Region 2050

Economic Impact of Region 2050 Growth Scenarios

FINAL
September 14, 2005

Performed for the Lane Council of Governments by

Timothy A. Duy, Ph.D.
Adjunct Assistant Professor
Director, Oregon Economic Forum
Department of Economics
University of Oregon

duy@darkwing.uoregon.edu

(541) 346-4660

Introduction

The purpose of this report is to examine the economic outcomes of the various growth scenarios proposed by the Region 2050 process.

"Region 2050 is a voluntary, collaborative effort to improve and sustain quality of life in the Southern Willamette Valley over the next 50 years. Region 2050 began in the summer of 1999 with the adoption of formal resolutions by the Lane County Board of Commissioners and the City Councils of Coburg, Cottage Grove, Creswell, Eugene, Junction City, Lowell, Oakridge, Springfield, Veneta, and Westfir. The resolutions endorsed the concept of developing a Regional Growth Management Strategy and defined the forum for the dialogue among the regional partners."[1]

The long time horizon (45 years) of this analysis poses some special challenges. Notably, predictions of economic outcomes just a few years into the future are shrouded by a variety of risks. The interactions of numerous firms and individuals always being subjected to exogenous shocks are very challenging to model. Moreover, there is a dearth of systematic studies analyzing intra regional dynamics. Case studies may describe the dynamics of other regions, but it is difficult to translate those dynamics to Lane County.

That said, there is a substantial (and always expanding) literature on the economics of cities in general. The outcome of this research may not be sufficient to yield exact predictions of the future, but does suggest ways of qualitatively assessing the advantages and disadvantages of alternative growth scenarios.

This report is organized as follows: First, key conclusions are discussed. Second, I briefly review recent literature on the economics of cities. The key assumptions used in this analysis are then presented, followed by the criteria for evaluation, and comments on these criteria. Next is an analysis of the three growth scenarios, followed by concluding remarks.

About the Author

Timothy A. Duy, Adjunct Assistant Professor, received his B.A. in Economics in 1991 from the University of Puget Sound, and his M.S. and Ph.D. in Economics in 1998 from the University of Oregon. Following graduate school, Tim worked in Washington, D.C. for the United States Department of Treasury as an economist in the International Affairs division and later with the G7 Group, a political and economic consultancy for clients in the financial industry. In the latter position, he was responsible for monitoring the activities of the Federal Reserve and currency markets. Tim is currently the Director of the Oregon Economic Forum, and joint project of the College of Arts and Sciences and the Department of Economics.

This report has benefited from review and comments provided by Bruce Blonigen, Professor and Knight Professor of Social Science and William Harbaugh, Associate Professor, both members of the Department of Economics of the University of Oregon.

[1] For a complete description of the Region 2050 project, go to http://www.region2050.org.

Key Conclusions

General Conclusions

- **At its core, this analysis is asking the following question: Suppose we add one new worker or acre of developable land to the region. Where would we put that resource in such a way that it would yield the highest economic benefit for the region?** To be sure, we can't answer this question conclusively, especially when looking over a 45 year time frame. But, using the tools of economics, we can assess the risks to economic vitality from the placement of that resource.

- **Cities evolve because they generate important benefits for producers.** Higher productivity in cities, evidenced by the wage-premium paid to urban workers, implies that firms obtain important benefits from locating in dense areas. This suggests that firms will not easily be enticed to outlying regions.

- **The Eugene-Springfield core will remain the economic center of the region.** Under any of the scenarios, positive agglomeration spillovers, proximity of workforce, and infrastructure access imply that economic activity will remain centered in the urban core. It is likely that no other city in the region grows large enough to generate a competing core, even if we plan for development in outlying cities.

- **Given the positive agglomeration externalities, there is a risk that attracting firms to the outlying communities will require large and continuing subsidies.** This may not be the case for all cities, particularly those closest to the Eugene, Springfield core. Outlying regions, however, may find that the temporary benefits available in enterprise zones are insufficient to attract firms.

- **Supporting the creation of high (family) wage jobs requires creating conditions attractive to firms expanding or locating in the region.** The creation of family wage jobs is the often elusive goal for local development officials across the nation. Achieving this goal rests in the ability of a region to attract high paying firms and educate and attract productive workers with high levels of human capital.

- **There is no guarantee that the expansion of information technology, all else equal, will support higher incomes in the region relative to the nation. Nor is it clear that technology will be a savior for struggling rural areas.** To be sure, the local area has benefited from the IT revolution, but area incomes remain stagnant at 85% of the nation's level. We also should not expect that technology will significantly enhance the attractiveness of less populated areas. It is likely that firms and people will still value levels of interpersonal contact that require dense communities. In other words, technology has changed the way we live and work, but will not entirely replace many of our economic conventions. For instance, Internet shopping has complemented traditional brick and mortar retailers, not completely replaced them.

- **There is no guarantee that a larger city necessarily implies more economic diversity.** Research suggests that local and regional economies exhibit a great deal of persistence in terms of the composition of business, suggesting that growth in any one city will not necessarily translate into a significantly more diverse economy. Also, note that many economic development officials favor specialization (clusters) over diversity.

- **Developing and attracting a high quality workforce requires providing residents an attractive set of amenities.** High human capital workers value amenities such as high quality housing, nightlife, leisure opportunities, good schools, short commuting times, etc. Such considerations are important when evaluating growth prospects.

Scenario Comparisons

- **The Compact Urban Growth Scenario represents a proven growth pattern, and as such is the least risky plan to pursue.** The preferences of firms to locate near each other, and to customers and workers, as well as recent firm location choices, imply that regional economic vitality will be most supported by fostering more dense growth closer to the urban core. The outlying regions will likely remain dependent upon the health of the Eugene-Springfield core in all growth scenarios. There is a risk in the Satellite Communities Growth scenario that locating potential resources away from the core will lower overall regional economic health.

    - **Compact Urban Growth Summary:** This scenario is most likely to attract a wide variety of firms, thus creating a more diverse regional economy. The greater economic activity would be more conducive to the creation and expansion of family wage jobs, relative to other scenarios. Transportation improvements and the relative close proximity of surrounding communities imply that jobs will be accessible to residents throughout the region. The Compact Urban Growth scenario is most likely to be conducive to providing amenities attractive to high human capital workers. Increasing benefits to locating in the core would also promote redevelopment.

- **The Satellite Communities Growth Scenario provides for similar resources, in terms of Urban Growth Boundary expansion and population, as the Compact Urban Growth Scenario, but there is a risk that some of these resources will be effectively stranded.** The satellite cities, particularly those closest to the central business core, will serve as bedroom communities, and rising populations will increase the availability of goods and services in those area. There is a risk that firms may be reluctant to locate outside the core. Moreover, areas more than 30 minutes from the urban core face challenging growth prospects. There is a high risk that expansion of the Urban Growth Boundary in such areas commits resources in areas not attractive to expanding or relocating firms.

    - **Satellite Community Growth Summary:** This scenario is more supportive of growth than the Rural Growth scenario, but note that individual cities in the outlying areas may be too small to support more than a single industry. The

higher population in the outlying areas will be most supportive of local access to goods and services. There is a risk that conditions in this scenario will not be as conducive to creating amenities attractive to high human capital individuals. The possibility of reduced economic activity, relative to the Compact Urban Growth scenario, implies less pressure for redevelopment.

- **The Rural Growth scenario has the highest risk of creating conditions that restrict economic development in the region.** The Rural Growth scenario envisions the dispersal of the population to large rural lots. This dispersal is likely to be costly in terms of infrastructure, essentially emphasizing the creation of high cost housing. While such housing will be attractive to a subset of the population, the scale is likely inconsistent with the needs of much of the population, including retirees, empty nesters, young families, or single professionals. Moreover, this scenario has the highest risk of being unattractive to new and expanding firms.

    - **Rural Growth Summary:** This scenario is least supportive of firm expansion; particularly concern is the tradeoff of industrial and commercial land in the Goshen area for rural housing. Access to goods and services will be limited relative to the competing scenarios. The diffused population and lack of transportation infrastructure is not conducive to access to jobs throughout the region. Moreover, this scenario is not conducive to creating amenities attractive to high human capital workers. Finally, a relative lack of economic vitality suggests the least amount of pressure for redevelopment.

Additional Considerations

- **Flexibility is a critical element in supporting economic vitality.** The Region 2050 project explores growth prospects over more than four decades. Obviously, such a long time horizon encompasses a large amount of uncertainty. Household and firm preferences and technology, for example, may change dramatically over the course of a single decade. Moreover, many business plans extend out only a decade. Today's planning may thus become inconsistent with future needs. This does not mean that we shouldn't plan for the future. Instead, planning must be flexible enough to respond to unforeseen changes in the economic environment.

- **Growth scenarios that are inconsistent with the populations' preferences may lead to unexpected negative welfare impacts.** Residents have revealed a strong preference toward locating in the urban core of the region. Competition for scarce land in the core is likely contributing to growth in the outlying areas. This trend can be further encouraged by development plans that continue to restrict growth in the urban core. But growth restrictions would then run contrary to the preferences of area residents. In such a situation, we would expect rising housing costs to effectively exclude lower and possibly middle income persons from locating in the core. Unintended consequences of such a policy might include falling school enrollments and the inability of those who provide critical services to live in the communities they serve.

Literature Review

Fundamentally, this study is an analysis of the economics of cities. Urban economists traditionally have viewed cities as having a positive impact on productive activities. The close proximity of firms and workers offer a variety of benefits to production, such as lower transport costs, adequate labor supply, and so called "cluster" benefits – the gains obtainable when a number of firms in the same industry locate in the same region (or, in other words, cities offer positive agglomeration benefits). Conversely, cities have also been viewed as a negative influence on consumption. Support for both of these views comes from the simple observations that workers earn more in cities, get better education and cultural amenities, but pay higher rents (scarcity of land forces up housing costs), suffer from higher crime (more interactions and anonymity), and potentially more time consuming commutes due to central city congestion (Glaeser, *et al,* 2001).

The view that cities are negative for consumption is also seen as a driving force behind the rise of suburbanization during the 20th century. A commonly held theory offers that as the central areas of the city become more crowded, new housing is built on the outskirts of the city. Higher income groups, who can afford the larger, more modern housing, gravitated toward the suburbs, while lower income groups occupy the older, smaller housing in the central city. Modern transportation has lowered the cost of commuting, allowing middle class residents to follow upper income groups to the suburbs (Mieskowski and Mills, 1993)[2].

In a newer phenomenon, firms, facing higher land costs and following the labor supply, move to the periphery, spurring additional movements of population away from the central city. This creates so called "edge cities," self-contained cities in their own right. The formation of edge cities has been fostered by highway construction around the central city, so that one may live and work in the Washington, D.C. metropolitan region, for example, without ever traveling into the city proper.

Recent research challenges the conclusion that cities are necessarily bad for consumption. Instead, cities may offer amenities that are highly valued by consumers. This is a particularly important concern for the modern city faced with the problem of attracting and maintaining high human capital workers. As the creation of ideas has risen in importance over the production of goods, the need for high human capital workers – not simply those with high levels of education, but all workers that possess high levels of employable skills – to sustain an economy has risen as well.

Glaeser, *et al* (2001) identify four critical urban amenities: A rich variety of consumer goods and services, such as theaters, restaurants, and nightlife. Additionally, a sufficiently deep marriage market is attractive to young, single professionals. Second, physical setting and

[2] Another explanation of suburbanization emphasizes the role of fiscal and social problem within central cities. Crime, low quality public services (especially schools), local redistributive spending, racial tensions, etc., prompted affluent residents to flee to suburban regions. The loss of important tax revenue worsens fiscal challenges, leading to further deterioration of the city center and additional urban flight. Mieskowski and Mills (1993) note that this explanation is largely observationally equivalent to the standard explanation of suburbanization, and that the most rapid period of suburbanization was between 1920 and 1950, prior to many of fiscal and social impacts. Note that these explanations don't appear relevant to the Southern Willamette Valley.

aesthetics. Third, quality public services, particularly good schools and low crime. Finally, speed of transit will likely become increasingly important. Time is an increasingly valuable commodity, especially for high human capital (high income) workers. This suggests the possibility of two models for cities, large, spread out "car" cities, or more dense, pedestrian/public transit cities.

Controversy has also emerged regarding the role of increasingly advanced information technology on the need for cities. One school of thought argues that such technology will render the need for face-to-face contact obsolete. Glaeser (1998) reports on a variety of research supporting the opposite conclusion: Cities will remain important to maintain relationships via interpersonal contact, people in cities are more likely to use telecommunications devices, the increase in business travel (suggesting, again, the importance of interpersonal contact), and the fact that the telephone did not replace the need for cities 100 years ago. Moreover, the most famous cluster of firms, Silicon Valley, implies that development of technology is positively effected by proximity. *In short, it is questionable to assume that information technology will be the savior of struggling rural areas.*

Economists have found studying the above phenomenon to be a fertile field. The resulting literature is broad and deep. Unfortunately, the nature of this research is largely inadequate to rigorously evaluate the economic impact of the three growth scenarios under consideration in the Region 2050 plan. While this research does not yield exact predictions for these scenarios, it does suggest ways of evaluating the advantages and disadvantages descriptively.

The Region 2050 plan focuses on the economics within a Metropolitan Service Area (MSA), or, more specifically, a medium size central city surrounded by a periphery of (small) towns. Typically, research in urban economics focuses on comparisons across MSAs, consistent with the fashion in which data is collected on metropolitan areas (Henderson, 1997). For example, there exists specific, industry (and firm) level data for the Eugene-Springfield MSA, which encompasses all of Lane County, but data at the individual city level is lacking.

Moreover, even if such data was available for Lane County, to what would it be compared? To date, I have found no systematic studies of intra-MSA dynamics. While individual case studies exist, their applicability to the local region is limited at best. By what basis would one compare growth dynamics of Charleston, S.C. to Eugene-Springfield? While such intra-MSA dynamics are clearly interesting, the economics profession just beginning to develop tools to analyze such systems.

Existing literature, and the tools of economic analysis, however, can provide some guidelines to differentiate between the *likely risks* of the three Region 2050 growth scenarios. These guidelines, however, should be used cautiously. Predicting a year into the future is a challenging effort; a look 45 years into the future is hazardous occupation.

Key Assumptions

This analysis is based on the following key assumptions:

Cities have important benefits to the production process.

Firms locate in cities to take advantage of lower transport costs and easy access to labor. Moreover, they gain benefits from agglomeration and spillover effects. In particular, knowledge spillovers occur as employees and firms within a city learn from one another. Indeed, this helps explain the existence of an urban wage premium. Otherwise, why would firms pay more for workers in an urban area? Knowledge spillovers may become increasingly important as the economy becomes more dependent on creative processes (Carlino, 2001).

Firm location will be largely influenced by:

Availability of labor force.
Access to infrastructure, especially interstate highway access.
Access to suppliers and customers.
Availability of competitively priced land.

Cities yield both positive and negative benefits for consumption.

As noted above, cities have negative impacts in the form of congestion, pollution, higher crime, etc. But there are positive impacts as well, as density creates a more vibrant set of amenities. Economic outcomes for the region will be enhanced to the extent the positive benefits are sufficient to attract high human capital workers.

Cities are well-governed such that they remain attractive places to live.

Underlying this analysis is that local governments, particularly Eugene and Springfield will manage public resources to maximize production of amenities attractive to the population, especially high human capital workers. Poor government, such as wasteful spending of taxes, declining school performance or lack of housing options for a wide range of incomes, could radically alter the economic outlook for the region under any of the three growth scenarios.

Criteria

The evaluation criteria are derived from the Regional Goal and Objectives unanimously approved by the Regional Policy Advisory Board. Scenarios are evaluated *relative to each other* on their likelihood of meeting a particular objective. These likelihoods are qualitatively assessed by applying the above assumptions and existing research to determine which scenario is at high or low risk – relative to the other scenarios – of meeting a particular goal or objective.

Regional Goal and Objectives:

Goals

Promote a diverse regional economy in the Southern Willamette Valley that facilitates access to quality employment, goods, and services throughout the region, while recognizing the unique advantages of each community.

Objectives and Comments

1. *Encourage partnerships with local organizations, communities, and business to help achieve local and regional economic development goals.*

   This objective is beyond the scope of this analysis.

2. *Promote the development of a full range of local job opportunities throughout the region with a focus on family wage jobs.*

3. *Work collaboratively to encourage economic diversity throughout the region and to encourage cooperation and communication between communities to reduce competition.*

   Objectives 2 and 3 should be considered cautiously. For example, efforts to "force" potential employers to locate in outlying areas will tend to be counterproductive, if employers value proximity of other firms in order to obtain agglomeration benefits. In such circumstances, the potential employer would likely avoid the region altogether and existing employers may not be able to increase wages and hiring as quickly as they would otherwise be able to. In other words, planning for growth where firms do not want to grow will reduce the overall income and employment prospects for the region.

   It is often believed that a larger economy necessarily implies a more diverse economy[3]. The story is actually more complicated. Larger cities tend to be more diverse, but the rankings of cities size remain relatively stable over time, such that there is considerable stability of economic activities within cities (Duranton and Puga, 2000). Indeed, Kim (1995) reveals a strong degree of persistence among two-digit industries at the state level over a 117 period! Economic change happens slowly.

   Table 1 (see end of report) lists, for the Eugene-Springfield MSA, the share of employment by 3 digit NAICS industries. Note that between 1990 and 2003, the share of workers in individual industries is relatively stable. A clear exception is the decline in wood products manufacturing employment, offset partially by increases in high tech and motor vehicle manufacturing. But, by in large, workers in the region are working in the same types of industries they were 13 years ago. Moreover, the Hirshman-Herfindahl[4] index, a measure of diversity, is essentially unchanged over that period.

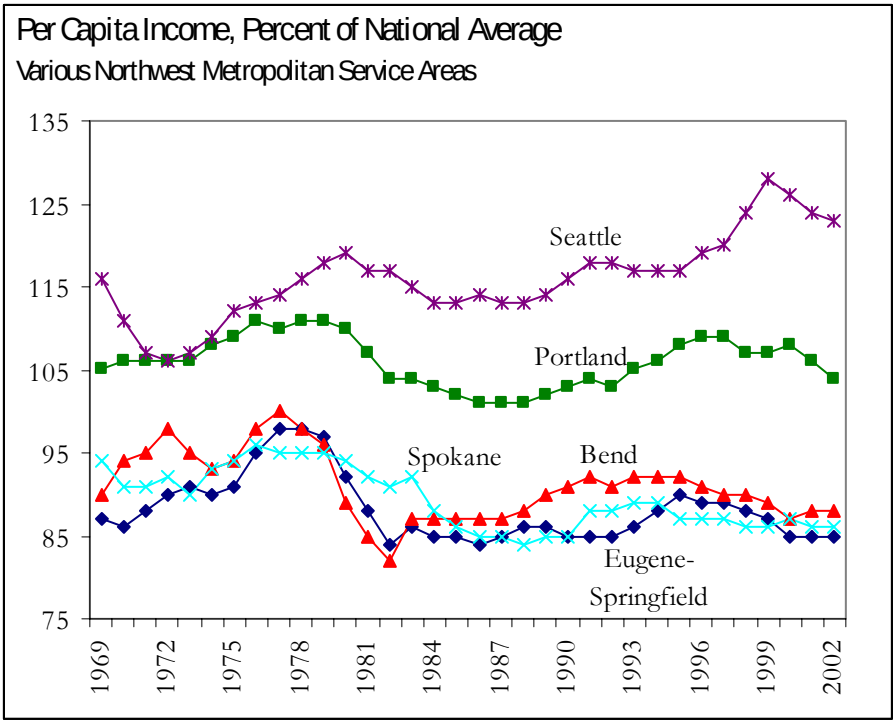
   Similarly, conventional wisdom holds that increasing diffusion of information technology will generate higher wage jobs in the region. This should not be taken for granted. Refer to the chart below. Per capita income, relative to the United States for Eugene-Springfield, Portland, Bend, and Spokane peaked in the

[3] Note also that there are some advantages to specialization, which is why many local development officials promote industry "clusters."

[4] The Hirshman-Herfindahl Index = $1 \Big/ \sum_j s_{ij}^2$ where s_{ij} is the employment share of industry *j* in city *i*.

late 1970's. Relative incomes in the region declined in the wake of the economic turbulence of the early 1980's and the subsequent decline of the wood products industry. Some progress was made in the early 1990's, but has since been reversed, implying that the tech boom in the late 1990's had a larger impact on the rest of the nation than locally. In contrast, note that since 1990, incomes in the Seattle area have gained ground relative to the rest of the nation[5].

Evidence suggests that the spread of information technology has not yet lifted incomes in the region relative to the rest of the nation (although IT industries likely helped prevent additional declines). Simply put, the region continues to be impacted by the adjustment away from the traditional base of woods products manufacturing[6].



Source: US Bureau of Economic Analysis

4. *Enhance human capital in the region, fostering a skilled, educated labor force that can attract high wage industries.*

[5] Note that the Seattle area is a hub of software production; Oregon's participation in information technology is largely in manufacturing activities. This helps account for the different fortunes of the two states in the information technology age. The production of technology goods may be less important than their application.
[6] This phenomenon is not unique to the region. Medium-sized cities have historically been specialized in manufacturing activities, and the decline of such activities has, not surprisingly, had a disproportionate impact on those cities. Workers in affected industries often find new work at lower pay. Consequently, as an industry slowly decreases in importance, regional earnings are negatively impacted, even as some new, higher paying jobs are created.

Meeting this goal will depend upon the ability of the region to support education to create productive workforce and provide amenities to hold and attract those workers.

5. *Promote redevelopment of brownfields and other sites and identify financing techniques to facilitate redevelopment projects.*

6. *Promote management of resource lands, including agriculture and forest, in a manner that maximizes the long-term return for the local economy and maintains the long-term health of the resource lands.*

   This objective is beyond the scope of this analysis.

Evaluation

The Region 2050 project outlines assumptions for three different potential growth scenarios, Compact Urban Growth, Satellite Communities Growth, and Rural Growth. The regional labor resources are assumed to be the same under each scenario, with regional population growing to 463,500 persons and employment to 215,000 jobs. The main differences between the scenarios is a.) where population and employment growth is allowed to occur and b.) the size of Urban Growth Boundaries expansion. For detailed population, employment, and UBG figures, see http://www.region2050.org/altgrowthscenarios.html.

A Note on Recent Population Growth Trends

Table 2: Population Trends

	1990	2003	Change	% Change	% of Total Change	% of UGB Change
Coburg	763	1,050	287	37.6%	0.7%	0.6%
Cottage Grove	7,403	8,910	1,507	20.4%	3.5%	3.2%
Creswell	2,431	3,990	1,559	64.1%	3.6%	3.3%
Eugene	112,733	143,910	31,177	27.7%	71.4%	65.6%
Junction City	3,692	4,870	1,178	31.9%	2.7%	2.5%
Lowell	785	890	105	13.4%	0.2%	0.2%
Oakridge	3,063	3,680	617	20.1%	1.4%	1.3%
Springfield	44,664	54,720	10,056	22.5%	23.0%	21.2%
Veneta	2,519	3,480	961	38.2%	2.2%	2.0%
Westfir	278	330	52	18.7%	0.1%	0.1%
Uninc.	98,329	94,480	-3,849	-3.9%	-8.8%	-8.1%
Total	276,660	320,310	43,650	15.8%	100.0%	91.9%
UGB Total	178,331	225,830	47,499	26.6%	108.8%	100.0%
Eugene-Springfield	157,397	198,630	41,233	26.2%	94.5%	86.8%

A beginning point to this analysis is the pattern of recent population growth. Table 2 contains data on population for Lane County, excluding the coastal towns of Florence and Dunes City. There are two distinct way to interpret this data. The first interpretation is to focus on the rapid growth of the cities surrounding the central core.

Many of these areas experienced growth rates in excess of the core's growth. This interpretation is potentially misleading as the population base in the outlying cities is considerably smaller than the core. Similar increases in population will translate to larger percentage increases. A second interpretation notes that of the 47,499 population increase in UBG areas, almost 87% of the gain is attributable to growth in Eugene and Springfield.

It is important to recognize these two interpretations. Excessive focus on rapid growth on a percentage basis in small outlying cities risks missing the big picture – the vast majority of new residents (on net) have shown a preference to live in the core cities.

Of the three growth scenarios under examination, the Compact Urban Growth scenario, in which 90% of the new residents locate in the core, best matches the pattern of the 1990s and early 2000s. In contrast, the Satellite Community Growth and Rural Growth scenarios assume that 47% and 35% of new residents, respectively, locate in core.

Why might we expect a shift in patterns of location preferences as assumed in these latter two scenarios? We might expect that newcomers have a change in preferences relative to the existing population. We might also expect, however, that growth restrictions essentially "force" individuals who would prefer to live in the core to reside in the outlying regions. These two possibilities have very different welfare implications for both new and existing residents. For example, current residents in the core areas may have a preference against new residents. Consequently, strict growth restrictions may leave the former better off and the latter worse off. The existing preference to live in the core, however, might then bid up housing costs, leaving lower income groups worse off.

In short, we should be aware of the possibility that growth scenarios that are inconsistent with the population's preference could lead to unexpected negative welfare impacts.

Compact Urban Growth

This Compact Urban Growth (Compact Growth) scenario likely generates the best conditions to meet the regional goals and objectives. It plans for growth both near the central labor source, freeway access, and the existing business core – consistent with the assumed firm preferences and recent patterns of firm location. This scenario is most likely to attract and maintain quality employment in the region.

The Compact Growth scenario is least risky simply because it represents the proven pattern of growth; firms have tended to prefer the region's central business core to the outlying regions.

From the perspective of firm location, the Compact Growth scenario offers important benefits for existing and new firms. Additional commercial land, particularly in the Goshen area, has interstate access, closer proximity to suppliers and customers, the potential to gain agglomeration benefits, and is located near the primary population centers. This scenario thus plans for growth where, by the assumptions regarding firm behavior, companies want to locate. This suggests the Compact Growth scenario will likely create the most employment opportunities in the region.

The likelihood of more economic activity near the regional core (compared to single industry towns in the outlying regions) reduces the risk to local taxes bases due to industry or firm specific shocks. Moreover, greater employment opportunities will more likely satisfy the needs of two-income households, especially where both workers are high human capital individuals. Also, assuming regional transportation improvements are made, workers in outlying cities will have access to the jobs created in the Eugene-Springfield core.

Higher populations in the central core will likely also enhance amenities attractive to high human capital individuals. The more sizable centrally located population will also be conducive to supporting a variety of entertainment options, restaurants, shopping, and nightlife. Similarly, the larger population would result in more "marriage market" opportunities (i.e. raising the possibility of encountering an attractive partner).

Recall that, as noted above, residents already show a preference for living in the central core. Between 1990 and 2003, 94% of the population growth in Lane County (excluding Florence and Dunes City) occurred in Eugene and Springfield. Even concentrating on the subset of UGB defined cities in the Region 2050 area, the central core accounted for 87% of the population growth. The Compact Urban Growth scenario, in which 90% of the population growth occurs in the central grows, closely matches this trend. From the perspective of residents, the Compact Urban Growth Plan appears to be most consistent with existing preferences.

Assuming that firms received agglomeration benefits, concentrating growth in the existing business core will increase the benefits, relative to the alternative scenarios, to locating in the core. Consequently, this scenario is most supportive of redevelopment of existing sites and brownfields.

Satellite Community Growth

It is tempting to view the Satellite Community Growth (Satellite Communities) scenario as most conducive to meeting regional economic goals. There are some risks, however, to consider.

The main risk for the Satellite Communities scenario is that it plans for growth where firms will not naturally want to locate. If so, UGB expansion of commercial and industrial land in the satellites essentially become "stranded" acreage, reducing the economic vitality of the region as a whole.

To be sure, the satellite cities, particularly those closest to the central business core, will serve as bedroom communities, and rising populations will increase the availability of goods and services to the outlying communities[7]. The availability of hospital services improves the attractiveness of Cottage Grove to retirees, creating demand for (low paying) employment in leisure and hospitality industries. And some firms will be interested in locating in smaller communities. Indeed, in both the Compact Growth and

[7] This does not necessarily mean a more diverse economy. Instead of one grocery store, a bigger town will support two. A somewhat different product mix, but essentially the same economy, just bigger.

Satellite Communities scenarios, outlying cities have the opportunity to develop as small towns that are highly livable but rely on nearby central core to sustain their economic base.

It is appealing to view the Satellite Communities in terms of the development of self-sustaining edge cities as seen in other metropolitan areas. This is misleading – the scope and scale of such edge cities is completely different from that being discussed in the current regional scenarios. Consider the following tables:

Seattle Area

	Population 2000 Census
Seattle	563,374
Bellevue	109,569
Federal Way	83,259
Redmond	45,256

Portland Area

	Population 2000 Census
Portland	529,121
Gresham	90,205
Beaverton	76,129
Tigard	41,223

Eugene-Springfield Area

	Population 2000 Census	Satellite Communities Scenario 2050
Eugene-Springfield	222,503	296,048
Cottage Grove	8,890	26,501
Junction City	5,858	12,524
Creswell	3,909	22,858

Bellevue's population is 20% of Seattle's; Gresham's population is 17% of Portland's; Cottage Grove, the largest of the outlying communities, amounts to just 4% of Eugene-Springfield's population, and is less than 10% in Satellite Communities scenario. In short, comparisons with "edge city" models appear inconsistent with the scope and scale of projected development in the region. Under the Satellite Communities scenario, the center of population – and therefore the vast bulk of the labor force and economic activity – remains in Eugene and Springfield.

Firms may be hesitant to locate outside the core area, raising the risk that perspective firm will would locate away from the region rather than be "forced" to one of the satellites. There is also a high probability that additional resources beyond a thirty minute

commute to the central core will be stranded from an economic development perspective.

It should also be noted that Veneta, Lowell, and Oakridge, all lacking close interstate access, are inconveniently located from an infrastructure perspective. While Junction City does not lie on Interstate 5, Highway 99 runs through the city and the city does have relatively close access to Beltline Highway. If unconstrained by UGBs, it is likely that Junction City and Coburg would both eventually grow to border Eugene (or vice-versa), as much as geography allows.

Of course, this is not meant to imply that no firms will locate in the outlying regions. The willingness of firms to locate or expand in the outlying areas, however, will be subject to a more variability *relative to the Compact Growth scenario*. For example, the development of the recreational vehicle industry has been a boom to Junction City and Coburg. But similar industries have failed to materialize in other area cities.

The relatively small size of cities under the Satellite Communities scenario also raises the possibility that if cities develop industries in the manner of Junction City, they will likewise be single industry towns. Individual cities would then face the risk that a downturn in that industry would significantly erode the local tax base, eroding the quality of city services. Interestingly, in such a case, regional economic diversity would lead to local economic specialization and the associated risks.

Evidence on recent patterns of firm investment is informative on the willingness of firms to locate outside the core. Note that Cottage Grove, Oakridge, and Springfield currently contain enterprise zones. Only the Springfield enterprise zone experienced activity during 2003-2004, two exemptions totaling $33 million in new investment. The recently renewed Eugene enterprise zone saw $101.5 million in new investment. Consider also the location choices of Hynix (then Hyundai), Sony, Royal Caribbean, or Toby's, for example.

It is not clear that population growth in outlying cities would be as conducive (compared to the Compact Growth scenario) to attracting high human capital individuals to the region, especially single individuals. There is a risk that scattering population to outlying cities will reduce the availability of amenities (nightlife, marriage market, short commutes) that such individuals find attractive. Moreover, two income households, where both partners have high levels of human capital, may not be able to find sufficient employment opportunities in the satellite communities[8,9].

---

[8] Alternatively, successful attraction of sufficient high capital workers in the Satellite Communities scenario could be harmful to the region as a whole. A possible path of development that follows from the Satellite Communities scenario is for the outlying regions to "compete" for the region's high capital – typically high income – workers by offering a mix of lower taxes and/or higher quality education in tandem with a more attractive housing stock (a combination of the traditional and fiscal/social explanations for suburbanization). If such a pattern set in motion a deterioration of the Eugene-Springfield, new firms may hesitate to locate in the region altogether (poor central core conditions and insufficient labor availability in any individual outlying city). Presumably, however, such a competition would be inconsistent with the goals of regional cooperation.

[9] While the workers in two-income households could commute to different cities for work, I assume they would prefer to both live close to their work locations.

One should consider the negative welfare impacts if the population would prefer to live near the central core, but is essentially forced out to the satellite communities due to restrictive zoning. Such an outcome would lower regional welfare as the restrictions leave individuals worse off (they don't live where they want to) and the negative impacts of commuting (pollution, lost time, etc.) are increased.

Again, if one looks at past trends, residents have shown a preference for the core; recall that 90% of the population growth is attributed to growth in Eugene and Springfield. The Satellite Communities scenario assumes that just 47% of the population increase occurs in the core. Such an assumption appears inconsistent with the existing patterns. Essentially, the Satellite Communities assumes a shift in consumer preferences, but the justification for such a shift is lacking. *In short, the point is not that economic activity will necessarily be severely restricted under the Satellite Communities scenario. Instead, the location preferences of firms and individuals imply that, from an economic development perspective, the Satellite Communities scenario has a higher risk of not meeting regional goals and objectives.*

Rural Growth Scenario

The Rural Growth scenario plans for the smallest UGB expansion – just 5,937 acres, or a 13% increase from 2000. The expectation is that 131,103 persons, or 28% of the regional population, will reside in rural areas with homes on one-to-two acre lots. Note that it is challenging to find examples of such patterns of growth[10].

The risk of the rural growth scenario is that it is least likely to meet the regional economic goals. Spreading the population to high acreage, rural lots fails to capitalize on the benefits of cities from both a production and consumption perspective.

From a business perspective, the risk of the Rural Growth scenario is that is does not provide for expansion that is consistent with the needs to firms. First, compared, to the Compact Growth or Satellite Communities scenarios, less commercial/industrial land is made available. In particular, infrastructure accessible land in the Goshen area is designated for rural housing. From the prospective of fostering regional economic vitality, there is a significant risk that this would be a costly trade-off. Second, there is a risk that firms will be hesitant to locate in a region with such a highly scattered labor force.

There is also a significant risk that, relative to the alternative scenarios, the Rural Growth scenario will not be attractive to high human capital individuals. While a more dispersed population will reduce the negative congestion effects of more compact growth, this needs to be balanced against longer commuting distances (and possibly times, considering the lack of infrastructure) and the reduced availability of amenities.

Commercial and retail services will not find it profitable to serve outlying regions and those that do will likely charge higher prices. Longer distance to medical services will not be attractive to older members of society. A more dispersed population raises the

[10] The Rural Growth scenario is not a typical pattern of classic "sprawl." A classic sprawl pattern is influenced by infrastructure costs and, consequently, lot sizes tend to be considerably smaller than 1 acre.

effective cost to traveling into the city core to pursue nightlife activities. Consequently, fewer of these attractive amenities will be provided. Likewise, the spreading of the population is also not conducive to supporting a vibrant marriage market.

While it is tempting to believe that more land will reduce housing costs, such a conclusion is suspect. Development in rural areas will require expensive infrastructure, such as roads and utilities, and these costs will be passed onto homeowners. Moreover, residents will likely want to protect their investment via building restrictions that require a certain size or quality of housing.

There is a risk that large, rural lots will become increasingly unattractive as the population ages. Maintenance and upkeep of such properties may not be appealing to retirees, empty nesters, or single professionals. Note instead, recent interest in condominium living in the central core. Also, families with children may be hesitant to locate far from schools and recreation opportunities.

Unincorporated areas of Lane County experienced a decrease in population since 1990, in conflict with the assumptions of population patterns in the Rural Growth scenario. Indeed, the Rural Growth scenario envisions that just 35% of the population increase will reside in the core, a stark contrast to recent trends. Simply put, there is a significant risk that the Rural Growth scenario emphasizes the creation of a housing stock that is both relatively expensive and not desirable to large segments of the population. Interestingly, this may have the perverse impact of forcing housing prices inside the UGBs higher than in the two alternative growth scenarios.

Considering the risk that the Rural Growth scenario results in an economic environment that is not attractive to new or expanding firms, redevelopment of existing areas would be minimal compared to the alternative scenarios.

Conclusion and Future Considerations

This report is an analysis of the economic development outcomes of the three alternative growth scenarios determined by the Region 2050 project. By definition, this requires forecasting far into the future, 45 years, to be exact. Such an exercise should be used with caution. Still, using the tools of economic analysis, a set of assumptions, and previous research in local and regional economics, we are able to evaluate the risks surrounding various scenarios.

The least risky scenario, from an economic perspective, is to follow the proven growth pattern illustrated by the Compact Urban Growth scenario. This scenario most likely supports an environment that is suited to meeting the needs of both firms and workers, particularly high human capital workers.

The next least risky scenario is the Satellite Communities Growth scenario. One cannot conclusively claim that such a scenario would lead to either a more diverse economy or more family wage jobs than the Compact Urban Growth. Instead, there is a *risk* that new and expanding firms will not find it attractive to locate far from the central core, especially if they value the positive agglomeration effects, and, if lacking alternatives near the core, will forsake the region altogether. Moreover, there is a risk that resources placed more than 30 minutes from the central core will become effectively stranded.

The riskiest scenario is the Rural Growth scenario. This scenario disperses a large proportion of the population to rural lots, thus failing to capture the benefits of congestion for production and consumption. There is a significant risk that such a development pattern will not be attractive to firms or workers, especially high human capital workers.

An issue for consideration is the preferences of current and new residents. Area residents and firms have to date shown an overwhelming preference to live in the central core. Competition for scarce land in the core may be contributing to growth in the outlying areas. If so, welfare considerations are important. Some residents may be worse off because they are unable to afford to live in Eugene or Springfield when their preference is to live in the core. Existing residents may be better off due to rising property values. New and low income residents may suffer disproportionately negative welfare impacts. By matching growth patterns with residents' preferences, we may be able to minimize such welfare distortions. Note, however, that such attempts will be problematic if existing residents are hostile to the preferences of new residents.

Another consideration is that a more "natural" growth pattern will be a blend of the three growth scenarios. This suggests that it is more instructive to view the scenarios as only potential paths, not the only paths. Rather than viewing all outlying cities as bedroom communities, self-sustaining edge cities, or rural areas, it may be more appropriate to realize that some communities will follow one path, while others chose a different direction.

Table 1.
Percentage of Total Employment By 3-Digit NAICS Sector

NAICS Sector		1990	2003
111	Crop Production	0.42%	0.43%
112	Animal Production	0.00%	0.11%
113	Forestry and Logging	1.79%	0.81%
114	Fishing, Hunting and Trapping	0.00%	0.01%
115	Support Activities for Agriculture and Forestry	0.91%	0.63%
211	Oil and Gas Extraction	0.00%	0.00%
212	Mining (except Oil and Gas)	0.25%	0.00%
221	Utilities	0.17%	0.14%
236	Construction of Buildings	1.28%	1.48%
237	Heavy and Civil Engineering Construction	1.09%	0.91%
238	Specialty Trade Contractors	2.84%	3.76%
311	Food Manufacturing	1.95%	1.16%
312	Beverage and Tobacco Product Manufacturing	0.19%	0.25%
313	Textile Mills	0.00%	0.01%
314	Textile Product Mills	0.07%	0.09%
315	Apparel Manufacturing	0.04%	0.12%
316	Leather and Allied Product Manufacturing	0.00%	0.00%
321	Wood Product Manufacturing	8.49%	4.47%
322	Paper Manufacturing	0.00%	0.00%
323	Printing and Related Support Activities	0.72%	0.65%
324	Petroleum and Coal Products Manufacturing	0.00%	0.00%
325	Chemical Manufacturing	0.64%	0.88%
326	Plastics and Rubber Products Manufacturing	0.42%	0.26%
327	Nonmetallic Mineral Product Manufacturing	0.15%	0.21%
331	Primary Metal Manufacturing	0.13%	0.05%
332	Fabricated Metal Product Manufacturing	1.15%	1.00%
333	Machinery Manufacturing	1.98%	1.39%
334	Computer and Electronic Product Manufacturing	0.16%	1.61%
335	Electrical Equipment, Appliance, and Component Manufacturing	0.92%	0.15%
336	Transportation Equipment Manufacturing	1.27%	3.38%
337	Furniture and Related Product Manufacturing	1.03%	0.96%
339	Miscellaneous Manufacturing	0.46%	0.53%
423	Merchant Wholesalers, Durable Goods	3.23%	2.94%
424	Merchant Wholesalers, Nondurable Goods	1.33%	1.61%
425	Wholesale Electronic Markets and Agents and Brokers	0.97%	0.30%
441	Motor Vehicle and Parts Dealers	2.40%	2.59%
442	Furniture and Home Furnishings Stores	0.51%	0.51%
443	Electronics and Appliance Stores	0.55%	0.49%
444	Building Material and Garden Equipment and Supplies Dealers	1.16%	1.53%
445	Food and Beverage Stores	3.80%	3.56%
446	Health and Personal Care Stores	0.58%	0.59%
447	Gasoline Stations	0.99%	0.89%
448	Clothing and Clothing Accessories Stores	1.36%	0.95%
451	Sporting Goods, Hobby, Book, and Music Stores	1.01%	1.05%
452	General Merchandise Stores	3.67%	3.60%
453	Miscellaneous Store Retailers	1.19%	1.32%

454	Nonstore Retailers	0.49%	0.30%
481	Air Transportation	0.10%	0.09%
484	Truck Transportation	1.67%	1.24%
485	Transit and Ground Passenger Transportation	0.21%	0.15%
487	Scenic and Sightseeing Transportation	0.00%	0.00%
488	Support Activities for Transportation	0.24%	0.33%
491	Postal Service	0.00%	0.00%
492	Couriers and Messengers	0.00%	0.37%
493	Warehousing and Storage	0.15%	0.08%
511	Publishing Industries (except Internet)	1.40%	1.97%
512	Motion Picture and Sound Recording Industries	0.19%	0.37%
515	Broadcasting (except Internet)	0.59%	0.42%
516	Internet Publishing and Broadcasting	0.00%	0.01%
517	Telecommunications	0.80%	0.42%
518	Internet Service Providers, Web Search Portals, and Data Processing Services	0.00%	0.12%
522	Credit Intermediation and Related Activities	2.03%	2.21%
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	0.00%	0.00%
524	Insurance Carriers and Related Activities	1.34%	1.27%
525	Funds, Trusts, and Other Financial Vehicles	0.00%	0.00%
531	Real Estate	1.70%	1.75%
532	Rental and Leasing Services	0.63%	0.00%
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	0.00%	0.00%
541	Professional, Scientific, and Technical Services	4.38%	5.47%
551	Management of Companies and Enterprises	2.15%	1.61%
561	Administrative and Support Services	4.94%	6.68%
562	Waste Management and Remediation Services	0.25%	0.29%
611	Educational Services	0.78%	1.08%
621	Ambulatory Health Care Services	4.42%	5.15%
622	Hospitals	0.00%	0.00%
623	Nursing and Residential Care Facilities	2.14%	3.40%
624	Social Assistance	0.00%	0.00%
711	Performing Arts, Spectator Sports, and Related Industries	0.46%	0.27%
712	Museums, Historical Sites, and Similar Institutions	0.05%	0.04%
713	Amusement, Gambling, and Recreation Industries	0.94%	1.29%
721	Accommodation	2.13%	1.44%
722	Food Services and Drinking Places	9.85%	9.64%
811	Repair and Maintenance	1.47%	1.39%
812	Personal and Laundry Services	1.39%	1.15%
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	1.63%	2.17%
814	Private Households	0.20%	0.38%
	Hirshman-Herfindahl Index	28.30	28.74

Source: Bureau of Labor Statistics

Notes: NAICS = North American Classification System. This data does not include a full universe of workers in the region. Some data is suppressed for confidentiality reasons (for examples, hospital employment is listed as zero, which is clearly incorrect). Also, government activities – including the University of Oregon – are excluded. As long as the suppression is consistent, however, we are still comparing apples with apples.

References

Allen, J. and Lu, K., 2003. Modeling and Prediction of Future Growth in the Charleston Region of South Carolina: a GIS-bases Integrated Approach, *Conservation Ecology*, 8 (2). http://www.consecol.org/vol8/iss2/art2.

Carlino, G., 2001. Knowledge Spillovers: Cities' Role in the New Economy. *Federal Reserve Bank of Philadelphia Business Review*, 4th Quarter, pp. 17-26.

Duranton, G. and Puga, D., 2000. Diversity and Specialisation in Cities: Why, Where and When Does it Matter? *Urban Studies*, 37, pp. 533-555.

Glaeser, E.L., Kolko, J., and Saiz, A., 2001. Consumer City. *Journal of Economic Geography*, 1, pp. 27-50.

Glaeser, E.L., 1998. Are Cities Dying? *Journal of Economic Perspectives*, 12, pp. 139-160.

Henderson, J. and Abraham, B., 2004. Can Rural America Support a Knowledge Economy? *Federal Reserve Bank of Kansas City Economic Review*, 3rd Quarter, pp. 71-95.

Henderson, V., 1997. Medium Sized Cities. *Regional Science and Urban Economics*, 27, pp. 583-612.

Kim, S., 1995. Expansion of Markets and the Geographic Distribution of Economic Activities: The Trends in US Regional Manufacturing Structure 1860-1987. *Quarterly Journal of Economics,* 110, p. 881-908.

Mieszkowski, P. and Mills, E. S., 1993. *The Causes of Metropolitan Suburbanization*, 7, pp. 135-147.

2003 Oregon Population Report. Population Research Center at Portland State University, http://www.upa.pdx.edu/CPRC/publications/annualorpopulation/Population%20Report%2003.pdf.