

- In every region, growth of Services employment has included jobs in restaurant, hotel, and recreation industries. Urban areas of Oregon have also experienced increases in relatively high-paying Service industries: legal, business, and health services.
- Growth in high-tech employment has been concentrated in urban areas of the Willamette Valley and Southern Oregon, particularly in Washington, Benton, and Josephine counties.
- The brunt of the decline in Lumber and Wood Products employment was felt in rural Oregon, where these jobs represented a larger share of total employment and an even larger share of high-paying jobs than in urban areas.

### ***Oregon will continue to grow and change***

Oregon's population is expected to continue to grow. A long-run population forecast by the State's Office of Economic Analysis predicts steady population growth at an annual average rate of 1.1% between 1995 and 2040. At this rate of

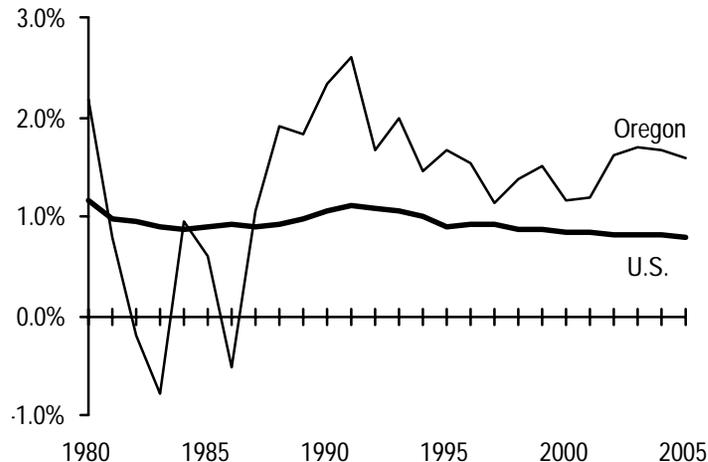
growth, Oregon is expected to add one million people by 2015 and another million by 2040, growing from 3.1 million in 1995 to 5.2 million in 2040. Over 70% of this population growth, 1.7 million people, is expected to come from net migration into Oregon.

Those forecasts make it clear why people are concerned about growth. A million more people in 30 years will need about 500,000 more housing units and the services and employment that go with them. As a rough estimate, they could create a demand for new urban land about equal to that which already exists in the Portland metropolitan urban growth boundary.

Population growth rates are predicted to be relatively even across Oregon's regions, with the Willamette Valley and Central Oregon growing slightly faster than the state. The result is that the share of Oregon's population by region does not shift more than 1% up or down over the 45-year period. Figure 3-10 shows the population forecast by region.

Actual population growth is likely to have much more variation than the steady growth rates used in the State's long-run forecast. A forecast of population growth through 2005 for the *Oregon Economic & Revenue Forecast* shows much more variation in the year-to-year growth of Oregon's population. Figure 3-11 shows the annual growth rate of the U.S. and Oregon population since 1980 and forecast through 2005. It shows the variation in Oregon's annual population growth rate, that with the exception of the recession of the 1980s, Oregon's population has grown more rapidly than in the U.S. as a whole, and this trend is expected to continue into the future. Barring a recession or other unforeseen economic conditions, Oregon's long-run population

**Figure 3-11: As in the past, annual population growth rates will vary**



Source: Oregon Department of Administrative Services. 1998. Oregon Economic and Revenue Forecast. Salem: State of Oregon. June.

*"Forecasts are for a million more people in Oregon in the next 30 years."*

growth rate should average out to the 1.1% rate anticipated by the long-term forecast.

***Many forces have affected, and will continue to affect, growth in Oregon***

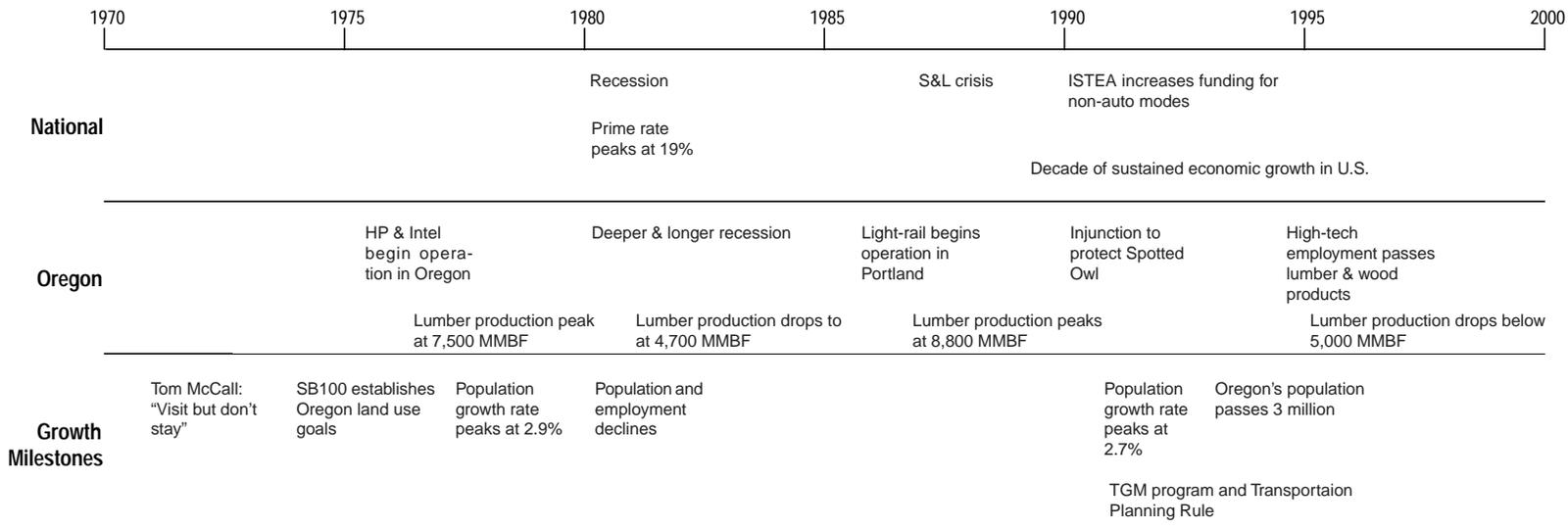
The data and figures in this chapter are pieces of a larger picture of growth and change in Oregon. The changes in Oregon have not occurred in isolation—Oregon has been affected by long-run national and international trends. The westward migration of the U.S. population, driven by economic opportunity and the increasing importance of amenities in location decisions, is likely to continue. Downturns in Asian economies notwithstanding, Pacific Rim trade will continue to be a significant part of

the nation's economy. In the last 20 years Oregon has made a transition to one of the most diversified state economies in the nation. Traditional resource-extraction industries are being supplanted by more diverse metropolitan economies. Oregon's national rank in economic diversification went from 13<sup>th</sup> in 1980 to 4<sup>th</sup> in 1992 (1<sup>st</sup> = most diversified).<sup>4</sup>

These changes have occurred not only because of national and international economic and demographic factors, but also because of government action in Oregon. State policy made a concerted effort to attract high-tech industries: with trade missions and offices in Japan and Taiwan, tax policy (e.g., no unitary tax, which would tax world-wide corporate income of businesses operating in Oregon), changes in Corporation

Codes, reforms to reduce the costs of workers' compensation, investments in infrastructure, and other incentives (e.g., enterprise zones and the Strategic Investment Program, which attempts to stimulate capital-intensive industries through property tax abatement). State policy on land use and environmental quality aimed at preserving the natural and cultural amenities that make Oregon attractive to its current and would-be residents and businesses. Figure 3-12 illustrates some of the key events that have influenced growth in Oregon since 1970, and in doing so repeats a theme from Chapter 2: Oregon's growth, and that of its communities, is a result of the interaction of many forces.

**Figure 3-12: Many factors have influenced growth in Oregon**



# Chapter 4

## *Impacts of Growth*

### **SUMMARY**

The impacts of growth can be negative or positive. This chapter attempts to discuss impacts comprehensively, and divides them into two categories: (1) the direct costs of providing public facilities to the development (housing, buildings, and public services) that new growth requires; and (2) other impacts on economic welfare, quality of life, and cost of living.

Regarding the direct costs of supplying public facilities (infrastructure) to new development, the report finds that (1) on-site infrastructure costs (e.g., for local streets, sidewalks, sewer, water lines and meters) for a single-family housing unit are on the order of \$15,000 to \$20,000, (2) the construction costs of off-site facilities (e.g. improvements to arterial streets, sewer and water trunk lines and treatment plants, schools, fire stations) are on the order of \$15,000 to \$30,000 per housing unit for new development at the urban fringe, (3) these average costs may vary widely for particular developments because of the specifics of site and locational characteristics relative to existing off-site facilities, local standards, and other factors, (4) in rough terms, it is probably the case that for on-site and off-site public facilities (setting aside schools and major upgrades to the regional transportation system) new residential development directly pays on the order of 50% to 90% of their capital costs (through developer provided infrastructure, hookup fees, SDCs and other impact fees, special assessments, exactions, and user charges), and (5) any summary like this one is necessarily approximate and needs to be used only with a clear understanding of the assumptions required to develop it (as described in this chapter and Appendix E).

Good public policy about growth must consider more than the direct costs of building the infrastructure it requires. It must consider other impacts, positive and negative, that are no less real because they cannot be measured in dollars, or perhaps cannot be measured well at all. Growth also affects many aspects of what people see as their quality of life, and these impacts (real or perceived) are often the source of the strongest sentiments about of growth: for example, impacts on jobs, income, traffic congestion, environmental quality, and crime.

### ***The impacts of growth can be negative or positive***

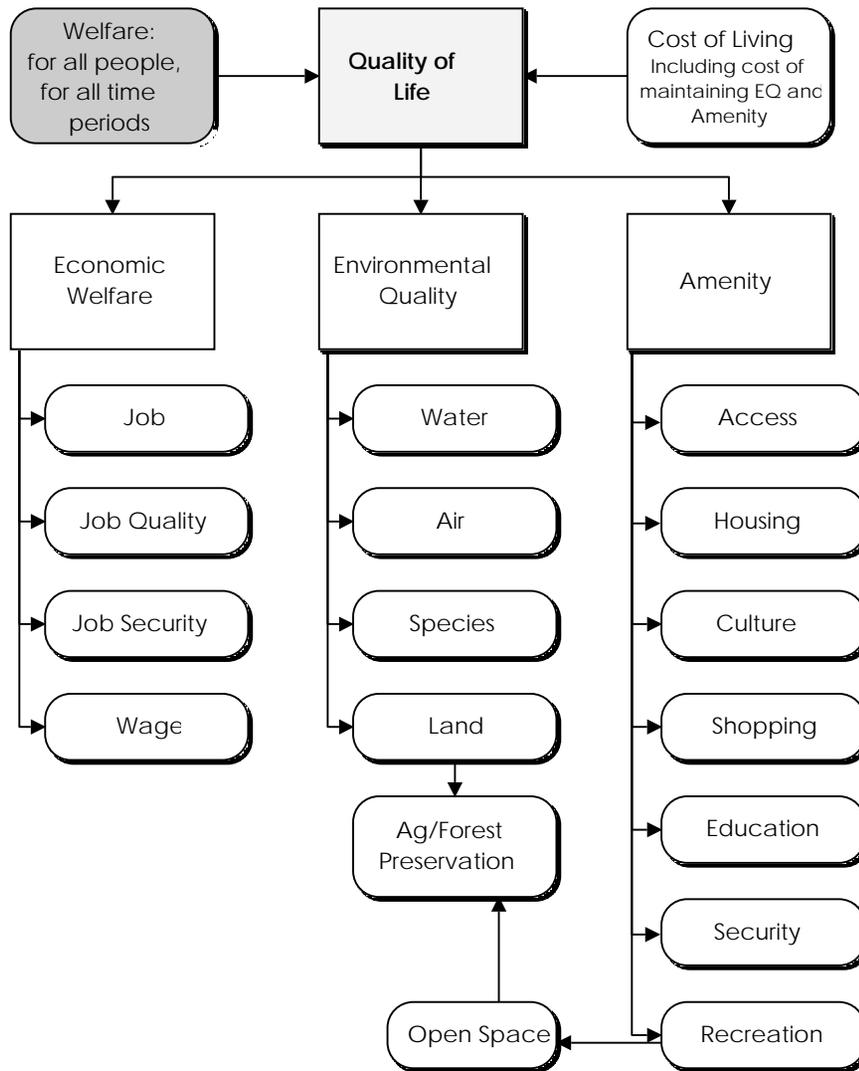
At several points this report has emphasized the importance of definitions. Nowhere are differences in definitions more apparent, and agreement more important, than when people discuss “the costs of growth.” Many of the numbers casually cited and compared in debates about costs are measuring very different things.

Any discussion of costs of growth tells at best half the story. This report has tried to consistently use the term *impacts* of growth to emphasize that those impacts may be costs (negative impacts) or benefits (positive impacts). Figure 4-1 organizes those impacts according to the aspect of quality of life that growth, and policies to manage growth, could potentially affect. Those impacts are, in broad categories, on:

- The economy (e.g., job opportunity, wage amount and security)
- Services and amenities (e.g., travel time, cost and level of service; cultural and retail opportunities)
- Social variables (e.g., change in neighborhoods and downtowns)
- The environment and natural resources (e.g., loss of farmland, changes in air and water quality)
- Cost of living (e.g., housing affordability).

There are problems with that organization, chief of which is that some of the big questions about growth do not fit neatly in those categories. For example, an overarching question about growth in Oregon is, Does growth pay its own way? That question cuts across issues of cost of living, public services, and finance. Another question is, Can growth be redirected from an

**Figure 4-1: Growth, and policies to manage growth, can potentially affect many aspects of quality of life**



area of the state with 'too much' to areas that 'need more' growth? Note also that cutting across any general discussion of impacts is a much more detailed discussion about their incidence: Who is impacted: Willamette Valley vs. Eastern Oregon; urban vs. rural; big city vs. small city; high growth area vs. low growth area; high income households vs. low income households?

Dealing with incidence makes any organization a problem. The ultimate concern should be about impacts on households and the individuals in them. Impacts on businesses and government are important primarily because they end up being passed on to households as workers and consumers (e.g., more and higher paying jobs; more and better quality products; lower prices), or as citizens and taxpayers (e.g., changes in the quality or cost of public services). In that context, the question "Does growth pay its own way?" gets recast as "Are current households in Oregon contributing through state and local taxes to the development of buildings, houses, infrastructure, and services that serve only households that are moving to Oregon from other states?" Or, at a sub-state level, "Are taxpayers in City X contributing to development that serves only people that currently do not live in City X?"

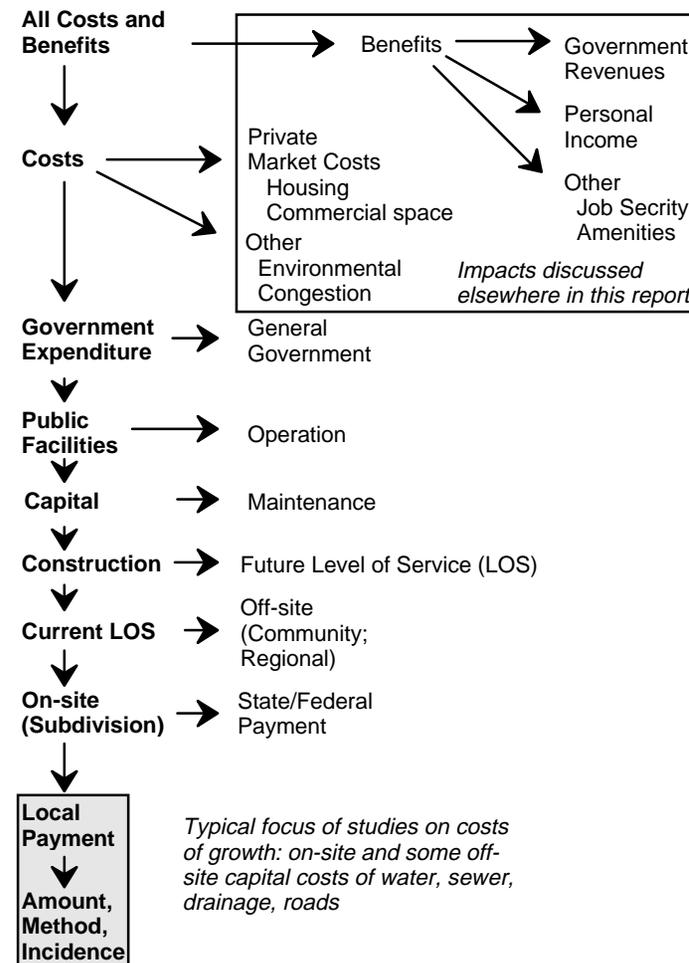
Despite the attempt of this report to discuss impacts (positive *and* negative), not just costs, most of the literature on growth impacts addresses only its costs, and does so using various definitions. In common usage, when people say some product "costs too much," they mean either that it is not a good value (what they get from the product is not worth it) or that the same product should be produced more cheaply (if producers were, for example, not so inefficient or greedy). People may complain about the high prices of a new car, a cappuccino, or a loaf of bread, but still buy them: they consider the benefits and estimate them to exceed their costs. The "cost of growth" literature, however, focuses, usually exclusively, on cost.

When benefits do get considered it is usually in the narrow sense of “revenues.” A fiscal impact analysis compares the impacts of new development on a government’s fiscal position to answer a limited version of the question, Is new development paying its own way? In the context of growth, the concern is less about, for example, the total cost of a house than about whether all the public costs of development are included in the price paid for the house. Thus, studies usually do not define the “cost of growth” to include the cost of land, lumber, and labor that go into building a new house because homebuyers are paying those costs; they usually focus instead on other costs of growth that homebuyers and others benefiting from growth allegedly do not pay.<sup>1</sup>

Figure 4-2 shows that a definition of the impacts of growth has many components. It starts at the top with all costs and benefits, and illustrates how typical studies of the costs of growth narrow the definition of costs. Near the top, for example, a broad definition of costs includes any resources used up to accommodate growth:

- *Direct monetary expenditures by the private sector:* for example, for land, labor, and materials to build housing
- *Direct monetary expenditures by the public sector:* for example, for the construction, maintenance, and operation of public facilities at a given level of service (some of which is reimbursed through development and user fees) and for other general government functions like administration and courts (some of which is reimbursed by taxes on the developed property or future fees on its occupants).
- *Indirect costs that are usually not denominated in dollars nor paid directly:* for example, environmental degradation, stress, loss of small-town atmosphere.

**Figure 4-2 Costs of public facilities are a subset of impacts of growth**



**How this chapter is organized: What are the impacts of growth (positive and negative)**

**DIRECT COSTS OF GROWTH (PUBLIC FACILITIES)**

Definitions

Summary of literature on direct costs

Who pays those direct costs

Caveats (Beware simple statements)

**OTHER IMPACTS OF GROWTH**

**Economic welfare**

**Environmental quality**

Water supply and quality

Air quality

Species

Land

**Amenity**

Access

Housing

Culture

Shopping

Education

Security

Recreation

**Cost of living**

Typical studies of costs of growth address only a few of those costs. Most often they are limited to looking at the costs of constructing capital facilities (usually transportation, water supply, and wastewater treatment, and sometimes drainage and schools) that development requires before it can be occupied (in Figure 4-2, the bottom left corner). The narrow focus on capital facilities gets even narrower: not all facilities are considered in every study. Some studies look only at on-site facilities (i.e., the roads, sidewalks, pipes, wires, and other structures and land that are within the boundaries of a new development). If off-site facilities are examined (e.g., sewage treatment plants, improvements to arterials, schools), it is usually only partially. Nonetheless, this subset of costs (itself a subset of total impacts) has usually been the focus of the debate about the impacts of growth.

Because there is so much inconsistency in discussions of the costs of growth, it is worth repeating the central point of this section in a different way. Ultimately, the costs of growth do get paid. The questions for the public policy debate are who

pays, when, in what form, and is that fair? Some costs are paid directly, up-front, and in dollars by players in the development process. Most of those costs, and others, are paid up-front, in dollars, by the households and businesses that be-

come owners of the development. Other costs are paid later in dollars by the owners of new development: special assessments, property and income taxes, user fees. If all those fees do not cover what it costs to provide the facilities and services the development requires, then current residents and businesses pay some of those costs directly in dollars by paying more in taxes and fees than they would have if growth had not occurred. Finally, to the extent that growth causes impacts, positive or negative, that are indirect and not captured through market prices, taxes, or fees (i.e., *externalities*), those impacts hit new and current residents and businesses alike.

Thus, this chapter is organized to address two multi-faceted questions about growth:

- *Direct costs of growth: what are they and who pays?* For this report, the direct costs of growth means the costs of providing public facilities to the development (housing, buildings, and public services) that new growth requires. This definition is admittedly narrow, but necessary. Because much of the debate about growth is whether it pays its own way in this narrow sense, this report puts this aspect of impacts into its own section.
- *Other impacts of growth: what are they and who is affected?* Growth has many effects besides the need for monetary outlays to build infrastructure and structures to accommodate it. That construction can have secondary impacts (e.g., loss of farm and forest land, air quality, water quality) that are not easily measured in dollars or, in some cases, any other units (e.g., sense of community). This section provides information about all these other costs.

### ***Direct costs of growth: what are they and who pays?***

This section addresses a *subset* of costs: the direct (monetary) costs of providing public facilities to the development that new growth requires. Even with this limited definition, different studies of cost usually focus on only one of many possible questions about direct costs:

- *What are the costs of growth, per se?* Few, if any studies, have been able to adequately address this overarching question. There are many reasons, but the key one is that growth has too many dimensions to measure. Growth is more than land development. Even if growth is defined that narrowly, there are many different kinds of land development (e.g., residential, commercial, and industrial) and many different ways that development can occur (e.g., by location, design, and density).
- *What are the costs of some specific development type?* For the reasons given in the previous point, most studies of the cost of growth focus on a certain type and pattern of development. Nationally, research has been driven by the debate about urban sprawl: do low-density development patterns cost more than higher density ones? The fact that such studies exist and find differences in cost based on the location and pattern of development shows why simple statements like “growth costs \$X per housing unit” are misleading: the estimate depends on many assumptions about the type and location of housing, its density, the size and economic conditions of a particular jurisdiction, the preferences of local residents for a particular level of service, and so on.
- *What are the fiscal impacts of some development type?* This question expands from the previous one about a subset of

costs (i.e., direct public costs) to include a subset of benefits (i.e., public revenues). Many studies have been done to estimate whether particular development types cost local governments more than they contribute.

- *Who is paying the costs, and is that fair?* This question expands on the former one to look at where the revenues to pay for the direct public service costs of growth are coming from, and the extent to which it meets some normative judgment about who *should* pay.

Appendix E of this report explores these and related questions in much more detail. It provides some standards for evaluating studies of the costs of growth, discusses problems associated in applying those standards, and evaluates several studies nationally and from Oregon that attempt to measure the costs of growth. Because the issues are complex, so is the discussion, which is why most of it has been relegated to an appendix. The rest of this section summarizes only the key findings.

#### **Comparing studies of costs of growth requires a definition and understanding of standards for evaluation**

Any study of the costs of growth should be specific and clear about several categories of assumptions. The point is not that there is a single right assumption for each of the points that follow, but that results cannot be interpreted without understanding what assumptions were made:

- *The question about the costs of growth addressed.* For this report, the essential question about direct costs is: Are the new people, employees, and development that are contributing to and benefiting from growth in a community paying a fair share of the additional costs of the public facilities and services they require?

- *The subset of costs evaluated.* This report, for example, focuses on the direct costs of key public facilities; other sections discuss other impacts (both costs and benefits). But the studies reviewed in this section do not all address the same facilities, and most do not consider indirect overhead costs of service provision
- *The treatment of capital and operating costs of public facilities.* Prior to 1980, most fiscal impact analyses focused on operating expenses and ignored construction costs. Many more recent analyses of costs in Oregon have gone the other direction, estimating construction costs but not operation costs. Direct costs obviously differ substantially with decisions about which costs, how long a time period to consider, and how to treat existing excess capacity (should growth be charged for its marginal cost or its average cost?).
- *The distinction between real costs and financing.* Using financing costs to estimate costs of growth may or may not be an appropriate measure of the true economic costs of the resources that growth requires. On the one hand, when capital improvements are financed, their cost may be reported as an annual payment, which can then be added to annual operating costs to get a rough approximation of an annual equivalent cost of the service. On the other hand, when some facilities are financed over a period not equal to their expected lives, when some facilities are financed and others are not, or when facilities are partially financed while other payments come from transfers from other local or state revenue sources, financial costs may bear little relation to the real economic costs.
- *The type and pattern of growth evaluated.* For this report, the focus is on residential growth in general, and on trying

to get an average cost per new household or housing unit. Obviously, the type and location of the housing unit that is built to accommodate the new household will have an effect on the costs the new household imposes on public facilities and services. Moreover, those facilities do not service residential development exclusively—they also serve commercial, office, and industrial development. Thus, total costs of new facilities cannot be reasonably attributed to housing only.

- *The other factors that influence cost.* All cities and counties do not offer the same package of services. Differences result from many factors, which include the historic pattern of growth; prior investments in and directions for services; and the preferences of property owners for type, level and cost of service (which is in part a function of their socioeconomic and demographic characteristics). Federal and state mandates have increased requirements for local facilities and services, while a phase-out of revenue sharing has reduced payments for others. Jurisdiction size also influences costs: larger cities typically provide more services.
- *The normative assumptions.* One can ask not only, *Does* growth pay its own way? but also, *Should* growth pay its own way? The answer depends on one's assessment of what is fair.
- *The limitations of the estimates.* There is a lot of uncertainty about the estimates of the amount and composition of population, its demand for services, costs, and all the other factors that go into calculating what a fair charge for the direct costs of public facilities should be. Some of that uncertainty is inherent (we can never be sure of the future until it's the past); some of it is introduced by bad techniques and data.

### **The literature suggests a range for cost estimates**

Appendix E evaluates studies done both nationally and in Oregon on the costs of growth: go there for a more detailed discussion of the multiple problems in interpreting the results of those studies. The rest of this section reports only the conclusion of that evaluation with respect to the direct costs of supplying public facilities (infrastructure) to new development. See Appendix E for details. *In summary, a review of the literature found:*

- Any estimate of infrastructure costs must be explicit about, at least, the facilities considered, capital and operation and maintenance costs, on-site and off-site, and marginal and average costs. Unless otherwise noted, the analysis that follows is for average, capital costs only. Which facilities, and whether they are on-site or off-site, are noted explicitly.
- Total on-site costs of neo-traditional development does not cost less than traditional development in the aggregate at the subdivision level: for reasons described in Appendix E, it may cost more. But smaller lot size means more lots (greater density) and less, in most cases, cost per lot. The costs of housing construction (i.e., the structure itself, net of on-site and infrastructure costs) of neo-traditional types are about the same as traditional dwelling types (when controlled for quality) on a square-foot basis.
- On-site infrastructure costs (e.g., for local streets, sidewalks, sewer, water lines and meters) for a single-family housing unit in a typical subdivision are on the order of \$15,000 to \$20,000. Lower costs may be possible for large scale or denser developments, though higher costs are more likely as easier sites get used and requirements for stormwater retention and open space dedication increase.

- Because on-site costs do not vary much by subdivision design, any large differences in cost per single-family housing unit are usually a result of differences in off-site costs, which are more heavily dependent on the location of the development than on its design. The construction costs of off-site facilities (e.g. improvements to arterial streets, sewer and water trunk lines and treatment plants, schools, fire stations) are on the order of \$15,000 to \$30,000 per housing unit for new development at the urban fringe. Estimates could be even higher depending on what services get included and the specifics of site and locational characteristics relative to existing off-site facilities.
- These average costs, even if correct on average, would vary a lot depending on the type of household (the socioeconomic and demographic characteristics of the household affect its demand for services).

### **For public policy, estimating who pays the direct costs of public facilities is as important as estimating how much they are**

So what? So what if the incremental contribution of an average housing unit to the cost of construction of new public facilities (on-site and off-site) is about \$40,000 to \$50,000 (or even more)? In general, our laws and conventions are not concerned about what somebody willingly pays for something he wants—they care when he does not pay. The real question is, Are the right households paying for these public services? In summary:

- Determining who pays these costs requires a basic understanding of how taxes and fees are used to finance public facilities in Oregon.

*“Average infrastructure cost for a single-family housing in a typical subdivision:  
Onsite: \$15,000 - \$20,000  
Offsite: \$15,000 - \$30,000”*

*“In rough terms, it is probably the case that for on-site and off-site public facilities new residential developments directly pay on the order of 50% to 90% of their capital costs.”*

- Measure 50 provides some incentive for cities to annex adjoining areas sooner than they would otherwise, because it allows new construction to add to a district's tax base.
- Regarding who pays the costs of growth, new development pays its share of property tax under the new rules (i.e., everybody pays proportionally less, but new development gets no special break). The new property tax rules allow budgets to grow if new property is annexed to a taxing district. Without annexation, it is unlikely (though theoretically possible) that municipal budgets could grow if growth (and, therefore, increases in taxable value) was high.
- In response to declining property tax revenue, many local governments have turned to fees in general, and in particular to system development charges and exactions on new development to help fund off-site infrastructure. The effects of such financing mechanisms are ambiguous: they depend on many other factors. If, for example, large system development charges (SDCs) are adopted by one city in a metropolitan area, the tendency in the short run may be to move development to other cities. If the financing in those other cities, however, is inadequate to handle necessary capital expansion and maintenance, then in the longer run their financial problems could drive growth away. If all cities in a region simultaneously increase SDCs, then the impact, if any, will be on the amount of regional growth, not its distribution.
- Many communities in Oregon use property tax abatements and enterprise zones to encourage business

location, retention, and new development. This practice has been increasingly criticized as citizens question the value of continued growth in their community.

- For new single family housing the construction costs of on-site facilities are paid almost entirely by developers (either directly as special assessments, or as fees to local governments and special districts).
- Some of the off-site costs are paid by developers through SDCs. Depending on many variables, those costs will be passed forward to the eventual owners of the new development (who may in turn pass most of them on to other users via rents or leases), passed back to landowners (via reduced land prices), or absorbed by developers (through lower profits, though this outcome is unlikely over the long run). Some are paid by past, current, and future property users through user fees calculated to recover costs of capital improvements. Some off-site costs are paid by past, current, and future property owners through taxes to retire debt. Some of the off-site costs are probably deferred,<sup>2</sup> with the result that either future households will have to pay for new facilities or accept a lower level of services, or methods and technology will have to change in ways that allow level of service to be maintained with less capital investment per capita.
- Thus, in rough terms, it is probably the case that for on-site and off-site public facilities new residential developments directly pay on the order of 50% to 90% of their capital costs (through developer provided infrastructure, hookup fees, SDCs and other impact fees, special assessments, exactions, and user charges). The percentage depends on how far one goes in allocating off-site public facility costs to new residential growth, and local circumstances (e.g., for

revenue collection and services standards). The percentage would be toward the high end if one does not count very large regional facilities (e.g., light rail in Portland, new electric generating capacity in Idaho), but does count property tax contributions to debt retirement for existing capital. It moves toward the lower end if one does the opposite. For the types of facilities that the cost literature commonly deals with (sewer, drainage, roads, parks, schools), it seems unlikely that the percentage could be much below 50% because (1) probably at least 30% to 40% of the capital costs are on-site costs, which are uniformly paid by development, and (2) all jurisdictions have some combination of hookup fees, SDCs, special assessments, and exactions to pick up some of the off-site costs. For operation and maintenance, it appears that new development, with its higher value and occupancy by households with higher than average incomes, pays more than its fair share of O&M.

These summary points make the evidence sound more straightforward than it is. Every point has a counter-point and qualifications. Do households that move within a city from an old house to a new constitute new growth, or is the growth the people that move from outside the city into the old house? Are SDCs paid entirely by new houses, or do SDCs increase the prices of all housing (new and old) so that their incidence is more diffuse? Appendix E provides more detail.

When interpreting the previous estimates, remember its limitations:

- The analysis in this deals with only the direct costs of public facilities and services for residential development. One possible assumption is that those facilities and services are of a quality that there are no large spillover costs. But that

assumption is probably incorrect. For example, the pricing of roads, the operation of combustion engines, and highway congestion means that there are spillover social costs.

- The analysis at this point does not discuss any of the benefits or beneficiaries of growth. It is not only developers who benefit, nor even just those involved in development (e.g., builders, Realtors). New homeowners benefit; existing homeowners may benefit from higher property values. Businesses and profits grow. The loss of farmland has a cost (for the farmer who wants to farm and urban residents that want open space and the protection of food-growing capacity), but it also has a benefit (to the farmer who wants to sell, and to the new homebuyers that might see lower prices).
- Even if the summary estimates of capital costs of public facilities were comprehensive and exactly right and if there were no other external costs of growth, one could still present the numbers in different ways to tell different stories. One story is that the average single-family house may not be directly paying, through up-front charges, anywhere from \$5,000 to \$25,000 of the capital costs of the public facilities it requires. That statement would have to be qualified by the statement that some, maybe most, of that up-front underpayment may be being paid through property taxes, user fees, and special assessments: it depends on the specific case. An alternative story starts with the total cost of a housing unit. When a buyer pays \$200,000 for a new house, he is paying for permit fees, construction costs, public facilities, SDCs: everything that went into the cost of building the house. If the capital cost he is not paying amounts to \$10,000, then his purchase price has covered 93% of the cost of the that new housing unit: the structure, the on-site infrastructure, and the off-site public facilities.

### **Beware simple statements about “costs of growth”**

The previous section on the direct costs of growth has tried to illustrate why the answer to a simple question like “Does growth pay its own way?” has to be “It depends.”

The essential question about growth is about welfare: (1) Is growth likely to make people in some area over some period better off, in the aggregate, and, if so (2) Does it do so without having unacceptable costs on other areas, or on subsets of people within the area being considered? Again, no definitive answer to that question is possible. It depends on:

- Characteristics of existing and new infrastructure (e.g., whether there are economies of scale), which depend in part on the pattern (primarily density) of growth
- Characteristics of existing and new infrastructure (e.g., whether there are economies of scale)
- The way growth is distributed within the region
- What the governments choose to do: local governments have the ability to determine the magnitude and, sometimes, even the direction of the welfare change.

The next section provides information about other components of welfare (i.e., besides public facilities and their costs).

### ***Other impacts of growth: what are they and who is affected?***

The previous section is narrowly focused on direct costs (primarily for capital) to the public sector (primarily local government) for some of the public facilities (primarily roads, water, and sewer) that development (primarily residential) requires. Good public policy must consider other impacts, positive and negative, that

are no less real because they cannot be measured in dollars, or perhaps cannot be measured well at all. Growth also affects many aspects of what people see as their quality of life, and these impacts (real or perceived) are often the source of the strongest sentiments about growth: for example, impacts on jobs, income, traffic congestion, environmental quality, and crime. This section assesses these impacts, organized around the aspects of quality of life shown in Figure 4-1: economic welfare, environmental quality, amenity, and cost of living.<sup>3</sup>

### **Economic welfare**

A central aspect of quality of life is standard of living, which is strongly correlated with income. For most people, income is determined by their ability to earn money through employment or by operating a business; some receive income from investments and transfer payments (insurance or Social Security). Figure 4-3 shows personal income growth in Oregon by source between 1969 and 1996, in constant 1996 dollars.

A person's ability to earn income through employment or investments is affected by national and regional economic conditions. In general, a strong economy increases the opportunity for people to find a high-paying job and increases the returns on investments. Figure 4-3 shows total earnings declined in the early 1980s due to the national recession—that recession also caused per capita income in Oregon to fall behind the U.S. average. Oregon's per capita income has recently made gains but remains behind the U.S. level. Per capita income in Oregon and the U.S. is shown in Figure 4-4.

As shown in Chapter 3, employment in Oregon has grown faster than population since 1977. The economy has diversified. Oregon's unemployment rate has been at or below 6%

for most of the 1990s. For many people in Oregon who lived through the recession of the 1980s, Oregon was probably a better place for them in the early 1990s than it was a decade earlier. Certainly their incomes were higher, which is the most typical measure of economic welfare.

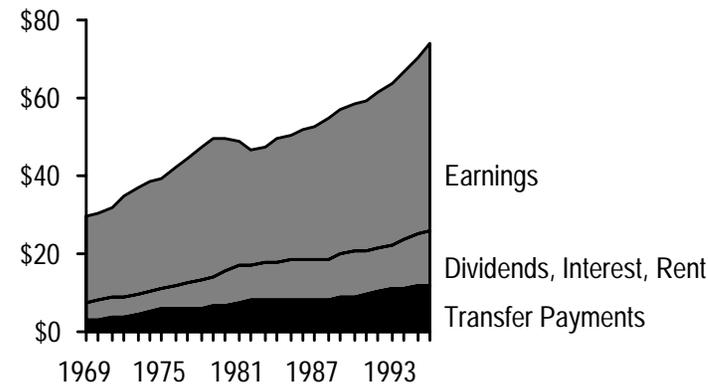
The result of a growing economy and increasing diversification has been growth in the earnings received by employees and business proprietors in Oregon. Figure 4-5 shows the earnings per worker, measured in 1996 dollars, between 1969 and 1996. This figure shows that earnings in Oregon took a sharp drop during the early 1980s recession, and have only recently begun to reach the levels experienced in the 1970s. The sharp decline in earnings was due, in large part, to massive layoffs of high-wage jobs in the lumber and wood products industry.

Oregon's strong economy has been a major force behind migration to the state. The steady influx of people has a multiplier effect, creating the need for workers in construction and government to build the housing and public facilities and provide the public services that a growing population requires. Oregon's economic growth has drawn people to the area, which in turn has created a need for more jobs.

But growth in jobs, earnings, and per capita incomes has not benefited all Oregonians equally. Much of the income growth for working families in Oregon has occurred because spouses entered the work force and all wage-earners were working more hours. Moreover, there is evidence that income inequality in Oregon is worsening—the top fifth of Oregon households earned nine times more than the bottom fifth in 1994-96, compared to seven times more in 1988-90.<sup>4</sup>

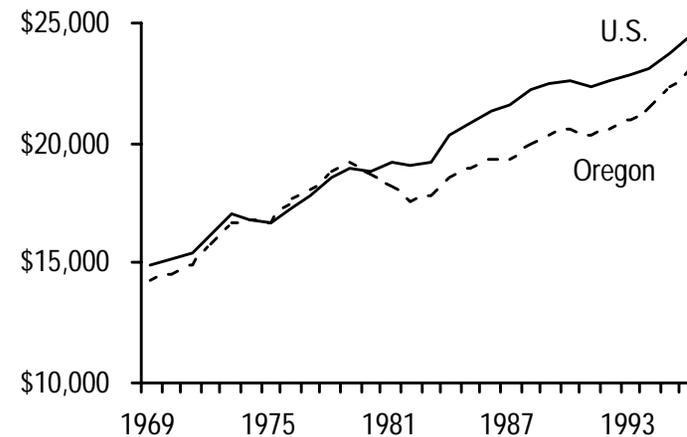
Nor has economic growth affected all areas of Oregon equally. The Oregon Economic Development Department recently

**Figure 4-3: Most personal income in Oregon is from earnings**



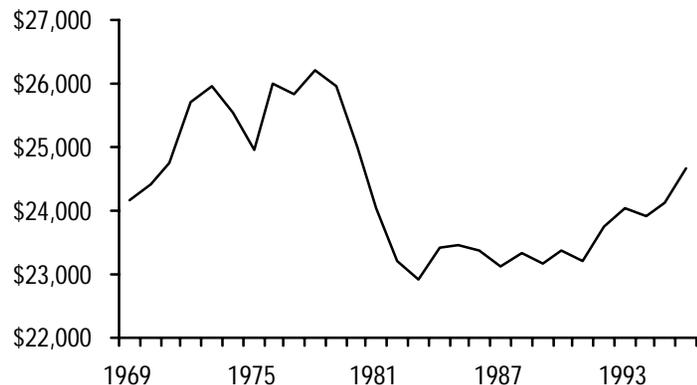
Source: U.S. Department of Commerce, Bureau of Economic Analysis. 1998. Regional Economic Information System. Compiled and converted to constant dollars by ECONorthwest.

**Figure 4-4: Oregon's per capita income has fallen behind U.S. levels**



Source: U.S. Department of Commerce, Bureau of Economic Analysis. 1998. Regional Economic Information System. Compiled and converted to constant dollars by ECONorthwest.

**Figure 4-5: Earnings per worker are recovering after a sharp decline in the early 1980s**



Source: U.S. Department of Commerce, Bureau of Economic Analysis. 1998. Regional Economic Information System. Compiled and converted to constant dollars by ECONorthwest.

ing by large corporations has caused layoffs, employment security has been replaced by a dynamic labor market that increasingly requires education and flexibility, and low savings rates have left many people unprepared for retirement. Moreover, the use of economic measures to measure well-being has been increasingly criticized. Economic indicators only measure monetary transactions, so crucial economic functions performed in households and the volunteer sector go uncounted. These measures also ignore other vital components of quality of life, such as environmental quality and urban amenities.

In sum, there is a strong link between economic growth and the growth of population and development that lead to some of the impacts of growth that people would like to eliminate or reduce. For most households, their own economic growth is desirable. It is difficult to create a strong argument that all

identified 149 communities and 15 counties in Oregon, primarily rural areas, as “economically distressed” (based on an index including the unemployment rate, the number of families living below the poverty level, and per capita income). The population of the 15 distressed counties accounts for only 12% of the total population of the state.

Despite economic growth, many people feel less secure about the future: restructur-

ing by large corporations has caused layoffs, employment security has been replaced by a dynamic labor market that increasingly requires education and flexibility, and low savings rates have left many people unprepared for retirement. Moreover, the use of economic measures to measure well-being has been increasingly criticized. Economic indicators only measure monetary transactions, so crucial economic functions performed in households and the volunteer sector go uncounted. These measures also ignore other vital components of quality of life, such as environmental quality and urban amenities.

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#### **Environmental quality**

##### **Water supply and quality**

Both the quality and quantity of water affect the quality of life in Oregon. Adequate amounts of clean water are necessary for “beneficial uses” such as drinking, recreation, fisheries, industry, and agriculture. Water quality is primarily measured by the amount of toxic organic and inorganic compounds, dissolved oxygen, suspended sediments, and temperature. Water quality and quantity are intertwined, since water of poor quality may be unusable.

To understand water supply one must start with the water rights system. The people of Oregon own all water in the state. Anyone who wishes to use water must obtain permission from the state, through the Oregon Water Resources Department (OWRD).<sup>5</sup> The OWRD issues water rights, which grant a landowner permission to use the public’s water. The right specifies, among other things, the allowed amount, use, place of use, point of diversion, and “priority date.” The latter determines where the landowner stands in the queue to withdraw water from a source. The water right does not guarantee that water will be available to everyone

who holds a right. It aims only to regulate and control water use among those who hold water rights, especially in times of scarcity.

The OWRD will not issue a new water right if it believes that water will not be available at least 20 percent of the time. It uses either historical data or sophisticated hydrological models to determine “water availability,” on a basin or watershed level. Eventually, the OWRD will stop issuing new water rights for a basin, once all of the available water has been appropriated. At that point, the only way a landowner could obtain a water right is by acquiring it from someone who already owns one, through the transfer process.

The end of new water rights, and the start of water rights transfers, would indicate that a basin has evolved from a period of abundant water to a period of scarcity. In reality, the transition is not so simple. The issuing of water rights does not stop suddenly, nor does the OWRD announce that no new water rights are available for a basin. Instead, it gradually becomes more difficult to obtain a new water right, and it becomes easier to obtain one through the transfer process. But even if new water rights are available, such water rights would have low priority dates, and so would be less useful. An increasing frequency of water transfers is a good indicator of water scarcity. Such signs are apparent in some parts of the state, especially in central Oregon, where an informal market for water rights has developed.

A recent innovation in the water rights system is rights for in-stream flows. This recognizes unappropriated water in a stream as a “beneficial use”, and so the right to maintain water in a river or stream is protected in the same manner as other rights—according to the priority date. Under state law, only certain state departments may apply for new water rights for in-stream flows. Such water rights would not be very useful in protect-

#### **Deschutes County and Water Quality**

The LaPine area south of Bend in central Oregon provides an example of the connection between growth and water issues. Prior to the adoption of the Oregon land use program in the early 1970s, over 10,000 parcels, most of 1/2 to 1 acre, were created in the area between SunRiver and LaPine in the drainage of the Deschutes River. Groundwater is the single source of drinking water for the region. Over half of the parcels have developed with houses and mobile homes using septic tanks.

The Department of Environmental Quality has found that decades of growth have resulted in significant areas of deteriorated water quality. Wells in some areas are developing unsafe levels of pollutants: DEQ models predict that nitrate concentrations will exceed federal standards within 10 years. Yet owners of vacant property believe, with justification, that they have vested rights to develop.

The relationship between development and deterioration of water quality is complex: DEQ scientists allow that models of possible future effects are approximate and uncertain. Deschutes County and DEQ are in the undesirable position of potentially having to restrict development on the basis of logically reasonable but empirically uncertain conclusions.

The best evidence, however, is that a problem exists and will get worse if new development looks like past development. But what if new development looks different? The County is considering both clustering of development, and transferring development rights to areas that are less sensitive or more easily served with waste-water treatment. The new development may be the necessary impetus for a water-treatment system that would serve existing development now on septic tanks. Without the growth, the situation might get slowly worse. With growth, it could get worse in a hurry or improve, depending on the policies that deal with the impacts of growth.

ing in-stream flows, though, since they would have the latest priority dates. Alternatively, the state allows anyone to obtain an existing water right for in-stream flows. The Oregon Water Trust is the only group currently pursuing this option, focusing its efforts on the Rogue, Umpqua, John Day, Umatilla and Deschutes River basins.

Water quality in Oregon has generally improved over the past several decades. Major improvements have been made in the last 50 years in controlling direct (point-source) discharges into water bodies from industry and sewage treatment plants. But there are still many cities in Oregon with inadequate sewage treatment capacity and persistent Department of Environmen-

### Wilsonville and Water Supply

Lack of consistent state policy direction frequently blocks or increases the cost of local infrastructure development. Wilsonville, one of Oregon's fastest growing cities, depends on groundwater from wells for its water supply. Groundwater levels in the aquifer are declining. The problem is so acute that Wilsonville has declared a moratorium on future development, a moratorium declared even before a new prison was sited in the city. But, the moratorium law has severe time limitations and developers are pushing for a fast solution.

The Water Resources Department has restricted future groundwater development. Water Resources also directed Wilsonville to limit its pumping and develop its existing water right on the Willamette River. The Willamette is the most cost-effective long-term water supply option available to Wilsonville.

Yet the Department of Environmental Quality has expressed concerns about whether the Willamette River water can be treated sufficiently to be safe for drinking water. These statements have contributed to local opposition to developing the Willamette as a drinking water source. Some citizens have joined the development community in urging the City to develop groundwater from the Troutdale aquifer south of the Willamette. This aquifer is already used extensively by farmers in exclusive farm use zones just south of the city limits. Land use policies are designed to protect such prime farm lands and most farm use depends on water.

The City faces a real dilemma: Try to develop wells in the Troutdale aquifer by tiptoeing around EFU land knowing the wells have the potential to adversely impact the adjacent farmers (contrary to the spirit of our land use laws) or try to develop the Willamette when other state agencies are questioning its safety.

tal Quality (DEQ) violations. Many waterways still do not fully meet standards intended to protect fish, drinking water, recreation, and other beneficial uses, and the trend may be reversing. A recent report for the Willamette Valley livability Forum found long-run improvements from cleanup of the Willamette River, but new problems emerging.<sup>6</sup>

Describing trends in water quality is difficult because not all water-bodies are monitored. For example, Oregon's DEQ is required by the Clean Water Act to list water-bodies that do not meet water quality standards. The 1994/96 "303(d)" list included approximately 870 stream segments, rivers, lakes, and estuaries, while the 1998 list contains 1,163 segments. The

increase in listed segments does not necessarily suggest that water quality is getting worse; it is primarily due to more refined data collection methods and new data gathered by DEQ.<sup>7</sup>

Surface water runoff, or non-point source pollution, is currently the largest source of water pollution in Oregon<sup>8</sup>—more than 90% of the total suspended solids entering the main-stream of the Willamette are from non-point sources.<sup>9</sup>

The amount of pollution from non-point sources, particularly from storm drains, is directly affected by population and economic growth. More people means more houses, businesses, and pavement, which increases the water runoff from these surfaces. At the same time, population growth also increases the need for clean rivers and lakes to provide safe drinking water, recreation, and other beneficial uses for humans, as well as adequate water for fish and wildlife.

Here, as elsewhere in the debate about growth, the way the real world works make quick conclusions difficult. Though development clearly increases non-point source pollution, it may be replacing agriculture, which is a big contributor to water pollution. Though getting to net impacts is tricky, it is at least the case that the water pollution of new development is offset to some degree by the agricultural pollution it replaces.

Groundwater is also a key water resource. Oregonians currently use over 700 million gallons of groundwater each day, and almost 77% of residents depend on groundwater for some or all of their drinking water. As of March 1993, DEQ was aware of over 1,300 groundwater contamination sites in Oregon. This contamination is very difficult, and sometimes impossible, to clean up. Groundwater contamination is caused by failing septic systems, overuse of fertilizers, leaking underground storage tanks, buried wastes, unlined or improperly

lined landfills, and seepage runoff from animal feeding yards.<sup>10</sup> Again, the lack of consistent data over time hampers the ability to describe any trend in groundwater contamination, and the number of contaminated sites has been increasing due to increased awareness of the problem and resulting regulation and testing by DEQ.

Growth obviously affects water quality: if settlers and technology had not come to Oregon in 1850, our rivers and groundwater would be clearer than they are now. Whether continued growth leads inevitably to poorer water quality is a debatable point. On the one hand, the Willamette River is cleaner than it was 20 years ago because of better regulation and more public funds (in part, from growth) spent on them. More can be done for both point-source and non-point-source pollution. On the other hand, most of the easy fixes have been applied. Even if pollution per person decreases, large amounts of growth can overwhelm the improvements.

#### **Air quality**

Poor air quality can cause health problems or decrease visibility, both of which are important to quality of life. Air quality is primarily measured by the amount of various air-borne compounds and particulate matter that affect health and visibility.

Even as Oregon's population has grown, air quality in Oregon has improved. Since 1980, the percentage of Oregonians living where the air quality meets the federal ambient air quality standards has increased, reaching 100% in 1993.<sup>11</sup> The annual number of days that Portland has exceeded national air quality standards for carbon monoxide and ozone have steadily decreased since the early 1980s.<sup>12</sup> Portland, which was not in compliance with either the ozone or carbon monoxide standards in the early 1980s, is currently in compliance with na-

tional air quality standards for ozone and carbon monoxide.

Population growth has a direct impact on air quality because more people means more cars, and motor vehicles are the number-one source of air pollution in Oregon.<sup>13</sup> The emissions from cars contribute to ozone problems in summer, and carbon monoxide problems in winter. Growth-induced traffic congestion worsens the problem: congestion leads to more automobile operating hours, and sub-optimal operating speeds, which increases the pollutants released into the air. Auto traffic also kicks up road dust, which is a major source of particulate matter.

Population growth also increases the number of fuel-powered machines (cars, lawn mowers, boats), aerosol spray cans, and other devices that pollute the air. Growth of industrial activity also affects air quality by emitting sulfur dioxide and other toxic material into the air.

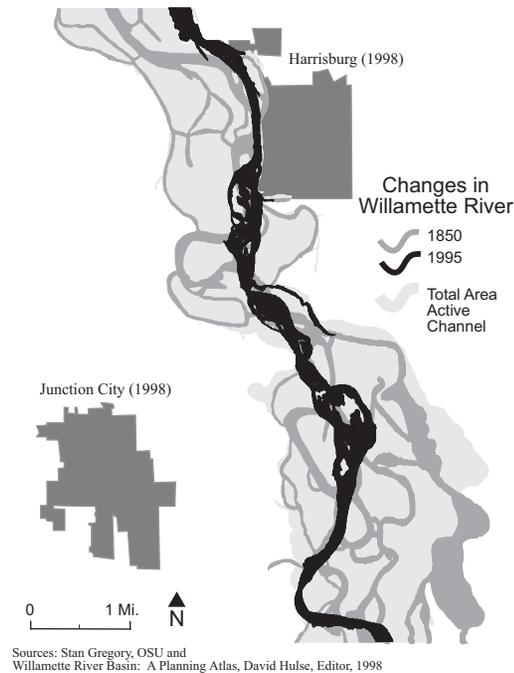
Air quality in Oregon has improved despite population growth because of improvements in technology such as automobile smog systems, and regulations to reduce polluting activities such as reliance on wood-burning stoves for heat. But gains from technology and regulation have reached the point of diminishing returns—the technology is increasingly expensive and curtailing activities requires more exacting levels of regulation. According to an analysis in *The Oregonian*, air quality in Portland is

#### **Eight Oregon Communities are Designated as Air Quality Nonattainment Areas**

The Department of Environmental Quality has designated eight Oregon communities as nonattainment areas for persistent air quality problems from excessive levels of carbon monoxide and particulate matter. Cars and trucks produce up to 90% of carbon monoxide emissions, and woodsmoke, wind-blown dust, and industrial emissions are the primary source of particulate matter. Both of these pollutants can cause health problems, and particulate matter can also reduce visibility. The nonattainment areas in Oregon are:

- *Carbon Monoxide*: Medford, Grants Pass, La Grande, Klamath Falls, and Salem
- *Particulate Matter*: Eugene-Springfield, Medford-Ashland, Klamath Falls, Grants Pass, La Grande, Oakridge, and Lakeview

**Figure 4-6 Growth and development have changed the habitat provided by many rivers**



expected to get worse in the next decade due to increased industrial emissions and road dust from traffic. Population growth is the primary reason these pollutants are expected to increase.

### Species

Plants, fish, and wildlife contribute to quality of life by providing recreational opportunities (viewing, hunting, and fishing), medicine, food, and healthy and diverse ecosystems, and through the intrinsic value people place on their existence. The existence of plant and animal species can serve as an indicator of the overall health of the environment, which is an important contributor of quality of life in Oregon.

Humans affect the population of plant and animal species primarily through hunting and actions that reduce the quantity or quality of habitat that is essential for a species' survival. Much of the decline of native species occurred due to human activities earlier in Oregon's history—hunting beaver and otter for fur, commercial salmon fishing, conversion of prairie

and wetlands for agriculture, damming and channelization of streams for power and navigation (see Figure 4-6), logging of old-growth forests, and urbanization.

Because of these actions in Oregon's past, the quantity and quality of remaining habitat is increasingly crucial for the survival of native species. Society places increasing importance on their survival as evidenced by federal and state endangered species acts and the many efforts to protect species and their habitat in Oregon. Currently there are 30 plant and animal

species listed as threatened or endangered by the state or federal government.<sup>14</sup> While actions are being taken to protect all listed species, the listing (or potential listing) of the Northern Spotted Owl and several species of salmon have had significant effects in Oregon.

The Northern Spotted Owl was listed as threatened in 1989, and the result of this listing and other environmental concerns has been to significantly curtail timber harvests on National Forest land in the Pacific Northwest. This example illustrates a point made several times in this report: growth has multiple impacts that interact in complex ways. Economic growth (timber harvest) caused a decrease in forest habitat, which caused the perception and public concern that a species was endangered, which led to restrictions on harvest, which contributed to both a slow-down of that aspect of economic growth and a loss of revenues to counties for all services (especially roads), which might further decrease quality of life and growth.

With the listing of coastal coho and other salmon species, Oregon has developed a plan that seeks to avoid the traditional regulatory approach used to protect species. The Oregon Plan for Coastal Salmon Restoration and the Healthy Stream Partnership rely on cooperation and voluntary activities to improve water quality for salmon and other species. The Oregon Plan involves coordination of effort by all parties, development of action plans with relevance and ownership at the local level, monitoring progress, and making appropriate corrective changes in the future.

The link between growth and species varies from direct to indirect. For example, population growth can lead to urbanization that destroys endangered plant species or habitat for animal species; logging of Oregon's forests is primarily for na-

tional and international markets rather than for growth in the state. Increased awareness and regulation has allowed some species to recover despite population growth. Efforts to protect raptors such as the Peregrine Falcon and Bald Eagle have allowed populations of these species to increase in recent years.

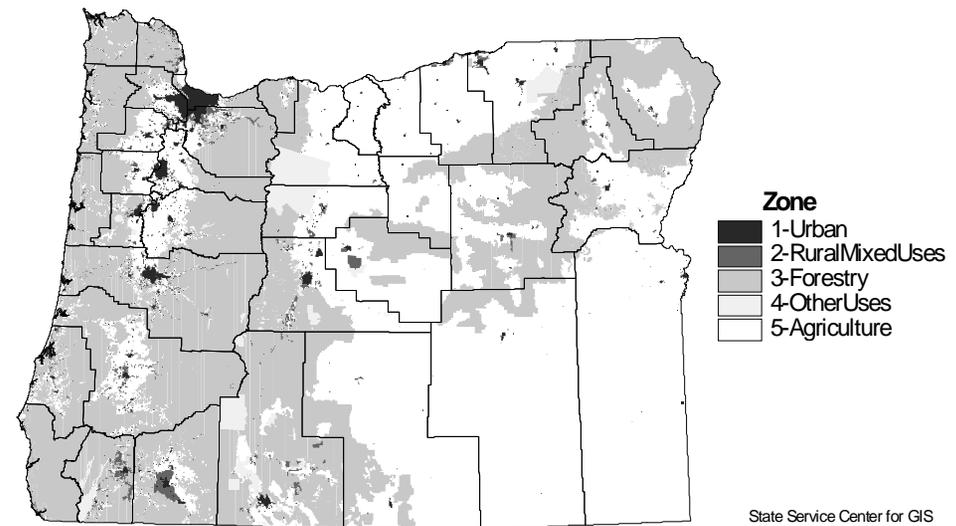
The case that growth and urbanization have a negative impact on ecosystems and the species they support is compelling. Here, as elsewhere, the question is about tradeoffs: can we grow in urban areas, and use natural resources, in a way that allows us to improve the economic and some of the amenity aspects of quality of life without losing too much of the natural system? For some, the answer is that no loss of natural systems is acceptable given how much has already been used. For others, there is still a possibility for economic use of some of the resources, while protecting the ecosystem.

### Land

Land use impacts are among the most immediate and tangible impacts of growth. Development intensifies land use; those changes, in turn, have other tangible impacts. For example, conversion of agricultural land to urban uses decreases the amount of arable land, and may affect surrounding agricultural operations, which leads to a reduction in agricultural production capacity.

Figure 4-7 shows Oregon land use about 10 years ago (the last update of the statewide land use map). Even though the detail cannot be read at this scale, it is good enough to illustrate the small percentage of urban land, and its concentration in the Willamette Valley. Figure 4-8 focuses on the Willamette Valley to show how land use has changed and is expected to change. It illustrates the importance of detailed, sub-area analysis: though Oregon has a lot of agricultural land, that part of it

Figure 4-7 Most land in Oregon is in agriculture, forest, and range



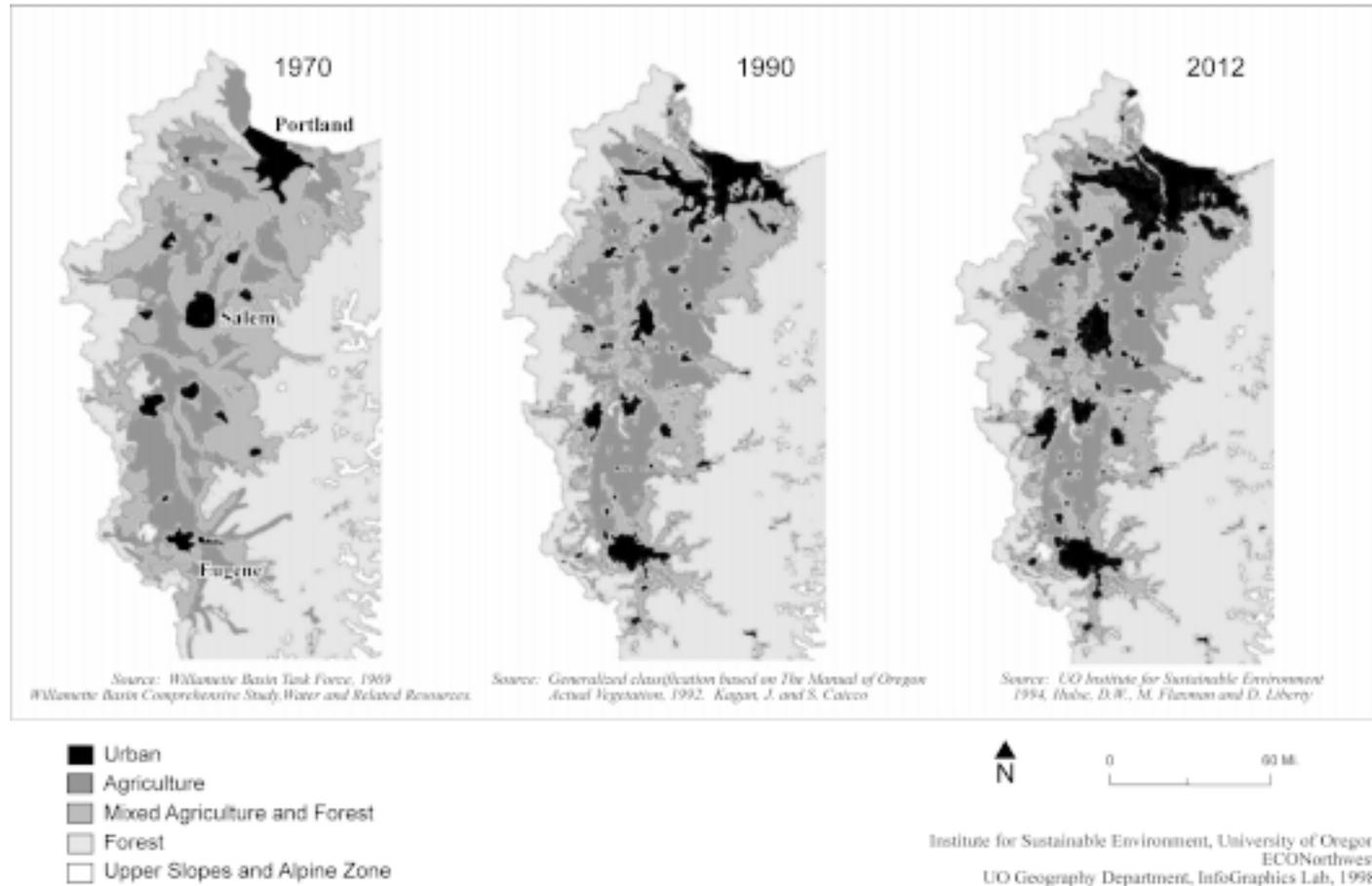
that is in the Willamette Valley is converting to urban uses more rapidly. Figure 4-9 shows how farmland has been converted in Lane County.

Impacts of growth on land use can be measured as changes in population density, the amount of agricultural and forest lands, the number of rural residences, parcelization in rural areas, densities in urban areas, and so on. This section focuses on a few of these impacts: amendments to Urban Growth Boundaries (UGBs), changes in population density for selected communities, creation of farm and forest dwellings, and rezoning or conversion of agricultural and forest lands.

Perhaps the most tangible land use impact is the growth of cities. In Oregon the expansion of UGBs is one measure of this growth: Figure 4-10 shows the change. In 1986, Oregon

Figure 4-8 Land use in the Willamette Valley has changed over the last 20 years

### Willamette River Basin Land Use

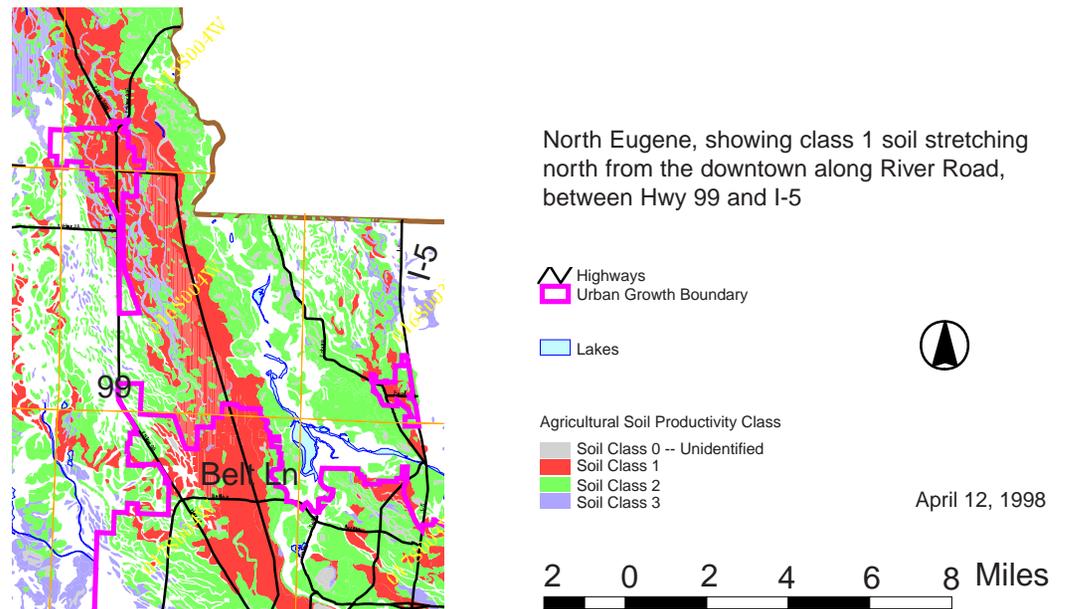


had approximately 1,200 square miles (769,000 acres) inside UGBs. Between 1987 and 1996, UGB amendments added about 13,700 acres (slightly more than 21 square miles) to UGBs—an increase of about 2%, compared to a 20% population increase during the same period.<sup>15</sup> Most planners believe that a significant reason for the slow growth of UGBs is that they all had a 20-year supply of buildable land within their UGB in 1986, and the limits of UGBs on land supply have only recently been felt.

While UGBs expanded relatively slowly compared to population, some of those expansions occurred on agricultural and forest land. Moreover, the expansions are not uniform: some areas have substantial urbanization at relatively low densities outside of urban growth boundaries. Those losses mean potential losses to economic production now and in the future. A key part of the debate about growth is about the protection of these resource lands for economic, ecological, and recreational reasons. State law gives a heavy weight to their protection. Here, as elsewhere, the issue is about tradeoffs: is it more efficient to have urban growth at the fringe and lose some resource land, or constrain that conversion by policies that push urban growth into existing urbanized areas? The answer depends not only on an assessment of the value of resource land preserved, but also of the efficiency and direct costs of providing urban services (discussed previously in this chapter).

More than 50% of the 13,700 acres added to UGBs between 1987 and 1996 was land zoned at the time for agricultural and forest uses. The overall amount of agricultural and forest land added to UGBs is a tiny percent (less than 0.001%) of the total amount of farm and forest land. This figure, however, understates the impact of development on farm and for-

**Figure 4-9** In some areas, urban development occurs on prime agricultural land

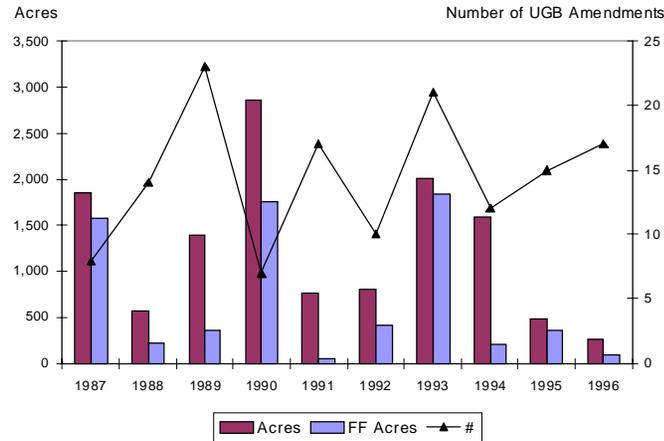


Source: Map prepared for Paul Atkinson by the University of Oregon G.I.S. lab

est lands: it does not include, for example, land outside UGBs that gets converted to non-resource uses. One estimate is that over 57,000 acres of agricultural land have been converted to urban uses (both inside and outside UGBs) in the past decade.<sup>16</sup> In the context of the Oregon planning program, however, land inside UGBs is supposed to be converted to urban uses. For example, in the Portland metropolitan area the vast majority of farm and forest land that urbanized between 1980 and 1994 was inside UGBs.<sup>17</sup>

Density is another key measure of land use change. Table 4-1 summarizes from a recent review of densities measured

**Figure 4-10 Additions to UGBs vary substantially year to year: on average, about 1,400 acres per year have been added to UGBs between 1987-1996**



Source: DLCD, 1997

**Table 4-1. Population and housing densities have increased between 1970-1990 in a sample of Oregon cities**

1990 Population	Population Density (Persons/Acre)			Dwelling Density (DU/Acre)		
	1970	1990	Change 70-90	1970	1990	Change 70-90
<2500	3.6	4.2	0.6	1.2	1.4	0.2
2500-4999	3.2	4.2	1.1	1.1	1.7	0.6
5000-9999	3.9	5.6	1.7	1.2	2.1	0.8
10000-19999	4.5	4.9	0.3	1.9	2.0	0.1
20000 or more	5.3	5.1	-0.2	1.8	2.0	0.2
<b>Total</b>	<b>4.8</b>	<b>5.1</b>	<b>0.3</b>	<b>1.7</b>	<b>2.0</b>	<b>0.3</b>

Source: Oregon Department of Transportation, Research Unit (1998).

in persons per acre for 20 Oregon communities between 1970 and 1990. It indicates a 6% increase in population densities between 1970 and 1990. Several communities (Canby, Central Point, and Troutdale) had density increases in excess of 2 persons per acre, while others (Bend, McMinnville) had decreases. While population densities increased moderately, densities in dwelling units (DU) per acre increased by more than 26% from 1.8 DU/acre to 2.2 DU/acre. These figures include *all* acres within the city limit, not just acres in residential use.<sup>18</sup>

Besides losses to urban development, agricultural and forest lands also face pressure from urban residents who desire a rural lifestyle on large lots close to urban areas. Some of these residents have no desire to continue agricultural or forest operations on their lands, and some object to intensive agricultural and forest practices on nearby land. The impacts of such rural development include fragmentation of farm and forest tracts, and a low-density residential land use pattern that makes the provision of urban services expensive.

One measure of the proliferation of residential uses on resource lands is the amount of farm and forest land redesignated or zoned for other uses. Between 1987 and 1996, about 16,800 acres of agricultural land was rezoned to other non-resource uses. About 5,900 acres of forest land was rezoned to other non-resource uses during the same period.<sup>19</sup> Such rezonings, however, do not necessarily mean that the land is taken out of agricultural production.

The US Department of Agriculture tracks the conversion of nonfederal resource lands to urban uses.<sup>20</sup> Between 1982 and 1992 over 150,000 acres of crop, pasture, range, and forest land were converted to urban uses in Oregon. But

other numbers give some perspective. That acreage amounted to just over 0.5% of the total acres of resource land in Oregon, and Oregon's percentage change was lower than any other western state. For prime soils, Oregon converted about 55,000 acres to urban uses during the same period, about 1.6% of the base: a lower percentage than most western states (except Idaho), but higher than the US average of 1.1% (during this period Oregon had to accommodate slightly greater population growth: 12% compared to 10% for the US as a whole).

Another measure of the impact is approvals of dwelling units on farm and forest lands.<sup>21</sup> Dwelling units developed on farm lands are either classified as "farm" (i.e., the dwelling unit is directly related to the farm operation) or "non-farm." About 275 farm and 325 non-farm dwelling units were approved each year between 1987 and 1996. More than 700 dwelling units were approved each year between 1990 and 1996 on lands zoned for forest use.<sup>22</sup> The rate of development for these dwellings on farm and forest land declined after tighter regulations in 1993/94.

As with other impacts, population growth in Oregon clearly contributes to changes in land uses (for good or ill), but its relative importance is hard to quantify. Even in the absence of population growth, economic and demographic changes will continue to increase demand for rural residential development. It seems likely, however, that without that growth Oregon land use law would not allow cities to justify amendments to UGBs (not just the modest ones that have occurred, but the larger ones that will occur to handle forecasted growth). Thus growth probably means that more resource land will change to urban uses.

### **Amenity**

#### **Access (transportation)**

Between 1982 and 1995 in Oregon, population has grown 18%, the number of drivers licenses has grown 34%, real per-capita income has grown 26%, the number of registered vehicles has grown 35%, and the real price of gasoline has declined 39%.<sup>23</sup> All those factors increase travel: vehicle-miles traveled on arterials and collectors grew 59% during the same period. But the number of lane-miles on arterials and collectors in Oregon grew only 6%.<sup>24</sup> The result: more congestion.

As with other impacts, population growth is not the only cause of the problem. Real incomes, on average, have been increasing. That's a benefit of growth, but it also means that people spend more money on transportation. With the real price of gasoline decreasing, every dollar spent buys more miles on the road than it used to. The biggest congestion problem—freeway and major arterial travel in metropolitan areas—is largely a result of the fact that everyone with a car can access those roads at any time. For water, telephones, movies, and many other congestible goods, prices increase at peak times to ration access and avoid gridlock. Not so for transportation.

Whatever its causes, people perceive traffic congestion to be increasing, and the data support their perceptions. In a na-



### Congestion creeps down I-5.

As the Portland region grows, development along I-5 is causing traffic congestion that is costing the state and local governments millions of dollars. In recent years, this problem has spread from Tualatin to Wilsonville and Woodburn.

Wilsonville's population more than doubled in the 1980s and increased another 50% between 1990 and 1996. Development around Wilsonville's two interchanges exploded, and the resulting traffic caused extreme traffic congestion conditions at the interchanges—by the mid-1990s, morning and afternoon traffic at Wilsonville exits had reached gridlock conditions. Current construction projects at these interchanges and on Wilsonville Road have a total cost of more than \$17 million, including \$8 million from the City of Wilsonville. Without funding from the City, the state would not have made these improvements for years.

Woodburn now faces the same situation—its population has grown 20% in the 1990s, and a significant amount of development has occurred around the I-5/Hwy 214 interchange. In addition, daily freeway traffic has increased by 50% between 1987 and 1997. The result is that afternoon traffic fills the I-5 off-ramps and backs up onto the freeway, and Hwy 214 is clogged for over a mile into Woodburn. Additional population growth and development, including a 232,000 sq. ft. factory outlet mall, threatens to make the situation worse. One proposed solution is to rebuild the I-5/Hwy 214 interchange at an estimated cost of \$10 million, which neither ODOT or the City can afford.

tional study of congestion in 1982, Portland was ranked as the 20<sup>th</sup> most congested metropolitan area in the country. By 1994 Portland's congestion index had risen by 27% and Portland was the 15<sup>th</sup> most congested metropolitan area.<sup>25</sup>

More is lost to congestion than time: it takes a little bit of our sanity and humanity as well. Studies are hardly necessary to prove to most people what they have experienced first hand: driving has moved steadily from pleasurable to stressful. Fifteen years ago a trip from Eugene to Portland on I-5 was usually and mostly a trip on the open road; now it is trucks and tailgating, construction and congestion for the entire length. One reaction has become prevalent enough to get a name: *road rage*.

Any city with an expanding developed area is obviously going to need new highways and other transportation improvements. Highway planners generally agree that in areas of high demand

they cannot build enough roads at a reasonable cost to solve problems of congestion as long as access is priced as it is: more highway capacity eventually fills up, and any new capacity is more expensive and less effective than the capacity we already have. Though new construction is often preferred by local governments when the state is paying, planners and policy are increasingly focused on influencing the demand for travel and encouraging denser land uses to facilitate trips by means other than the single-occupant auto. But the evidence is strong that demand (behavior) will change little if the inducement is moral rather than monetary, and density could result in even more auto trips in the same area (even with improvements in other transportation options). Congestion is going to get worse.

A 1998 report by ODOT concludes that there will be no inexpensive or painless ways of avoiding significant congestion increases in the future. Over the next twenty years, Oregon's population is expected to increase by about 30%, which will lead to a 38% increase in travel miles. Even if metropolitan areas are successful in reducing travel miles per capita as called for in the Transportation Planning Rule, travel miles will still grow substantially. If pricing of highway travel does not change, increases in highway capacity will be needed to avoid growing congestion.<sup>26</sup>

Transportation preservation and finance are other transportation problems. Here, as elsewhere, the effects of growth are ambiguous. Whether growth comes or not, existing highways and bridges have to be maintained. Most state and local studies conclude that the cost of needed preservation far outstrips identified funding. The chief source of revenue for preserving and expanding the transportation system is the gas tax, and increases in that tax have not kept pace with inflation.

Though highway transportation dominates concerns about growth, other modes get congested as well. Air travelers are united in their criticism of construction at the Portland airport, and the delays and inconvenience it causes. Population growth in Portland gets only part of the blame. Deregulation of the airline industry has allowed airlines more freedom to respond to market conditions, resulting in reduced levels of service and increased prices at smaller airports. For example, the Eugene Airport is served by only 3 airlines while Portland is served by 17 passenger airlines. A comparison of lowest round-trip airfares from Eugene and Portland show flights from Portland are consistently cheaper, averaging \$175 less than flights from Eugene for the same destination.<sup>27</sup> The Eugene Airport estimates 36% of passengers originating in their market area drive to Portland for lower airfares.<sup>28</sup> But the overall impact of deregulation and increased air travel out of Portland has been lower cost travel for airline passengers.

### **Housing**

A previous section on costs of growth defined the principal focus of this section to be the costs of public facilities and who pays for them. There are good reasons, however, to be concerned about not just the cost of public facilities, but the total cost of housing. Minimum shelter and food are basic to any societally acceptable definition of quality of life, and together make up the bulk of expenditures by low-income families. As housing costs have risen in Oregon, the concern about housing has extended to middle-income families.

In 1990, about 12% of Oregon households fell below the federal poverty level. While this number has not changed significantly since 1990, other data paint a more grim pic-

ture of housing affordability. Housing is generally considered affordable if a household spends no more than 30% of their income on housing and utilities. Households that pay more than 30% of their income for housing and utilities are considered to experience “cost burden.” In 1996, 38% of Oregon homeowners experienced cost burden; this figure increases dramatically for renters—nearly 60% of renters experienced cost burden in 1996.<sup>29</sup>

Housing prices and costs increase for many reasons, but all are fundamentally a result of the interplay of forces—both market and policy—affecting the supply of housing units and the demand for them. A recent study of housing development costs in Portland (White et. al. 1997) provides a good description of the components of housing cost and found that:<sup>30</sup>

- When measured either per square foot or per person housed, the direct costs of single-family housing (i.e., the costs paid for in dollars by the developer of the housing) are less than those for multi-family housing. Compared to single-family costs per square foot, those for multi-family are almost 25% greater; those for mixed use are over 30% greater.
- When costs are measured per unit, the conclusion flips: single-family units costs are about 35% more than multi-family units (but only about 6% to 8% more than multiplexes (duplexes, quads) or mixed-use housing).

These findings provide yet another example of tradeoffs for public policy. If the objective is to provide some generic product called “shelter” at low cost, then denser, smaller units will do that, but households, if they have the means, will choose to purchase more than minimum space and quality: it’s worth it to them. If more square footage is what they want, then in many cases, it is cheaper to provide at lower densities in single-family units.<sup>31</sup>

*“In 1996, 38% of Oregon households spent more than 30% of their income on housing and utilities.”*

The Oregon Housing Affordability Study (in progress) is addressing state-wide housing issues.<sup>32</sup> Some preliminary information documents rising housing costs in Oregon, both absolutely and relative to other regions:

- Since 1980, the housing price index has increased to 143% (using a 1980 base of 100%) in Oregon, compared to 114% nationwide, and 137% for Pacific states.
- The median sales price of homes “listed” in the Multiple Listing Service increased nearly 90% in Portland and 80% in Eugene/Springfield between 1990 and 1997. The national average increase was slightly less than 30%.
- The median sales price for all homes increased nearly 90% in the Portland PMSA, 84% in the Eugene PMSA, 79% in the Salem MSA, and 51% in the Medford MSA between 1991 and 1997. Median prices increased 27% nationally.
- The median sales price in 1997 was \$155,000 in the Portland PMSA, \$123,000 in the Eugene PMSA, \$119,000 in the Salem MSA, and \$199,000 in the Medford MSA between 1991 and 1997. The median price nationally was \$127,000.

The housing story gets told differently depending on the data cited. Clearly housing prices are rising in Oregon, especially in the metropolitan areas of the Willamette Valley. Eugene and Portland have made headlines in the last year as being among the top 10 least affordable housing markets in the nation. But Table 4-2 shows a picture: despite large increases in housing prices, the relative cost of housing in Portland and Eugene (as measured by cost-of living indices) are still below national averages. The forthcoming Housing Affordability Study may help resolve some of these issues.

Much of the debate in Oregon about growth and housing price centers on the effects of Urban Growth Boundaries on the prices. There is general agreement that prices have been rising faster in Oregon metropolitan areas than elsewhere in the nation. Advocates of tight UGBs blame rising demand; opponents blame lack of supply because of a government-induced scarcity of buildable land. Some middle ground is probably the right place to stand, since prices are determined by both supply and demand forces. Most detailed studies of UGBs find prices higher inside the boundary, though there is disagreement about the relative importance of the contributing causes.<sup>33</sup>

Whatever the reasons for the increases in housing costs, state and local policymakers are concerned about it and trying to address it through many different policies: housing development corporations, preservation of affordable housing stock, fee waivers, and so on.<sup>34</sup>

In addition to housing values, other aspects of housing in Oregon have changed since 1990. For example, legislation passed in 1991 requires cities to plan for manufactured housing as a “needed” housing type. Manufactured units now account for more than one-quarter of new housing units in some communities. Manufactured housing increasingly offers an affordable housing alternative to units built using conventional methods.

Homelessness is a growing problem in Oregon. The 1990 Census reported 2,977 homeless in Oregon. That figure, however, probably underestimated the extent of homelessness in Oregon. In 1993, a “One Night Shelter Count” showed a total of 5,196 persons, 2,077 adult males, 1,345 adult females, and 1,744 children applying for services that one night.<sup>35</sup>

## **Culture**

In most cases, the existence of cultural amenities is closely linked to population. Larger communities tend to have more cultural facilities such as museums, galleries, theaters, performing arts centers, and professional sport arenas, and more activities associated with those facilities. The largest concentration of these amenities exists in Portland and Oregon's other major urban areas (Eugene, Salem, Medford).

There is not much debate that bigger or higher quality facilities require more people to support them. Whereas for other impacts we have focused almost exclusively on residential population growth, the existence and quality of some cultural amenities depends on the growth of non-resident population—i.e., tourists—as well. Thus, Oregon has a diversity of cultural amenities not only in its metropolitan areas, but also in smaller places that can attract tourists: Ashland, Jacksonville, Newport, Hood River, and Bend.

Measuring the impact of growth on the amount and quality of cultural amenities is difficult.<sup>36</sup> But anecdotally, it seems logical to argue that cultural amenities are a benefit of growth (any negative impacts that result from the attraction of people and cars to those amenities are discussed under other headings in this section). The Ashland Shakespeare Festival, the Britt Festival, the Bach Festival, and others seem to get better over time, and their improvement is linked to the revenues they generate from growing. Portland in this decade makes everyone's "quality places" list, and the scope and quality of its cultural amenities contribute strongly to its rating.

For want of a better heading, one could also include in this category all the psychological benefits and costs that come with having more people in one place. Though the extrapolations from the density of rats in laboratory cages to urban popula-

tions have been discredited, most people's personal experience is that more people can occasionally cause stress. As a trivial but indicative example, Colorado's population boom required a shift to 10-digit phone numbers for local calls. The example also illustrates a recurrent theme: costs are usually accompanied by benefits, and vice versa. In Colorado, the telephone demand was less from new people than from fax machines, second phone lines, wireless phones, and pagers: all things that households and businesses find beneficial.

## **Shopping**

Shopping is no longer an activity that fulfills peoples' daily needs—many people consider shopping a leisure activity. The evidence verifies what people already know: shopping and shopping opportunities have increased substantially over the past decades. To some extent, it is those shopping opportunities that define growth.

In 1987, 18,712 retail stores had sales of \$16.8 billion. In 1992, 19,561 retail stores had sales totaling \$24.2 billion, a 44% increase in total retail sales. For the same period paid employees (full- and part-time) engaged in retail trade increased 11%.<sup>37</sup>

The growth of shopping opportunities is driven by growth in aggregate disposable income, which is a function of growth in both population and income. Inflation-adjusted per capita personal disposable income increased by 7% between 1990 and 1996. In 1996, Oregon had 473 shopping centers accounting for 54 million square feet of retail space. This represents a 4% increase in retail space from 1995.<sup>38</sup> In 1994, Oregon had more than 20,000 retail establishments that employed over 100,000 workers and generated \$3.7 billion in payroll.

More shopping opportunities, however, come at a cost. The advent of malls and discount retail stores make it easier for

people to get to a broader array of shopping opportunities, but profoundly impact downtown areas, local economies, and transportation patterns. Moreover, visual preference surveys have consistently found that people dislike the appearance of “big box” stores. While big box stores are flourishing, many residents lament the demise of downtown areas and the homogenization of retail opportunities. Communities have long sought approaches that ensure the continued success of downtown areas and independent local retailers. These efforts have met with mixed success.

Technology is also increasing shopping opportunities available to consumers. Mail order retailing increased by more than one-third between 1990 and 1994. Internet shopping is similar to mail order shopping in many respects. While providing more shopping opportunities, the Internet could also decrease demand for retail space and the amount of driving for retail purposes. Internet shopping clearly offers some convenience, but will probably not replace traditional shopping for many consumers as long as people perceive shopping to be as much a leisure activity as a way to meet daily needs.

The availability of health care facilities (doctors offices, hospitals) are another aspect of consumer choice. Growth allows economies of scale and scope: one typically finds more and higher quality health care options as concentrations of population increase.

With respect to this impact alone, growth is positive: it generally provides more choice of retail goods, easier access, and lower prices. In doing so, it imposes costs (transportation, land use, community values) that are discussed elsewhere in this report.

#### **Education**

Population growth has a direct impact on the need for educational services: more households mean, eventually, more stu-

dents.<sup>39</sup> Because the linkage is so strong, all Oregon school districts develop enrollment forecasts to assist in delivery of educational services. Between 1988 and 1997, population and school enrollment in Oregon grew at nearly the same rate, about 1.6 percent annually. Enrollment forecasts suggest this trend will continue at least through the 2001-02 academic year.<sup>40</sup>

While enrollment has grown at about the same rate as population, the number of full-time equivalent (FTE) teachers decreased by nearly 1,800 (about 0.7% annually) between 1988 and 1997. As a result, the average student/teacher ratio (which is not the same as average class size) increased by over 13%, from 17.7 in 1988 to slightly over 20 in 1997.

School funding has been an issue in Oregon since the passage of Ballot Measure 5 in 1990, which limited property taxes collected for education to \$5 per \$1,000 of assessed valuation. As a result of Measure 5, Oregon shifted from a locally-funded system of public education to a state-funded system. Before the passage of Measure 5, 26% of the total budget for public schools came from the state; in 1997-98, nearly 59% came from the state. In 1997, Measure 50 further limited property taxes for schools.<sup>41</sup> Despite these financial changes, on average, public schools in Oregon spent more on education every year between 1995 and 1998 (without adjusting for inflation), and more per student. At the same time, however, the ratio of students to schools and students to teachers both increased.<sup>42</sup>

Related to funding problems (and ultimately to other issues about the impacts of growth on development patterns) are issues of school siting. The incentives are strong for school districts to site new schools at the urban periphery: land costs are lower, political problems are less (schools have become locally unwanted land uses), and the state picks up

70% of the transportation costs. To the extent that school districts opt for peripheral locations, they are inconsistent with a spate of state policy that encourages greater density of new development.

If the discussion of growth and education is limited to building new schools for new students, it is clear that communities that are growing very rapidly often have difficulty expanding educational facilities fast enough to accommodate growth. As a previous section showed, the costs of these facilities is substantial. But changes in technology and institutional arrangements may mitigate the need for more space for more students. Moreover, the quality of education depends on much more than facilities.

The Oregon Department of Education uses a number of standardized tests to evaluate education in the state. State tests are “criterion-referenced,” meaning student performance is evaluated by predetermined standards. Between the 1991-92 and 1996-97 academic years, statewide tests of 3<sup>rd</sup>, 5<sup>th</sup>, 8<sup>th</sup>, and 10<sup>th</sup> grade students showed improvements in math and reading, and held steady in reading. Class of 1997 graduates averaged the highest scores on the SAT exam since 1972.

There is a substantial literature on the measurement and evaluation of K-12 education. No one believes that standard test scores measure everything, or even that they do a complete job of measuring math and reading skills. Bigger budgets are no assurance of better education, but quality teachers are, and more money may attract and hold them. The connection between growth and the quality of education is too complex to put much faith in any correlations about the direction of the impact: it could be positive or negative.

### Security

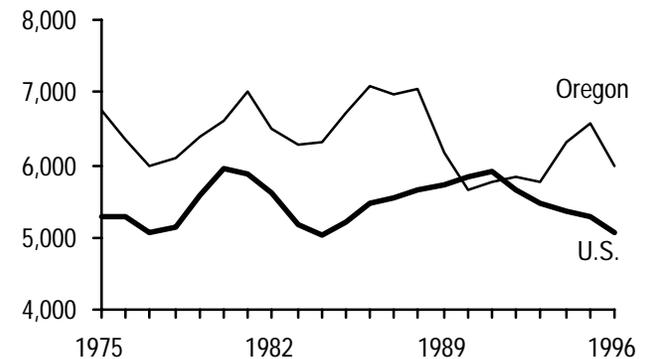
A basic need is to feel safe. Housing gives security from weather, health care from disease, seat belts and air bags from the worst consequences of traffic accidents. This section, however, focuses on security from crime.

Figure 4-11 shows Oregon's total crime rate has fluctuated widely over the past twenty years. In contrast, the U.S. total crime rate grew slowly between 1984 and 1991, and has since declined.

Oregon's crime rate has been higher than the U.S. for most of the years shown in Figure 4-11. According to the Oregon State Police, crime is concentrated in Portland, Salem, and Eugene—these cities have 24% of Oregon's population but reported 32% of total crimes in 1994.

People are increasingly concerned about crime, sometimes despite falling crime rates. In Oregon, this increasing concern led to passage of several anti-crime initiatives by Oregon voters, including Measure 11 in 1994 which established mandatory minimum sentences for specified crimes. The result of Measure 11 and other crime measures has been a prison population that is increasing at a faster rate than total population—in the 1995–2005 period, Oregon's population is projected to grow at an annual average rate of 1.4%, while prison population is projected to grow at an average of 5.2% per year. Figure 4-12 shows Oregon's prison population since 1985, with a forecast through 2008.

**Figure 4-11: Oregon's crime rate has fluctuated widely**



Source: U.S. Federal Bureau of Investigations, annual. *Crime in the United States*.

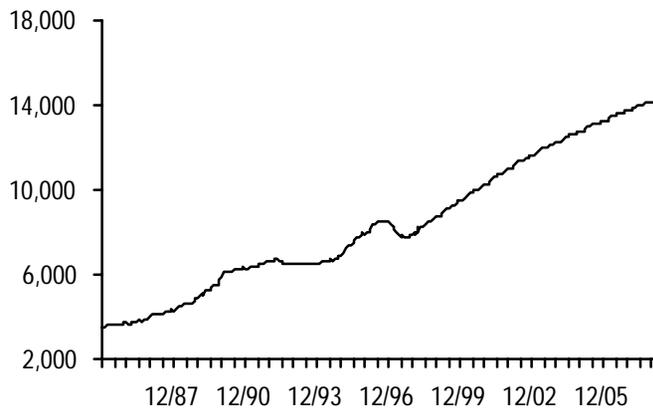
The evidence in Oregon suggests there is not a link between population growth and reported crime rates—Figure 4-11 shows that Oregon’s crime rate has fluctuated widely over the past twenty years, while population has grown steadily over this period. But state level data may mask strong associations at a local level. Obviously there are more felonies committed in Portland than in Corvallis: the more interesting question is whether there is statistical evidence or a perception that one is more likely to be a victim of a crime in one place or the other.

Whether supported by data or not, it is clear that many people act on their perception that denser urban areas are less safe. “Gated communities” surrounded by security walls are appearing more in Oregon. Concerns about security are also being addressed in designs for new development. Designing “defensible space” is particularly important for multi-family and neotraditional single-family development, because security

concerns are often a criticism of high-density development.

As with other issues, it may not be growth itself that creates less security. In the larger picture, the unique impact of population growth is probably small compared to the socioeconomic and demographic characteristics of that population, changing societal values, school funding, state policies and budgets for crime prevention and criminal justice.

**Figure 4-12: Oregon’s prison population is expected to grow rapidly through 2008**



Source: State of Oregon, Department of Administrative Services. 1998. Oregon Economic and Revenue Forecast.

### Recreation

Oregon has long held a reputation as a recreation destination. More than half of the land in Oregon is in public ownership, and 90% of public lands in Oregon are held by the U.S. Forest Service or the Bureau of Land Management. In addition to federal lands, Oregon has a nationally-recognized state parks system. Moreover, most communities and counties have parks systems.

Population growth increases demand for recreational facilities and opportunities. The State Parks Department and most communities use standards to determine how much and what type of recreational facilities to develop. While these standards vary, many communities have a difficult time meeting these standards. Without developing new facilities, more people will compete for the same facilities leading to inevitable conflicts. Moreover, many communities and agencies are finding it difficult to garner public support for parks funding.

The Oregon state parks system provides an excellent example. The Oregon state parks system, established in 1913, presently has more than 200 properties. In 1995, state parks had 92,000 acres, more than 41 million visits, and over \$11 million in revenues.

In 1980, voters passed an initiative prohibiting use of gas tax money for parks. State park user fees, federal funds, recreational vehicle registration fees, and a small part of the state general fund shouldered the burden of funding parks. As a result, few additions have been made to the state system since 1980; the State Parks Department has had difficulty maintaining the system. In 1996, the state Parks and Recreation Commission ordered the closure of 65 parks, a resolution that was staved off by a last-minute budget fix. The future of the state parks system, however, remains uncertain because of ongoing budget problems.

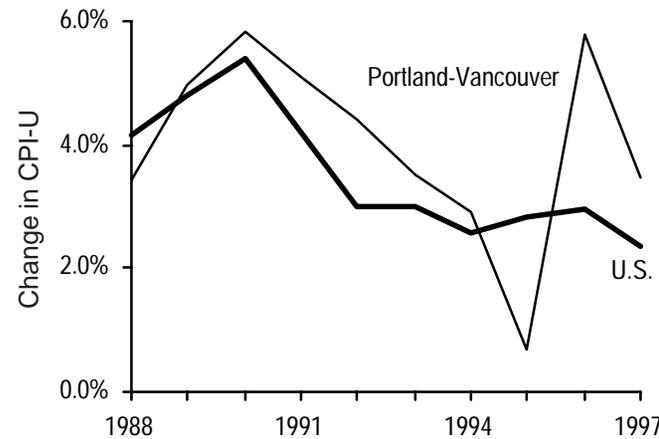
Communities are using a variety of approaches to address park and recreation needs. Some communities have moved towards privatizing many recreational programs. Many have adopted exactions and systems development charges to help provide land and fund park development and maintenance. Others have decreased the level of service, cutting programs, or decreasing maintenance. Land management agencies have initiated pilot fee projects that require users to pay fees for trail access and entrance to many recreational sites.

Population growth has direct impacts on parks: more people want to use them. But other factors contribute substantially. Incomes have risen: people have leisure time and money to spend on outdoor technology: RVs, boats, jet skis. Travel books, tourist brochures, and the internet get more and more information out about Oregon's "best places"—local knowledge is no longer a price of admission. A recent newspaper article commented on increased conflicts for surfing spots in California that resulted from Internet posting about little-known spots and optimal conditions. The only ways that highly desirable recreation locations can be preserved in the face of this rising demand is with regulation (of time and type of use), pricing, or additional funding to expand their capacity to handle the demand.

### Cost of living

Prices for consumer goods have been generally increasing in the U.S. and Oregon since the Great Depression. National inflation rates were historically high (for the U.S.) in the 1970s but have since declined to levels of 2–3% per year in the 1990s. Prices in the Portland-Vancouver area have grown slightly faster than the U.S. average in most years since 1970. Figure 4-13 shows, for example, between 1990 and 1997 consumer prices grew at an average annual rate of 3.7% in Portland-Vancouver compared to the U.S. average of 3.0%.

**Figure 4-13: Consumer prices have grown faster in Portland-Vancouver than in the U.S.**



Source: U.S. Department of Labor, Bureau of Labor Statistics. Annual. "Consumer Price Indexes for All Urban Consumers." Monthly Labor Review. January.

While overall price levels are increasing, the prices of some goods are declining. For example, the prices of electronic goods such as computers, stereos, and televisions have declined because of technological innovations in the manufacturing process, and the real (inflation-adjusted) price of gasoline is currently lower than it has been since the late 1950s due to worldwide market conditions. These trends are true for the U.S. and Portland-Vancouver area.

However, the Consumer Price Index indicates that prices in general have increased faster in Portland than in the U.S., and the result is that the cost of living in Oregon is slightly higher than the U.S. average. Table 4-2 shows a cost of living index for Oregon cities in 1996, where the U.S. average is 100. This index is designed to represent the cost of living for persons

employed in mid-management occupations. The composite index shows the cost of living in Oregon cities is 6%–9% higher than the U.S. average. The indexes for components of cost of living show Oregon cities are more expensive for utilities, transportation, and health care, and less expensive for groceries. The results for housing are mixed, with Salem more expensive and other Oregon cities less expensive than the U.S. average.<sup>43</sup>

Chapter 2 explained the expected relationship between growth and cost of living: cost of living is a measure of how prices bring the relative attractiveness of a region back into equilibrium with other regions. Thus, if growth in Oregon does cause many aspects of quality of life to deteriorate, one should expect to see cost of living in Oregon decrease relative to other regions whose quality of life is not deteriorating.

***An identification and description of key impacts of growth does not lead to clear conclusions about the net impacts of growth***

Chapter 1 notes that this report is not intended to determine whether growth is good or bad for Oregon and its communities. Even if this report does an adequate job of describing

types of impacts on a statewide level, it does not begin to cover the ways people in different circumstances are impacted by various aspects of growth. People do not share in the benefits and costs equally. Even if the ideal data were available (per Figure 2-4, information on all types of impacts, on all types of people, in all different locations, for all time periods), those data do not lead inevitably to a conclusion about the net impacts of growth: such a conclusion requires assumptions and value judgments. Chapters 2 and 4 have provided more detail on the reasons for that conclusion.

Nonetheless, it is not likely that people who care about growth issues in Oregon will reach the end of this chapter without some conclusions about the desirability of growth in Oregon. Those conclusions will imply a direction for public policy about growth: to encourage, discourage, or manage it. But a decision about specific policies requires an understanding of what they are, how they influence growth and its impacts, and what other impacts (usually costs) they themselves have. Chapter 5 attempts to make some progress toward that understanding.

**Table 4-2: Oregon’s Cost of Living is Higher Than the U.S. Average**

City	Composite	Groceries	Housing	Utilities	Transportation	Health Care
Eugene	108.3	93.4	73.6	105.0	115.7	104.1
Portland	109.1	99.7	89.2	112.8	124.0	104.1
Salem	106.0	95.1	103.6	108.4	124.9	101.8

Source: ACCRA. 1997. ACCRA Cost of Living Index, Third Quarter 1996. As reported in U.S. Department of Commerce, Bureau of the Census. 1997. *Statistical Abstract of the United States 1997*. Table 755.

# Chapter 5

## *Tools for Growth Management*

### **SUMMARY**

The report uses “tools” or “policies” generally to mean any legislation, administrative rules, programs, investments, or other actions by some unit of government that affect the way growth occurs. Those policies may affect growth directly (e.g., a limitation on building permits) or indirectly (e.g., by requiring pollution control devices that increase costs of new business development and, thus, reduce the amount of new development, at least in the short run).

Growth management tools can be categorized in many different ways. The categorization used in this report is based on the question: What aspects of growth can public policy influence? (which, in turn, may affect the amount, location, and type of growth itself).

With the exception of policies that allow state or local governments to place direct limits on natural increase or migration, governments in Oregon have about every type of tool that has been tried anywhere in the country to manage growth. They address land use or intensity, design, public facilities, other aspects of environmental quality, other fees, taxes and incentives; and the process of how decisions are made. Any community that can get an agreement on how much and what type of growth is desirable can assemble a consistent package of tools to encourage or discourage growth, and to shape its form, provided, of course, that it can convince its citizens (or others: state and federal agencies, developers) to pay for the form they want.

Nonetheless, there are actions that the state could take that would allow or encourage local governments to address growth issues more thoroughly. They include policies to revise tax codes, add local flexibility, and create new funding sources or increase state funding to local government.

This chapter and the previous one make it clear that there is no single package of growth management tools that will be right for every jurisdiction. Communities differ in many ways (size, location, socioeconomic characteristics and desires of citizens, to name a few), and those differences will lead to differ-

ent opinions about the amount and type of growth that is desirable, and what constitutes a fair way to pay for that growth. Despite differences in desired results, the process for agreeing on growth policies is likely to be similar across jurisdictions. It will have to include some level of public debate that considers, among other things, alternative futures; full benefits and costs, and who they fall on; tradeoffs; and state requirements and regional implications.

In this report, “tools for growth management” means the policies currently or potentially available to state and local governments in Oregon to change the way growth occurs. The report uses “policies” generally to mean any legislation, administrative rules, programs, investments, or other actions by some unit of government that affect the way growth occurs. Those policies may affect growth directly (e.g., a limitation on building permits) or indirectly (e.g., by requiring pollution control devices that increase costs of new business development and, thus, reduce the amount of new development, at least in the short run).

As Chapter 2 noted, a broad definition of growth and its impacts leads to a broad definition of growth management tools—a majority of government policies in land use, economic development, and public facilities address some aspect of quality of life (welfare) that growth influences.<sup>1</sup> Those policies vary along at least three key dimensions:

- *Amount of regulation.* Least flexible are regulatory policies that say “You must do this” (e.g., you must hook-up to municipal water and wastewater lines to develop in some urban growth boundary). Slightly more flexible are regulations that say “You must not do this” (e.g., you must not have more than eight units per acre in some residential zone, but if you want less we won’t stop you). Even more

flexible are performance standards (e.g., for storm water, you can build what you want as long you don't increase downstream flows by more than 5%).

- *Amount of incentive.* The flip-side of regulation is incentive: instead of prohibiting what is not desired, policies encourage what is desired. Incentives usually take the form of cost reductions (e.g., tax abatement to encourage chip manufacturers to build and bring jobs to a city) or regulatory reductions (e.g., if you build this way, you can have more density than the underlying zoning allows).
- *Amount of pricing.* Pricing overlaps with regulation and incentives. Parents regulate when they tell a child “Mow the lawn”; they use incentives when they say “I’ll give you \$2 if you mow the lawn”; they use pricing when they say “Your weekly allowance will be reduced by \$1 per day until the lawn is mowed.” Pricing is used commonly and crudely in some policies (e.g., sewer and water hook-up fees); more sophisticated applications are usually suggested by economists, and occasionally applied (e.g., emission fees for pollution, pricing (tolls) by time and location for transportation).

### ***Growth management tools can be categorized in many different ways***

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Defining growth management as government action that affects quality of life is too broad. For this report, we use a narrower definition: growth management tools are any plans, policies, ordinances, programs, investments, or other actions that seek to influence, directly or indirectly, the rate, amount, type, location, or quality of future development in a jurisdiction.

Even with this narrower definition, the literature on growth management covers dozens of tools that have been applied with varying levels of success.<sup>2</sup> A comprehensive review of those tools is beyond the scope of this report: this chapter provides an overview only. For such an overview to cover the range of potential tools, some type of classification system is required. Several systems are possible:

- *By type of impact.* Tools are commonly classified by impacts on (i.e., the growth of or changes in) things like population, housing units, industrial and commercial development, jobs, environmental quality, public facility and services, or community character and livability. Chapters 2 and 4 of this report use a similar classification system.
- *By part of the physical environment affected.* Various growth management tools target different parts of the physical environment. Some tools are designed to protect the natural environment (i.e., wetlands, air quality, soil erosion, agricultural lands), while others specifically target the built environment (i.e., design standards, infill and redevelopment policies). Some, such as urban growth boundaries affect both natural and built environments by determining where growth will occur. This type of organization would presumably have to have additional categories for non-physical effects (e.g., on the economic and social environments).
- *By jurisdictional level.* Tools exist at the federal, state, and local levels. The Environmental Protection Agency air quality standards are federal standards that must be implemented by local jurisdictions. Oregon’s statewide land use planning system contains numerous growth

management policies. Local jurisdictions can adopt and implement a broad range of growth management tools.

- *By location of growth.* Different tools get applied where growth is desired (e.g., in urban areas; in higher density areas) than where growth is not desired (e.g., farm and forest land). Tools for suburban areas may be different from those for central cities, tools for large cities different from those for small cities.
- *By type and degree of government intervention.* Most growth management tools rely on one or a combination of approaches: regulations, incentives, and pricing.

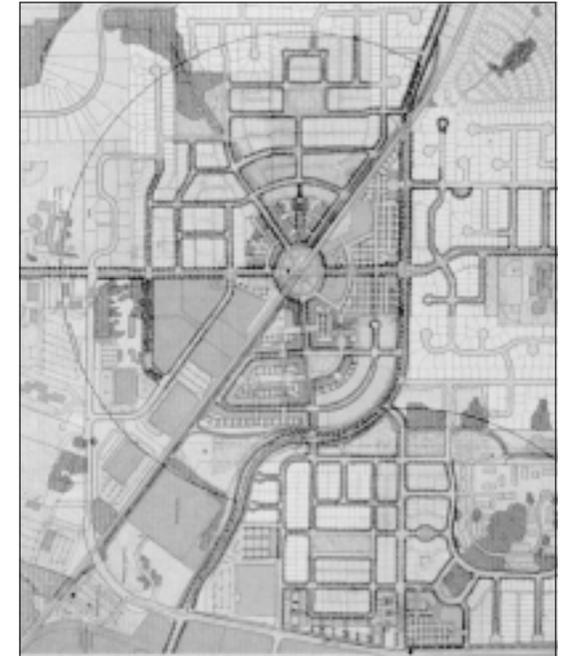
Moreover, growth crosses many boundaries and is crossed by many considerations. A tool that addresses land use impacts may also affect economic development and the environment. Tools regarding where services will be provided may also affect their costs. Financing cuts across all aspects of the growth and development process.

In short, there is no professional agreement on a classification system for growth management tools. Each study is free to invent its own, as this one does. The following system is similar to ones that organize by impacts of growth. It is based on the question: *What aspects of growth can public policy influence?* (which, in turn, may affect the amount, location, and type of growth itself). Growth may be limited directly (the first category), or it may be managed in a way that it is accommodated while its negative impacts are mitigated (the rest of the categories).<sup>3</sup> Public policy can aim to affect:

- *The amount of population, employment, or built space.* Growth management tools can try to limit directly growth itself (as defined in this study, growth means more

population, employment, or development). Examples include moratoriums on residential building permits or sewer hookups, or caps on commercial square footage.

- *Land use or intensity.* Tools that regulate the location, type, and intensity of land uses are in common use: they can be found in virtually any municipal zoning ordinance. Most zoning ordinances divide a city into districts; each district has specific requirements that define the permitted uses of land and buildings, the height and size of buildings, the supply of parking spaces, and other characteristics of development.
- *Design.* Two developments that have the same location, types of use, and density can look and operate quite differently: design matters. Examples of growth management tools addressing design include design standards or review boards, landscaping buffers, and tree conservation requirements.
- *Public facilities.* Public facilities allow growth, mitigate its impacts, and provide amenity. The impacts of growth frequently manifest themselves first through inadequate infrastructure: traffic congestion, overcrowded schools, inadequate sewer treatment facilities, or inadequate water supplies are a few examples. Managing infrastructure has obvious linkages to location of growth, environmental quality, and financing.



Examples of public facility tools include concurrency requirements (i.e., requirements that adequate levels of on-site and off-site public facilities be provided at the same time as buildings are constructed), capital improvement plans, and facility performance standards.

- *Other aspects of environmental quality.* Growth management tools also address a variety of environmental quality issues. Many tools applied at the local level are in response to federal or state standards (e.g., for water or air quality, wetlands). Federal and state requirements, however, are not the only reason that communities adopt such tools. Environmental quality is inextricably linked to people's perception of quality of life. Communities have applied a variety of tools to address environmental quality such as open space requirements, wetlands preservation, riparian buffers, and cluster development
- *Other fees, taxes, and incentives.* Jurisdictions are increasingly searching for fiscal tools to better link the cost of providing public services for individual developments to those who directly benefit from those developments. Such tools include system development charges, exactions (i.e., fees or in-kind contributions exacted as a condition of development), special taxing districts, and tax increment financing. Other incentives include write-down on land and service costs, tax and fee abatement, and the use of municipal financing authority to lower private development costs.
- *The process of how decisions about growth are made.* Tools in this category include institutional change (e.g., enabling or encouraging regional government or regional problem solving), better public involvement and representation

(e.g., on annexation and development issues just outside city limits), mediation, and education.

The categories above underscore the inter-relationships and multiple objectives that characterize most growth management tools. The overlaps that exist among the categories create difficulty in defining a system that allows tools to be classified in mutually exclusive categories. The classification system used in the next section suffers from these same limitations, but is consistent with the system described above.

### ***State and local governments already use many tools to manage growth***

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Tools that regulate various aspects of the built environment have been applied in U.S. communities for decades. Traditional planning tools such as zoning have been widely applied in U.S. communities since the 1930s. The concept of "growth management" emerged in the late 1960s with national interest in environmental protection at that time. In concept, "growth management tools" can either discourage or encourage growth: policies to encourage economic development are growth management tools under this broad definition. In practice, most growth management tools aim generally to accommodate growth while mitigating its negative impacts.

A comprehensive discussion and evaluation of growth management tools is beyond the scope of this study and readily available in the literature on growth management.<sup>4</sup> Table 5-1 gives some examples of typical tools organized by the aspect of growth they try to affect (as outlined in the previous section). It briefly describes what advocates of a particular tool hope it will achieve, and the aspect of quality of life most likely to be affected by the application of the tool.

The Oregon statewide planning goals, and the administrative rules that define and implement them, are the foundation for most city and county growth management policies. They all develop comprehensive land use plans and implementing ordinances. Communities over 2,500 must have capital improvement plans and transportation system plans. All cities must have Urban Growth Boundaries that provide a 20-year supply of buildable land.

Many Oregon communities use tools beyond those required by statewide planning statutes. Many have system development charges for some public facilities, level-of-service standards, or design review. Few have used minimum density requirements, building caps, urban service boundaries, focused public investment plans, or transfer of development rights.

Many studies have addressed the effectiveness of growth management policies in Oregon.<sup>5</sup> They find the following patterns of development in various parts of the state:

- Development at densities lower than planned
- Leapfrog and dispersed development in urbanizable areas
- Inconsistent development charges, impact fees, and other exactions across jurisdictions
- Overburdened public facilities, and development in areas lacking the full range of urban services
- Lot and building designs that discourage future redevelopment at higher intensities
- Less than planned amounts of infill development and redevelopment of decaying areas
- Less-than-planned amounts of development that allows and encourages trips other than by single-occupant vehicles.

**Table 5-1: Many types of policies are used by or available to local governments in Oregon. Some examples...**

Aspect of growth the tools affect/tools	Assumptions about the beneficial impacts of the tool (assuming efficient implementation)	Aspect of quality of life affected	
		Primary	Secondary
<b>Amount of Growth</b>			
Building Caps	Growth, after some point, is not beneficial: its net negative impacts either cannot or will not be controlled by other policies	EQ	A
Employment Limits		EQ	A
Economic Development	Diversifies economic base; increases employment	EW	
<b>Land Use/Intensity</b>			
Community Planning; Visioning	(Includes public involvement) Improves all aspects of quality of life	EQ/A/EW	-
Zoning (traditional)	Preserves amenity; reduces cost of conflict and spillovers. Incentive if upzoning.	A	-
Zoning (minimum density)	More efficient use of public infrastructure.	EQ	
UGB/Annexation Policies	Preserves farmland; encourages efficient provision of services	EQ	A
Building Caps	Reduces growth and all the presumed net negative impacts connected with it	EQ	A
Development Plans	Amenity; environmental protection; more efficient use of services	A/EQ	-
Transfer of Development Rights	Preserves farmland, open space, and natural areas by creating marketable rights	A/EQ	-
Greenspace Acquisition	Preserves farmland, open space, and natural areas by buying them	A	EQ
Development Permits	Ensures plans and standards get implemented	EQ	A
<b>Design</b>			
Design Review	Preserves amenity; potential protection to natural systems	A	EQ
Design Overlay Zones	Same	A	EQ
Performance Standards	Same	A	EQ
<b>Public Facilities</b>			
Level of Service Standards	Maintains health and safety; preserves amenity and environmental quality	A/EQ	-
Service Extension Limits	Reduces the amount and spread of growth	EQ	-
Capital Improvement Plan	Defines the location and timing of public facilities and services	EQ	EW
Focused Public Investment	More efficient use (and therefore lower cost) of public facilities and services	EW/EQ	-
System Development Charges	Growth pays greater share of cost: more efficiency and equity; less growth and fewer impacts	EW/EQ	-
Hookup Charges	Same	EW/EQ	-
User Fees	Same	EW/EQ	-
<b>Other Environmental Quality</b>			
Emission Regulation	Maintains health and safety; preserves amenity and environmental quality	EW/A	-
Emission Fees	Same	EW/A	-
<b>Other Fees and Taxes</b>			
Site Value Tax	Shift of tax to land encourages density and efficient use; equity	EW	-
Tax Increment Financing	Encourages growth, and in places deemed desirable	A	-
Federal Grants	More money to accommodate or control growth	A/EQ/EW	-
<b>Process</b>			
Public Involvement	Leads to better decisions, consensus, or at least partial agreement on approach	A/EQ/EW	-
Education	Provides citizens and policy makers with information, which leads to better decisions	A/EQ/EW	-
Mediation	Avoids litigation	A/EQ/EW	

### Recent state and local efforts related to growth management

DLCD case studies on growth outside and inside UGBs

TGM funded research: many local studies; statewide study on growth management tools (*Tools of Trade*) and Adequate Public Facility Requirements

ISTEA: federal mandate and funding for integrated planning

Transportation Planning Rule: state mandate for integrating land use and transportation

DLCD periodic review: TSPs; buildable lands; consistency of local plans with regional growth forecasts

Regional problem solving: e.g., Deschutes, Clatsop, Metro 2040

Eugene Growth Mangement Study: multi-year effort to define a future development pattern

Community Solutions Team; Integration Task Force

Quality Communities (Governor's Executive Order 97-22) Quality Development Objectives

Willamette Valley Liveability Forum

Willamette Basin Commission

EPA: Pacific Northwest Consortium: ecological model for Willamette Basin

ODOT's Strategy for Integrating Transportation/Land Use

ODOT statewide model: transportation, economics, land

Oregon Transportation Plan, corridor plans, and Area Commissions (J-PACT, MWACT, RVACT)

EDD's new Directions in Economic and Community Development

Oregon Housing Affordability Study

"New Directions" for economic and community development

State and local governments have begun to respond to these and other findings about the patterns and impacts of development. By the mid-1980s many parts of Oregon had crawled out of a five-year economic slump and have been growing ever since. By 1990 some of the negative impacts of that economic growth were being felt, especially in areas with high growth rates. New ways of managing those impacts were explored (e.g., the transportation planning rule, minimum density zoning, specific location plans, intergovernmental agreements, specific development plans, and a number of other tools).<sup>6</sup> The emphasis of current policy with respect to reducing, controlling, or encouraging growth is definitely influenced by prevailing economic conditions.

Ten years of a growing economy have enabled Oregon's communities to focus on tools to manage the impacts of the development that is a manifestation of economic growth. Institutional mechanisms have also improved for coordinating policy among the five

state agencies with primary responsibilities for managing growth in Oregon.

In 1995 Governor Kitzhaber established the Community Solutions Team, composed of the directors of the five state agencies that have the most direct effect on the physical development of communities (the Departments of Land Conservation and Development, Transportation, Environmental Quality, Housing and Community Services, and Economic Development). He charged the group with integrating investments and coordinating programs in order to be more effective at solving local and regional community development problems. A sidebar shows some of the new efforts related to growth management.

### *Some additional tools might be helpful*

With the exception of policies that allow state or local governments to place direct limits on natural increase or migration, governments in Oregon have about every type of tool that has been tried anywhere in the country to manage growth. In most cases growth management is not a lack of policy tools, but a lack of agreement within a community about which ones to pick up and how hard to swing them. Any community that can get an agreement on how much and what type of growth is desirable can assemble a consistent package of tools to encourage or discourage growth, and to shape its form provided, of course, that it can convince its citizens (or others: state and federal agencies, developers) to pay for the form they want.

Such agreement, of course, is difficult for the reason already described in this report: different people, different goals, facing different impacts. People and groups argue strongly at both the state and local level for different policies. The result is often a policy to please each interest, which collectively results

in little change to the trajectory of public policy. Significant increases or decreases in growth or any of its impacts require complementary, not offsetting, policies.

That said, there are certainly actions that the state *could* take that would allow or encourage local governments to address growth issues more thoroughly. Following are some possibilities (these are *not* necessarily recommendations of the Task Force, which are contained in Chapter 6):

- State legislation could be adopted to allow System Development Charges (SDCs) for schools, electricity, fire and emergency services, police.
- The State could revise its tax structure. Many possibilities exist; here are a few examples. A shift to a sales tax would probably reduce Oregon's relative advantage for retail and disadvantage for residential property tax and influence the type of land development on both sides of the Oregon/Washington border. Reducing or eliminating current tax deferral on farmland inside UGBs would encourage development. Economists have long argued that a property tax on land, rather than land and improvements, is more efficient, less distorting, and would encourage greater density of development in urban areas.
- The State could allow more flexibility for local solutions. This suggestion can be interpreted in different ways. First, for reasons noted, local governments already have flexibility: within the context of state and federal mandates, they still have substantial room to either encourage or discourage growth, or to require mitigation of its impacts. Thus, more flexibility would mean going even farther toward local decision. Second, it may mean that local governments are willing to meet mandated

federal and state performance standards, but they want to be able to implement creative local solutions in place of standard ones that the mandates require. That seems a reasonable request: if objectives can be achieved more efficiently, provide the flexibility to allow it to happen. Third, it may mean that local governments want relief not only from the means prescribed by the federal and state mandates, but from the ends as well. For example, some counties would like more flexibility to choose a future growth forecast to plan for, rather than having to use the forecasts of the state economist. The state could go even farther: it could allow jurisdictions the flexibility to grow less by repealing requirements for a 20-year supply of land and removing limitations on moratoria.

- State funding to local governments could be increased, or new local funding mechanisms authorized. Though local governments may have the legal authority for growth management actions, and may desire to mitigate some of the negative impacts of growth, they may lack the money to undertake them. One might argue that they have the authority to raise the money locally, and that local revenue generation would be consistent with getting growth to pay its full costs. Alternatively, one could argue an overriding state interest in local growth management makes state funding desirable. Funding for economic development, infrastructure, and intergovernmental coordination would be useful to local governments.

Some tools require big action at the state level: changing the tax structure would require legislative action *and* widespread public support. Others, such as expanding SDC legislation to allow charges for new schools would require legislative approval but probably would find public support. But many of the things

*“Local governments in Oregon have many tools they can use to influence the amount, type, location, rate, and design of growth. Nonetheless, the state could adopt policies that would allow or encourage local governments to address growth issues more thoroughly.”*

that have been suggested during this project can be done without new legislation: for example, DEQ can raise emission fees, special districts can raise fees based on new estimates of full costs of service, local governments can offer and rescind tax incentives or shift toward performance zoning.<sup>7</sup>

### ***To what degree can these tools be expected to address some of the big issues about growth?***

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Community growth management programs employ a combination of the tools discussed in the previous section. But do these programs—these collections of tools—do a good job of addressing the aspects of growth that people are concerned about? Public testimony and Task Force discussion raised dozens of questions about growth during this study. Each of these questions could have been the topic of a separate study, or at least a separate chapter. The rest of this chapter addresses a few of the more general ones to provide a sense of the ability of growth management tools to deal with the negative impacts of growth.

#### **Can we grow less?**

At the *state* level, a review of the components of population growth provides some insight into this issue: nearly one-third of the state's forecast population growth over the next 20 years will come from natural increase. In other words, even if Oregon were to close its boundaries to migration, population would still increase unless people move out.

Given the likely range of policies that fit with the likely local authority and political will of state decisionmakers, the state can probably reduce population growth, but cannot eliminate it. If one takes statewide growth as a given, at least in the short run, a relevant question plays out at the local level: Can some communities in Oregon grow less? Theoretically, communi-

ties could adopt policies that would strictly limit the expansion of urban services, and as a result growth. Oregon's land use program, however, requires UGBs to contain a 20-year supply of land:<sup>8</sup> they must accommodate forecasted growth. (Their lever for slowing growth is to forecast less of it, which would need to be justified by growth-reducing land use and infrastructure policies that they intend to adopt.) Moreover, if the restrictive policies achieve a desired end of making one community more attractive than the alternatives, the pressure for growth will increase, and so may growth in the long run.

Within a region, it is almost certainly possible to redistribute growth—ideally from communities that don't want it to those that do. In the Portland region, with multiple cities and counties offering different mixes of service and policies, growth can shift. Shifts *across* regions (e.g., Western to Eastern Oregon) are discussed in the next section.

Finally, note that at some level it has to be the case that we can use public policy to get less growth if we believe that we can use public policy to get more growth. State and local governments now have in place tools to encourage some types of economic development. If they have any affect, then eliminating them would lead to less growth. Similarly, they have policies that, while not necessarily aimed at this goal directly, have the secondary impact (at least in the short run) of reducing growth (e.g., regulatory environmental protection that may increase the cost of development). Changing those policies could increase growth if that were desired.

In sum, the range of policies that are typically described for managing growth can probably not make Oregon grow at 10% per year any more than they can make it grow at 0%. It takes national economic conditions to make that happen: policies

over which Oregon policy has little control. Oregon can, however, adopt policies that make its expected long-run population growth rate of 1.9% per year move a little in either direction. At the local level, more significant changes are possible.

### **Can we redirect growth from one part of the state to another?**

For every period in Oregon's history, the majority of its growth has occurred in the Willamette Valley. If, as some people believe, the negative impacts of growth now outweigh its benefits in the Willamette Valley, and if other parts of the state want growth, then a reasonable question is whether a combination of state and local policies can redirect growth from one part of the state to another.

A study for the Puget Sound Council of Governments (ECONorthwest 1990) found that neither state nor local governments had made concerted efforts to redistribute growth from one region to another. Moreover, not only had they not tried, none had wanted to. While the effort to redistribute growth may have few precedents, the literature offers empirical and theoretical insights on the issue. If citizens of a region *want* to slow economic and population growth, they can do it through intelligent design and aggressive implementation of state and local policies.

The growth foregone in metropolitan areas of the Willamette Valley, however, will not necessarily redistribute itself to other parts of the state. Part of the foregone growth would not occur at all. The other part would be much more likely to occur in other urban centers along I-5 (e.g., Seattle, Vancouver (BC) with possible spillover to Vancouver (WA), Sacramento, San Francisco, or Los Angeles) than in Klamath Falls, Ontario, or Pendleton.

The reasons are straightforward. Portland's economy—both its size and composition—is not simply a larger version of Pendleton's economy. It more closely resembles Seattle. Those resemblances are not limited to geography and topography. For example, Portland provides specialized cultural, legal, medical, and financial services that are not available in Pendleton. The firms and households that will make up Portland's expected growth through 2020 will make their decisions based on their own evaluations of the advantages and disadvantages of Portland's scale, complexity, and location. If they are denied them in Portland, they will find them in Seattle, Vancouver (BC), or San Francisco sooner and at less cost than they will find them in Pendleton.

The idea that we are redistributing some given population of new households and jobs is not the right way to think about the issue. There is a link between the urban and rural, western and eastern, economies of Oregon, but it is more likely to be complementary than offsetting: eastern Oregon is more likely to grow if the Portland economy does also.<sup>9</sup>

Thus, it is probably best for the purposes of this policy question to think about different regions in the state; the answer is then more clear. Some regions (*or communities within regions*) can adopt policies that encourage growth while others adopt



policies whose effects, at least in the short run, are to slow it down. The result of those policies will look like a redistribution of the growth that had been forecast, but will, in fact, be composed of different households and firms than would have existed in the absence of those policies.

### **Can we grow smarter?**

If growth is going to occur, can policies mitigate its negative impacts? In general, yes: most of the policies in Table 5-1 have that objective and can have that effect. More specifically, considerable work has been done nationally and in Oregon on ways communities can grow “smarter.” Smart growth initiatives typically aim to direct resources to revitalize older developed areas, preserve valuable resource and open space lands,

and discourage the continuation of urban sprawl.

Table 5-1 shows examples of policies that can do all those things. Smart growth initiatives are closely related to growth management programs—so closely that it is hard to distinguish how policies for smart development would differ from those for good growth management. Both attempt to balance economic development with impacts on communities and the environment. Both use many of the same planning and fiscal tools.

At least a dozen states are presently considering or have adopted smart growth initiatives. In Oregon, the Transportation and Growth Management Program initiated a “Smart Development” program to provide grants to communities to help develop and enhance more livable environments.<sup>10</sup> In keeping with the theme of this chapter is the question of net impacts: is this mitigation of the negative impacts of growth enough to justify a continuation of other policies that allow us to enjoy the benefits of growth like economic security, consumer goods, and urban amenities? There is no neat quantitative answer to that question: unanimous agreement at the local or state level is impossible.

### **Can we change the incidence of cost?**

A broad range of cost-recovery techniques are available to local governments to pay for public services associated with growth. Communities may, and do, take different approaches to paying for growth; approaches that presumably reflect a community consensus on who should pay for what and when. Those approaches, implicitly or explicitly, are the local decision about what is a fair incidence of cost. Thus, communities clearly have the ability to shift the incidence of cost to one group or another.

Financial tools such as exactions, system development charges, and hookup fees place the initial incidence of cost on developers. Most of those costs, in most cases, are ultimately passed on to the consumers of the development: some may be shifted back to landowners; almost none stay with a developer or builder.

A change in government policy almost always has a redistributive effect: it benefits and burdens some people more than others. More important than an answer to the general questions about whether growth management policies can affect the incidence of cost (yes, they can and almost always will), are answers to the more specific

#### **Smart Development**

Uses land and resources efficiently—Smart development is compact and reuses existing sites and buildings wherever possible.

Is located in cities or areas with full urban services—Smart development supports existing development or creates centers of new development to make the fullest use of existing services.

Mixes Uses— Smart development combines many activities, including commercial, retail, education and recreation, with housing. This allows people to take care of much daily need without driving, and creates a lively and safe environment in the community.

Encourages transportation choices— Smart development connects a community's existing network of walkways, bicycle paths and streets and provides direct routes to housing, employment, commercial services, schools, parks and public transportation, if available.

Uses detailed, human-scale design—Smart development is designed to the scale and comfort of people, and uses locally-appropriate design to reinforce a community's identity and heritage.

Smart Development Principles developed by TGM in cooperation with Livable Oregon.

questions about the incidence of costs and benefits from the application of a specific policy in a specific location. A previous section of this chapter provided some information on that topic, but an evaluation of the distribution of costs of all policies or combinations of policies is beyond the scope of this study.

### **Can we deal with regional problems?**

Few of the impacts of growth tie closely to political boundaries like city limits and county lines. One jurisdiction's growth can have an impact on another that is downstream, downwind, or down the street. Eugene, at the southern end of a Valley with northwest prevailing winds, suffers from the effects of field burning in other counties. An arterial built by one jurisdiction may have its excess capacity consumed by growth in another.

The economist's solution to the problem of spillovers is to "internalize the external costs." One way to do that is with prices. If air pollution from motor vehicles operating in Portland is polluting air to the south, charging emission fees (which may reduce driving) provides incentives to car owners to get less polluting vehicles, and creates revenues to offset the costs that people to the south of Portland may bear.

Another way to internalize costs is to expand jurisdictional boundaries until external costs are appropriately small: in other words, to establish some form of regional decision making. Metro is widely considered a model regional government in the U.S. It deals with the regional issues of transportation, land use, greenspaces, and so on. The Minneapolis/St. Paul regional government is a notable example for its regional tax-base sharing. Other formal institutional arrangements in Oregon are Metropolitan Planning Organizations and Councils of Government.

Less formal regional arrangements are also available and in use in

Oregon: the Regional Problem Solving<sup>11</sup> program, the Willamette Valley Livability Forum, and watershed councils are a few examples.

### **Can we improve the public's participation in decisions about growth be improved?**

There are plenty of indications that public participation needs improvement. There are many complaints about local process ("I wasn't notified," "the decisions were already made"). The movement for voter approval of annexations derives in a large part from a belief that city governments do not fairly represent interests of the people most directly affected by those annexations. The success of that movement (all seven local initiatives for voter-approved annexations on the ballot in November 1998 passed) means voters are asking for more involvement in local choices about the pattern and jurisdiction of growth, if not also its amount. The spate of ballot initiatives could be construed as a strength of public participation or a reaction to the inability of elected representatives to make decisions that reflect the desires of their constituents.

Public involvement can certainly be increased, and the funding to allow it to be more expansive and substantive can also be increased. Thus, it can be improved.

More relevant, however, is some assessment of whether cost-effective improvements are possible. No matter what they choose for a community decisionmaking process, local governments will be criticized. If they do little, the criticism is obvious. But if they do a lot, the criticism is that they are being ineffective and wasting taxpayer money.<sup>12</sup> Thus, local governments want to find some middle ground: a citizen involvement process that is fair, substantive, appropriate to the scale of the problem, and effective in getting in a timely man-

### Public Involvement in Regional Policies for Growth

Oregon jurisdictions have been at the forefront nationally of regional planning for growth and citizen participation in that planning.

The two best known, and related efforts, come out of the Portland metropolitan area. *Region 2040* started in 1990 as some general goals: it evolved to a regional plan for land use that is binding on cities and counties in the region. *LUTRAQ* was organized and funded by non-profit groups, and grew out of citizen concerns with highway planning in the Portland region. The study won national planning awards and has become a model for both the political and technical aspects of grassroots efforts in transportation and land use planning.

Many cities—Eugene, Salem, Corvallis, and Albany, to name a few—have had (or are currently involved in) extensive efforts to get citizens involved in growth management issues. Eugene, for example, spent over a year on *Shaping Eugene*, which ultimately led to workshops and surveys for citizens that asked them to consider the many conflicting aspects of growth (the positive and negative impacts, as described in this report) and to make decisions about a vision and the policies consistent with it. In parallel to that effort was one by a nonprofit group that spent a year facilitating education and discussion about growth in Eugene among a small group representing diverse interests.

Other efforts have crossed political boundaries to look at regional solutions. The Regional Problem Solving program has funded pilot projects in Clatsop, Deschutes, Jackson, and Polk/Yamhill Counties. The Rogue Valley Civic League, a two-county, non-profit was organized to provide a neutral forum for public dialogue about regional issues, and has produced a “Regional Vision Plan” for Jackson and Josephine Counties. Several cities in Umatilla County joined together to address community needs arising from rapid employment growth.

alternatives. One possible implication is that cities need more flexible state requirements that would allow them to remove some of the buildable land that is unlikely to be annexed from

ner to decisions that people agree were made openly.

The principles and techniques for effective public participation have been well known for decades and have been applied extensively in Oregon. More recent and slightly different applications in Oregon include local designs charrettes, extensive polling and focus groups, real-time electronic voting on policy preferences, and small-group process for conflict resolution and mediation.

Clearly, more citizen participation of this type has a process cost. But the structure of that participation could also change how planning gets practiced in Oregon. For example, voter-approved annexations mean, at a minimum, that a city should not simply assume that it will be able to grow into contiguous areas that are already partially urbanized. Thus, it must do additional planning to consider

their buildable land inventories: the result would be different, probably larger, urban growth boundaries.

### *Deciding on the best tools requires judgment, but some guidance is available*

This chapter and the previous one make it clear that there is no single package of growth management tools that will be right for every jurisdiction. Communities differ in many ways (size, location, socioeconomic characteristics and desires of citizens, to name a few), and those differences will lead to different opinions about the amount and type of growth that is desirable, and what constitutes a fair way to pay for that growth.

This report has argued, however, that managing growth is just another way of talking about planning for a future. Despite decades of looking for an alternative, the general steps for that kind of public planning are hard to improve on. It requires a community to engage its citizens in a discussion of facts about growth; possible futures (alternatives) and the impacts of those alternatives on the community and surrounding communities; and how those alternatives could be achieved (the policies). Figure 5-1 illustrates a typical process.

That discussion is not easy. Appendix E gives an example of some of the thorny issues about fairness that underlie decisions about a system development charge for schools. Other policy changes are equally difficult. In trying to decide on a position on growth and a package of policies to support that position, local governments should have some level of public debate that considers:

- *Alternative futures.* What's likely? What's desirable?
- *Local responsibility for global problems.* To what extent, and how, should local policies attempt to address larger

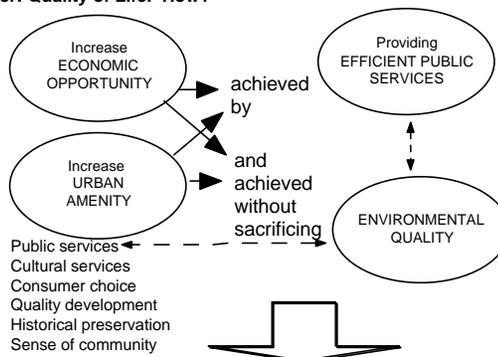
problems like population growth, global warming, resource depletion, and social justice?

- *Full social costs, externalities, and distributional impacts.* Chapter 4 shows that impacts of growth are much greater than the costs to local governments of providing public facilities. What are the biggest impacts of a particular policy course, and how are those impacts likely to be distributed (including impacts that occur outside local boundaries)?
- *State requirements; other local and regional policy direction.* Impacts cross boundaries in both directions: what other levels of governments do can have big impacts on the success of local policy. Do local policies fit into a consistent state and regional framework for dealing with growth?
- *Tradeoffs.* Because there are options, there are tradeoffs. As some factors that contribute to quality of life become more scarce, local policy may want to take stronger steps to protect them. Local government is the logical place for taking a collective, long view of what a place could and should become. Some risk assessment is required: given inherent uncertainty, which actions best protect quality of life? Are some things becoming so scarce that they need protection, even if the cost is greater than current market prices might suggest the protection is worth?
- *Consistency.* It is common for government policies, in an effort to give something to all interests, to offset one another. Choose a future and realign local policy to work consistently toward it.

**Figure 5-1: One way to structure a local discussion of growth and growth management**

**What is the city trying to achieve by managing growth?  
In other words, What are the goals?**

Answer: Quality of Life. How?



**1 GOAL SETTING**

The amount and the distribution of the impacts (benefits and costs) over time is important.

**What are the policies that the City has used in the last 10–20 years to achieve these goals?**

Should there be growth?

Should there be growth? As a matter of policy, is the City for, against, or neutral on growth?

Answer: may not be answered directly in a specific policy statement, but other policies imply the answer. Most cities in Oregon, at a minimum, have accepted and tried to accommodate growth. Some policies have actively sought to encourage growth (ECONOMIC DEVELOPMENT). Those policies, however, can change.

Given, at a minimum, the acceptance of growth, what has the City done to reduce its negative impacts?

Implemented policies to:

- Get growth to the right place (LAND USE/LOCATION: planning, zoning, growth boundary)
- Get growth designed right (DESIGN: subdivision ordinances, design review)
- Get adequate services to growth to avoid negative impacts (SERVICES: sewer, water, roads)
- Mitigate the negative impacts that do occur (MITIGATION: wetlands reclamation, transit)

**2 REPORT CARD  
POLICY HISTORY;  
POLICY FRAMEWORK**

**What policies are available for future growth management, and how well do they work?**

**3 EVALUATION**

How do the policies relate to each other? How do they interact with market forces?  
How are they likely to work?



# Chapter 6

## Conclusions and Recommendations

### SUMMARY

This chapter summarizes how the Task Force interprets information in Chapters 2, 3, 4 and 5 in the context of public policy. Only conclusions and recommendations on which the Task Force members agreed unanimously are included in this chapter

The Task Force agreed on three categories of conclusions:

- How communities and regions within Oregon are growing.
- *How and when communities pay for, and benefit from, development.*
- *Tools communities may use to address growth-related issues.*

The Task Forces recommendations address regional problem solving, protection of natural resources, better financing and some new financing mechanisms, state-funded technical assistance to local governments, and the creation and funding of a subsequent task force to address in more detail certain growth issues identified in this report.

Chapters 2, 3, 4 and 5 summarize the information the Task Force reviewed during its investigation of the impacts of growth. It also considered more detailed information presented in appendices and attachments to this report, including public testimony, both oral and written, on growth and growth management issues. Collectively, this information constitutes the facts about growth and its impacts that the Task Force was charged to assemble.

This chapter summarizes how the Task Force interprets these facts in the context of public policy. The Task Force drew several conclusions from the facts, and then agreed on eight recommended next steps. The specific charge to the Task Force did not require it to go any farther than getting agreement on facts about growth (i.e., Chapters 2-5). The members decided,

however, that they would make recommendations whenever they could reach unanimous consensus.

### Conclusions

#### How communities and regions within Oregon are growing

##### 1. Different rates of growth affect communities differently and the impacts of growth vary by local conditions

Communities throughout Oregon are changing. Some communities are growing rapidly due to an influx of people and jobs. Others are distressed due to the loss of local jobs and services. This report references several studies that suggest that the per capita costs of growth are higher in both slow and fast growing communities than in communities growing at a moderate pace. Slow-growing communities have difficulty raising the funds to pay for services. However, it is clear that higher rates of growth do not solve a jurisdiction's revenue problem. Fast-growing communities have more difficulty managing the effects of growth than slow- or moderately-growing communities.

The Task Force also concluded that the type and magnitude of growth impacts, both good and bad, vary significantly depending on local conditions. Variables such as geography, growth rate, methods of paying for growth, levels of healthy civic engagement on growth issues, and size of the community, among others, can have a substantial effect on growth impacts.

##### 2. Communities should consider growth and development-related issues in a regional context

Community development issues are complex and interrelated, often affecting surrounding jurisdictions. For

example, if a community decides it wants to focus its community development efforts on creating jobs rather than on providing housing, surrounding communities may receive additional pressure to provide housing for people who are attracted to the area for job opportunities. This type of jobs/housing imbalance within a community may also affect the level of congestion on roadways connecting the jobs and housing as people travel longer distances to and from work.

Another example might involve a community that does not want to grow (e.g. a town surrounded by high-value farmland). If decisions about if, where, when, and how communities should grow are made in a regional context, communities that want to grow and that can absorb that growth (e.g., are surrounded by lower-quality soils) may agree that they are better suited for development than those communities surrounded by high-quality soils.

Regional treatment of issues also presents opportunities to tailor state policies to local needs. Sometimes implementing a policy regionally rather than locally is more sound given that many issues transcend local boundaries. For example, the Regional Problem Solving Program provides money to local governments to solve problems in a regional context.

### **3. Communities must be cognizant of the relationship between growth, natural resources and quality of life**

Fast-growing communities cannot sustain high growth rates without affecting quality of life and environmental quality. Even communities growing at a moderate or slow pace should be cognizant of how growth affects the quality of the natural and built environment. Air, water and other natural resources have a finite supply. If a community

grows, it should develop in a way that minimizes negative affects on regional environmental concerns and available natural resources (e.g., available water, air quality, etc.)

### **How and when communities pay for, and benefit from, development**

#### **4. Paying for growth-related infrastructure presents a significant challenge to many Oregon communities**

The amount of population and employment growth forecasted for Oregon cannot occur without the construction of public facilities. For new single family housing, the construction costs of on-site facilities (e.g., local streets, sidewalks, sewer, water lines and meters) are on the order of \$15,000 to \$20,000 per housing unit. Developers initially pay those costs either directly by building the infrastructure themselves, through special assessments, or as fees to local governments and special districts. In turn, developers pass these costs on to purchasers.

The construction costs of off-site facilities (e.g., improvements to arterial streets, sewer and water trunk lines and treatment plants, schools, fire stations, parks) are on the order of \$15,000 to \$30,000 per housing unit. Some of these costs are paid by developers (and purchasers) through System Development Charges (SDCs) and exactions or dedications; some are paid by current and future property owners through taxes to retire debt; funding for some projects is also available through federal grants and revenue sharing.

Some of the off-site costs are probably deferred, with the result that either (1) future households will have to pay for new facilities or accept a lower level of service, (2)

methods and technology will have to change in ways that allow level of service to be maintained with less capital investment per capita, or (3) growth will need to be slowed or stopped. Studies reviewed by the Task Force showed that in most cases there is a gap between the level of off-site costs incurred by a community and the revenue available to cover those costs. The amount of the gap varies from community to community and there is strong debate about the size of any shortfall. The Task Force did not resolve this debate.

Communities may be able to reduce the costs of growth by selecting development patterns that use infrastructure efficiently. The most efficient growth pattern may vary depending on unique local conditions.

Shortfalls in revenues that would enable a jurisdiction to construct and maintain public facilities at current levels of services are a problem regardless of a community's rate of growth. Slow-growing communities have difficulty raising funds for infrastructure to support growth. Fast-growing communities have trouble building infrastructure to keep up with growth.

This problem is particularly acute for transportation. State gas tax revenues are not adequate to pay for transportation needs, and cannot be spent for transit, which in some cases might be an efficient alternative to road construction.

In some cases, financing mechanisms do not raise revenue when revenue is needed. Large capital investments require up-front financing, while the revenues often flow in small increments over time. Taxes and fees also are not assessed at the time when land is added to urban growth

boundaries, even though significant property value is created by this act.

##### **5. Oregon's tax system affects the resources available at the local level to deal with growth-related issues**

Oregon's tax system increasingly relies on income tax revenues; the state does not have a sales tax and property tax increases have been limited by voters. Income taxes are highly responsive to growth, meaning that more revenue is generated during high growth periods and in fast growing communities than during slow-growth periods and in slow-growing communities.

Income taxes are collected and spent by the state. Local governments rely heavily on property tax revenues which are limited through voter-approved initiatives. Property tax revenues provide a relatively constant flow of revenue, but are less responsive to growth. Local governments must bear much of the cost of providing the infrastructure needed to support growth, but do not have a revenue stream commensurate with the need.

For example, state law requires state income tax revenues that exceed forecasts to be returned directly to taxpayers as the income tax "kicker". Local governments seeking funds to pay for growth related infrastructure costs have no access to this growth-related income, nor has there been an adequate method of projecting this income within the forecasting formula.

This study did not examine whether redirecting revenues from state to local governments would eliminate or reduce the infrastructure funding gap or have other consequences.

**Tools communities may use to address growth-related issues**

**6. Communities may need to use incentives to foster the type of development they desire**

Not all communities in the state are growing rapidly. In many counties and small cities, public policy is aimed at encouraging growth, not restraining it. It is important to focus public attention and resources on small slow-growing communities that want to encourage growth as well as to help fast-growing communities to deal with the effects of growth or to assist them in slowing growth.

If slow-growing communities hope to grow at rates in excess of what market forces would cause, they will need to offer incentives to stimulate development that is compatible with local, regional, and statewide needs. For example, financial incentives may be used to encourage development that reinforces downtowns and community centers as well as helps to diversify a local economy.

Rules and regulations only permit development to occur; they do not make it happen. Land may be zoned for commercial, industrial or residential development, but that does not ensure development will occur. Many Eastern Oregon communities that have an adequate supply of land zoned for economic development purposes are unlikely to get a type and amount of development consistent with community goals unless they target investments and offer incentives, or unless there are significant changes in market patterns and market development.

Incentives can also be used to focus growth in moderate- or fast-growing communities in downtowns, main streets and neighborhoods rather than on the urban fringe. For example, if land near community centers is more expensive than is land on the urban fringe, different types of incentives could be crafted to reduce the cost of the land near the community center. Similarly, if development on infill sites is more time consuming, incentives and tools could be offered to encourage developers to choose to build on infill locations.

**7. State agencies need to integrate their programs better to respond to local needs**

Many communities believe that state agencies do not act consistently when implementing programs and policies. An example cited is the inconsistency between the Oregon Department of Transportation (ODOT) and the Department of Land Conservation and Development (DLCD). DLCD encourages higher-intensity, mixed-use development patterns in certain locations, while ODOT sometimes recommends denial of such development on the basis that such development will overburden state highways or that congestion problems on existing roadways will be exacerbated. This can create frustration at the local level.

Another issue cited is that state programs need to respond to a range of community development issues. What works to enhance the quality of life in one community may be inadequate in another. State agencies need to work more collaboratively with each other to find the most appropriate and effective ways to achieve state policy goals in ways that work in local areas.

The committee was briefed on the Governor's Community Solutions Team which was established to integrate the programs of state agencies, and to work together to solve community development problems, rather than simply run agency programs. The team consists of the directors of five state agencies whose programs and investments most directly affect the physical development of communities and regions across Oregon. These agencies are Economic Development, Environmental Quality, Housing and Community Services, Land Conservation and Development, and Transportation. State agencies need to support local and regional efforts to maintain and build livable communities through collaboration and creative problem solving. To do this, it is often necessary to break down the institutional barriers that exist between them.

#### **8. Use existing tools to achieve community goals**

Chapter 5 outlined the range of tools available to address community development issues. Communities have access to the tools that can help them shape or direct growth. However, the Task Force heard that some jurisdictions need technical and financial assistance to help identify how to apply available growth management tools in a manner that supports local priorities and visions. The Task Force also heard that additional tools are needed to enable communities to encourage, direct, or slow growth.

#### **9. High-quality design is important**

The debate about growth is not just about how much, but what kind. Two developments of identical size and density can have very different impacts on their community depending on how they are designed.

Community acceptance is closely tied to good quality design that is sensitive to impacts on surrounding properties and whether the development contributes or detracts from the aesthetic value of the community. High-quality design and construction may, however, increase housing cost.

#### **10. Citizens are increasingly concerned about if, how, and when their community should develop**

Many people and community representatives indicated that citizens are feeling increasingly disconnected from their local governments on growth issues. One example of this trend is the recent increase in local initiatives to amend city charters to require a public vote prior to approval of annexations.

Business, civic, and government leaders must constructively respond to growing citizen concerns about growth-related issues and quality of life in communities. The intensity of citizen concern has reached the point that failure to act may jeopardize Oregon's land use planning program and the economic future of the state.

*"Business, civic, and government leaders must constructively respond to growing citizen concerns about growth-related issues and quality of life in communities. The intensity of citizen concern has reached the point that failure to act may jeopardize Oregon's land use planning program and the economic future of the state."*

### ***Recommendations***

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1. The State Legislature and Department of Land Conservation and Development need to ensure that adequate tools exist so that communities will participate in sound regional planning for purposes of protecting farm and forest land and achieving other statewide goals. For example, the Regional Problem Solving Program, which provides resources to local governments to help address problems that are regional in scope has met with some

success and should be funded by the legislature. The State should also consider ways to coordinate the timing of the periodic review processes within a region to make it more conducive to addressing regional problems.

2. The State should study whether there are better ways, within a regional context, to limit growth in certain areas for purposes of natural resource protection.
3. The added value created when property is added to urban growth boundaries should be taxed by the local jurisdiction for the purposes of defraying the cost of growth and promoting affordable housing.
4. The State should develop mechanisms that would allow local governments to finance infrastructure needs in a timely manner. One mechanism could be a state-funded loan fund available to municipalities.
5. The State Legislature should increase the gas tax to fund transportation improvements across the state and should also create funding mechanisms for local transit needs.
6. State agencies should increase their efforts to coordinate their activities and programs with one another, consistent with the Community Solutions Team approach.
7. As a follow-up to this project the state should consider increasing technical assistance to local government officials on matters of managing growth. One useful product would be a growth management “how to” manual to help local governments use existing tools as effectively as possible to advance their unique vision for their community’s future. This can be in the form of a written manual, workshop, or a web-site.

8. A new committee or task force should be convened during the 1999-2001 biennium to more thoroughly research issues and oversee implementation of these recommendations. This group should specifically address the basic fairness issues surrounding the question, “who should pay for growth?”, and should also consider the adequacy of tools available to local governments to slow or stop growth. The Legislature should allocate sufficient time and resources to allow the group to thoroughly address the range of issues.







# Appendix A

## Endnotes

### Chapter 2

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<sup>1</sup> For a more detailed description of how regions and metropolitan areas grow see an appendix to this report, and O'Sullivan (1994), Moore and Thorsnes (1994), ECONorthwest (1994). For the importance of metropolitan growth, and of capturing suburban growth, to central cities, see Rusk (1993).

<sup>2</sup> See ECONorthwest (1994) for a longer discussion of the importance and essential components of a full-cost framework for evaluating growth-management policies.

<sup>3</sup> For an overview of this perspective, see the material submitted to the Task Force from Tom Bender, which provides evidence of ecosystem misuse, resource depletion (especially fossil fuels), and population growth, and argues that growth has immense costs (both direct and social) that could be avoided by population stabilization, transition to renewable resources, and a four-fold reduction of consumption.

People with this perspective often advocate sustainable development as an alternative to today's level of growth and consumption. Sustainability is a philosophy about limits, connections, the importance of natural systems, social justice, and civic engagement. The literature on sustainable development is strong on underlying philosophy, information about global ecological limits, and suggestions for local process, but weaker on tradeoffs and applications to regional growth management. In general, its policy recommendations derive directly from its assumptions: since sustainable local development means less consumption, more conservation, and greater community awareness and participation, desirable policies include recycling, energy conservation, non-auto transportation, protection of farm land, tight urban growth boundaries, greater urban density, and more substantive public involvement (Krizek and Power 1996).

### Chapter 3

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<sup>1</sup> Much of the data in this report is available by county. Oregon has 36 counties, and describing conditions and trends for each individual county would be complex and possibly confusing for the reader. To simplify our presentation we grouped counties into five regions, based on physical proximity and economic ties. The composition of these economic regions are as follows:

*Coastal Oregon:* Clatsop, Columbia, Coos, Curry, Lincoln, Tillamook. *Willamette Valley:* Benton, Clackamas, Lane, Linn, Marion, Multnomah, Polk, Washington, Yamhill. *Southern Oregon:* Douglas, Jackson, Josephine. *Central Oregon:* Crook, Deschutes, Hood River, Jefferson, Klamath, Sherman, Wasco. *Eastern Oregon:* Baker, Gilliam, Grant, Harney, Lake, Malheur, Morrow, Umatilla, Union, Wallowa, Wheeler.

<sup>2</sup> Frohnmayer, Dave. 1993. "The New Pioneers." *Old Oregon* (Autumn): 23-27.

<sup>3</sup> Frohnmayer, Dave. 1993. "The New Pioneers." *Old Oregon* (Autumn): 23-27. Judson, Dr. Dean H. 1994. *The Oregon In-Migration Survey*. Salem: State of Oregon, Employment Department.

<sup>4</sup> State of Oregon, Oregon Progress Board. 1997. *Oregon Shines II: Updating Oregon's Strategic Plan*. Salem: Oregon Economic Development Department. January 21.

### Chapter 4

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<sup>1</sup> They may also be concerned about housing affordability, an issue covered later in this report.

<sup>2</sup> See Carson (1998, 36-40). If, for example, the facilities that we build do not completely handle all external costs (e.g., waste

water treatment), then costs of future cleanup are being deferred. Similarly, if this decade's growth is using and not adding to excess capacity built in previous decades (e.g., highways, bridges, dams), then some costs of growth are being deferred.

<sup>3</sup> The same warnings apply: (1) most of the information is at the state level—it cannot be directly applied to any particular city, which may have a situation substantially different from general statewide tendencies; and (2) the analysis is an overview: it cannot provide enough detail about any individual impact and its effects from and on all aspects of growth (amount, rate, location) to allow quantified conclusions about the net impacts of growth.

<sup>4</sup> Bernstein, Jared. Forthcoming. *The State of Working America*. As reported by Sleeth, Peter. 1998. "Wages Slowly Regain Ground." *The Oregonian*. September 27. p. B1.

<sup>5</sup> There are some important exceptions; for example, homeowners do not need permission to extract a limited amount of groundwater for domestic use.

<sup>6</sup> Willamette River Basin Task Force, September 1988. *A Proposed Framework for Tracking the Health of the Willamette Watershed*.

<sup>7</sup> State of Oregon, Department of Environmental Quality. 1998. Restoring Water Quality Through Oregon. February. <http://waterquality.deq.state.or.us/wq/303dlist/303dFactSheet.htm>

<sup>8</sup> Surface water runoff, or non-point source pollution, is currently the largest source of water pollutants in Oregon. When it rains, water washes over driveways, roofs, agricultural lands, streets, lawns, construction sites, and logging operations picking up soil, garbage and toxics. Pollution from surface water runoff is hard to detect and control because it doesn't come

from a single source like a factory or sewage treatment plant. Instead, many everyday activities and traditional land use practices allow pollutants to wash into our waters. Non-point sources of pollutants include: (1) Household chemicals and soaps running off driveways, roofs and yards into streets and down storm drains directly to streams and rivers. (2) Fertilizers and pesticides running off agricultural lands and urban areas such as yards, parks, golf courses and landscaped areas. (3) Oil, anti-freeze, and other toxic materials running off roadways into storm drains or directly into streams. (4) Soil erosion which comes from construction sites, logging activities and agricultural lands. (5) Failing septic tanks that cause both surface and groundwater pollution. (6) Livestock and pets, such as dogs, which pollute the water with bacteria, cause erosion, and destroy aquatic habitat. State of Oregon, Department of Environmental Quality. 1998. *Water Quality Overview*.

<sup>9</sup> Willamette River Basin Task Force. 1997. *Willamette River Basin Task Force: Recommendations to Governor John Kitzhaber*. December.

<sup>10</sup> State of Oregon, Department of Environmental Quality. 1998. Water Quality Overview. <http://waterquality.deq.state.or.us/wq/wqovr.htm>

<sup>11</sup> State of Oregon, Oregon Progress Board. 1997. *Oregon Shines II: Updating Oregon's Strategic Plan*. Salem: Oregon Economic Development Department. January 21.

<sup>12</sup> State of Oregon, Department of Environmental Quality. 1998. *Carbon Monoxide Summary (ppm), Portland 4<sup>th</sup> and Alder, 1979-1997*. Data provided to ECONorthwest by DEQ Air Quality Division.

<sup>13</sup> State of Oregon, Department of Environmental Quality. 1998. *Air Quality Overview*. <http://www.deq.state.or.us/aq.aqover.htm>

<sup>14</sup> This list includes all animal, fish, and plant species currently listed as threatened or endangered by the State of Oregon or Federal government.

*Animals/Fish.* Aleutian Canada Goose, American Peregrine Falcon, Bald Eagle, Borax Lake Chub, Brown Pelican, Bull Trout, Columbian White-Tailed Deer, Foskett Speckled Dace, Hutton Tui Chub, Kit Fox, Lahontan Cutthroat Trout, Lost River Sucker, Marbled Murrelet, Northern Spotted Owl, Oregon Chub, Oregon Silverspot Butterfly, Shortnose Sucker, Sockeye Salmon, Steller Sea Lion, Warner Sucker, Western Snowy Plover, Wolverine

*Plants.* Applegate's Milk-Vetch, Bradshaw's Desert-Parsley, Golden Paintbrush, Macfarlane's Four-O'clock, Malheur Wire-Lettuce, Marsh Sandwort, Nelson's Checker-Mallow, Water Howellia, Western Lily

U.S. Department of Interior, Fish and Wildlife Service. 1998. *Listed Species by State/Territory as of June 30, 1998.* <http://www.fws.gov/r9endspp/statl-r1.html#LnkOR> and State of Oregon, Department of Fish and Wildlife. 1998. *Questions and Answers About the Oregon Threatened and Endangered Species Act.* <http://www.dfw.state.or.us/ODFWhtml/InfoCntrWild/PDFs/BKGT%26E.pdf>

<sup>15</sup> Acres in UGBs from DLCD estimates of acreage by zoning: <http://www.lcd.state.or.us/backinfo/zontot.htm>; UGB amendments from DLCD: <http://www.lcd.state.or.us/backinfo/ugbsum.htm>.

<sup>16</sup> Northwest Land Conservation Trust, in Oregon Department of Land Conservation and Development (1997). *Population Growth Affects Agriculture.* [http://www.oda.state.or.us/information/Growth\\_Affects\\_AG.html](http://www.oda.state.or.us/information/Growth_Affects_AG.html)

<sup>17</sup> 1000 Friends of Oregon (1997). "Farm and Forest Land Protection." *Landmark.* February. Page 4.

<sup>18</sup> Oregon Department of Transportation, Research Unit (1998). Draft Indirect Land Use and Growth Impacts: Phase 1 Report.

<sup>19</sup> More than 14,000 acres were rezoned to industrial use by the Port of Umatilla. Oregon Department of Land Conservation and Development (November 1997). County Acres Replanned and/or Rezoned from One Rural Zone to Another Rural Zone by Type of Zone and Year. <http://www.lcd.state.or.us/backinfo/pamapsum.htm>.

<sup>20</sup> USDA-NCRS National Resource Inventory. Information provided by Mark Tilton, Beaverton Office.

<sup>21</sup> Oregon Department of Land Conservation and Development (September 1997). Exclusive Farm Use Report, 1995-1996; Forest Use Report, 1995-1996.

<sup>22</sup> 1000 Friends of Oregon (1997). "Farm and Forest Land Protection." *Landmark.* February. Page 5.

<sup>23</sup> Bureau of the Census . Various years. *Intercensal Estimates of the Total Resident Population of States.* Bureau of the Census . 1985 & 1997. *Statistical Abstract of the United States.* Bureau of Economic Analysis. 1997. *Regional Economic Information System.* Oregon Department of Transportation, DMV Various years. *Oregon Motor Vehicle Registrations by County.* Energy Information Administration. 1998. *State Energy Price and Expenditure Report 1995.*

<sup>24</sup> Oregon Department of Transportation, Transportation Planning Section. 1998. *Statewide Congestion Overview for Oregon.*

<sup>25</sup> ODOT. 1998. *Statewide Congestion Overview for Oregon.*

<sup>26</sup> ODOT. 1998. *Statewide Congestion Overview for Oregon*.

<sup>27</sup> Eugene Airport. 1998. "Lowest air fares from Eugene," Eugene: *Register-Guard*, September 6. Morris Travel. 1998. "Lowest airfares from PDX last week," Portland: *The Oregonian*, September 6.

<sup>28</sup> Scudder & Associates. 1997. *Ticket Lift Study: Eugene Airport*.

<sup>29</sup> Oregon Progress Board (1996). *Oregon Population Survey*. <http://govinfo.kerr.orst.edu/ops/>

<sup>30</sup> White, Bole, and Sheehan, (1997). *Affordable Housing Cost Study, An Analysis of Housing Development Costs in Portland, Oregon*.

<sup>31</sup> In discussions about growth in Oregon it is often asserted or implied that multi-family housing is less expensive. The findings of White (1997) for Portland give mixed evidence. Multi-family housing costs less per unit, but there is more to the story.

People have a lot of experience with consumer purchases, and they know lowest price does not necessarily mean greatest value. People do not buy a generic product called "shelter" any more than they buy generic products called "car" or "stereo" or "dinner." Yes, that one's the cheapest, but this one tastes better, is more nutritious, and is big enough that I'll have left-overs for lunch tomorrow.

The food analogy has other parallels for the debate about growth. People worried about population growth and the ability of natural systems and technology to provide food for more people usually argue that population growth should be reduced. An extension of the argument is that for a given amount of population, natural limits to carrying capacity suggest some people should either eat less, or more nutritiously and lower

down the food chain. If some people lack the means to produce or purchase basic nutritional requirements, social programs like school lunches and foreign aid should assist them.

By analogy, if the goal for housing were to produce a uniform shelter unit as efficiently as possible, then denser, multi-family housing has advantages. But when people consider all the things they want housing, many see single-family housing as a better value. The Portland study shows they get more space per dollar, or they get other attributes they want.

As with other aspects of growth, one's choice of policy depends in part, perhaps strongly, on one's view of ecological limits. On the one hand, if resources are very scarce, standardized and modest products will conserve them. Some economists have argued that a better theory of economics, one consistent with ecological systems and limits, is one that aims to satisfy basic needs with a minimum of throughput (rather than one that aims to provide whatever people are willing to pay for at the lowest price). On the other hand, generic products certainly limit consumer choice and, thus, satisfaction, and may be seen as an abridgement of personal freedom and an obstacle to creativity.

<sup>32</sup> Bay Area Economics (1998). *Draft Oregon Housing Cost Study, Phase I Report: Market and Economic Trends*. July.

<sup>33</sup> An evaluation of these studies is presented in City of Eugene (1997). *Urban Growth Boundary and Related Policies, Data and Analysis Report*. November.

<sup>34</sup> See, for example, Metro's recent *Housing Needs Analysis* for a list of potential policies.

<sup>35</sup> Southard, P.A. (1994). *An Overview of Homelessness and Social Service Responses in Oregon*.

<sup>36</sup> One measure of commitment to cultural amenities is funding for arts programs. Oregon ranked 44<sup>th</sup> nationally in state-wide per capita funding of arts programs in 1996. State of Oregon, Oregon Progress Board. 1997. *Oregon Shines II: Updating Oregon's Strategic Plan*. Salem: Oregon Economic Development Department. January 21.

<sup>37</sup> U.S. Bureau of the Census (1997). *Census of Retail Trade*.

<sup>38</sup> Bureau of the Census (1997). *Statistical Abstract of the United States, 1997*. Table 1279.

<sup>39</sup> “Eventually” because demographic shifts in the existing population can cause school enrollments to decrease even as total population is increasing.

<sup>40</sup> Oregon Department of Education (1997). *Ten-Year Historical Profile of Education Statistics*. <http://www.ode.state.or.us/stats/profile.pdf>.

<sup>41</sup> Measure 50 reduced the maximum assessed value of property for the 1997-98 tax year, limited future growth in assessed value to 3% annually, and permanently fixed the maximum tax rate for each tax district, based on the 1997-98 levy.

<sup>42</sup> Oregon Department of Education, from National Public <http://www.ode.state.or.us/stats/finance/ncesexph.htm>.

<sup>43</sup> The relative cost of housing here is opposite that shown by median sales price data in Chapter 3. The opposite results arise from measuring prices for different segments of the housing market. The cost of living data is meant to measure the relative price levels of goods for a “mid-management standard of living,” so the prices measured by the index are only for those goods and services that correspond to that standard of living. Median sales price data for housing, however, is based on sales prices for all housing.

## Chapter 5

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<sup>1</sup> Chapter 2 also showed why it is always difficult, if not impossible, to quantify rigorously the impacts of any growth management policy on aggregate welfare: that aggregate calculation requires the consideration of all impacts, on all people, now and in the future.

<sup>2</sup> In *Managing Growth in America's Communities*, Porter (1997) indicates that 59 distinct growth management tools exist.

<sup>3</sup> Note that the categories overlap, and that tools to manage and mitigate growth, if they become very expensive, will have the effect of limiting growth as well (e.g., fees for facilities deemed necessary to protect environmental quality potentially could raise the cost of development enough that growth slows down as a result). Alternatively, if such tools achieve their desired goals efficiently, then quality of life could increase and attract more growth.

<sup>4</sup> See, for example, Kelly (1993), Nelson and Duncan (1995), Porter (1994), ECONorthwest (1994).

<sup>5</sup> ECONorthwest (1991). *Urban Growth Management Study: Case Studies Report*. Salem: Department of Land Conservation and Development.

<sup>6</sup> Transportation and Growth Management Program, Department of Land Conservation and Development and Oregon Department of Transportation, 1996. *Tools of the Trade*. <http://www.lcd.state.or.us/issues/tgmweb/pub/tools.htm>. This publication provides a detailed discussion of innovative growth management tools and examples of communities that are applying those tools.

<sup>7</sup> Tools that local governments genuinely lack the authority to implement are largely a subset of financing tools: for example,

SDCs for schools, or a state sales tax. In most other cases, local governments have the *authority* to implement more or stronger tools, but have not done so for many reasons. In some cases, the argument for state action is to compel local jurisdictions to take actions that they can already take if they wanted. While the rhetoric of local government is uniformly in favor of local control, the reality is occasionally some local governments favor state regulatory requirements so that they have a compelling reason to adopt growth management policies that would otherwise remain stuck in a gridlock of local debate.

<sup>8</sup> A main reason is to reduce any impacts on land price and, thus, housing that could otherwise result from a restricted supply of buildable land.

<sup>9</sup> Because the Portland economy has a big influence on the demand for the products and services that Pendleton provides.

<sup>10</sup> Transportation and Growth Management Program, Department of Land Conservation and Development and Oregon Department of Transportation (1996). <http://www.lcd.state.or.us/issues/tgmweb/smart/smart.htm>

<sup>11</sup> In 1995, the Oregon legislature authorized a process that allows local governments, state agencies, citizens, and affected organizations to work together to address problems that extend beyond city or county boundaries. The act allows LCDC to acknowledge regional solutions that include plan changes and regulations that do not fully conform with the Commission's rules. The pilot project is scheduled to end in December 1998.

<sup>12</sup> Asking for that input does not guarantee that a community consensus will emerge on what the community should look like in the future or how to get there. The huge expenses associated with broad-scale citizen involvement processes and the

expectations that accompany those expenditures further increase the risk to local decisionmakers. For example, Eugene ran extensive public involvement processes as part of *Eugene Decisions* and *Shaping Eugene's Future*. That process did not insulate the City from the criticism that it already had an agenda, or that the process was both too little and cost too much.

### ***Appendix D***

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<sup>1</sup> ECONorthwest (1994). *Evaluation of No-Growth and Slow-Growth Policies for the Portland Region*, Chapter 4.

<sup>2</sup> Or also as *external economies of scale*—external because they do not result from the internal operation of a particular firm.

<sup>3</sup> *Wages* are a colloquial way of expressing the term usually used by economists to describe the objective of growth: *increases in real per incomes*. Those increases are typically assumed to be the best proxy measure available for the true objective: (Pareto optimal) increases in welfare. The assumption is that if people have more money they are better off because they can buy more of what they want.

<sup>4</sup> One of the critiques of a strict no-growth policy is that it would not only stop in-migration: it would also require out-migration to counterbalance the growth from natural increase. In the extreme, some people criticize no-growth policy as requiring “our sons and daughters to move somewhere else.” In fact, of course, even policies aimed at a very low growth in population would probably not include residency cards—people would be free to move. The point is that if slow growth is achieved by increasing prices, then people who are mobile and lower-income (including sons and daughters) are the most likely to migrate from the region.

<sup>5</sup> *The Oregon In-Migration Study* (Oregon Employment Division, 1991) found that Oregon's recent arrivals took an average pay cut of about \$4,500 per household.

<sup>6</sup> Such as: the impact of national and international policies and economic conditions; the anchoring effect of homeownership on mobility; and the fact that wanting to be near friends and family is typically the most important reason given by newcomers to a region (to name a few).

<sup>7</sup> Note that here, as throughout this appendix, we are dealing generally with a metropolitan region as a whole. There is ample evidence that the size of the whole can be declining at the same time parts of the whole can be growing. Thus, individual communities in a metropolitan region may feel they are growing too fast even as the region itself might be growing slowly. We do not try in this appendix to describe sub-regional dynamics.

<sup>8</sup> Edwin Mills the dean of urban economists, has been more forceful: "There is no such thing as optimum metropolitan area size." (personal communications, 1994).

<sup>9</sup> See Landis and Sawicki (1988:336), in which the authors conclude that while the "*Places Rated Almanac* may be of some use to footloose migrants, the volume contains some basic conceptual and measurement problems and therefore is of little use to planners who are attempting to evaluate and understand localities' quality of life."

<sup>10</sup> Job opportunity could also be considered a component of quality of life, and could be influenced by economic development policies. We grouped job opportunity in this diagram as a subset of wages.

<sup>11</sup> For example, federal and state investment in sanitary sewer and water systems contributed to growth and suburbanization after World War II. The full costs of those systems was often

not considered either: for example, Portland is looking at a billion dollars to correct its sewer system; the Northwest will spend or lose more than that as it deals with the loss of salmon from hydroelectric facilities. The list goes on: in every case, we got more growth than we would have if we had been paying full cost.

<sup>12</sup> This distinction gets fuzzy because some jurisdictions may actually want to affect the rate of growth, but they attempt it indirectly through public facility policy or changes to the UGB.

## *Appendix E*

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<sup>1</sup> For estimations of the costs of public facilities and services, most studies do not allocate a portion of the costs of administrative overhead (e.g., city manager, finance, legal, city council) which might be around 10% of the general fund budget. But if those same facilities are provided by a single-purpose special district (e.g., a water district), then the overhead costs are probably rolled into the connection fees and user charges: if those fees and charges are used as measures of costs, then they include more costs than are included in other studies.

<sup>2</sup> For those costs to be truly comprehensive, one would also have to assume that the public facility would be designed and sized in such a way that there would be no significant spillover (external) costs: e.g., that a sewer treatment plant would handle wastewater in such a way that there would be no measurable deterioration in water quality. The reality, however, is that good design, by definition, does not attempt to eliminate all risk of externalities: to do so would be prohibitively and inefficiently expensive because eliminating each additional increment of risk gets increasingly expensive. Environmental regulation has increased substantially over the last 30 years to eliminate some

of the worst externalities (e.g., lack of tertiary sewage treatment, or frequent overflows from the treatment plant), but failures still occur. The next section on indirect impacts addresses some of these issues.

<sup>3</sup> That thinking is consistent with economists' conclusion that "current and future residents will face the true economic costs [assuming no external costs] of the facilities they use if the local government finances all capital facilities through bonds and if the terms of the bonds are identical to the useful lives of the facilities." (Altshuler and Gómez-Ibáñez 1993, p. 79).

<sup>4</sup> (Fischel, 1990)

<sup>5</sup> For example, with 80% and 90% federal funding for LRT, did Portland pay the cost of growth? There is no simple answer: it requires more details on interim and ultimate sources of funds, and assumptions about the extent to which LRT is dealing with existing transportation problems.

<sup>6</sup> The studies span a couple decades, so the costs they report are not directly comparable: \$1,000 today does not buy as much infrastructure as it did 20 years ago. We cite the cost estimates as reported in the studies, note the year of the estimate, and provide in parentheses an equivalent estimate in 1998 dollars (i.e., what would that infrastructure cost today). Such adjustments are very rough, but better than no adjustment at all (which is the case in many studies). In some cases, the studies do not report the year of the cost estimates, so we have had to guess. All estimates are brought to 1998 dollars using a Gross Domestic Product deflator for the personal consumption index of the gross domestic product from the Economic Report of the President.

<sup>7</sup> For example, there is no documentation of whether the study

is looking at on-site or off-site costs, or what services are included in the category of "utilities."

<sup>8</sup> Her work illustrates the importance of definitions for studies that try to determine that one pattern of growth (typically, higher-density) costs less than another. What level of geography is density being measured at: subdivision, neighborhood, city, or region? The densities, analysis, and implications for policy are different for each.

<sup>9</sup> Ladd (1998), Nelson (1988), and Altshuler and Gómez-Ibáñez (1993) do address the incidence of costs.

<sup>10</sup> In his original work Foder implied that all the costs he estimated were net costs to existing citizens of growth. His subsequent response to LCOG's analysis (October 1996) considers SDCs, but only SDCs, as offsets to the costs he estimates.

<sup>11</sup> One good reason not to include O&M costs is that for many facilities (schools is an important example) the burden of new households on O&M is paid through property taxes or user fees.

<sup>12</sup> The stream of these annual O&M costs would have to be discounted to present value, and converted to a cost per unit. That discounting could lead to present values that are on the order of 10 to 20 times greater than the annual cost.

<sup>13</sup> ECONorthwest (1998), for example, has done work for a large Oregon corporation showing its operation yields net fiscal benefits to government when all costs and payments are considered. The key to a large surplus is capital intensity for the employer and high incomes for the employees, conditions typical of many high-tech firms.

# Appendix B Bibliography

This bibliography provides full references for documents that are cited with only the author and date in this report and appendices. Full references in endnotes and sources for figures and tables are not repeated here. The references here are organized by author.

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# Appendix C

## Glossary

**Actual Housing Mix and Actual Net Density**—As defined by state statute, the housing mix (e.g., single-family, multi-family) and density (dwelling units per net acre) that has actually been developed in the community in the last five years or since the last periodic review, whichever is greater. (See “net vacant acre.”)

**Adequate Public Facilities Requirements (APFRs)**—Regulations to ensure that public facilities and urban services are provided at the same time as new development. Also called “concurrency.”

**Affordable Housing**—Housing is affordable when households with incomes at or below 80% of the area median income pay no more than 30% of their gross income on housing costs, including rent or mortgage payment plus utilities and insurance.

**Assessed Valuation**—The market valuation estimated on real estate or other property by a government for the purpose of levying taxes.

**Available Housing**—The net number of existing housing units available to meet projected housing requirements.

**Buildable Lands Inventory**—A study of lands inside the UGB that are vacant, available, and suitable for urban development.

**Buildable lands**—Lands in urban and urbanizable areas that are suitable, available and necessary for residential uses. Buildable lands include both vacant land and developed land likely to be redeveloped.

**Capital Improvements**—New or expanded public facilities that are relatively large-size, expensive, and permanent. Some common examples are streets, public libraries, water and sewer lines, and park and recreation facilities.

**Capital Improvement Plan or Program (CIP)**—A multi-year (5-6 years) plan for the construction of capital improvements that includes a discussion of their timing and cost.

**Central Business District (CBD)**—An area within a city which has a centralized, high concentration of retail and service businesses, governmental offices and facilities, financial districts, professional offices, hotels and motels, cultural, recreational and entertainment establishments, colleges and universities, residences, appropriate industrial activities, and transportation facilities. (Often same as Downtown.)

**Community Development Corporation (CDC)**—An organization meeting the statutory definition of a Community Development Corporation as recognized by the State of Oregon.

**Comprehensive Plan**—A plan prepared by a local government which establishes policies and land use designations to achieve and support the statewide planning goals.

**Comprehensive Plan Density Ranges**—The lowest permitted density and the highest permitted density for each comprehensive plan designation.

**Concurrency**—A requirement that public facilities and urban services necessary to meet the demands of new development are in place to accommodate development as its impact occurs. Same as adequate public facility requirements.

**Constrained land**—Land that is not part of the buildable land inventory because of physical impediments (e.g., steep slopes, floodway) or legal impediments (e.g., designated wetlands or riparian area) to development.

**Current Population**—The most recent annual Portland State University population estimate of study area population.

**Current Vacancy Rate**—The actual vacancy rate of dwelling units in the study area, distinguished between owner occupied and rental properties.

**Developed land**—Parcels that have improvements on them with no vacant areas.

**Development Codes**—Zoning and subdivision ordinances and standards to implement comprehensive plan policies.

**Economic sector**—A specific industry or group of inter-connected industries.

**Exactions**—Discretionary fees, dedications, or off-site improvements imposed as a condition of approval to mitigate off-site impacts of a development. These may vary by project.

**Floodplain**—The area adjoining a stream that is subject to inundation by flood. The floodplain consists of two parts:

1. **Floodway**: the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than 0.2 feet.

2. **Floodway fringe**: The area of the floodplain lying outside the floodway.

**Focused Public Investment Plan**—A plan that specifies the location and timing of planned public facility improvements in specific areas. Can be used to focus growth to sub-areas within an urban growth boundary.

**Fringe Area**—Urbanizable land or future growth area that is at the edge of an urban area.

**Geographic Information Systems (GIS)**—Computer-based tools for capturing, integrating and presenting geographically

related data items, such as natural resources, population information, zoning information, housing development, utility locations, and roadways.

**Government assisted housing**—Housing that is financed in whole or part by either a federal or state housing agency or a housing authority as defined in ORS 456.005, or housing that is occupied by a tenant or tenants who benefit from rent supplements or housing vouchers provided by either a federal or state housing agency or a local housing authority.

**Gross Vacant Acre**—An acre of vacant land before land has been dedicated for public right-of-way, private streets, or public utility easements. For example, a standard assumption is that between 20% and 30% of land in a subdivision is used for streets and utilities: if so, then a gross vacant acre will yield only about 35,000 sq. ft. (70%-80% of a full acre) for lots. (See “net vacant acre.”)

**Group Quarters**—All persons not living in households are classified as living in group quarters. Two general categories of persons in group quarters are recognized: (1) institutionalized persons and (2) other persons in group quarters such as dormitories (also referred to as “noninstitutional group quarters”). Persons in group quarters are not considered to be living in housing units.

**Household**—One or more persons residing together as a unit [e.g., a single person, married couple (with or without children), unmarried persons who share the same dwelling]. The National Affordable Housing Act of 1990 made the terms “household” and “family” almost synonymous though the U.S. Census Bureau still distinguishes between family and non-family households.

**Housing Need**—The gross number of housing units needed to accommodate the population expected in a study area for the planning period.

**Housing Unit**—A house, an apartment, a mobile home or trailer, a group of rooms or a single room occupied as separate living quarters or, if vacant, intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from outside the building or through a common hall.

**Industrial Base**—Those industries which make up a community's economy; industries creating the most impact and job creation.

**Industry**—A distinct group of productive or profit-making enterprises including forestry, fishing, hunting and trapping; mining; construction; manufacturing; transportation; communication, electric, gas and sanitary services; retail and wholesale trade.

**Infill Development**—New construction activity occurring on vacant parcels located within an area which is predominantly developed.

**Infrastructure**—The original, specific definition of *infrastructure* — the *sub*structure of basic utilities on which structures (residential, commercial, industrial) get built — has been lost. Infrastructure is now synonymous with “public facilities” and can include not only roads and water, sewer, and electric lines, but also police and fire stations and equipment, schools, parks, and other public buildings. The variability in the definition contributes to problems in defining the costs of growth.

**Institutional Uses**—Include publicly owned parcels, parks, governmental, or public facilities and are considered unavailable for development.

**Land Use Plan**—A graphic depicts existing and future land uses and intensities. It shows land use compatibility and spatial relationships, establishes the physical form of the community and identifies urban design opportunities. A land use plan serves as a guide in the preparation of zoning ordinances and zoning district maps.

**Leapfrog Development**—New development that is not contiguous with existing development and leaves vacant land in between.

**Level of Service (LOS) Standard**—Minimum capacities or performance standards required for adequate public facilities. For example, standards can address emergency service response time, water pressure, and/or park acres per 1,000 population.

**Living Quarters**—Living quarters are classified as either housing units or group quarters. Usually, living quarters are in structures intended for residential use (for example, a one-family home, apartment house, hotel or motel, boarding house, or mobile home). Living quarters also may be in structures intended for nonresidential use (for example, the rooms in a warehouse where a guard lives), as well as in places such as tents, vans, shelters for the homeless, dormitories, barracks, and old railroad cars.

**Minimum Comprehensive Plan Density**—The lowest number of units permitted per acre for development by a comprehensive plan designation.

**Multi-modal**—Capable of accommodating a variety of transportation modes, such as buses, automobiles, rapid transit,

rail, bicycles and pedestrians. A multi-modal transportation hub is a facility for the transfer of passengers or goods between different modes of transportation.

**Natural Resources**—Elements relating to land, water, air, plant and animal life, and the interrelationship of those elements. Natural resource elements include soils, geology, topography, flood plains, vegetation, wildlife, surface and groundwater and aquifer recharge zones.

**Neighborhood**—An area of a community with characteristics that distinguish it from other community areas. It may be defined by physical barriers such as major highways and railroads or natural features such as rivers. It may also be distinguished by unique architectural, historical, social, or ethnic characteristics.

**Neighborhood Facility**—A public facility that is typically within a one-half mile radius of the residents it serves.

**Neighborhood Shopping Center**—Generally sells goods necessary to meet daily needs, occupies up to 10 acres, has up to 130,000 square feet of gross leaseable area, and draws its clientele from a 5-minute driving distance. Typically this type of center is located on a secondary arterial or major arterial.

**Net Vacant Acre**—An acre of vacant land after land has been dedicated for public right-of-way, private streets, or utility easements. A net vacant acre has 43,560 square feet available for construction, because no further street or utility dedications are required: all the land is in lots.

**Nonconforming Use**—A use or activity that was lawful prior to the adoption, revision, or amendment of a zoning ordinance but that fails by reason of such adoption, revision, or amendment to conform to the present requirements of the zoning district.

**Owner-Occupied**—A housing unit that is owned by the household living in it.

**Partially vacant land**—Parcels or tax lots with some development, but vacant portions large enough to develop.

**Periodic Review**—Regularly scheduled DLCDC reviews of local government comprehensive plans and implementing ordinances. Jurisdictions may have to revise their plans and policies to bring into compliance with the statewide planning goals.

**Persons per Household**—The average number of persons in each household, as determined by dividing the total population of persons in a jurisdiction's households by the number of households.

**Population In Households**—The total number of people living in households other than group quarters.

**Public Facilities**—Roughly synonymous with “Infrastructure” (see definition above). In the broadest sense, all of the facilities and equipment that have typically been provided by the public sector (e.g., water and sewer pipes and treatment plants, police stations and vehicles, schools, libraries). In current use, the term covers all such facilities, even if they are not provided by public entities.

**Public Facility Plans**—A component of a comprehensive plan that describes the types and levels of urban services required to support planned development for areas inside a UGB.

**Public housing**—Housing available only to low-income households which is owned and administered by a public or non-profit agency.

**Public Investment Area (PIA)**—Identifies an area where a local government plans to focus public facility improvement spending over the next five to seven years.

**Redevelopment Potential**—Parcels or tax lots with developed structures that are likely to be demolished and new buildings constructed in their place.

**Regional Shopping Center**—Contains a wide range of retail and service establishments, occupies 50 to 100 acres of land, has at least one or more anchor stores, and contains over 400,000 square feet of leaseable space. It usually has direct freeway access and draws clientele as much as a 45-minute drive away.

**Renter Occupied**—A housing unit that is owned by other than the household occupying the unit, including units rented for cash and those occupied without payments of cash rent.

**Seasonal Housing Units**—Housing units available only for temporary use through the year.

**Sense of Place**—The characteristics of a location that make it readily recognizable as being unique and different from its surroundings. A feeling of belonging to or being identified with a particular place.

**Shadow Plat**—A planning tool whereby initial low-density development of a large property is according to a site plan that makes it easier to further subdivide and develop the property at planned densities at some future time.

**Special Needs Population**—For the purpose of providing affordable housing, this term refers to the physically and mentally disabled, the elderly, and the homeless.

**Specialty Shopping Center**—A shopping center whose shops cater to a specific market and are linked together by an architectural, historical or geographic theme or by a commonality of goods and services. Varies in size and location.

**Specific Plan**—A custom land use plan and development criteria for a given geographic area. A specific plan may detail (a) the location and density of land uses; (b) the list of permitted and conditionally permitted uses; (c) development standards such as building setbacks, building heights, lot coverage, and parking requirements; (d) public infrastructure such as a circulation system, street improvements, street lights and drainage systems; (e) architectural guidelines including architectural styles, themes and building materials; and (f) landscape guidelines such as types of trees and planting materials for public parkways and private front yard setbacks.

**Streetscape**—The elements that constitute the physical makeup of a street and that, as a group, define its character, including building frontage, street paving, street furniture, landscaping, awnings and marquees, signs, and lighting.

**Strip Center**—Commercial or retail development, usually one store deep, that fronts on a major street.

**Super Regional Shopping Center**—Includes retail, office, entertainment and service uses, occupies over 100 acres, has four or more anchor stores and contains over one million square feet of leaseable space. (Usually this type of center is developed with direct freeway or expressway access).

**System Development Charges (SDCs)**—A uniform fee collected by local governments to pay for off-site public facility improvements to mitigate impacts associated with a development.

**Tenure**—Whether a housing unit is owner or renter occupied. Owner Household - A dwelling whose principal occupant is the owner of the dwelling. Renter Household - A dwelling that is not occupied by its owner.

**TGM**—The Transportation and Growth Management Program of the Oregon Department of Transportation and the Department of Land Conservation and Development.

**Traffic Demand Management Strategies**—Policies or programs aimed at reducing the volume of traffic and the distance of a trip by influencing the manner in which people travel to work. Examples of traffic demand strategies include carpooling, congestion pricing, and providing a financial subsidy for transit riders.

**Transportation Planning Rule**—An administrative rule adopted by the Oregon Department of Land Conservation and Development that provides details regarding what cities, counties, and metropolitan areas in Oregon must do to comply with state land use laws (Goal 12, Transportation).

**Transportation System Plan**—Identifies street types and transportation modes, and defines design criteria for all street elements such as signage, bus stops, lighting, etc. Required of larger cities in Oregon for the Transportation Planning Rule.

**UGA**—An Urban Growth Area is the land inside the UGB but outside city limits that represents the future growth area of a city. Also referred to as urbanizable land.

**UGB**—An Urban Growth Boundary separates urban land from rural land. It shows the outermost limit of urban development over the next 20 years.

**Underutilized Property**—Property with land or buildings that are at least 50 percent vacant or that are abandoned, dilapidated, or otherwise impaired by physical deficiencies. (See “partially vacant” and “redevelopment potential.”)

**Urban Centers**—Characterized by mixed or concentrated commercial, public and residential uses at a regional scale which capture the highest practical proportion of projected regional population while supporting the development of an efficient and effective high capacity transit system.

**Urban Design**—A process to creatively shape a city’s physical form, image or identity. An integral part of the process of city and regional planning. It is primarily and essentially three dimensional design but must also deal with the non-visual aspects of environment such as noise, smell, or feelings of danger and safety, which contribute significantly to the character of an area.

**Urban Land**—Land inside and adjacent to cities that is served by urban services and is intensively developed.

**Urban Reserves**—An area outside a UGB to be maintained as the most likely future expansion of the UGB during a 20-50 year period.

**Urban Services**—Public facilities that serve urban development, including sewers, water, fire protection, parks, open space, recreation, streets, roads and public transit.

**Urbanizable Land**—Land inside a UGB that represents the future growth area where development and urban service extensions will take place.

# Appendix D

## Why Cities and Regions Grow

This appendix is primarily a reprint, with a few additions and editing, of work done by ECONorthwest for Metro in Portland.<sup>1</sup> It provides detail on the process of growth that would have overloaded Chapter 2. Its purposes are to give more information about the causes of growth to readers wanting the detail, and to document the assertions in Chapter 2 that (1) the process of growth is complex: many market and policy factors interact, and (2) such complexity means that simple statements about the impacts of growth at a minimum do not tell the full story, and may tell the wrong story.

### Introduction

Development of a metropolitan region takes place in an environment of market forces constrained by public policies. Most policies evolved over decades, and the market has evolved with them. There is no static and no right answer about what policies a region should adopt to control growth.

Three long-term trends dominate 20th century urbanization of population and employment in the United States: (1) increasing concentration of population and employment in metropolitan areas, (2) decentralization of population within metropolitan areas (suburbanization), (3) decreasing population density within metropolitan areas.

The fundamental economic forces that drive urbanization, and how they interact with public policies, is much more complicated than policymakers typically acknowledge. Ultimately, residents of a region must make a tradeoff between after-tax income and the environmental and urban amenities that a region has to offer. If all were growing at the same time, it would induce migration, which would cause one or more of them to decrease. Because of the number of variables involved in estimating the net impacts of growth, and the complexity of their

interactions, the best one can hope for is an approximate description of impacts to stimulate and inform public debate about growth-management policies.

### The fundamental economic (market) forces that drive urbanization

Though the growth in the proportion of the population living in urban areas must slow, continued growth in the national population (expected to occur at about 1% annually, mostly in metro areas), combined with changes in regional economies, guarantees continued growth and change in metropolitan areas.

Why do cities exist? The short and simple answer is that some locations offer lower production costs for businesses. Competition forces businesses, and their employees, to those locations. Of interest, and much less simple to describe, are the reasons production costs are lower in metropolitan areas.

The most fundamental source of lower production costs in cities is that many goods and services can be produced at lower unit cost when produced at relatively high volumes. *The economic advantage that comes from putting people together with machines under one roof is one of the primary forces of urbanization.*

Some cities grew larger than others principally because of differences in accessibility. Transporting inputs (including raw materials, manufactured inputs, and labor) to the business and outputs to market is a significant cost for most businesses. Some locations offer lower total transportation costs than others. Some manufacturing firms, for example, locate close to input sources, others close to markets. The most attractive locations provide good access to both. Because freight can be transported by water in very large quantities, areas with good ports have always attracted urban growth. Most of the largest cities in the U.S.

are located on navigable waterways. The location of rail lines also played a major role in the development of many cities in the U.S. Within the past several decades, the interstate freeway system and the location of air terminals have heavily influenced the growth and change of metropolitan areas.

The competition for areas that reduce transportation costs gives cities their most significant characteristic: high-intensity development near particularly accessible (and, therefore, attractive) places. One of the reasons that cities can grow large in population is that businesses (and households) can economize on high-priced land. All businesses need land, some more than others (e.g., manufacturing activities typically require more land per worker than office activities). Most, however, can make significant adjustments to the high price of land caused by competition for locations with good access to transportation. They can, for example, build vertically. Innovations in the construction of tall buildings, and in the transport of freight and people vertically, fueled the growth of the largest cities in the late nineteenth century. Those businesses that can best economize on land (such as office firms) occupy the most centrally-located land. *The ability to substitute capital for high-priced land is another of the principal forces of urban growth.*

Though access to inter-urban transportation systems attracts businesses to urban areas, the characteristics of the transportation system within the city also strongly influence growth. Large cities grew not only from technological changes that allowed development skyward, but also from changes that reduced the cost of travel on the ground. Before about 1850, most workers commuted by foot, which strongly limited the length of commutes and the number of workers that could access a particular area. The innovations of the horse-car, the electric streetcar, and the automobile progressively increased

the amount of land area within commuting distance of places particularly attractive to businesses. These innovations in intra-city transportation made possible the growth of very large metropolitan areas.

The auto, truck, and highway have been particularly important in the development of modern multi-centered metropolitan areas, such as Portland. Both households and a wide variety of businesses can use highways to access relatively low-priced land in suburban areas while maintaining links to all parts of the metropolitan area. The trend toward suburbanization that started with the electric streetcar, accelerated with the development of autos, trucks, and highways is now decelerating as highway systems are being completed. These highway systems now are the dominant influence on patterns of development in metropolitan areas.

One additional economic force is fundamental to the growth of cities: growth itself. The concentration of a large number of households and businesses makes possible the local production of a wide variety of highly specialized goods and services. Many of these goods and services can be found nowhere other than in large metropolitan areas; nowhere else would their producers enjoy the demand that allows them to exploit the scale economies necessary to produce at reasonably low cost. Examples of these goods and services are specialty food stores and restaurants; specialists in law, medicine, and financial services; and manufacturers of key components of specialized machinery. Businesses and workers also benefit from the relatively large pool of skilled workers and specialized employment found in large cities. In general, the economic relationships that size encourages are numerous, highly complex, and fundamental to the economic efficiency of metropolitan areas. Economists refer to the cost advantages that sheer size provides as *economies of agglomeration*.<sup>2</sup>



Consider first the top half of Figure D-1, which illustrates how growth begins. Something (e.g., a technological change) increases the attractiveness of a region to a business (*business attraction*), which increases *business growth*. The lower costs of production at that location allows the firm to offer *wages*<sup>6</sup> high enough to attract workers from other areas; the growth of the firm usually also means more *job opportunities*. More jobs and higher wages leads to *migration*, which causes *urban population growth*. The population growth is augmented not only by migration, but also by *natural increase* (the excess of births over deaths for the existing population).<sup>4</sup>

This relationship explains, for example, the long-term growth trends in cities located, like Portland, on natural harbors. Natural harbors first attracted urban development as improvements in the technology of shipping freight by sea gave port cities good access to distant markets. Natural endowments often gave (and continue to give) one area cost advantages in the production of some commodities over other areas. Areas near Portland could supply agricultural and forest products at relatively low cost in exchange for manufactured goods produced in cities on the eastern seaboard. These *comparative advantages* make possible gains from trade, given sufficiently low transportation costs. Until this century, most commodities, whether produced at a factory or at home, could be shipped most cost-effectively by firms that invested in ships, equipment to load them, and people that could sail them. Thus, economies of scale in shipping encouraged the growth of port cities. As shipping companies attracted workers to ports, other business followed—businesses that served shipping companies (ship builders, financiers, accountants) and retail firms that sold goods to workers.

With time, Portland grew not only because it served as a distribution and collection point for goods coming from and

going to the Willamette Valley, but also for all of the reasons described in the previous section. The Willamette and Columbia Rivers, rail lines that converged at Portland, streetcars, and the highway system all give the Portland area key transportation advantages over any other area nearby. As a variety of industries—including wood products, ship building, and even beer brewing—took advantage of Portland's accessibility, the city grew. That growth itself improved Portland's prospects for further growth improving the range of specialized goods and services available in the metro areas.

These effects are shown on the bottom portion of Figure D-1. *Urban population growth* and *business growth* increase the *demand for personal and business services*, which directly increases the attraction of the area for business, which contributes to more urban population growth. Agencies charged with economic development try to lure new manufacturing firms to an area because they expect that the factory and its workers will support a variety of service-oriented businesses. Urban growth has indirect effects that further stimulate growth.

The argument so far suggests that well-located metropolitan areas might grow without bound as agglomerative economies reduce production costs. Some seem to (e.g., L.A., Mexico City). A particular technological improvement, however, usually has limited effects on the growth of most urban areas (when Boeing grows Seattle grows, but not without bound). What slows the process of growth? Often it is the effects that accompany the growth itself: the congestion, higher land and housing prices, and other disamenities associated with growth eventually increase the costs of production: the marginal costs of these disamenities surpass the benefits of further agglomeration.

Figure D-1 shows the sources of the increases in production costs. First, as population grows, so typically does the *cost of living* in the city. The increase in the population increases the demands for all products, some of which can be supplied only at higher prices: land for housing and commercial services, transportation, and a variety of urban services. (Offsetting some of the increase in the cost of living are potential decreases in the cost of goods and services because of scale and agglomerative economies.) Increases in the cost of living slow migration directly by discouraging workers who are considering a move, and indirectly as higher wages discourage more firms from locating in the city. Increased population also increases production costs by increasing the cost of non-labor inputs, such as land and business services. Given a limited supply of land with good access, land prices increase as the urban area grows, which directly increases production costs for the manufacturer, and indirectly increases production costs by increasing the cost of business services.

Urban growth stops when the costs of growth exceed its benefits to new arrivals. Growth occurs when some change allows the growing city to offer a better combination of wages and cost of living than other cities. Firms and workers respond by moving away from cities or regions with less favorable combinations of wages and living costs. The movement away from low-wage, high-cost cities reduces living costs relative to wages in those cities (living costs may decrease, as they have recently in many California cities; wages may rise; or both).<sup>5</sup> At the same time, the growth of the high-wage, low-cost city decreases wages relative to the cost of living (again, living costs may rise as, for example, housing prices increase, wages may fall with the influx of workers, or both). This process of economic adjustment continues until an *equilibrium* regional development

pattern is established: in other words, until regions offer roughly the same total advantages to migrants (though the mix of advantages summing to the same total may differ).

Note that this apparently straightforward process is sufficiently complex to make forecasting future growth in population and employment highly uncertain. First, it is difficult enough to identify just the key variables and their antecedents and successors in a chain of cause and effect. Second, it is difficult to foresee the changes in these variables that influence growth. Third, the complexity of the growth process makes it difficult to predict how much an area will grow given the initial impetus. For example, Figure D-1 shows the population growth of an urban area has effects that can move in opposite directions: (1) it increases the cost of living and some production costs; and (2) it decreases other production costs because of agglomerative economies. How much the urban area grows depends in complex ways on the characteristics of the city: the types of goods and services produced, the ability to accommodate new households, and so on.

Remember that Figure D-1 is what we called the *simple* model of urban growth. The actual process is much more complex. Figure D-1 leaves out, among other things,<sup>6</sup> an important determinant of urban growth: the level of amenities, livability, or (as we will refer to it in the rest of this report) *quality of life*. That variable is particularly important to the arguments of slow-growth advocates.

Though conventional theory suggests that people move when the wages offered somewhere else exceed their current wage, a large proportion of migration in the U.S. is no longer from low-wage to high-wage areas. Instead, amenities like a warm climate, access to recreation, and clean air appear to attract people. The value of quality of life is so important that we

have coined the phrase “the second paycheck” to make explicit the relationship we will describe shortly: that people make location decisions based on wages (the first paycheck), quality of life (the second paycheck), and cost of living (what the first paycheck can buy). A complete theory of inter-regional migration must recognize that not only do people follow jobs, but jobs also follow people.

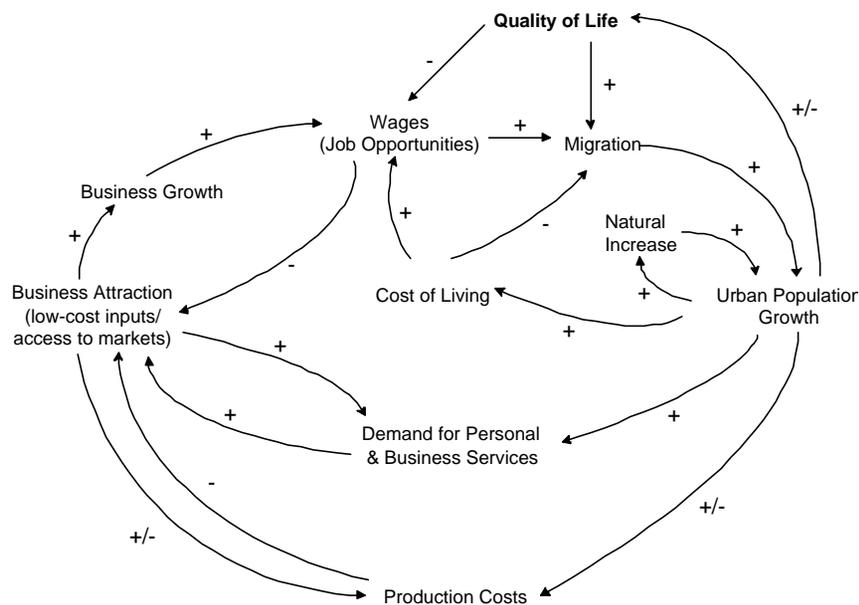
Much of the recent growth in employment in the region has been in high-tech, specialty metals, plastics, and professional services, not the traditional resource-based industries. The Port-

land area has grown sufficiently diverse to provide the intermediate inputs (marketing, legal services, technical support) necessary to support many non-traditional industries. Many of these industries use highly-skilled workers who value the kind of environmental amenities the region has to offer: relatively clean air and water, low traffic congestion, good restaurants, art galleries, and public facilities, and good access to recreation. A skilled worker can move to the region and bring her job with her or find one relatively easily.

Figure D-2 adds to Figure D-1 to include the effects of difference in the quality of life between regions. Suppose quality of life improves *relative* to other areas in the region (for example, because quality of life decreases in California or Seattle). If other things remain constant, a relative improvement in quality of life attracts new residents. Labor supply increases, which decreases wages and attracts new business (the minus sign on the arrow from wages to business growth indicates that higher wages reduce business growth, so lower wages will increase business growth). People do not follow businesses to the region: businesses follow people who are willing to accept a lower wage for improved quality of life.

Aggregate growth in a region stops when inter-regional equilibrium re-establishes itself.<sup>7</sup> Growth in population and employment increase the cost of living, decrease wages, or reduce quality of life until the people are indifferent about where they live. Equilibrium is re-established when the combination of quality of life, wages, and the cost of living makes the overall standard of living comparable to that in other areas. The important point is that disproportionate regional growth (migration) will slow down as the standard of living (as measured by wages, the cost of living, and quality of life) becomes similar across regions. In economic terms, migration slows

**Figure D-2 : A newer theory of urban growth**



Source: ECO Northwest based on Myers, 1989, p. 93.

down when real incomes in one region decrease relative to those in other regions.

Some people in Portland focus groups suggested that there is an optimum metropolitan-area size (say 100,000 to 500,000 people), and that the Portland metro area had or would soon exceed its optimum size. Given this belief, they argue for either slower growth or growth policies that would create new cities.

Our analysis suggests that the complexity of the economic activity both within a single urban area and within the system of metro areas in the region and nation prevents any clear definition of optimal city size.<sup>8</sup> Well-located cities usually grow to take full advantage of their location. That growth provides higher incomes, better job opportunities, and a much richer variety of goods and services. It almost certainly also implies some decrease in the quality of important amenities such as environmental quality and access to recreation. The types of trade-offs that affect the quality of life are so numerous, however, that determining a single optimal metropolitan area population is almost certainly impossible.

A very large metropolitan area can, for example, possess better environmental quality than even much smaller ones. As we argue below, public policy plays a crucial role making a particular set of trade-offs. Though we have no doubt that metropolitan area growth will hurt some aspects of the quality of life (for example, more people in the Portland area certainly means larger crowds at the ski areas and the coast), the trade-offs available make it hard to demonstrate that, for the range of city and Metropolitan sizes that exist in Oregon, any particular size is clearly too big. The benefits and costs of metropolitan growth to its citizens depends more on how growth is handled than on the amount of growth.

Nonetheless, though urban and regional economists generally agree that there is no such thing as an optimum metropolitan size, there are probably many people in the region who feel that the Portland metro region is somehow “just too big;” that it has exceeded or will soon exceed a size they feel was better for them. Some researchers have tried to quantify these feelings about the quality of life by rating cities on multiple variables. While the ratings are great news items and a boon for growth promoters, they are not much more: their methods do not withstand scrutiny.<sup>9</sup> Though difficult to measure, those feelings about a region gone wrong are real and probably not uncommon.

#### **The role of public policy in metropolitan growth**

To this point the models that we have described have not included any reference to public policy. Clearly the policies that a region adopts can have an influence on all of the variables contained in Figure D-2. Figure D-3 shows some of the relationships. The chief influence of public policy is through its impacts on *production costs* via the provision of *public infrastructure and services*, and on *quality of life* via effects on *environmental quality*, *urban amenities*, and *infrastructure and services*: the three factors at the center of Figure D-3. The bottom of Figure D-3 shows in more detail some of the components of these general categories that policies can influence.

The three factors (environmental quality, urban amenities, and the capacity and quality of infrastructure and services) simultaneously provide a definition of *quality of life*: they are the things that public policy must encourage if people are to perceive that their second paycheck is anything more than chump change.<sup>10</sup>

Public policies influence virtually all aspects of urban development. Local governments provide most of the infrastructure needed for important urban services: transportation, water,

sewer, and drainage. Local governments regulate the provision of other services: electricity, natural gas, and garbage collection and disposal. The conditions under which these services are provided can affect the pattern of land development. Local governments control land development directly via a wide range of land-use and building regulations: zoning, building codes, development guidelines, and so on. Effectively designing new policies to control growth requires a clear understanding of how existing public policies influence growth.

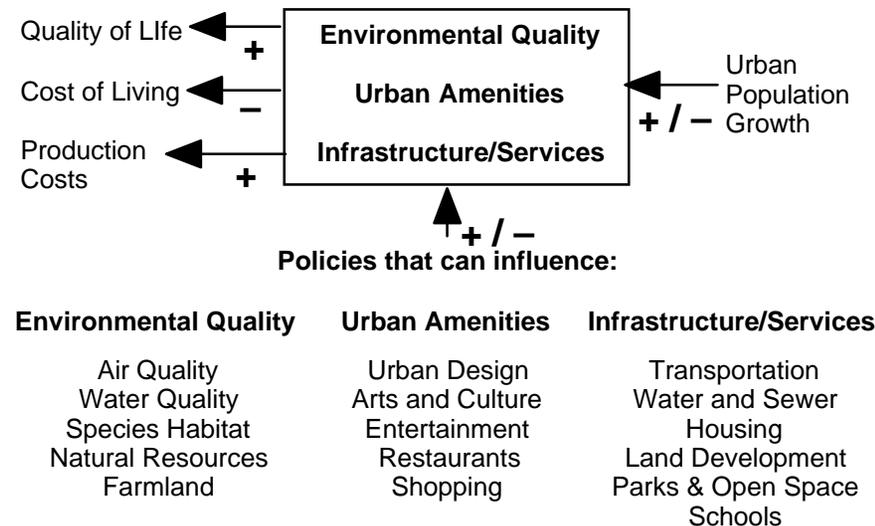
Public policy in the U.S. evolved as the country developed. Policy in the 19th century focused on war and defense (both

international and domestic), protecting individual liberties, and assisting in the development of North America's vast resources. Most of the people who immigrated to North America were poor by today's standards, and were most concerned about improving their economic condition. Municipal governments did not have the power and resources to monitor and regulate the activities of individuals that local governments have today. Even today, although most people enjoy a very high standard of living by historical standards, many people feel strongly that government's major role should continue to be to assist in the development of natural resources.

It is hard to over-emphasize the importance of the objective of increasing growth and development in the evolution of local public policy. Local governments grew because they could contribute significantly to growth and development. Only in the last 30 years has there been a significant shift toward conservation of resources as an important objective of public policy. Until very recently local government policy was directed mainly toward the growth of the community: if not toward stimulating growth, then certainly to accommodating it. Though the commitment to conservation has increased in strength in recent years (largely as a result of the increases in incomes made possible, in part, by policies to promote growth), in most communities the commitment to policies that promote growth and development remains strong.

Transportation illustrates the typical pattern in the historical development of public policy. In the 19th century the transportation policy that existed was aimed at growth and development, primarily of ports and railroads, secondarily at urban-streetcar systems. Those transportation systems were provided almost entirely by the private sector; public policy focused on keeping private markets efficient by regulating mo-

Figure D-3 :The role of public policy in urban growth



Source: ECO Northwest based on Myers, 1989, p. 93.

nopoly power, and subsidizing the private development of transportation systems. In the 20th century, policy shifted toward government provision of transportation services. Highways and transit, originally provided privately, became the domain of the public sector. Transit systems shifted to public control; the highway system was almost entirely public. The focus remained on developing capacity, not curbing its growth.

Given the successes of all public works during the depression of the 1930s, and the growing demand for high-quality roadways, the public supported large-scale government construction of highways and related infrastructure. As with the coming of the streetcar, it was easy for the public to envision the benefits of a system of urban expressways. The new expressways could supply low-priced land for both residential and commercial purposes. Moreover, given current populations, sufficient capacity could be built to provide convenient access to all parts of the city. Not surprisingly, the construction of urban expressways had the same effect on well-located urban areas as had the streetcar systems constructed at the turn of the century: it allowed these cities to grow. The highways opened up large quantities of low-priced land with good access to inputs and markets to commercial and industrial development. They also provided access to the land workers wanted for housing.

We have no doubt that autos, trucks, and highways contributed immeasurably to the economic vitality of urban areas and to the standard of living enjoyed by urban residents. The public investment in transportation infrastructure that has occurred over the last several decades almost certainly contributed more to urban areas than it hurt them. This is true not in spite of growth, but because of growth. The reason businesses and households move to cities in response to infrastructure investments is that urban areas offer them something better than

they currently have. They gain from the move. It is frustrating to current residents to see the new highway expected to speed travel quickly become congested. The highways were built because the existing facilities already were congested. The businesses and households that move to the now more attractive city put pressure on a wide variety of urban services. They also, however, make possible the supply of the wide range of goods and services typically found in cities, and they increase wages and the range of employment opportunities. It is easy to focus on the nice aspects of the city before it grew, and fail to consider the benefit of the growth.

The growth that transportation policy stimulated, however, caused the same kinds of problems experienced earlier with construction of streetcar systems: large parts of cities remained crowded and dirty as more people poured in, land and housing prices increased, and the highway system became congested. The auto itself, which was used to escape the poor environmental conditions in the city contributed significantly to the degradation of urban environments.

It is only in the last third of the 20th century that public policy has given serious attention to the impacts of the growth in transportation capacity. The problems emerged first as air pollution, but recently have expanded to include all the things that transportation policy and the growth of access can affect: the economic impacts of congestion, consumption of farmland, land use patterns that cause social and fiscal problems, and so on. Unfortunately, some of the policy responses only exacerbated some of the problems. The natural response to congestion and high land prices was to widen existing highways and build new highways to undeveloped areas. The response was the same: more growth, more congestion, higher land prices, and more air pollution. Going back to Figure D-1, improvements to the

highway system decreased production costs, which attracted employers to the city. The employers offered wages high enough to attract workers. The process continued until the combination of wages, the cost of living, and the quality of life more-or-less equalized between cities and regions. Some urban areas grew more than others because of their accessibility and the characteristics of businesses and natural environments.

The problem with public policy isn't that it focuses too much on expanding public infrastructure and services that encourage growth, but that it often fails to treat directly and effectively the most important problems associated with growth. For example, policy typically treats congestion by increasing roadway capacity. That would work if the volume of traffic remained constant. But the new capacity decreases the cost of travel in the short run, which encourages people to take more trips, and to change travel modes, routes, and times. In the long run, some people move farther from their destinations (which increases the amount they travel) and people move into the urban area. The new highway capacity often fills up very quickly. This realization has led to the recent thrust of transportation policy: a renewed interest in the full impacts of transportation investments on *all* systems, and an emphasis on having people pay the full costs (of operation, maintenance, lost time to others, pollution, and so on) of their trips.

The basic evolution of transportation policy is a pattern repeated (with important variations) in policies for all public services related to the development of land and the resources it contains:<sup>11</sup> full scale support of development for two centuries, tempered in the last 30 years by a growing awareness of the impacts of that development as the frontier disappears.

Returning for this example to policies more directly associated with growth management, we note four general categories of regulatory growth management techniques being used in the U.S. today (Kelly 1993:43):

- Adequate public facilities requirements
- Urban growth boundaries
- Growth phasing programs
- Rate-of-growth programs

Jurisdictions in Oregon rely primarily on policies in the first two categories, and to a lesser extent the third, to manage growth. We are not aware of any jurisdictions that have policies aimed directly at changing the rate of growth.<sup>12</sup> Adequate public facilities and growth phasing are closely related: the former focuses on the impacts of development on public facilities to ensure adequate capacity; the latter on the timing of growth in particular locations (but usually based on the availability of services). In addition, there are several nonregulatory (or quasiregulatory) techniques to affect the timing, amount, location, and quality of growth: things like land acquisition, annexation, economic development incentives, and the development of regional facilities (especially major highways). All of these techniques are used by at least some jurisdictions in Oregon. Chapter 5 discusses the potential impacts of the various categories of policies.

The model of growth we have presented in this chapter requires merging Figure D-2 with Figure D-3. The result is Figure D-4.

Even as Figure D-4 makes the process and determinants of growth more complex, it does not make them complicated enough. It's





## *Direct costs of growth: What are they and who pays?*

This appendix addresses a subset of costs: the direct (monetary) costs of providing public facilities to the development that new growth requires. For a framework for thinking about the full costs of growth, go to the beginning of Chapter 4. Even with this limited definition, different studies of cost usually focus on only one of many possible questions about direct costs:

- What are the costs of growth, per se? Few, if any studies, have been able to adequately address this overarching question. There are many reasons, but the key one is that growth has too many dimensions to measure. Growth is more than land development. Even if growth is defined that narrowly, there are many different kinds of land development (e.g., residential, commercial, and industrial) and many different ways that development can occur (e.g., by location, design, and density).
- What are the costs of some specific development type? For the reasons given in the previous point, most studies of the cost of growth focus on a certain type and pattern of development. Nationally, research has been driven by the debate about urban sprawl: do low-density development patterns cost more than higher density ones? The fact that such studies exist and find differences in cost based on the location and pattern of development shows why simple statements like “growth costs \$X per housing unit” are misleading: the estimate depends on many assumptions about the type and location of housing, its density, the size and economic conditions of a particular jurisdiction, the preferences of local residents for a particular level of service, and so on.
- What are the fiscal impacts of some development type? This question expands from the previous one about a

subset of costs (i.e., direct public costs) to include a subset of benefits (i.e., public revenues). Many studies have been done to estimate whether particular development types cost local governments more than they contribute.

- Who is paying the costs, and is that fair? This question expands on the former one to look at where the revenues to pay for the direct public service costs of growth are coming from, and the extent to which it meets some normative judgment about who should pay.

Although discussion of definitions and assumptions is tedious, it is essential for a fact-finding study such as this one. Different studies of costs of growth measure different aspects of those costs, in different units, over different levels of geography and time periods. In most cases, simple comparisons across studies is inappropriate. Without clear statements of definitions and assumptions, the debate about costs of growth is primarily rhetorical, and the evaluation of policies primarily political. Regardless of whether such a decisionmaking process is desirable or inevitable, the objective of this report has been to provide a technical basis for the debate about growth by describing the technical issues as clearly and fairly as possible.

### ***Comparing studies of costs of growth requires a definition and understanding of standards for evaluation***

Such a description begins with a list of principles for evaluating any study of the costs of growth to make sense of what is being measured. Any such study should be specific and clear about:

#### **The question about the costs of growth addressed**

For this report, the essential question about direct costs is: Are the new people, employees, and development that are contrib-

uting to and benefiting from growth in a community paying a fair share of the additional costs of the public facilities and services they require?

#### **The subset of costs evaluated**

Fig 4-2 shows all the different levels of costs that might be addressed. This section of this appendix, for example, focuses on the direct costs of key public facilities; other sections discuss other impacts (both costs and benefits). But the studies reviewed in this section do not all address the same facilities, and most do not consider indirect overhead costs of service provision.<sup>1</sup>

Figure 4-2 also shows where study methods differ significantly and make simple cost comparison incorrect. Some studies of public facility costs look only at on-site costs for facilities that serve the development exclusively (e.g., interior roads and sidewalks in a subdivision, pipe to hookup to water mains and sewer trunk lines). Other studies consider off-site costs (also called neighborhood, community, or central costs) that can be attributed to the site development (e.g., more capacity in arterial streets, water mains, wastewater treatment plants, schools, parks, and jails).<sup>2</sup>

#### **The treatment of capital and operating costs of public facilities**

An analysis of the direct costs to government of providing public facilities must state how it is calculating those costs. From an economist's perspective, the desired measure of cost would be an annual equivalent value that accounted for the stream of costs that it would take to plan, build, operate, maintain, decommission, and salvage some public facility over its useful life.<sup>3</sup>

Think of it this way: if construction on a new residential development were begun today in a community, how much

money should it ask a developer to put in an escrow account so the full stream of costs (capital, operation, maintenance, and (perhaps) environmental clean-up) could be paid for when the costs came due?<sup>3</sup>

No studies, however, attempt such a measure. Prior to 1980, most fiscal impact analyses focused on operating expenses and ignored construction costs (Altshuler and Gómez-Ibáñez 1993, p. 79). Many more recent analyses of costs in Oregon have gone the other direction, estimating construction costs but not operation costs.

Further complicating the cost analysis is the treatment of excess capacity and full life-cycle costs. What is the efficient level of excess capacity to design for, and how should it be paid for? If, for example, a current wastewater treatment plant has a peak capacity 50% greater than the largest historical demand recorded, should growth have to pay for a part of a new treatment facility that won't have to be built for another 20 years? Or does the growth actually reduce costs for existing residents by paying average-cost prices for use of the system while its additional cost burden is hardly noticeable? This is a question about average versus marginal costs, and potential economies of scale.

Moreover, jurisdictions can reduce current costs by reducing quality of construction and maintenance, both of which could reduce the effective life of the facility and, thus, the period over which its costs should be amortized. The cost differences that result cannot be handled by studies that do not take a life-cycle approach to cost estimation.

#### **The distinction between real costs and financing**

Using financing costs to estimate costs of growth may or may not be an appropriate measure of the true economic costs of

the resources that growth requires. On the one hand, when capital improvements are financed, their cost may be reported as an annual payment, which can then be added to annual operating costs to get a rough approximation of an annual equivalent cost of the service. On the other hand, when some facilities are financed over a period not equal to their expected lives, when some facilities are financed and others are not, or when facilities are partially financed while other payments come from transfers from other local or state revenue sources, financial costs may bear little relation to the real economic costs.

Concern in Oregon about the financing of infrastructure, however, is not about methodological distinctions between real economic costs and the stream of financed costs that pay for them. Rather, it is about the ability of government to raise enough revenue to pay for needed and desired public facilities, and the fairness of who pays. The two largest sources of tax revenue in Oregon are income and property taxes, which together account for approximately 75% of total state and local tax revenue.

Changes in Oregon's income tax reflect changes in the state's economy. Personal and corporate income tax collections have grown rapidly in the 1990s because of an increase in population, per-capita income, national corporate profits, and the share of corporate profits allocated to Oregon. The electronics industry is now the largest payer of corporate income taxes in the state. Income tax collections surpassed property taxes as the largest source of state and local revenue in 1994, caused by growth in income tax collections and declines in property tax collections that resulted from ballot measures to reduce them.

Before Measure 5, the total amount of tax revenue to be raised (the tax base) was divided by total assessed value in the taxing

district to calculate a tax rate. A tax base could not increase more than 6% per year without voter approval. Under that system, local voters determined the level of property tax revenue to counties, cities, and school districts. Property tax revenue was the largest source of school district funding, accounting for over half of all school district revenue.

Ballot Measure 5, passed by voters in 1990, limits the property tax rate to \$10 per \$1000 assessed value (i.e., 1% of assessed value) for non-school taxes, and limits the tax rate limit for schools to \$5 per \$1000. These limits were added to the Oregon Constitution: they can not be increased by local voters, but local voters can approve taxes beyond the limits to fund capital improvements. Measure 5 requires the State to replace lost property tax revenue to schools, effectively creating a state-funded school system.

Ballot Measure 50, approved by voters in 1997, limits the property tax rate and growth of property values. Measure 50 rolled back the assessed value of property to 1995-96 levels less 10%, and limited growth of the assessed value to 3% per year. Under this system, the property tax rate in Oregon is no longer applied to the actual market value of property, but rather to a lesser assessed value. There are exemptions for new construction, re-zoning, and subdivisions.

In addition to limiting the assessed value of property, Measure 50 required a 17% cut in tax levies, and permanently froze the resulting tax rate. Levies for bonds are exempt from this cut. The combination of fixed permanent tax rate and the 3% limit on assessed value growth effectively limits property tax revenue growth to no more than 3% per year plus increases for new development, either from new construction within a jurisdiction, or an expansion of its boundaries (e.g., annexation).

Voters can approve levies beyond the permanent rate, but only at general elections or an election with 50% voter turnout. Operating levies beyond the permanent rate are limited to five years, and capital levies to ten years. Bond levies are exempt from the time limits of Measure 50, but must be approved by voters in a general election or in an election with at least 50% voter turnout.

A basic understanding of state and local finance is necessary to any assessment of the costs of public policies and services, and of who pays them. The important relationships between the tax system and growth in Oregon include:

- Economic growth has increased personal and corporate income tax revenue, and changes in the economy have changed the composition of industries paying the largest share of corporate taxes, and has increased the share of income taxes paid by residents.
- Economic growth also increased residential property values, which caused property taxes to increase even under Measure 5 limits, which in turn contributed to the approval of Measure 50.
- Measure 50 provided some incentive for cities to annex adjoining areas sooner than they would otherwise, because it allows new construction to add to a district's tax base.
- Regarding who pays the costs of growth, new development pays its share of property tax under the new rules (i.e., everybody pays proportionally less, but new development gets no special break). In high growth areas it is theoretically possible for municipal budgets to increase more than they would have under the old rules (e.g., a lot of new development in a city, combined with a 3%

increase in assessed value of existing property, could increase tax revenues by more than the old 6% lid).

- The loss of local control of school district funding prevents communities from voting to increase funding for higher-quality schools. While state funding and equalization may be desirable for reasons of equity, the quality of schools has historically been a key determinant of residential local decisions. The effects of that limitation on location decisions, however, may not be great since desirable school districts will continue to have the capital and human resources, and local support, to find ways to remain good districts.
- The shift in Oregon's tax system to increased reliance on income taxes has increased the sensitivity of funding to changing economic conditions. An economic downturn could have a significant effect on the state General Fund and, consequently, on school funding.
- In response to declining property tax revenue, many local governments have turned to fees in general, and in particular to system development charges and exactions on new development to help fund off-site infrastructure. The effects of such financing mechanisms are ambiguous: they depend on many other factors. If, for example, large SDCs are adopted by one city in a metropolitan area, the tendency in the short run may be to move development to other cities. If the financing in those other cities, however, is inadequate to handle necessary capital expansion and maintenance, then in the longer run their financial problems could drive growth away. If all cities in a region simultaneously increase SDCs, then the impact, if any, will be on the amount of regional growth, not its distribution.

- Many communities in Oregon use property tax abatements and enterprise zones to encourage business location, retention, and new development. This practice has been increasingly criticized as citizens question the value of continued growth in their community.

### **The type and pattern of growth evaluated**

For this report, the focus is on residential growth in general, and on trying to get an average cost per new household or housing unit. Obviously, the type and location of the housing unit that is built to accommodate the new household will have an effect on the costs the new household imposes on public facilities and services. Moreover, those facilities do not service residential development exclusively—they also serve commercial, office, and industrial development. Thus, total costs of new facilities cannot be reasonably attributed to housing only. Some studies, especially those that take a public utility rate perspective on cost analysis, deal with this problem by estimating costs per equivalent dwelling unit (e.g., assume that 2.5 employees have the same impact on a water system, on average, as a single-family dwelling unit).

### **The other factors that influence cost**

All cities and counties do not offer the same package of services. Differences result from many factors, which include the historic pattern of growth; prior investments in and directions for services; and the preferences of property owners for type, level and cost of service (which is in part a function of their socioeconomic and demographic characteristics). For example, the amount of driving in the US, and therefore need for highway facilities, has grown two to four times faster than population in each of the last five decades, leading to conjecture that land development itself may account for only 25% to 50% of the increase in driving and highway demand (Altshuler and Gómez-Ibáñez 1993, p. 64).

Federal and state mandates have increased requirements for local facilities and services, while a phase-out of revenue sharing has reduced payments for others. There is ample evidence that many state agencies and local governments, faced with requirements for more services, inflation, and budget limitations, make ends meet by deferring maintenance (in essence, borrowing from the future). Whether mandated or locally chosen, different standards for level of service can easily change costs by a factor of two or more (Frank 1989, p. 11).

Jurisdiction size also influences costs. Larger cities typically provide more services. To some extent, that results from different regulatory standards, and from the need for a critical mass of demand to allow certain services to take advantage of economies of scale that lower the per capita costs. Increasing per capita expenditures may also be a result of the effects of the amount and density of population (i.e., congestion). For example, more people means that some intersections now need traffic lights. Several studies find the relationship between metropolitan growth and per capita public sector expenditures to be U-shaped: when controlled for other variables, per capita spending is higher at low growth rates, declines with growth, and then increases after the growth rate reaches some level.

The larger the jurisdiction the smaller the impacts of a new household (that might have higher marginal costs) on average service costs of all households, the more likely that excess capacity will exist and mean decreasing marginal costs for growth, and the more likely that external benefits and costs will be internalized.

### **The normative assumptions**

One can ask not only, Does growth pay its own way? but also, Should growth pay its own way? The answer depends on one's

assessment of what is fair. Considerations of equity add a layer of complexity to questions about the cost of growth. Consider:

- Fiscal zoning. Municipal governments have incentives to use land use policy for fiscal purposes.<sup>4</sup> While law prohibits many types of discrimination, it does allow municipalities police powers regarding the type, density, and standards for land uses. Should municipalities be allowed to adopt high standards and full-cost recovery policies if that means that only high-income people can afford new housing?
- The principles and mechanisms for recovering costs. There are at least four notions of a fair way to charge for a good or service. For goods in the market place, one of them is used exclusively: if you have the money, you can have the product (ability to pay). That mechanism is deemed fair: an informed buyer and seller agree to an exchange that makes both feel better off. For collective goods provided by government, however, other principles get applied. People could get charged based on their share of the costs (e.g., what share of the sewage treatment plant they use), their estimated benefit (much harder to calculate since people have incentives to underestimate their benefit), or special status (e.g., half-price for senior citizens, independent of their cost, benefit, or ability to pay).

The financing of schools illustrates the problems. If education were purely a private good, then school districts could be run like businesses and students or their parents could be charged for the full cost. But there are other public benefits to education (the development of better citizens through shared understanding and values), and an argument that everyone has a right to a good education, whether they can pay or not. Lee (in Nelson 1988, p. 305)

argues that “to the degree that there is a public purpose, the costs should be borne by the community, with the share falling on each taxpayer bearing no relationship to the load placed by the taxpayer on the educational system....the number of school children associated-directly or indirectly-with new development is not only irrelevant, it should be illegal for impact fee purposes.” Thus, whether and to what extent system development charges should be used to finance schools depends a lot on bigger decisions about education and fairness.

- Initial versus final incidence of cost burdens. Ultimately, most of the direct facility costs of new development get paid by someone or the development cannot occur. There is no free lunch, and municipalities have to balance budgets. Thus, the question about growth is more about who pays, and in what form, than about total cost.

What public facility costs are paid directly by developer (e.g., on-site streets); what costs are paid indirectly by developer (fees paid to municipalities and special districts for public facilities that they install, either on site or off site); and what part not covered by developer/builder fees that the public sector must pick up? Even if a developer pays initially, the final burden gets distributed to different groups (landowners, developers (as landowners, or just as developers), new residents, current residents, other state and federal taxpayers) depending on the conditions of supply and demand.

For housing, the direct costs are usually borne primarily by households buying or renting. If some of the direct infrastructure costs are recovered via impact fees, for example, in markets where buyers and renters are sensitive

to price, some of those costs will be pushed back to landowners in the form of lower land prices. Most studies conclude that the shift to landowners will be small (Nelson 1988, p. 316 and Altshuler and Gómez-Ibáñez 1993, p. 100), but that conclusion is debatable and dependent on many variables. The counter-argument is that in a large urban housing market, the new housing in any given year is a small percentage of total stock, so the price of new housing (adjusted for constant quality) is determined by the price of existing housing. Thus, a developer cannot simply charge more to cover the SDC: in the short run the developer pays; in the longer run, land prices must drop to capitalize the SDC. This effect will be most likely for SDCs that are for services that are not an obvious and direct benefit to the individual property (e.g., for an SDC to pay for off-site road improvements or regional parks, compared to an SDC to pay for sewer treatment capacity).

But if homeowners and renters are paying most of the costs, how are the costs distributed among them? Consider, for example, that not all people buying new houses are new to a community. Much of the development that occurs in a community gets occupied by households and businesses that already reside in that community and pay fees and taxes. Are they the ones that should pay the cost of growth? Or should the burden fall on those households and businesses that are moving into the area and are most directly responsible for population growth? How that question gets answered implies different methods of charging for growth.

Moreover, the population of a jurisdiction changes composition even as it grows. In Oregon, on average, less than half the households in the state live in the same house

they lived in five years earlier; over 25% lived in a different county. Even with an assessment that perfectly matched facility life, current taxpayers pay more for the system than future ones: people who pay early pay more because payments do change in time as inflation makes future payments less valuable. Property taxes complicate the picture further, as do taxes paid to state and returned to local governments, and federal grants.<sup>5</sup>

#### **The limitations of the estimates**

Finally, and perhaps most obviously, there is a lot of uncertainty about the estimates of the amount and composition of population, its demand for services, costs, and all the other factors that go into calculating what a fair charge for the direct costs of public facilities should be. Some of that uncertainty is inherent (we can never be sure of the future until it's the past); some of it is introduced by bad techniques and data.

#### ***Differences in objectives, scope, definitions, assumptions, methods, and data in studies of costs of growth make comparisons, and some of the conclusions derived from the, questionable***

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#### **National studies**

We compare several key studies against these principles. Some studies regarding the costs of development are cited in almost any cost study. The classic, *Costs of Sprawl* (Real Estate Research Corporation 1974), is of limited use: not only is it 25 years old, but it has been shown to have methodological flaws (Windsor 1979). Recent work on development costs starts with Frank (1989), whose report is itself a summary of the best studies he reviewed going back to 1955. Much of the more recent work has been done in the context of fiscal impact analysis by Burchell (Burchell 1997; Burchell and Listokin 1995;

Burchell, Listokin, and Dolphin 1985). Other significant work on costs comes from the literature on development impact fees (Nelson 1988, and Altshuler and Gómez-Ibáñez 1993) and on property tax (Ladd 1998).

Some of the works cited above are themselves summaries of other studies-this report must compress those summaries even further. All the points listed above about different research questions (e.g., the costs of growth, or the costs of different patterns of growth?) and methods (construction vs. operation, on-site vs. off-site, total cost vs. costs unreimbursed directly at the time of development, differences between residential and non-residential demand patterns and marginal costs) apply. With the obvious caveats, here are the key points.<sup>6</sup>

Frank's (1989, 39-41) conclusion from his review of cost studies is that when all on-site and off-site capital costs for streets, sewers, water systems, storm drainage, and schools are counted they amount to about \$35,000 (\$1987, which would be about \$50,000 in \$1998) per dwelling unit for a low-density residential pattern. That estimate depends heavily on the assumed location of the dwelling units from central facilities and on the density of the development. Frank shows different reasonable assumptions that cause costs to be from about 50% to 250% of that base estimate. Service standards have big effects: capital costs for schools and streets across jurisdictions vary by a factor of two. He notes that costs can be reduced even further if standards are reduced, but that such reductions are usually only acceptable with less density, which means that distance-related costs (roads and pipes) will increase and at least partially off-set the savings (assuming water and sewer hookups to a central system). His conclusion is that "in most communities, costs beyond the neighborhood level are not fully passed on to the consumer as part of buying a house...." Note

that though he reviewed studies that looked at O&M costs, his summary is for capital costs only.

Frank also notes an obvious point that is critical to any estimate of the costs of growth: marginal costs vary substantially because of big differences in unused capacity. If cost estimates are based on having growth connect to existing infrastructure that has excess capacity, those estimates will be lower. Frank found that if only marginal costs are considered, scattered, infill development has the smallest short-run impact on cost because it takes advantage of unused capacity.

The American Farmland Trust (1986 and 1995) has sponsored studies related to the costs of growth: their focus is the cost of different patterns of growth; their conclusion is that denser patterns are preferable because they cost less and also save farmland. The 1986 study for Loudoun County, Virginia, is notable for its documentation of assumptions and adherence to most of the underlying economic principles described in this report. It did not actually estimate total cost, because it noted that the costs of local streets and water and sewer hookups are paid by developers. The study looked primarily at off-site capital costs and all other costs of government operation, including costs for schools, road maintenance, water and sewer, public safety (police, fire, EMS), health and welfare, and general government. The conclusion was that these costs were about \$3,500 to \$5,000 per household (\$1986, which would be about \$5-7,000 in \$1998; Table 4, page 32), with denser patterns costing less. About 2/3 of the costs were for school operation and instruction.

The work of Frank and others since Frank is identified and briefly summarized in Burchell et al. (1998), which is primarily based on his previous summary (Burchell 1995). Burchell's work in New Jersey is a state-level analysis of the relative costs

of alternative development patterns. He looks at roads, water, sewer, and schools, but his reference to the study does not include sufficient documentation to determine exactly what components of those costs are being measured. His results are not reported in his summaries as a cost per dwelling unit. His summary table (Burchell 1995, 17) allows the calculation of an average cost per household, which is about \$33-\$36,000 (\$1992 [but some mixing of different years], which would be about \$37-\$41,000 in \$1998). That estimate allocates total infrastructure costs for all development to only households: if employment were considered with standard assumptions for equivalent dwelling units, the allocation might be more like \$20,000 per household. Burchell also cites a study by Duncan (1989) but does not provide enough detail to determine what aspects of capital costs that study is measuring.<sup>7</sup> Despite these problems, Burchell summarizes from three studies to argue that certain service costs are less expensive under compact development than under traditional development. He estimated “compact” costs as a percent of “sprawl” costs to be about 75% for local roads, 80% for utilities, and 95% for schools.

Like Burchell, Ladd (1998) has done substantial work on government cost and growth, and has done a review of that literature. While most other work on costs makes estimates based on the assumed characteristics of subdivisions, her work is done at a metropolitan scale.<sup>8</sup> She finds a U-shaped relationship between the rate of population growth and growth in local government per capita spending. On average, for a few hundred metropolitan areas, spending declines at low rates of population growth (less than 1% per year) and then rises at an increasing rate after the annual population growth rate reaches about 3.8%. Among the reasons: in fast-growing counties state governments do not maintain their share of state-local spend-

ing; fast-growing counties have larger capital expenditures. Ladd concludes that “the results suggest that new development, as measured by population growth, may not pay its way when population growth is rapid.” (Ladd 1998, 67). A corollary is that in slow-growth areas, more people could reduce per capita spending and reduce tax burdens.

With respect to density, Ladd finds that it has the same U-shaped impact on spending as she found for growth, and that greater density is associated with higher public sector costs. Higher density requires more public expenditure to deal with what Ladd refers to as “the harshness of the environment.” For example, the costs of pollution and the need for expenditures on pollution control are greater when people are closer together: the pollution impacts more people.

The maturation of the neo-traditional development movement has led to some tests of its initial assertions about cost savings. In general, the findings are that neo-traditional development does not cost less in the aggregate at the subdivision level, but smaller lot size means more lots and less cost per lot (Steuteville 1998). A study in Oregon (ECONorthwest 1995) found similar results, and that housing construction of neo-traditional type costs about the same on a square-foot basis.

That study also supports the conclusions of other studies: that infrastructure costs depend more on the location of the development than its design because of significantly different impacts on off-site costs. Many analysts agree with Kain (1967, quoted in Frank (1989, 23)) that the cost of inter-neighborhood (i.e., community) facilities “depends primarily on the shape and size of the region being served rather than on density.”

The conclusion that distance from central facilities leads to

greater off-site costs has been used by many planners to argue that leap-frog development is inefficient. From an economic perspective, however, greater off-site costs are not necessarily bad. Peiser's empirical work (1989) suggests that over time discontinuous development patterns actually promote higher density. He examined lot sizes over time along major arterial roadways in Dallas, TX; Montgomery County, MD; and Fairfax County, VA). He found higher densities (i.e., smaller lot sizes) in later in-fill development than in the original development.

The studies cited so far focus on subsets of the total costs of government services that are needed to accommodate growth. Most do not focus on exactly who is paying for those services and through what mechanisms.<sup>9</sup> Dauter (1998) attempts to sort out what developer pays and what households subsequently pay through user charges and property tax. He looks at the full range of capital costs and municipal services growth requires for cities in Texas. His conclusion is that new subdivisions, because they are higher than average value, will pay more than the average amount into the general fund for general fund services like police and fire protection, parks and recreation, libraries, and municipal courts. The amount of debt that can be supported by revenues from the new subdivisions (e.g., development fees, ongoing user charges) exceeds the amount of capital improvements cities have provided to these areas. Despite uncertainties and limitations (e.g., he looked at water, sewer, storm and streets, but not schools, which were not municipally provided), the findings make it clear that growth already pays a lot of its direct costs on public facilities.

#### **Oregon studies**

In addition to all the other criticisms of national studies, Oregonians can add one: Oregon is different. Direct costs might not be that much different, but service standards, densities,

and fee structures certainly will be. What do Oregon studies say about the costs of growth?

Carson (1998) is the most recent Oregon work on costs of growth, the bulk of which deals with not the total cost of growth per se, but who does, should, and could pay for the public facilities and services that growth requires. A subset of the report deals with costs. Carson summarizes six studies into a single table (Carson 1998, 31). Four of the studies are national. For several reasons cited above, only the Frank study (1989) has enough documentation to merit citing the numerical estimates. The two other studies are from Oregon: one by Fodor (1996; updated 1997), and one by Conder (1997).

The Fodor study of public facility costs in Eugene has been well publicized in Oregon: references in policy debates to new residential growth costing \$20,000 to \$25,000 per housing unit are usually based on the findings of this study. With respect to the principles discussed above, the report gets a mixed review. On the positive side, it states explicitly that it is evaluating only a subset of costs, it documents where the cost estimates came from, and it provides reasonable ballpark estimates of some of the costs of adding new public facilities. On the negative side, a minor problem is that the cost estimates are from different states and not standardized to constant dollars. More importantly, the analysis appears to assume that any of the estimated costs not paid by system development charges is a cost that is borne, unfairly, by other citizens in Eugene.<sup>10</sup>

A study for the City of Eugene by Lane Council of Governments (1996) in response to the Fodor study found some of the costs of facilities to be similar, but also found, as did Dauter (1998), that many of those costs were being paid by develop-

ers and subsequent users of the developed space. Carson makes the same point. Among LCOG's conclusions:

- Eugene's City Council has been explicit about the costs of public facilities and how they should be funded. Many costs are paid initially by developers in a number of ways:
- As part of their construction cost. E.g., on-site streets
- As fees or special assessments for on-site facilities. E.g., sewer and water hookup. For example, sewer and water fees were calculated by the utility to cover all operating and capital needs. Where metering is possible, such a system has several advantages over impact fees. Yet other facilities and services, typically those of general and regional nature, are funded on an ongoing basis by property taxes, to which residents of the new development contribute.
- As SDCs for off-site facilities. LCOG concludes that the SDCs charged cover 100% of the costs of the facilities that the City Council has decided can and should be covered by SDCs. The Council decided not to cover regional parks or regional transportation through SDCs because of their general benefit to the entire community: user fees and general funds are used instead. The Council could not cover schools or fire, because state law does not allow SDCs for those facilities.
- School and fire costs in Eugene do not rise in proportion to growth. LCOG showed, for example, that the long-run trend in Eugene has been for a relatively stable school-age population despite substantial growth, and argued that most of the reasons for a new fire station were unrelated to growth.

- The large majority of the direct costs of growth for public facilities are paid for either up-front by the development that accommodates that growth, or over time by those occupying that development through special assessments, user fees, and property taxes.

One point illustrated by differences in the Fodor and LCOG findings is the importance to the calculations of things like excess capacity, a short-run versus long-run perspective, and marginal versus average costs. Fodor is correct that eventually growth will be great enough that new public facilities will be required (and that, in that sense, those facilities are a cost of that growth); LCOG is correct that those relationships are not the linear ones that Fodor implies—excess capacity and changes in technology, service standards, institutional relationships, and pricing may reduce future costs in real terms.

Conder (1997) did his work on cost as part of the Metro evaluation of the public facility costs of urban growth in the Portland area. His memo, though short, comports with many of the principles above. He distinguishes between on-site and off-site costs, builds to regional totals from hypothetical subdivision costs, brings cost estimates to constant dollars, notes that he is looking at capital costs only (and for only a subset of services), estimates the components of those costs individually, and effectively calculates an up-front capital cost per dwelling-unit equivalent. It does not, however, consider life-cycle or O&M costs: it implicitly assumes that all growth happens today and builds facilities to today's standards to accommodate that growth.

Carson cites Conder as estimating a cost of about \$23,000 per single-family dwelling unit (\$1996, which would be about \$24,000 in \$1998), which he then compares to estimates (by

facility type) from other studies. This type of comparison, typical in much of the planning literature, illustrates the problem noted previously: simple comparisons of costs from different reports give an inaccurate picture. Conder's cost estimate is for on-site and most off-site public facilities (including parks, jails, and some new arterials, but not including major improvements to the regional transportation system), reported in 1996 dollars for dwelling-unit equivalents (which means that costs are not allocated exclusively to single-family, or even residential, development). Fodor's cost estimate is for a substantially reduced subset of those costs, reported in dollars from different years, and allocated exclusively to single-family development. Frank has yet a different subset of costs reported in 1989 dollars. The Burchell estimates are not comparable at all: they are costs in millions of dollars for the entire state of New Jersey.

ECONorthwest (1995) developed cost estimates for on-site public facility construction costs (local streets, sidewalks, water, sewer, electrical, and lighting) for two prototypical subdivisions: traditional and neo-traditional. Attempts were made to control for type, number, and quality of units, and expected demographic mix. The results were consistent with subsequent national studies showing no absolute cost savings for on-site public infrastructure (streets; water, sewer, and gas pipe; and electrical conduit) for neo-traditional development. At best, the total cost per acre of typical public infrastructure is no greater for neo-traditional development than for a standard subdivision: depending on the amenities provided, it may cost more per acre.

But any greater site cost is offset by two considerations. First, the amenity of a neo-traditional development may be greater: open space, design, and other factors make its housing a more

desirable product for buyers, who may pay more to live in such a development. Second, the neo-traditional pattern usually has smaller lots (more density), which means more lots to distribute on-site costs to. The end result of the ECO study was that the cost per lot is about the same: about \$12,000 for construction only (\$1995, including hook-up fees, which are typically based on service-provider estimates of the cost of the hook-up). Adding in design engineering and contingency, and updating to current dollars would bring that estimate to about \$15,000 to \$18,000 in \$1998.

Conversations with engineers and developers conducted as part of the research for this project suggest that number is in the ballpark, but could easily be higher, and maybe a little lower. Increased standards and, increasingly more difficult sites as all the easiest lands get used up, might cause those cost to be higher. Moreover, the estimates do not include other on-site costs that might be offered or exacted (e.g., open space, trails, and especially storm water retention). Costs could go lower for larger scale developments, where the costs can be spread over more lots, or for different jurisdictions, which have different site conditions and standards. In summary, \$15,000 to \$20,000 is probably a good estimate of the costs of designing and building all the on-site public services that a new single-family subdivision would require, with costs quickly moving toward the higher end. Note that these on-site costs only: they do not include, for example, systems development charges.

Most if not all of those on-site costs are paid as part of the development process. The ECO study also concluded, consistent with other national studies cited above, that "off-site public costs are primarily affected by the overall pattern of development [especially the location of the development relative to

central facilities] and public infrastructure capacity.” (ECONorthwest 1995, 4-6).

The most recent study we reviewed aimed at estimating public facility costs of growth was done as part of Metro’s urban reserve analysis (W&H Pacific 1998). The study looked at only the off-site (regional) costs of constructing and operating wastewater, stormwater, drinking water, and transportation facilities to serve 49 urban reserve areas (URA) in the Portland Metropolitan area. The study was empirically based, looking at the topography of each URA and its proximity to existing facilities. By including the present value of annual operation and maintenance costs (O&M)-i.e., an average annual payment that would have to be made to cover the long-run stream of slightly variable O&M costs-the study gets at an estimate of life-cycle costs (unlike Conder (1997) for example, which estimates only a one-time capital cost).

The study did not look at other types of public facilities: for example, schools, police and fire, and electrical distribution systems. Transportation costs did include new arterials and collectors estimated to be needed to link to the regional highway system, but did not include any improvements to the existing regional highway system to accommodate more growth beyond those envisioned in the regional transportation plan, regional transit improvements or costs, or new signalization. For this study, W&H Pacific estimated total signalization costs and allocated it to dwelling units to calculate an average cost per new dwelling unit of \$865.

The estimated costs per dwelling unit varied significantly from one URA to another, but most were in the range of \$15,000 to \$40,000. Some costs were exceptionally high because the servicing costs were high and the estimated growth of dwelling

units in a URA was low. The average off-site costs per dwelling unit for 37 URAs considered typical are shown in Table E-1. Adding in the estimated cost for signalization brings the total to \$24,300.

ECO’s work on on-site costs can be combined with that of W&H Pacific’s work on off-site cost to get a rough estimate of the capital costs for the subset of public facilities that have typically been included in analyses of the costs of growth. The combination is rough because not all facility types are included in the off-site costs (e.g., electrical and gas transmission lines, regional transportation costs) and the ECO estimate is for one-time capital costs only, not for O&M or life-cycle costs. But if we limit the analysis to one-time construction costs, we get an estimate of roughly \$35,000 per average single-family unit (\$15,000 to \$20,000 on-site, plus \$18,500 off-site). O&M probably adds \$5,000 to \$7,000.

There is plenty of evidence that the capital costs for schools (K-12) is on the order of \$10,000 to \$20,000 per pupil. If one assumes \$15,000 per pupil, an average household size of 2.4 persons, and that school-aged (K-12) children are about 15% of the population, then an average household adds 1/3 students and potentially creates a part of a demand for a new school that could lead to an additional \$5,000 of cost; other

**Table E-1 Off-site infrastructure costs: construction and O&M**

<b>Present Value of Costs in 1998 Dollars</b>			
	<b>Construction</b>	<b>O&amp;M</b>	<b>Total</b>
<b>Wastewater</b>	5,600	1,800	7,400
<b>Water</b>	5,700	600	6,300
<b>Stormwater</b>	2,400	1,200	3,600
<b>Transportation</b>	4,800	1,300	6,100
<b>Total</b>	18,500	4,900	\$23,400

Source: W&H Pacific, Public Facility, Metro Urban Reserve Productivity Analysis, September 1998, and additional calculations for this study.

studies have estimated that cost to be \$10,000 or higher, especially if land costs are included at current market prices.<sup>11</sup>

The result of these assumptions is that the incremental cost for the public facilities discussed so far (i.e., the ones typically considered in fiscal impact studies) imposed by an average new household if it requires a new single-family housing unit is on the order of \$40,000 to \$45,000 (perhaps even \$50,000). That average cost, even if correct on average, would vary a lot depending on the type of household (the socioeconomic and demographic characteristics of the household affect its demand for services). One could add other capital costs as well.

Sooner or later incremental growth will use excess capacity for other services as well: eventually it will contribute to the need for a new police or fire station, library, park, swimming pool, jail, solid waste transfer station, city hall, and municipal court, as well as other general government plant and equipment. In many cases some of that need will also be attributable to existing development. For example, the increased congestion of and demand for transportation facilities over the last 20 years in Oregon resulted more from increased per capita demand than from more people. Nonetheless, using this reasoning, and depending what detail one goes to in identifying and quantifying public costs, we would not be surprised if the incremental impact of a new household could eventually lead to additional capital costs of another \$5,000 to \$15,000. Adding these to the previous estimates would bring the estimate of total capital costs for public facilities to \$45,000 to \$60,000 per household/housing unit.

Note that these are just the capital costs, which are most often what studies and discussions of cost of growth address. One could also, however, consider operation and maintenance costs

as part of the cost of growth.<sup>12</sup> Those costs occur year after year, so they have to be summed over some time period (which should probably be the life of the facility) and discounted to a present value. The present value of O&M costs for all capital facilities and services is probably on the order of \$25,000.

***For public policy, estimating who pays the direct costs of public facilities is as important as estimating how much they are***

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So what? So what if the incremental contribution of an average housing unit to the cost of construction of new public facilities is around \$50,000? In general, our laws and conventions are not concerned about what somebody willingly pays for something he wants—they care when he does not pay. The real question is, Are the right households paying for these public services?

To keep it simple, let's start with an average estimate for capital only. The number could be higher or lower, but assume that \$50,000 covers all the incremental capital costs that, in the long-run, are necessary to accommodate a household occupying one new single-family unit. Embedded in the \$50,000 is approximately \$15,000 to \$20,000 of assumed costs for on-site public services. In most places in Oregon these are paid by developers and passed on to buyers and renters of residential property. The other \$30,000 to \$35,000 is for off-site costs for sewer, water, transportation, drainage, schools, and other public facilities. In most jurisdictions in Oregon, some of these costs are paid with SDCs, which may range from roughly \$2,000 to \$10,000, depending on the jurisdiction. Some are paid with special levies (e.g., Washington County's levy for major street improvements). Some are paid by federal and state revenue sharing and grants, whose ultimate source of revenue

is primarily income and gas taxes paid by everyone. Some may be paid in some jurisdictions by the general fund, which means all local taxpayers are contributing. These costs do not include increments to O&M costs.

Who is paying for that residential growth? The answer depends on some assumptions, most importantly about when and in what form the costs of growth should be paid. Consider:

- Wherever metering is possible, user fees do the best job of having the people who impose costs pay them. The essence of the complaint about costs of growth is that the growth does not pay. Thus, if a new household is paying a user fee (say to a water, sewer, or electrical utility) that is calculated to cover operation, maintenance of existing facilities, replacement, and capital expansion, one could argue that the household is paying its share of costs. The counter-argument is that but for that household (and other new ones like it) user fees could be kept lower for existing users. Issues of prior capital investment and debt financing complicate the issue. But in an ideal situation, if all capital and O&M costs are adequately covered in local user fees calculated by service providers around Oregon, then there is a reasonable argument that each new household pays approximately its fair share, and does so for only as long as it lives in Oregon and uses public facilities.
- For regional facilities that are not easily or desirably financed from user fees (e.g., open space, fire stations, schools), there is a reasonable difference of opinion. On the one hand is the argument that, but for new growth, additional open space, schools, and so on would not be needed: thus, the new facilities should be paid for with SDCs, which will fall directly on developers and be passed

on to occupants of new buildings. On the other hand are the arguments that the occupants of new buildings are not exclusively—perhaps not even primarily—new to the community; that existing residents enjoy investments made by people that preceded them; and that new residents will contribute a fair share by paying the property and income taxes (usually greater than average) that support general government expenditures on these types of facilities.

- For operation and maintenance, a justifiable and simplifying assumption is that new growth pays its proportional share through standard cost-recovery mechanisms. For most cities, a large part of road maintenance is funded with their share of state gas taxes. School operation is primarily funded through state income taxes, personal and corporate, that are passed back to school districts. Thus, though the costs per student of K-12 education are large, it is likely that people moving into new houses are paying more than average property and income taxes, which is how public school operation is funded. If maintenance is being deferred (as it appears to be in many cities and the state for some transportation facilities and for buildings), growth is responsible for only its (small) proportional share of that deferred cost. In other words, that cost is probably not appropriately classified as a cost of growth.

Again in rough terms, trying to put some boundaries on the estimates, the evidence reviewed leads us to conclude it is probably the case that for on-site and off-site public facilities new residential development directly pays on the order of 50% to 90% of the capital costs (through developer provided infra-

structure, hookup fees, SDCs and other impact fees, special assessments, exactions, and property taxes).

The exact percentage will vary by jurisdiction, depending on things like the local type and level of service, the details of the cost-recovery structures of service providers, and how one chooses to treat future property tax payments and users fees, some of which may be paying down financed capital costs. If a city in a smaller region (which will have a less complex regional transportation system) also provides most public facilities through enterprise funds and special districts, then its recovery rate will be toward the higher end. Even where these conditions do not apply, 50% still seems like a reasonable lower bound because (1) probably at least 30% (and maybe as much as 40%) of the capital costs for public facilities are on-site costs, which are uniformly paid by development, and (2) all jurisdictions have some combination of SDCs, special assessments, and exactions to pick up some of the off-site costs. For operation and maintenance, it appears that new development, with its higher value and occupancy by households with higher than average incomes, pays more than its fair share of O&M.

Identifying all the costs is difficult, but tracing through who is ultimately paying the costs, and who should be paying the costs, adds even more complexity. Should the cost of Portland's LRT or a new bridge, neither of which would have happened without growth but now benefit all households, be allocated to new households only? The question of who does and should pay the capital costs for K-12 schools provides a good example of how difficult this kind of analysis can be. Consider:

- How should future school capital costs be calculated? As the Eugene analysis shows, the need for new schools is not a linear function of population growth. One precedent for calculating an SDC, probably preferable to per-unit

factors, is to develop a 10-to-20-year capital improvement program for schools, identify those improvements that are strictly needed to respond to growth, and allocate that cost to new units based on estimates of their contribution (by type of unit and assumed demographic characteristics) to the need for the new facilities.

- Should school costs be borne in SDCs by childless households who, after paying taxes in the community for 20 years, move across town to a new house?
- Assume that a roughly uniform SDC for schools is adopted in a region. That cost gets capitalized into not only the prices of new housing, but also existing housing. The result is a one-time benefit for owners of existing housing, many of whom had the advantage of using schools paid for before they moved to the region. And because Measure 50 limits the growth of assessed property value, that increment in value does not result in more property taxes as long as property values are increasing at least 3% per year anyway. The combined effect of an SDC and Measure 50 is to shift even a greater burden for school to new development.
- More fair than having new housing pay for schools is to have users pay for schools. There are private schools in Oregon that charge tuition. But the consensus in the US and Oregon has always been that equality means equal opportunity, and that requires equal access to public education regardless of means. An SDC may not be the most fair way to provide that public good.
- The previous points notwithstanding, ultimately new residential growth will reach a point or occur in a location where new school facilities are required. It is that

assumption that makes the argument for placing the cost of those facilities on growth. A school SDC, crude as it is, pushes some of those costs on new residents.

When interpreting the previous estimates, do not forget several qualifications:

- The analysis in this deals with only the direct costs of public facilities and services for residential development. One possible assumption is that those facilities and services are of a quality that there are no large spillover costs. But that assumption is probably incorrect. The pricing of roads, the operation of combustion engines, and highway congestion means that there are spillover social costs. Many cities in Oregon have sewage treatment systems that fail in the rainy season. If, to accommodate growth, we build and price facilities no better than we have in the past, then there will be some additional costs of growth on society (though in that example current development also contributes to those costs).
- The analysis at this point does not discuss any of the benefits or beneficiaries of growth. It is not only developers who benefit, nor even just those involved in development (e.g., builders, Realtors). New homeowners benefit; existing homeowners may benefit from higher property values. Businesses and profits grow. The loss of farmland has a cost (for the farmer who wants to farm and urban residents that want open space and the protection of food-growing capacity), but it also has a benefit (to the farmer who wants to sell, and to the new homebuyers that might see lower prices).
- Even if the summary estimates of capital costs of public facilities were comprehensive and exactly right and if there were no other external costs of growth, one could still

present the numbers in different ways to tell different stories. One story is that the average single-family house may not be directly paying, through up-front charges, anywhere from \$5,000 to \$25,000 of the capital costs of the public facilities it requires. That statement would have to be qualified by the statement that some, maybe most, of that up-front underpayment may be being paid through property taxes, user fees, and special assessments: it depends on the specific case. An alternative story starts with the total cost of a housing unit. When a buyer pays \$200,000 for a new house, he is paying for permit fees, construction costs, public facilities, SDCs: everything that went into the cost of building the house. If the capital cost he is not paying amounts to \$10,000, then his purchase price has covered 93% of the cost of the that new housing unit: the structure, the on-site infrastructure, and the off-site public facilities.

### ***Beware simple statements about “costs of growth”***

The previous section noted in several places a key point: it is dealing only with the costs of public facilities. The larger question about the impacts of growth requires an evaluation of other costs and benefits of growth as well. Thus, a conclusion that growth does not pay the full cost of all the public facilities it requires is not the same as saying that growth is a net loss to a community. Chapter 4 shows the many other impacts that must be considered (some additional costs, some additional benefits) before such a conclusion could be justified. Even the answer to a narrower question about what percent of the capital costs growth pays for depends on several categories of assumptions:

- Treatment of costs and benefits. Among the conclusions that can be drawn with confidence from the review of

studies of the impacts of growth is that they deal with different impacts, defined and measured in different ways. Ladd (1998, 63) summarizes the economists' consensus about fiscal impact analysis: "a bastardized form of benefit-cost analysis...[that] cannot by itself provide appropriate signals about whether new development should be allowed, even in the absence of equity concerns about the people who are excluded." Decisions about growth policies require at least a qualitative assessment of benefits and costs, including external ones. The perspective of this report is broader than fiscal analysis. In concept, it cares about the impacts of growth on welfare.

- Perspective. One's conclusions about the impacts of growth can vary based on whether one is looking at a neighborhood, city, region, or state; at the near-term or long-term; at household welfare or fiscal impacts on local government; at high-income households or low-income ones.
- Residential vs. nonresidential growth. How will we measure and attribute costs to growth-as new people or as new buildings? To make the discussion of direct costs of growth manageable, the previous section used an "average" dwelling unit with an "average" household as the units of analysis. But the real world has substantial variation in housing and household type, and in their combined impacts on the demand for public facilities and services. Moreover, in a typical city only about half the land is in residential use, and about 1/4 of the assessed value is in commercial and industrial property. In other words, commercial and industrial development is a significant part of growth, and that growth will have different requirements and pay different amounts for public facilities.

An analysis of the type above for commercial and residential property is beyond the scope of this report. The conventional wisdom has been that non-residential growth was fiscally beneficial to a jurisdiction: that it typically contributed more to revenues than it required in costs of service. Burchell's work (1998, p. 56) describes a fiscal impact hierarchy, in which most residential categories are negative or break-even, retail is break-even, and all other business categories are fiscally positive (at a municipal level). Ladd (1998) summarizes those studies, concluding that improvements in the methods of fiscal impact analysis are likely to show those benefits to be less than commonly believed. Most recent studies cited on the topic in the national literature have given mixed results. At a minimum, the conclusion should be that the net impacts of commercial and industrial on a local government's fiscal position depends on local conditions.<sup>13</sup>

- The studies reviewed. Studies have sponsors; researchers have opinions.

The essential question about growth is about welfare: (1) Is growth likely to make people in some area over some period better off, in the aggregate, and, if so (2) does it do so without having unacceptable costs on other areas, or on subsets of people within the area being considered? The answers to those questions depend, among other things, on:

- Characteristics of the old and new populations
- Characteristics of existing and new infrastructure (e.g., whether there are economies of scale)
- The way growth is distributed within the region
- What the governments choose to do: local governments have the ability to determine the magnitude and, sometimes, even the direction of the welfare change.

Thus, questions about the net benefits of growth cannot be answered only by an evaluation of how much public facilities to serve growth cost, and who pays those costs. It requires a consideration of all the impacts of growth shown in Figure 4-1 and discussed in Chapter 4.



# *Appendix F*

## *Acknowledgments*

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Despite those improvements—the result of many rounds of review—this report will certainly have many omissions (the scope of the topic makes that inevitable) and some errors. As prime contractor and principal author, ECONorthwest is responsible for any such errors, and hopes that there is more in this report to use than to criticize.



