

MORE EXTENSIVE IS MORE EXPENSIVE

How Sprawl Infrastructure Bankrupts Oregon Communities, and What We Can Do About It



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About this report

This report is the result of several months of research to explore the impacts of sprawl-induced infrastructure spending, and to propose strategies that could better avoid such burdens in the future. Download a summary or the full report at www.friends.org/infrastructure.

About 1000 Friends of Oregon

1000 Friends of Oregon is a statewide land use advocacy organization with offices in Bend, Eugene, Grants Pass, and Portland. Founded in 1975, our mission consists of working with Oregonians to enhance our quality of life by building livable urban and rural communities, protecting family farms and forests, and conserving natural areas.



For more information on 1000 Friends of Oregon, please visit www.friends.org.

Credits

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Executive Summary

Oregon's physical infrastructure is an investment in the future of its residents and communities. Unfortunately, many Oregon communities are making the wrong bets. They're falling behind on maintenance, taking on debt, and raising taxes to pay for it all.

Much of this owes to the shape communities have taken. Some development patterns create much higher public costs than others. Land-extensive sprawl costs a lot more for infrastructure than more efficient development, especially when total lifecycle costs are included. Greater separation and longer distances in sprawling development require costlier roads, sewer and water lines, and more – in capital, operating, and maintenance costs. Services feel the squeeze, too, spreading thinner to serve fewer people.

But there is an alternative. Quality growth directs development into existing communities and creates walkable neighborhoods with mixed land uses and transportation options. At the same time, it saves communities millions. In these difficult fiscal times, quality growth is the best fiscal bet for Oregon's future.

Unfortunately, current Oregon law does not require cities to consider the full lifecycle costs of infrastructure when making growth choices. It's time to change this approach. **By considering the full costs of infrastructure, we can hold leaders accountable and help communities step back from sprawl's fiscal edge.**

Key Findings

- **The public invests heavily to support development with infrastructure**, such as roads, water lines, and sewer systems. The costs are usually highest when that development sprawls—when the majority of residential and employment development is low-density, land-consumptive, and auto-dependent, with large separations between different land uses.
- **Sprawl is a bad fiscal bet.** It costs more to supply with infrastructure than it generates in taxes, development charges, and user fees. It creates deficits that the community must make up with higher taxes or declining services elsewhere. Oregon cities are suffering under maintenance backlogs related to low-density growth.
- **In Oregon, land use planning helps to contain sprawl, but infrastructure costs are often inadequately considered**—especially the lifecycle costs of operation, maintenance, and replacement. This constrains the choices communities consider, and keeps many on the path to fiscal stress or even insolvency.
- **Cost-conservative quality growth creates substantial savings** for the public on infrastructure construction and future maintenance by avoiding the inefficiencies of sprawl. For example, roads cost 12 percent less for quality growth than for sprawl. Water and sewer systems cost 14 percent less.¹
- **Policymakers and the public need better information about the life-cycle public costs of development infrastructure.** Only with such information can they create fiscally-responsible land use and transportation policy and avoid the “sprawl premium.” We propose that Oregon cities consider the full fiscal impacts of growth choices through a tool known as Fiscal Impact Analysis.

MORE EXTENSIVE IS MORE EXPENSIVE

How Sprawl Infrastructure Bankrupts Oregon Communities, and What We Can Do About It

What is infrastructure? How is it funded?

Public infrastructure is the publicly owned and maintained “bones” of cities and towns, things like roads, bridges, and pipes for water and sewage. Infrastructure also includes systems and treatment facilities that distribute and manage water, sewage, and storm water, including the hookups that connect individual residences and businesses to larger municipal systems. Transportation infrastructure is usually the largest infrastructure expense. Sidewalks, local streets, larger regional roads, highways, freeways, and bridges are all transportation infrastructure. Although developers often pay for the initial construction of neighborhood infrastructure, usually these types of infrastructure are maintained and replaced at public expense.²

Funding the initial investment. The initial construction of public infrastructure can be funded in a variety of ways. In some cases, developers of larger

residential or employment projects will pay for and build the on-site infrastructure up front—for example, the local roads and water and sewer lines. When the project is completed, those costs are embedded in the prices of properties, such as homes, within the development.

Infrastructure outside the development, such as collector roads connecting it to other parts of a city, is built using a municipality’s capital construction budget, usually funded by revenue from sources including bond sales, fuel taxes, sales taxes, property taxes, and developer impact fees.³ Sometimes large infrastructure projects are funded by grants from the state or federal governments.

Each funding source has limitations, sometimes significant. For instance, consider developer impact fees. New development causes increased demand on transportation and other infrastructure by the residents or employees associated with the new development. This can often cause impacts over a large area. Developers often pay fees to local governments, called System Development Charges (SDCs), to help mitigate this impact, which can affect a large area.

In Oregon, state statute strictly limits the types of infrastructure for which local governments may assess SDCs: roads, sewer, water, storm water, and parks. The statute allows SDCs “only for capital improvements,”⁴ not for operations and maintenance, and establishes the methodology local governments must use to calculate any SDCs they charge.⁵ The statute

Public and private infrastructure

This report focuses on public infrastructure, the publicly owned and paid-for elements that are essential in any city. There are other types of infrastructure that are privately owned and built largely by private corporations. These include some electric systems, gas, cable, telephone lines, and fiber-optic systems. Although these systems aren’t funded directly through tax bills, they follow a similar formula to public infrastructure: the more extensive the systems must be, the more expensive they are. Their costs are passed on to customers through higher rates, or through declining service quality, even for those that live nowhere near new developments.

does allow local governments to assess SDCs for “an equitable share”⁶ of the cost of the infrastructure capacity that must be added to serve future users of the new development. It also states that SDCs can “obtain the [projected] cost”⁷ of those required improvements.

But few, if any, local governments in Oregon charge SDCs for the full cost of required capacity increases. A recent Oregon study found inadequacies with current SDC practices:

Some local jurisdictions within the [Portland] Metro area do not levy sufficient funds through SDCs to pay for the total cost of needed infrastructure development to serve growth. In addition, most cities and counties in the Metro area charge a uniform SDC for development within their jurisdiction regardless of whether the costs of servicing different developments vary due to factors such as location and density.⁸

SDCs fail to cover lifetime costs. But there is a bigger problem with relying on SDCs for infrastructure funding. Because Oregon SDCs are not permitted to fund the ongoing service costs of infrastructure, cities and counties must depend on other revenue sources to pay for basic operations and maintenance. These include fuel taxes, voter-approved bonds backed by property taxes, ratepayer payments, and even municipal general funds, which also pay for essential services like police and fire. Maintenance is especially difficult to fund, because it creates no new developer fee revenue or property tax revenue and is often ineligible for federal grants.

With small pots of money pulled in many directions, it is not surprising that expensive infrastructure repair and replacement projects are often cut or put off. In a recent survey, 38 percent of Oregon cities polled reported cutting road maintenance budgets in response to overall budget deficits.⁹ Metro recently found that the Portland region faces \$10 billion in infrastructure maintenance costs between now and 2035, with no source of funding identified to pay for it.¹⁰ This is on top of up to \$31 billion Metro estimates will be required for new infrastructure by 2035.

In this revenue-constrained context, policy makers and citizens need as much information as possible about how to contain infrastructure costs. The research is clear that urban form matters for the fiscal health of our communities. This is good news for Oregonians because Oregon has a unique set of land use tools that help us create fiscally prudent urban forms and wise infrastructure investments. But these tools and practices need to be updated to fully grasp the magnitude of



Supplying infrastructure for new neighborhoods is expensive. Although developers often cover much of the initial costs, long-term maintenance is a perpetual burden for taxpayers. Photo: Sam Beebe. Creative Commons.

the sprawl burden and to make cost-conservative development the easier choice.

Picturing sprawl and quality growth

Cost-conservative quality growth can create substantial savings for cities and counties on infrastructure construction and maintenance. To highlight the impacts of different development patterns on public finances, we will refer throughout this report to two general approaches to development: typical “sprawl” and “quality growth.”

Sprawl has been a common form of urban and suburban expansion in the United States. Researchers identify sprawl by several characteristics¹³:

- Low or very low average housing density
- Development occurring in an “unlimited and non-contiguous (leapfrog) way outward”¹⁴ from existing urban areas, leaving derelict patches of land between subdivisions.
- Segregated land uses, meaning that work, shopping, and homes are restricted to exclusively zoned areas and separated from each other.
- Consumption of “greenfield” land, typically productive agricultural land or open spaces free of

existing infrastructure.

- No convenient transportation choices other than private automobiles.

Research reveals troubling consequences related to sprawl. In general, people living in sprawling areas take more car trips¹⁵ for longer distances than those living in more efficient development patterns.¹⁶ Sprawl has been connected to lower levels of traffic safety compared to denser areas¹⁷ and its streets are often unsafe or inconvenient to access on foot, by transit, or on a bicycle. Those living or working in sprawling areas are more likely to suffer negative health impacts associated with inactivity.¹⁸

“Quality growth,” in contrast, directs development towards existing communities and built areas. In a quality growth neighborhood, residents are close to many of the things they need, like grocery stores, schools, and parks. Sidewalks connect homes, businesses, and schools on streets that are safe and pleasant to walk. Where the population justifies it, communities have convenient and efficient transit connections to the larger region. A choice of viable transportation modes means fewer miles in the car for many residents. Meanwhile, local businesses have a local clientele and can save money by not having to provide as much automobile parking. These are communities that are pleasant for people and families of all ages, where housing options match residents’ needs throughout their lives.

The cost differences, quantified

The evidence has been clear for decades. Urban form matters for public finances, and quality growth is the cost-conservative option. Zoning for sprawl has significant implications for capital infrastructure budgets, the ongoing provision of public services, and the cost burden

Dwindling funding sources

Like System Development Charges, most key funding sources for Oregon’s infrastructure are limited or diminishing. The main revenue source for transportation infrastructure maintenance, the state gas tax, is facing a huge decline as vehicles become more fuel efficient and Oregonians reduce their driving.¹¹ Unlike most states, Oregon does not have sales tax revenue to use for infrastructure. Property tax revenues have been capped and constrained in Oregon by several ballot measures. Dwindling funding for maintenance means that road degradation isn’t addressed right away. Studies show that waiting to repair a worn road can increase the cost to four to ten times the cost of an early intervention.¹²

of infrastructure maintenance and replacement.

In 1998, a review of research on the costs of sprawl found agreement among researchers that sprawl imposes higher infrastructure costs than higher density development.¹⁹ For example, researchers found that building roads to serve sprawl development patterns costs 12 percent more than building roads to serve areas built at higher density and/or next to existing development.²⁰ Sewers and water systems cost between 7 and 14 percent more to serve sprawl.²¹

The cost premium for all infrastructure needed to serve sprawl is as much as 47 percent over quality growth—for the same amount of development (both residential and commercial).²² Moreover, most of these studies looked at only the capital cost of building new infrastructure, and not the ongoing operations, maintenance, and replacement commitment—all of which is borne by taxpayers and ratepayers. Public services, such as police and fire protection, also cost more on average in sprawling areas.²³

A major study called *The Costs of Sprawl—2000* estimated the extent of extra expense that would be incurred between 2000 and 2025 if the United States continued to grow predominantly through sprawl rather than better managed growth. The study found that roads would cost \$146 billion more for sprawl over this time period, an extra 12 percent. Water and sewer would cost \$16.7 billion more for sprawl, a 6.6 percent difference over managed growth. Public services were found to produce annual deficits under both scenarios, but those deficits were 10 percent larger for the sprawl growth



In sprawling areas, driving becomes the dominant mode of transportation. This wears roads down more quickly in addition to being less safe and less pleasant for people who aren't driving. Photo: 1000 Friends staff.

scenario.²⁴

Why does sprawl cost so much more to supply with infrastructure? There are several major reasons. First, development built on previously undeveloped or “greenfield” land usually requires the provision of *all* sewer, water, and road systems. Because there is more empty space between buildings in sprawl, it takes more feet or miles of road, sewer, and water line to connect everything. More distance means higher costs.

Distances are also longer for the school buses, fire engines, police cars, and snow plows that operate in sprawling areas. And because people must drive more in sprawling areas, local and regional roads suffer high levels of wear and tear from automobile use. Vehicles miles traveled (VMT), the per-capita measure of driving distance, has been estimated to be 17 percent lower on average in areas planned around the principles of quality growth rather than sprawl.²⁵ According to researchers, higher levels of VMT from sprawl are exacerbating a “crisis” in local road financing.²⁶

A more efficient choice. Quality growth is cost-conservative because less extensive infrastructure is less expensive infrastructure. Less wasted space between buildings means shorter sewer lines, water lines, and roads. Nearby existing roads reduce the extent of new roads that must be built. Mixed land uses located near one another mean walking, bicycling, and transit use are viable options, replacing some car trips and reducing wear and congestion on roads.²⁷ Less new infrastructure means less maintenance cost in the future.



Sprawl often requires major infrastructure projects to help regional roads keep up, like this “modernization” project on US Highway 26 in Washington County. Photo: ODOT. Creative Commons.

Quality growth does require some infrastructure that sprawl often lacks. For example, many sprawling residential areas are built without sidewalks. Building roads with sidewalks in a quality growth, walkable neighborhood costs more than building roads with no sidewalks, but the cost is much lower than building and maintaining roads for sprawl. Additionally, building roads with sidewalks creates more jobs per public dollar spent than building roads without sidewalks,²⁸ and the higher densities of quality growth make transit more cost-effective.²⁹ Cost variability also depends on elements such as design, which influences how easy it is for people to choose to walk, ride a bike, or take transit for some trips.

Oregon can benefit from the quality growth infrastructure savings observed nationwide. According to Metro:

National experts agree that providing infrastructure in urban settings and compact new development is generally less expensive per unit than in areas with more land-extensive development patterns. Case studies in five existing urban areas and twelve newly urbanizing areas in the [Portland metropolitan] region found that while public infrastructure capital costs vary depending on specific location and access to existing infrastructure, they generally reflect this national pattern.³⁰

Overall, the research is clear: **more extensive infrastructure is more expensive infrastructure.**
Quality growth is the cost-conservative option.

A better cost picture: scenario planning

Many communities and regions around the country are using new tools and computer models to fully analyze the impacts of infrastructure spending, and the results are convincing. These “scenario planning” efforts take population and employment growth projections for a community and compare how they can be accommodated through various policy

choices. These scenarios usually include one or more sprawl development scenarios and one or more quality growth scenarios.

By portraying how neighborhoods and communities could develop under different scenarios after several decades, the scenario planning models estimate the infrastructure costs associated with these different growth patterns. Numerous scenario plans have found costs to be substantially lower for land-conservative quality growth. On pages 10 through 13, we explore some of these scenario plans and their results.

The quality growth scenarios modeled in these scenario plans are not extreme visions of Manhattan-style density, but visions of a range of employment and appropriate housing densities distributed carefully around the communities studied. These studies come from urban regions, rural counties, small towns, and suburban areas. But no matter their setting, the infrastructure savings reported are all substantial.

Moreover, there is generally strong public support for the quality growth scenarios. Most scenario planning includes a high degree of public participation, finding consensus about a community vision for the future. Participants generally prefer the quality growth scenarios to the “trend” scenarios resulting in more sprawl. In the Envision Central Texas process, for instance, 70 percent



Suburban arterials like Sunnyside Road in Clackamas County are generally built and maintained at taxpayer expense. And they don't come cheap. Photo: Brett VA. Creative Commons.

of survey participants said the two scenarios involving the least land consumption and highest levels of infill and redevelopment would “provide the best quality of life for Central Texas’ future.”⁴⁶ In Louisiana Speaks, a 2007 scenario planning process initiated in the wake of hurricanes Katrina and Rita, 81 percent of survey respondents said future growth should be directed towards existing cities and towns, or said development plans should be modified to reduce sprawl in hurricane-sensitive areas.⁴⁷

These scenario plans from communities of all types and sizes confirm the academic literature: **sprawl costs more for infrastructure, and quality growth is the cost-conservative option.** The magnitude of those savings, which in several scenario plans reached billions of dollars, is significant for the local and regional taxpayers that must pay for the growth decisions made by local leaders.

The report continues on Page 14.

Scenario Planning: Making the Choices Clear

A Sampling of Cost Comparisons in American Communities, 1997-2011

Scenario planning in a wide range of communities makes it clear: more extensive infrastructure is more expensive infrastructure. In these pages, we present a collection of recent studies from around the nation, in metropolitan regions as well as rural communities. Note that all dollar figures have been adjusted to 2012 dollars.

Southeast Michigan Council of Governments

Fiscal Impacts of Alternative Land Development Patterns in Michigan, 1997³¹

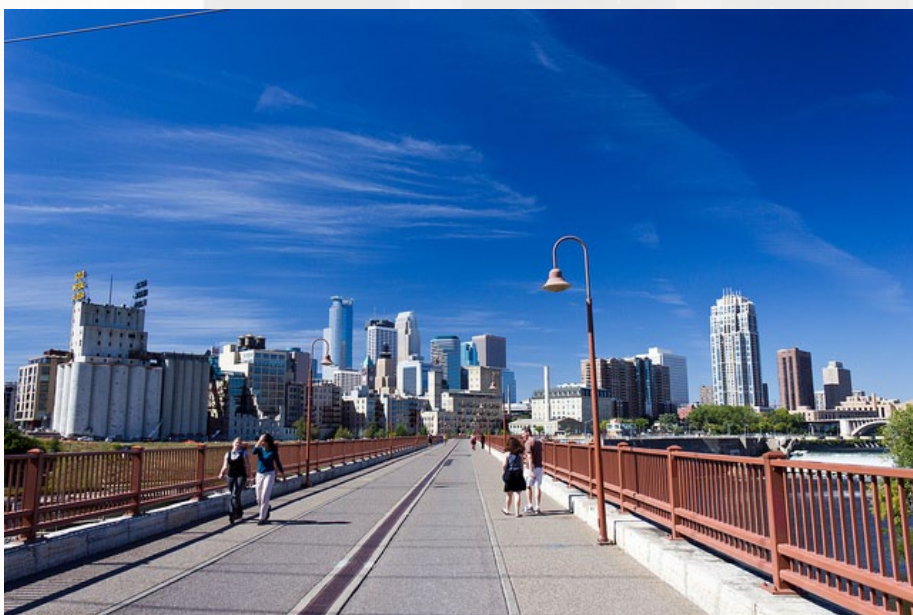
This study compared the infrastructure costs and ongoing fiscal impacts of “current” or trend development to “managed growth” for eighteen urban, suburban, and smaller communities in Southeast Michigan, with populations ranging from about 9,000 to 65,000. The researchers found that between 1995 and 2020, “managed growth” would save 12 percent of the capital cost of local roads, or \$61 million; 15 percent of the capital cost of water infrastructure, or \$26 million; and 18 percent of the capital cost of sewer infrastructure, or \$22 million.

Center for Energy and Environment, Minnesotans for an Energy Efficient Economy, and 1000 Friends of Minnesota

Two Roads Diverge: Analyzing Growth Scenarios for the Twin Cities Region, 1999³²

This report compared a “sprawling” growth scenario based on then-current zoning and trends to a “smart growth” scenario in the Minneapolis-St. Paul Metropolitan Area. It found that providing for and promoting quality growth could save 57 percent of the capital cost of local roads, sewers, and water infrastructure, a savings of about \$4.1 billion, between 1995 and 2020.

In addition, the researchers found that an additional public investment of \$1.2 billion would be required for new regional road infrastructure under the sprawling scenario that would likely not be required under the “smart growth” scenario.



By investing in its downtown areas, the Minneapolis-St. Paul region has saved billions, and become a national beacon for livability. Photo: Flickr.com/mrlaugh. Creative Commons.

Envision Utah

Quality Growth Strategy, 2000³³

Envision Utah, a public/private partnership, developed a “quality growth strategy” for Utah’s Greater Wasatch Region, including the Salt Lake City metropolitan area and numerous rural communities. The “quality growth strategy” would save about \$6 billion in the provision of basic infrastructure between 1995 and 2020 when compared to the “baseline” scenario representing the continuation of then-current sprawl trends. Elements of the quality growth strategy have been adopted into numerous local and regional plans.³⁴

Thomas Jefferson Planning District Commission, Charlottesville, Virginia

Jefferson Area Eastern Planning Initiative, 2000

The Thomas Jefferson Planning District Commission, a regional planning collaboration between governments in the Charlottesville area, studied the impacts of a “dispersed” growth pattern based on then-recent trends, and a “town centers” scenario based on quality growth, which would focus growth near Charlottesville to 2050. They found that road infrastructure would cost 50 percent less, a savings of \$665 million, under the “town centers” scenario. These findings influenced comprehensive plan updates in the counties studied, and today Charlottesville’s downtown (in the background of these pages) continues to thrive.³⁵

Cumberland Region Tomorrow, 2000³⁶

A private, non-profit organization sponsored this regional planning effort for Middle Tennessee, including greater Nashville and smaller population centers in ten counties. The study compared a trend “Base Case Scenario” to an “Alternative Case Scenario” of growth focused near previously developed areas for the 2000 to 2020 period.

The “Alternative Case” would require

infrastructure costing 52 percent less than that needed for the “Base Case,” a savings of \$4.7 billion. Cities in the region are still using principles of the Alternative Case Scenario to guide local planning decisions.³⁷



Cumberland Region Tomorrow looked at the City of Nashville, but also rural counties and communities like Lebanon, in Wilson County. Photo: SeeMidTN.com. Creative Commons.

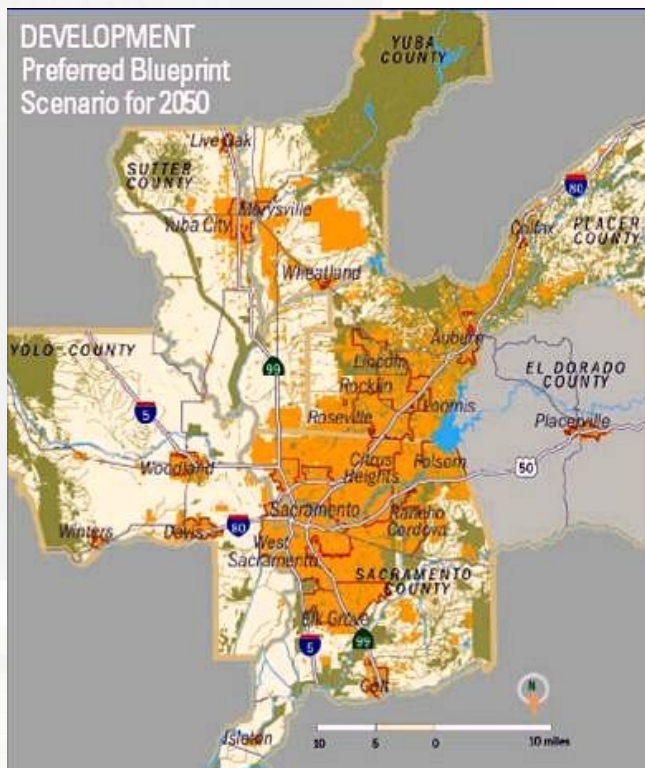
Envision Central Texas, 2003³⁸

The non-profit Envision Central Texas conducted a detailed scenario planning process for the City of Austin and its surrounding region, including many rural areas. Through extensive public involvement, the study developed several scenarios for 20 to 40 years of growth. Scenario D, which involved “the greatest amount of mixed-use development and redevelopment” and concentrated “the greatest amount of development in existing towns and cities,” was projected to save 73 percent of the cost

of infrastructure over the more sprawling trend scenario, a total of about \$10.1 billion in savings. In surveys, area residents expressed a strong preference for the quality growth scenarios over the more sprawling scenarios. Envision Central Texas is working directly with planning organizations in the area to update plans as part of a \$3.7 million federal Sustainable Communities Partnership grant.³⁹



The Austin region could save \$10.1 billion through concentrating development in existing centers—and it's a more popular choice. Photo: Stu Seeger. Creative Commons.



SACOG's Preferred Blueprint saves taxpayers \$8 billion over 50 years through better growth management—the price of several Columbia River Crossings. Map by SACOG.

Sacramento Area Council of Governments Blueprint, 2004⁴⁰

The regional government in the Sacramento area compared a “Preferred Alternative” pattern of quality growth to a sprawling “Base Case” (see map, left). The infrastructure required for the “Preferred Alternative” would cost 21 percent, or \$8 billion, less than that needed to support the “Base Case” over 50 years. As in Austin, the quality growth pattern also enjoyed far greater public support than a more sprawling scenario. Since the adoption of the “Preferred Alternative” in 2004, the regional government has provided technical support to its member governments in implementing the plan.⁴¹

Charlotte Fire Department, North Carolina
*Effect of Connectivity on Fire Station Service Area
& Capital Facilities Planning, 2008*⁴²

A study analyzing the costs and efficiency of fire stations in the City of Charlotte found significantly cheaper per-capita life cycle costs for fire stations in better connected neighborhoods. A station in a low-density neighborhood was found to serve one-quarter of the households at four times the cost of a fire station in a more mixed-use neighborhood with higher connectivity.



The City of Charlotte explored the crucial role of street connectivity in helping the Fire Department save lives and save resources. Photo: Charlotte Fire Dept. Creative Commons.

Delaware Valley Regional Planning Commission
*Connections, 2009*⁴³

This interstate planning agency, covering rural, suburban, and urban areas in the Philadelphia-Trenton region, compared a “trend” scenario to a “recentralization” scenario based on quality growth. Between 2005 and 2035, the “recentralization” scenario would cost 29 percent less for infrastructure than the “trend” scenario, a savings of \$3.5 billion. The *Connections* plan was adopted by the Delaware Valley Regional Planning Commission in 2009, and the Commission has been assisting member governments and tracking the progress of implementation region-wide.⁴⁴



The Sonoran Institute’s work helped show that more efficient development could save \$53 million for Gallatin County, Montana—a huge sum for a rural county. Photo: Philip Downer. Creative Commons.

Sonoran Institute
*Gallatin County, Montana, Fiscal Impact
Analysis, 2009*⁴⁵

The nonprofit Sonoran Institute compared growth scenarios in rural Gallatin County, home to Bozeman. In the analysis, growth between 2010 and 2012 directed towards a land-conservative “Alternative Scenario” would save 72 percent of the cost of road construction and maintenance over the “Business-as-Usual Scenario.” That added up to \$53 million, a huge sum for a rural county.

(Continued from Page 9)

Stopping the drain on taxpayers

Elected officials and other leaders often view any development as a way to increase the local tax base to pay for existing debts and generate new income. **But does sprawl provide enough revenue to communities to offset its extra costs? The answer is no.** Research clearly shows that it costs more to build and maintain infrastructure for sprawl than it generates in taxes, development charges, and user fees, and creates deficits for cities when compared to other development patterns.

Yet decision-makers often do not have the information they need to know the full impacts of their development choices. For a variety of reasons, many governments fail to conduct a “life-cycle” fiscal impact comparison among different development alternatives—one including capital costs, long-term operations and maintenance costs, and financing options and implications. This failure is now sinking many local governments around the nation deeper and deeper into debt, with no clear strategy to get out.

Sprawl’s Ponzi tendencies. Incurring new debt to pay for old debt through new development has been compared to a “Ponzi scheme.”⁴⁸ When infrastructure is first provided, a new opportunity for development is created and total property taxes go up. However, infrastructure has a limited life span, and regular maintenance and replacement create additional

costs. For example, maintenance or replacement of an existing road has only a small positive impact on surrounding property values, and therefore does not pay for itself by creating new property tax revenue.

This is especially true in states such as Oregon, where strict limits have been imposed on property tax increases. To pay for maintenance and replacement of infrastructure built to support existing development, local leaders look to new growth. The new infrastructure built to serve new growth must then in turn be maintained along with all the old. Infrastructure building often puts taxpayers on the hook for infrastructure that can’t last long enough to pay back their investment.⁴⁹ Sprawl exacerbates this “Ponzi Scheme” cycle, while quality growth provides a logical response by concentrating more value on less land, served by less extensive infrastructure.

Several tools have been developed to assist communities in gauging the long-term financial impact



The research is clear: more extensive sprawl means more expensive infrastructure, like this new overpass for the Beltline Highway at I-5 in Eugene. Photo: John Boren. Creative Commons.

that proposed development or future growth will create. In particular, Fiscal Impact Analyses can inform difficult community decisions about possible land use changes, including new residential subdivisions and employment areas, and loss of farm and forest land.

Fiscal Impact Analysis. A Fiscal Impact Analysis provides the most complete means to quantify the ongoing benefits and costs of new development and avoid the “Ponzi Scheme” of deficit-producing sprawl.

This method attempts to account for *all* costs that a specific new development or land use change will impose on public finances—including the capital and ongoing maintenance costs of new infrastructure, and the cost of public services such as police, fire, and school. It then compares these costs to revenues such as property taxes and sales taxes.⁵⁰ Hundreds of communities across the country have employed Fiscal Impact Analysis techniques when considering land use and development changes at the level of a single new development, possible future growth for part of a city or a whole city, or land use changes spread across an entire region.

Fiscal Impact Analyses clearly identify the negative fiscal impacts of sprawl. For example, the Columbus, Georgia, region found that infill and moderate to high density development would produce a net government surplus of about \$21.5 million over the 20 year study period, while the “trend” suburban development pattern would produce a net deficit of \$14.3 million, “primarily due to increased capital costs as development



Aging freeways are but one major infrastructure problem Oregon taxpayers must face. Photo: ODOT. Creative Commons.

is focused in greenfield areas requiring more significant infrastructure investments, particularly roads and parks.”⁵¹

A 2010 study in Champaign, Illinois, compared the costs of concentrating growth over 20 years within the city’s existing service area to expanding the city beyond the existing area. While both scenarios produced deficits in the capital construction budget, the scenario for growth beyond the service area created a deficit of \$101.8 million, twice as large as that created by growth within the existing service area.⁵²

More land, more cost, less revenue

Sprawl generates less tax revenue per acre than quality growth. For example, a Walmart Super Center in Asheville, North Carolina, produces \$6,500 in property taxes for each of its 34 acres, while a remodeled JC Penney store in downtown Asheville produces \$634,000 per acre.⁵³ “A moderate high-rise, mixed-use development that was proposed in the downtown could have generated as much local property taxes as the 73-acre Asheville Mall plus the Asheville Walmart, plus the

new 60-acre big-box power center near the airport,” said developer Joe Minicozzi, who headed the study.⁵⁴

The difference in tax revenue exacerbates the fiscal challenge of sprawl’s infrastructure cost premium. Minicozzi also compared a 357-unit multi-family housing development on 3.4 acres in downtown Sarasota, Florida, to a 30-acre single-family housing project. The downtown development produced enough tax revenue within three years to pay off the public investment in its infrastructure. In contrast, the suburban housing development would take 42 years to do the same.⁵⁵

Put another way, that is 39 years of revenue that can be used on operations and maintenance, instead of 39 years spent paying off a deficit for infrastructure that may have to be replaced before it is even paid off.

Single-family and multi-family projects often differ in their basic infrastructure requirements. A study in Austin, Texas found that the public cost of providing schools, transportation, water, sewer, storm water, and parks to a new single-family housing unit was \$36,625 after all developers’ fees were taken into account. In contrast, the public cost of a new multi-family housing unit was \$17,912.⁵⁶ That is a lot of money that can be used for other priorities. Similarly, in the Minneapolis-St. Paul region, a study found that “compact development produces more net revenue per acre (revenue minus costs) than spread-out development.”⁵⁷

Like all large investments, infrastructure provided to support development matters for public finance. When a local government chooses sprawl, it sets itself



Car-oriented big box shopping centers, like this one in North Carolina, provide far less tax revenue per acre than stores in more walkable places. Photo: Zen Sutherland. Creative Commons.

up for deficits from the ongoing cost of infrastructure maintenance and replacement. On the other hand, quality growth based on infill and using existing infrastructure capacity means taking advantage of prior investments and reducing future fiscal burdens. It may even generate more revenue to use on desperately needed projects elsewhere. It is clearly the better fiscal choice.

Oregon's infrastructure challenge

The tools provided by Oregon's unique statewide land use planning program position it relatively well to take advantage of quality growth infrastructure savings. Land use planning has already helped contain sprawl and steer more development towards existing communities, emphasizing quality growth: walkable neighborhoods, housing choice, and proximity to the places we need to get to most often, like workplaces, shopping, schools, and parks. Therefore, Oregon has avoided some of the fiscal burdens associated with sprawl and housing predominantly on large lots.

Still, many Oregon communities have built significant infrastructure for low density development and now face costly maintenance and replacement bills. The infrastructure challenge in Oregon is pressing. Across the state, water infrastructure requires \$5.2 billion in repair and replacement over the next twenty years.⁵⁸ Twenty-four percent of Oregon's bridges are structurally or functionally deficient.⁵⁹ Over 1,000 of Oregon's school buildings are at high or very high risk of

collapse in an earthquake.⁶⁰

In the Portland region, Metro estimates a total infrastructure investment of \$27-41 billion is necessary to meet population and employment needs to the year 2035.⁶¹ This includes \$10 billion in repairs and replacement, required regardless of whether the Portland region grows, for which no funding sources have been identified.⁶² Many other Oregon cities face similar funding holes. If it cannot address this situation, Oregon could face dire consequences.

Robbing Peter, but Paul demands more: a threat to essential services. A challenging fiscal situation affecting all Oregon communities complicates this infrastructure backlog. Driven in part by infrastructure costs, city budget obligations in Oregon are increasing much faster than their revenue sources.⁶³ Property tax limitations and declining gas tax revenues make it increasingly hard for cities to meet their obligations to provide services for growing populations and a recovering economic base.⁶⁴

In a recent survey of Oregon cities, 69 percent

expected property taxes to continue falling short of the cost of providing essential services.⁶⁵ Altogether, Oregon cities need \$187 million more in annual revenue to continue to maintain and construct roads at the level needed for current development patterns. This shortfall is creating a bloated backlog of needed capital improvement projects.⁶⁶

The response has been troubling. Some cities look at developing new land at their edges, apparently in the hope that more expansion can



Replacing Oregon's aging bridges—a quarter of which face major deficiencies, like this one in Tillamook County—will be costly for taxpayers. Photo: ODOT. Creative Commons.

raise revenues to support existing debts for worn out or failing infrastructure. The sprawling development that typically occurs in these far-flung expansion areas creates additional negative fiscal impacts, worsening the problem the cities set out to solve in the first place.

Many other Oregon cities are using reserves or taking on debt to pay for basic public safety services—police and fire—that the general fund can no longer cover because it is increasingly dedicated to infrastructure. Salem's public safety spending equaled 114 percent of its property tax revenue in fiscal year 2009-10. Gresham spent 169 percent of the amount of property tax revenue on public safety in 2009-10, and Bandon spent an incredible 592 percent.⁶⁷

These fiscal realities leave cities with very difficult choices in terms of cutting expenses, and these cuts often impact the maintenance and repair of existing infrastructure. Thirty-eight percent of Oregon cities polled reported cutting road maintenance budgets in response to overall budget deficits. Twenty-five percent of cities reported cutting spending on all infrastructure.⁶⁸ "Structurally, cities are unable to meet current and future demands for the services that are necessary to support service levels, road and public facility maintenance and population growth," said League of Oregon Cities executive director Mike MacCauley, in a press release reacting to a report by ECONorthwest, "Cities are being slowly strangled."⁶⁹

Raising taxes to fill the hole. Lack of



No one likes potholes. But fixing them will cost Oregon cities billions of dollars—money they can only gather by raising taxes. Photo: Ed Bronson. Creative Commons.

adequate revenue for road maintenance has led numerous cities and counties to turn to voters for more infrastructure funding. From 2010 through summer 2012, nineteen local ballot measures in Oregon asked local residents to approve property tax increases or vehicle fuel tax increases to fund road maintenance and new road construction. In just two years, these measures have come from city and county governments in eight counties, including five of the seven most populous counties in the state. About one-third of those ballot measures failed.

These measures sought to fix potholes, as well as fill fiscal holes left by growth that could not pay its way. For example, a 2011 measure in Bend sought \$30 million in bonds backed by new property taxes to pay for road capacity enhancements around the city. Writing in support, the Bend City Council cited that "Bend has experienced significant growth in the past ten years," without explaining why that growth and development had failed to create enough revenue to fund necessary

transportation system enhancements.⁷⁰ Also in 2011, voters in Washington County were asked to approve a new property tax to pay for roads to serve greenfield residential development with some sprawl characteristics in the North Bethany area. The roads would allow development to proceed in the area, which had been stalled since its 2002 addition to the Urban Growth Boundary. Writing in support, an advocacy group noted that “it is a fact that the area WILL be developed over the next several years,” without explaining why the development required taxpayer subsidies to supply basic infrastructure.⁷¹

Something must change. These fiscal circumstances suggest that Oregon cities cannot continue to build transportation and other infrastructure as they have in the past. Communities need to talk about infrastructure costs when they talk about growth and urban growth boundary expansions. Unfortunately, there is currently no statewide requirement to perform Fiscal Impact Analysis or similar tools for new developments or urban growth boundary expansions. As a result, elected officials and residents do not have adequate information to make truly informed decisions.

Oregon’s land use system requires cities to determine whether the current urban growth boundary has sufficient land or other capacity to accommodate growth. If it has insufficient capacity, the city will consider a boundary expansion.

When comparing alternatives for urban growth boundary expansions, Oregon law does require cities to consider the cost of providing urban

infrastructure to different potential expansion areas. But the expansion process fails to ask the tough questions about infrastructure costs.

No cost comparison is currently required between accommodating growth in areas *outside* the urban growth boundary and accommodating that same growth on land *within* the boundary. Land inside an urban growth boundary might require some infrastructure investment before it can accommodate new growth – for example, to assemble parcels, upgrade sewer pipes, clean-up a brownfield, or improve an interchange. But these costs will often pale in comparison to the expense of providing the full suite of new infrastructure to a greenfield site. When long-term maintenance costs are included, the fiscal advantage is even clearer.

Right now, these questions are rarely asked by cities, and are certainly not required to be asked. And that means residents are also unable to fully participate in important decisions that will have a major impact on



Oregon faces its own fiscal cliff—in decades of crumbling infrastructure combined with a thirst for sprawl that will only exacerbate this situation. It’s time to step back from the edge. We can begin by fully accounting for the cost of infrastructure. Photo: Jennifer Winn. Used with permission.

their communities and pocketbooks.

This is a system set up for higher costs, and it is clear who will pay the bills. Local governments and the state will have to go back to taxpayers time and time again to ask for bonds, rate increases, and new taxes just to keep the system working as it is—let alone add new capacity.

Back from the edge: Oregon's strategy for accountability

We have another option. Oregon can begin to make more informed investments in infrastructure, saving Oregonians money and realizing a healthier fiscal future for our cities and counties.

It can be done by keeping in mind a simple observation about building infrastructure for typical sprawling development: **more extensive infrastructure is more expensive infrastructure.** The best way to save money on long-term infrastructure costs is to embrace cost-conservative quality growth.

On a regional or state level, the savings from cost-conservative development could add up to billions of dollars, saving the public from the unmanageable burden of maintenance and replacement of more extensive sprawling infrastructure.

Choosing to support quality growth and minimize our infrastructure expenses will not entirely solve Oregon communities' fiscal problems. But not doing so will only make them worse.

Fully accounting for these potential savings will help us have better informed conversations about the future of Oregon's infrastructure, communities, and quality of life.

To make sound investments, Oregon

communities need to consider complete information about the long-term public infrastructure costs of proposed development. **We propose that all Oregon communities should use Fiscal Impact Analyses as part of the process of urban growth boundary evaluation and other growth decisions.**

Long-term fiscal impacts of greenfield development should be clearly compared to the fiscal impacts of accommodating growth through redevelopment and used to inform the choices leaders make about growth.

Oregonians have a right to expect full transparency in their local governments' choices about growth and the impacts these will have on their taxes and utility bills. The choices we make about growth today will dictate Oregonians' tax burdens for decades to come. It is time to stop trumpeting short-term fiscal injections from growth while concealing sprawl's slow drain.

Through full transparency, long-range vision, and some basic arithmetic, we can save communities millions and create a truly sustainable infrastructure system.



There are two directions we can take. Oregon can stay on the road to ever-higher taxes for infrastructure, or we can choose to consider the full costs of growth. We think the choice is clear. Photo: Flickr user oysh9. Creative Commons.

Notes

- 1 See “What Cost Conservative Development Looks Like,” below.
- 2 American Road and Transportation Builders’ Association, “FAQ— Who is Responsible for Building and Maintaining Roads, Transit Systems and Airports in the United States?” *artba.org*, accessed October 4, 2012 from <http://www.artba.org/about/faqs-transportation-general-public/faqs/#1>
- 3 American Road and Transportation Builders’ Association, “FAQ— How Does the United States Pay for Transportation Infrastructure and Improvements?” *artba.org*, accessed October 4, 2012 from <http://www.artba.org/about/faqs-transportation-general-public/faqs/#2>
- 4 Or. Rev. Stat. § 223.297
- 5 Or. Rev. Stat. § 223.297-314
- 6 Or. Rev. Stat. § 223.304
- 7 Or. Rev. Stat. § 223.304
- 8 Galardi Consulting, Arthur C. Nelson, Parametrix, and Beery, Elsner, and Hammond LLP, *Promoting Vibrant Communities with System Development Charges*. Metro (2007): III, accessed October 4, 2012, <http://www.oregonmetro.gov/index.cfm/go/by.web/id=26684>
- 9 League of Oregon Cities, “State of the Cities,” *Local Focus* (January 2012): 15-19.
- 10 Metro, *Regional Infrastructure Analysis* (July 2008): 1, accessed October 4, 2012, <http://www.oregonmetro.gov/index.cfm/go/by.web/id=26213>
- 11 Sarah Mirk, “Factcheck, Is Oregon’s Gas Tax Revenue Decreasing?” *Portland Mercury* (February 7, 2012), accessed October 4, 2012, <http://www.portlandmercury.com/BlogtownPDX/archives/2012/02/07/factcheck-is-oregons-gas-tax-revenue-decreasing>
- 12 Sacramento Area Council of Governments, “MTP 2035 Issue Papers: Road Maintenance,” accessed October 4, 2012, <http://www.sacog.org/mtp/pdf/MTP2035/Issue%20Papers/Road%20Maintenance.pdf>
- 13 Transportation Research Board, *Transit Cooperative Research Program Report 39: The Costs of Sprawl Revisited*, Washington, D.C.: National Academy Press (1998): 6-7.
- 14 Transportation Research Board (1998): 6.
- 15 Transportation Research Board (1998): 65-66.
- 16 Reid Ewing and Robert Cervero, “Travel and the Built Environment,” *Journal of the American Planning Association* 76, no. 3 (2010): 265-294.
- 17 Reid Ewing and Eric Dumbaugh, “The Built Environment and Traffic Safety,” *Journal of Planning Literature* 23, no. 4 (2009): 347-367.
- 18 Reid Ewing, Tom Schmid, Richard Killingsworth, Amy Zlot and Stephen Raudenbush, “Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity,” *Urban Ecology* Section V (2008): 567-582
- 19 Transportation Research Board (1998): 46-50.
- 20 Transportation Research Board, *Transit Cooperative Research Program Report 74: The Costs of Sprawl 2000*, Washington, D.C.: National Academy Press (2002): 243-259; James Frank, *The Costs of Alternative Development Patterns*, Washington, D.C.: Urban Land Institute, (1989); Robert W. Burchell and Sahan Mukherji, “Conventional Development Versus Managed Growth: The Costs of Sprawl,” *American Journal of Public Health* 93, no. 9 (2003): 1534-1540.
- 21 Transportation Research Board (2002): 217-241; Burchell and Mukherji (2003), Cameron Speir and Kurt Stephenson “Does Sprawl Cost Us All? Isolating the Effects of Housing Patterns on Public Water and Sewer Costs,” *Journal of the American Planning Association* 68, no. 1 (2002): 56-70; Carruthers and Ulfarsson (2003).
- 22 Frank (1989); Jonathan Ford, “Smart Growth & Conventional Suburban Development: Which Costs More?” Morris Beacon Design (study for Environmental Protection Agency) (2009).
- 23 Burchell and Mukherji (2003), John I. Carruthers and Gudmundur F. Ulfarsson, “Urban Sprawl and the Cost of Public Services,” *Environment and Planning B: Planning and Design* 30, no. 4 (2003): 503–522; John I. Carruthers and Gudmundur F. Ulfarsson, “Does ‘Smart Growth’ Matter to Public Finance?” *Urban Studies* 45, no. 9 (2008): 1791-1823.
- 24 Transportation Research Board (2002).
- 25 Keith Bartholomew and Reid Ewing, “Land Use - Transportation Scenarios and Future Vehicle Travel and Land Consumption,” *Journal of the American Planning Association* 75, no. 1 (2009): 13-27.
- 26 Juita-Elena Yusuf, Lenahan O’Connell and Sawsan Abutabenjeh, “Paying for Locally Owned Roads: A Crisis in Local Government Highway Finance,” *Public Works Management Policy* 16, no. 3 (2011): 250-269.
- 27 Robert Cervero, “Mixed Land Uses and Commuting: Evidence from the American Housing Survey,” *Transportation Research Part A: Policy and Practice* 30, no. 5 (1996): 361-377.
- 28 Heidi Garrett-Peltier, *Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts*, Amherst, Massachusetts: Political Economy Research Institute (June 2011). Accessed October 16, 2012 from <http://www.peri.umass.edu/236/hash/64a34bab6a183a2fc06fdc212875a3ad/publication/467/>



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- 29 Erick Guerra and Robert Cervero, "Mass Transit & Mass: Densities Needed to Make Transit Investments Pay Off," (Working Paper) University of California Transportation Center (2011), accessed October 16, 2012 from <http://www.uctc.net/research/briefs.shtml>
- 30 Metro, "Assessing Regional Infrastructure Needs," Accessed October 4, 2012, from <http://www.oregonmetro.gov/index.cfm/go/by.web/id=28176>
- 31 Southeast Michigan Council of Governments, *Fiscal Impacts of Alternative Development Patterns in Michigan: The Costs of Current Development Versus Compact Growth Summary of Findings*, Detroit, Michigan: Southeast Michigan Council of Governments (1997).
- 32 Center for Energy and Environment, Minnesotans for an Energy Efficient Economy, and 1000 Friends of Minnesota, *Two Roads Diverge: Analyzing Growth Scenarios for the Twin Cities Region* (1999), accessed October 4, 2012 from <http://www.mncee.org/Innovation-Exchange/Resources/Two-Roads-Diverge--Analyzing-Growth-Scenarios-for-/>
- 33 Federal Highway Administration, "Case Study—Envision Utah," [fhwa.dot.gov](http://www.fhwa.dot.gov) (last update May 22, 2012), accessed October 4, 2012 from <http://www.fhwa.dot.gov/planning/processes/tools/toolbox/utah/index.cfm>
- 34 Envision Utah, "Accomplishments," *Envisionutah.org*, accessed October 4, 2012 from http://www.envisionutah.org/eu_about_euaccomplishments.html
- 35 Thomas Jefferson Planning District Committission, "Building Livable Communities: Jefferson Area Eastern Planning Initiative," *tjpd.org* (2000), accessed October 4, 2012 from http://www.tjpd.org/pdf/rep_comm_epiBrochure.pdf
- 36 Cumberland Region Tomorrow, "A Report to the Region," *Cumberlandregiontomorrow.org* (2003), accessed October 4, 2012 from <http://www.cumberlandregiontomorrow.org/resources/regional-visioning-and-scenario-planning/>
- 37 For example, Cumberland Region Tomorrow, "Montgomery—A Metro of its Own Right," *Cumberlandregiontomorrow.org*, accessed October 4, 2012 from <http://www.cumberlandregiontomorrow.org/our-region/montgomery/>
- 38 Envision Central Texas, "ECT Scenario Summaries," *Scenario Briefing Packet* (2003), accessed October 4, 2012 from <http://envisioncentraltexas.org/resources.php>
- 39 Envision Central Texas, "Program of Work," *Envisioncentraltexas.org*, accessed October 4, 2012 from <http://envisioncentraltexas.org/programofwork.php>

- 40 Sacramento Area Council of Governments Housing & Land Use Committee, "Infrastructure Cost Analysis," *Sacramento Area Council of Governments* (May 2, 2005), accessed 4 October 2012 from <http://www.sacog.org/calendar/2005/05/09/hlu/pdf/03INFRA.pdf>
- 41 Sacramento Area Council of Governments, "Implementing the Blueprint," *sacog.org*, accessed 4 October 2012 from <http://www.sacregionblueprint.org/implementation/>
- 42 Charlotte Department of Transportation, "Effect of Connectivity on Fire Station Service Area & Capital Facilities Planning," (2009), accessed October 24, 2012 from <http://www.charlotteobserver.com/static/images/pdf/CNUPresentation.pdf>
- 43 Delaware Valley Strategic Planning Commission, "Making the Land Use Connection: Regional What-If Scenario Analysis" (September 2008), accessed October 4, 2012 from <http://www.dvrpc.org/reports/08059.pdf>
- 44 Delaware Valley Strategic Planning Commission, "Tracking Progress Towards 2035," *dvrpc.org*, accessed October 4, 2012 from <http://www.dvrpc.org/LongRangePlan/RegionalIndicators/>
- 45 Sonoran Institute, RPI Consulting, LLC, and Geodata Services, Inc., "Gallatin County Montana Fiscal Impact Analysis," *Sonoran Institute*, (March 2009), accessed October 4, 2012 from <http://sonoraninstitute.org/gallatin-county.html>
- 46 John Fregonese and Scott Fregonese, "Memorandum: Survey Results," *Envision Central Texas* (December 5, 2003), accessed October 4, 2012 from <http://envisioncentraltexas.org/resources.php>
- 47 Louisiana Speaks Regional Plan Team, "Louisiana Speaks Regional Plan: Vision and Strategies for Recovery and Growth in South Louisiana," *Louisiana Recovery Authority* (May 2007): 51, accessed October 4 2012 from <http://lra.louisiana.gov/index.cfm?md=subsite&tmp=home&ssid=1>
- 48 Charles Marohn, "Curbside Chat Companion Booklet," *strongtowns.org* (2011): 16, accessed October 4, 2012 from <http://www.strongtowns.org/companion-booklet/>
- 49 Ibid.: 16.
- 50 Zenia Kotval and John Mullin, "Fiscal Impact Analysis: Methods, Cases, and Intellectual Debate," *Lincoln Institute of Land Policy* (2006), accessed online at <http://www.lincolninst.edu/subcenters/teaching-fiscal-dimensions-of-planning/materials/kotval-mullin-fiscal-impact.pdf>
- 51 TischlerBise, Inc., "Fiscal Impact Analysis of Comprehensive Plan 2028 Growth Scenarios," *Columbus, Georgia Consolidated Government* (November 6, 2008): 7.
- 52 TischlerBise, Inc., "DRAFT Revenue Strategies Report," *City of Champaign, Illinois* (February 11, 2010): 1, accessed October 4, 2012 from <http://ci.champaign.il.us/cms/wp-content/uploads/2011/04/Fiscal-Impact-Analysis-Phase-III-Revenue-Strategies-02-11-10-DRAFT.pdf>
- 53 Emily Badger, "The Simple Math that can Save Cities from Bankruptcy," *Atlantic Cities* (March 30, 2012).
- 54 Phillip Langdon, "Best Bet for Tax Revenue: Mixed-Use Downtown Development," *Better Cities & Towns* (September 13 2010).
- 55 Badger (2012).
- 56 Fodor & Associates, "Cost of Infrastructure to Serve New Residential Development in Austin, Texas," *fodorandassociates.com* (2011): ii.
- 57 Metropolitan Council, "The Fiscal Impacts of Growth on Cities," (draft) St. Paul, Minnesota: Metropolitan Council, 74-01-004 (2001): i.
- 58 American Society of Civil Engineers, "Report Card—Oregon," *Report Card for America's Infrastructure*, accessed October 4, 2012 from <https://apps.asce.org/reportcard/index.cfm?reaction=states&page=OR>
- 59 Ibid.
- 60 Edward Wolf and Jules Bailey, "Cascadia's Seismic Certainty: Putting Earthquake Safety on the Green Schools Agenda," *Trim Tab* (Fall, 2001): 67. accessed October 4, 2012 from <http://www.cisforegon.org/current/documents/wolfbailey.pdf>
- 61 Metro (July, 2008): 1.
- 62 Metro (July, 2008): 1.
- 63 ECONorthwest, "Fiscal Challenges for Oregon's Cities" (July 2011), accessed October 4, 2012 from <http://econw.com/our-work/publications/fiscal-challenges-for-oregons-cities>
- 64 ECONorthwest (2011): 3.
- 65 League of Oregon Cities (2012): 17.
- 66 ECONorthwest (2011): 1.
- 67 ECONorthwest (2011): 1.
- 68 League of Oregon Cities (2012): 17.
- 69 Christian Wihtol, "Report Weighs Benefits' Burden," *Eugene Register Guard* (September 28, 2011): B1.
- 70 Kathie Eckman, "Argument in Favor [Measure 9-83]," *Official Deschutes County 2011 Special Election Voters' Pamphlet*, Bend, Oregon: Deschutes County Clerk's Office (2011): 5.
- 71 Neighbors for North Bethany, "Vote Yes" on Measure 34-189! Join Your Neighbors and Friends," *Washington County Voters' Pamphlet: Vote By Mail Special Election May 17, 2011*, Beaverton, Oregon: Washington County Elections Division (2011): 15.



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