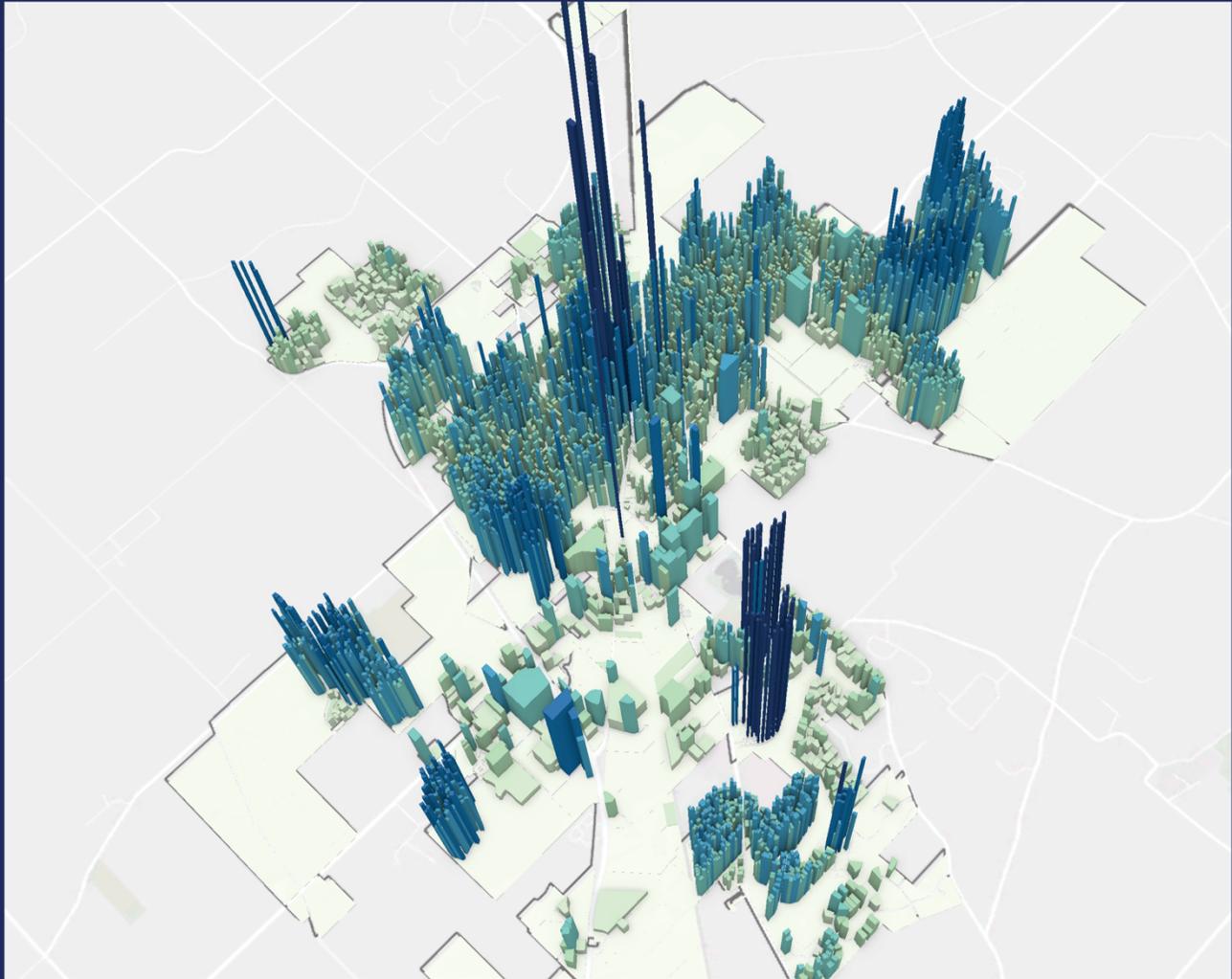


Rationale for Smart Growth Fiscal Impact Analysis and Model Fiscal Impact Assessment Ordinance



Prepared for Smart Growth America

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Smart Growth America
Improving lives by improving communities

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About the Authors

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James C. Nicholas, PhD, is emeritus professor of urban and regional planning and emeritus professor of law at the University of Florida. Nicholas has written widely on the subject of land, environmental policy, and growth management. He has authored eight books, three monographs, and over sixty articles in the professional literature dealing primarily with growth and local governmental finance of infrastructure. He is author of *A Guide to Impact Fees and Housing Affordability* (with Julian Conrad Juergensmeyer and Arthur C. Nelson), editor of *The Changing Structure of Infrastructure Finance*, and author of *State Regulation and Housing Prices*. In addition to his academic duties, he has worked with hundreds of national, state, regional, and local governments. Nicholas has developed growth management and infrastructure funding programs for over 100 local governments in the states of Maine, Massachusetts, Maryland, Virginia, Georgia, Florida, Illinois, Iowa, New Mexico, Colorado, Nevada, California, and Hawaii. Together with Juergensmeyer and Nelson, he pioneered the *Rational Nexus Test* which has become the guiding principle for development exactions such as impact fees in the United States.

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About Smart Growth America

Smart Growth America is a national organization dedicated to researching, advocating for, and leading coalitions to bring better development to more communities nationwide. From providing more sidewalks to ensuring that more homes are built near public transportation or that productive farms remain a part of our communities, smart growth helps make sure people across the nation can live in great neighborhoods. Learn more at www.smartgrowthamerica.org.

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Dedication

To Geoff Anderson -

He did not invent smart growth, he made smart growth smarter

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INTRODUCTION

In their pioneering book on fiscal impact analysis, Robert W. Burchell and David Listokin define the process as “[a] projection of the direct, current, public costs, and revenues associated with residential or nonresidential growth to the local jurisdiction(s) in which this growth is taking place.”¹ It can be a tool to objectively assess the extent to which development projects impact government fiscal resources. In planning and land use development decision-making, it can be used to compare fiscal outcomes to different land use or development scenarios.

Modern fiscal impact analysis is traced to *The Cost of Sprawl*, published by the Real Estate Research Corporation in 1974.² It was the first study to show that providing infrastructure to low-density, sprawling development costs more than for compact, dense developments. Low-density development’s greater distances among homes, offices, shops, and so forth, require more road and pipe infrastructure than would be required to serve the same number of homes and businesses in a more compact development pattern. Looked at another way, one mile of infrastructure costs roughly the same to build no matter where it is, but that mile can serve many times more people in a high-density place than in a low-density place.³

Doing so will reduce taxpayer burdens allowing them to save money that can be reinvested in ways that can improve the local economy. Fiscal impact assessment (FIA) can be a tool to help achieve those objectives. Yet conventional FIA practices rely on simple average cost methods, which implicitly assumes that each new resident or job will add the same amount of public costs, regardless of whether they live and work in a sprawling, low-density development, or a high-density, walkable urban one. When these factors are considered, literature shows that compared to conventional suburban development patterns, smart growth development:⁴

- Costs less for upfront infrastructure;
- Reduces the costs of ongoing delivery of services; and
- Generates several times more tax revenue per acre.

¹ Robert W. Burchell and David Listokin, *The Fiscal Impact Handbook*, New Brunswick, NJ: Center for Urban Policy Research, 1978, p. 1.

² Real Estate Research Corporation, *The costs of sprawl: environmental and economic costs of alternative residential development patterns at the urban fringe*, Washington, DC: Council on Environmental Quality, 1974.

³ Adapted from Smart Growth America, *The Fiscal Implications of Development Patterns: Chattanooga, Tennessee*, 2017.

⁴ Ibid.

This can help assure that all development that is needed for an efficiently functioning market occurs while preventing over-development that can undermine the fiscal well-being of the community.⁵

While the term fiscal impact analysis, or FIA, is used throughout, in the context of this guide FIA is intended to advance fiscally related smart growth decisions.

These include but are not limited to:

- Analyzing the full costs and revenues of the proposed development on the community considering its distance from users of its space, density, location, configuration, and interaction with adjacent and nearby development, and including initial capital costs, long-term capital costs, and operations and maintenance costs.
- Considering especially the distance-related nature of fiscal costs and revenues, such as more distant developments requiring more utility lines and greater pumping capacity than closer-in areas.
- Infill and redevelopment, mixed-use development, and other smart growth-based development features generally will have favorable fiscal impacts.
- Minimizing the need for new or expanded facilities and maximizing the use of existing facilities, including "fix it first" as an element of SGFIA. (For instance, sometimes new projects claim it is cheaper to build at the fringe but then the community needs to manage an older, aging system that will need to be replaced in addition to new facilities.)
- Basing the analysis on localized as opposed to community-wide service area assessment consistent with service area principles applicable to each facility type, also considering community-wide fiscal impacts as appropriate. (This reduces the sprawl-inducing effect of comparing local project revenues to average community-wide costs).
- Assuring that development in each local area pays its proportionate-share capital and operating costs, thus preventing low-cost areas from subsidizing high-cost ones.
- Taking into consideration the fiscal burdens of accepting developer-installed infrastructure as future maintenance and capital costs are thereafter inherited by the community.

⁵ Arthur C. Nelson, John Travis Marshall, Julian Conrad Juergensmeyer and James C. Nicholas, *Market Demand-Based Planning and Permitting*, American Bar Association, 2017.

- Estimating long-term contributions to the local fiscal base from development considering change in value of the development over time. (This reduces the effect of assuming future property taxes assume constant reinvestment into structures when in fact all structures depreciate resulting in lower present values of the flow of future property tax revenues -- failure to account for this also induces sprawl.)
- Taking into account adjustments to fiscal costs and revenues based on design features of development that use facilities and services more efficiently.

The purpose of this Guide is to provide the best information reasonable to show the kinds of fiscal impacts that may be associated with Smart Growth

An aspect of smart growth is assuring that plans are based on assessments of market needs and that permitting of development occurs only when it is in accordance with a plan. This can help assure that all development that is needed for an efficiently functioning market occurs while preventing over-development that can undermine the fiscal well-being of the community.⁶

The term “smart growth” is used often in the context of development patterns. Key principles guiding smart growth development include but are not limited to:⁷

Efficient use of land and infrastructure;

A greater mix of uses and housing choices;

Neighborhoods and communities focused around human-scale, mixed-use centers;

A balanced, multi-modal transportation system providing increased transportation choice; and

Well-defined community edges, such as agricultural greenbelts, wildlife corridors, or greenways permanently preserved as farmland or open space.

⁶ Ibid.

⁷ Adapted from APA Policy on Smart Growth, <https://www.planning.org/policy/guides/adopted/smartgrowth.htm>.

This Guide to Smart Growth Fiscal Impact Analysis is comprised of four chapters:

Chapter 1 – Fiscal Impact Findings presents considerable evidence showing that smart growth development patterns reduce the fiscal costs of growth and improves the overall economic performance of communities.

Chapter 2 – Planning Foundations for Fiscal Impact Analysis outlines the role of planning to support fiscal impact analysis.

Chapter 3 – Implementing Fiscal Impact Analysis provides a framework for implementing fiscal impact analysis to address smart growth principles.

Chapter 4 – Model Fiscal Impact Analysis Ordinance for Smart Growth presents a framework for crafting and adopting a fiscal impact analysis ordinance with special reference to advancing smart growth principles.

This Guidebook is nothing more than that: A guide. Local governments will need to adapt the Guidebook and especially the ordinance to meet state and local rules for construction as well as be consistent with state and local policies relating to fiscal impact analysis, and potentially its relationship to planning.

Chapter 1

FISCAL IMPACT FINDINGS

All real estate development impacts local government finance. Often, the costs of the impacts are less than the revenue development generates but often it is not the case and those costs are borne by taxpayers. Fiscal impact analysis is a tool that can be used to assess the costs and revenues associated with development, sometimes leading to measures to mitigate costs if they exceed revenues.

This chapter provides the findings that can be used by local governments in a comprehensive planning process to lay the foundation for fiscal impact analysis. It is comprised of five sections. The first addresses the nature of costs associated with different development patterns. The second addresses the relationship between infill development and redevelopment and fiscal outcomes. The second shows how certain development patterns can improve property value thus leading to improved revenue streams. The fourth section addresses the fiscal implications of long-term life cycle costs and inherited obligations. The final section identifies some overarching economic development benefits of certain development patterns with fiscal impact implications. We offer concluding perspectives at the end.

Costs of Different Development Patterns

We begin our report with a review of literature on costs of different development patterns. We begin with a review research related to density and public facility costs

Density and Public Facility Costs

Based on the largest study of its kind, researchers showed that as residential density decreases, costs per residential unit increase for roadways and other transportation, sewerage, trash collection, housing and community development, police protection, fire protection, parks, education, and libraries. These findings are consistent with literature spanning decades.⁸

What follows are findings with respect to broad types of facilities, such as roads, water utilities, and public safety facilities with respect to density, as well as overall costs. Much of the information is based on “net” impact costs which mean capital facility impact costs per unit of development less new tax, fee, and other revenues generated by new development that help finance the same facilities, such as that portion of a dedicated school facility property tax that is used to pay debt service for new schools. We apportion this to lot size or density category.⁹

⁸ See John I. Carruthers and Gudmundur F. Ulfarsson, Urban sprawl and the cost of public services, *Environment and Planning B: Planning and Design* 2003 30: 503-522.

⁹ The foundation for much of this discussion is adapted from Arthur C. Nelson, James C. Nicholas, Clancy Mullen, and Liza K. Bowles, 2005, *Proportionate Share Impact Fees and Housing*

Public Service Costs

The Environmental Protection Agency's Office of Sustainable Communities presents several fiscal advantages of more compact and higher density/intensity development that are summarized here.¹⁰

We begin by addressing public costs for public safety services (police, fire, and emergency medical services). Studies show that when homes are built far from stations, especially when they are built on dead ends or cul-de-sacs, costs rise. The reason is that the community must provide more stations, equipment, and personnel to maintain adequate coverage at acceptable levels of response.¹¹ For instance, a study by Charlotte, North Carolina, discovered that more connected street networks—a proxy for density of development and through-streets—the more homes a fire station could serve.¹² This is illustrated in Figure 1.1 which shows that the Station service area with the most-connected street pattern and the highest density (Station 2) served 4.5 times more homes at less than one-quarter of the cost per person as the least-connected one serving the lowest density area (Station 31).

Wastewater, stormwater and domestic (sometimes called “potable”) water costs also vary by density. Figure 1.2 illustrates the relationship between total water consumption and lot size, in this case for Albuquerque NM. As lot size increases to about one-half acre, water consumption and implicitly costs per home also increases before leveling off.

Affordability prepared for HUD's Office of Policy Development and Research. Figures in that report are not adjusted for inflation.

¹⁰ Office of Sustainable Communities, *Smart Growth and Economic Success: Strategies for Local Governments*, Washington DC: Smart Growth Program, Environmental Protection Agency (2014), available from <https://www.epa.gov/smartgrowth/smart-growth-and-economic-success-strategies-local-governments>.

¹¹ Coyne, William. *The Fiscal Cost of Sprawl: How Sprawl Contributes to Local Governments' Budget Woes*, Environment Colorado Research and Policy Center (2003) available from http://www.impactfees.com/publications%20pdf/fiscalcostofsprawl12_03.pdf.

¹² Congress for the New Urbanism, *CNU Report: Emergency Response & Street Design* (2009), available from <http://www.cnu.org/resources/publications/cnu-report-emergency-response-street-design-2009-2009>.

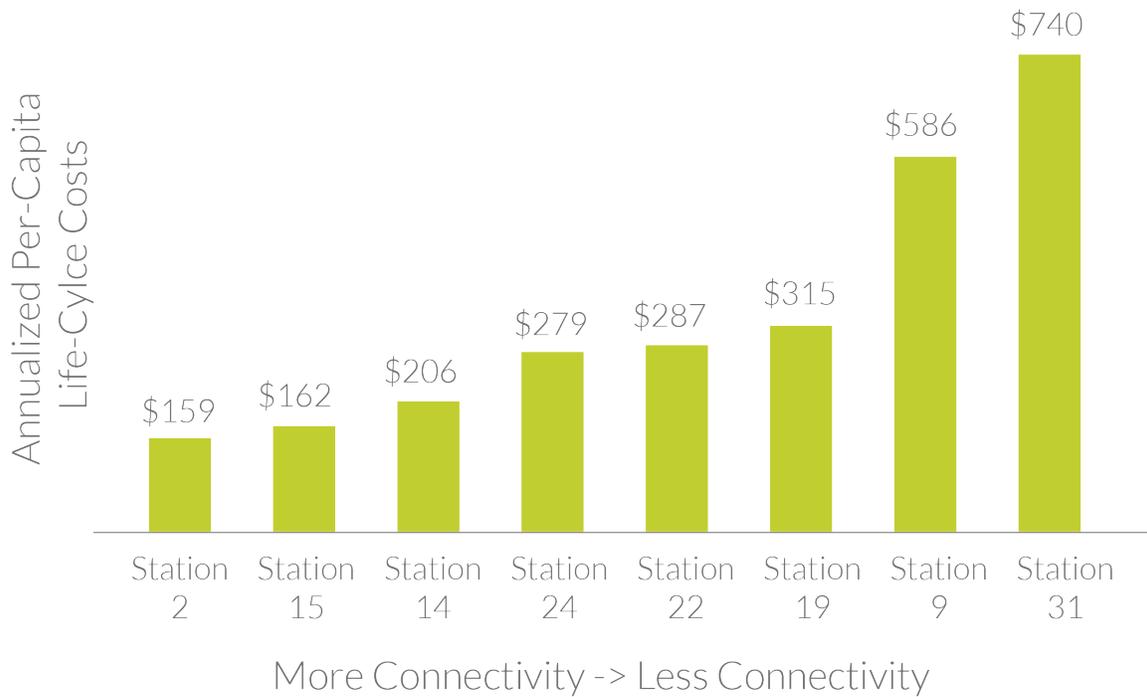
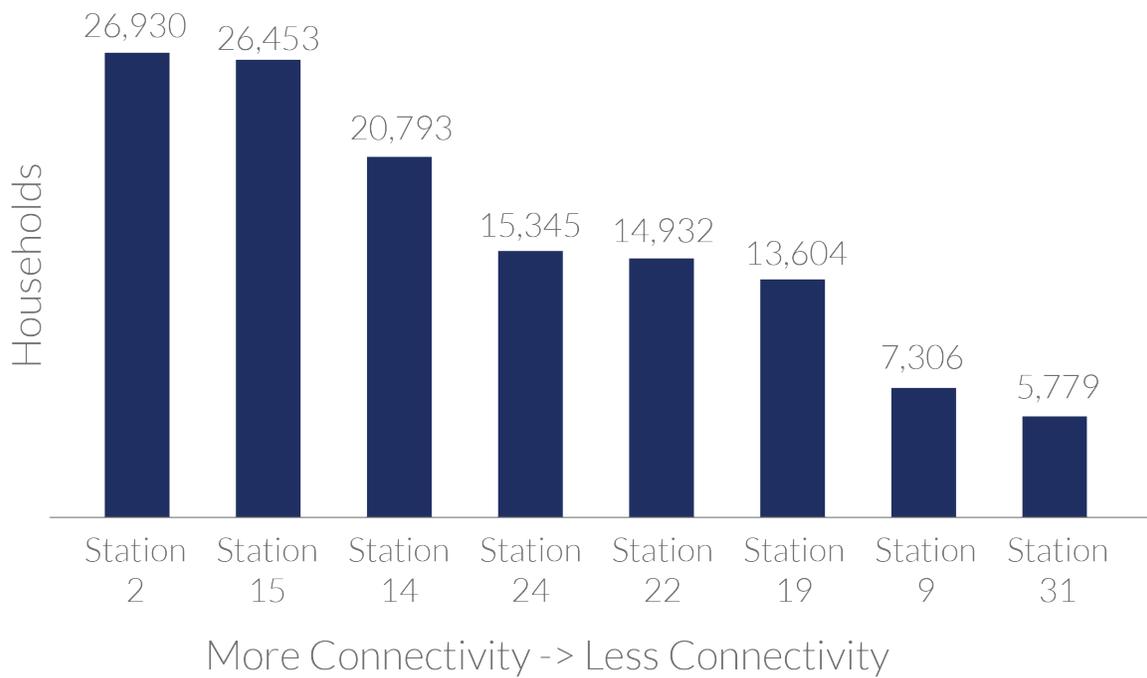


Figure 1.1
Households Covered (top half) and per Capita Costs (bottom half) for Fire Stations in Charlotte, North Carolina
 Stations are ordered by how well connected the street grid is in the area they serve which is a proxy for density.
 Source: Charlotte Department of Transportation (2009).

5 Year Average for June Water Consumption

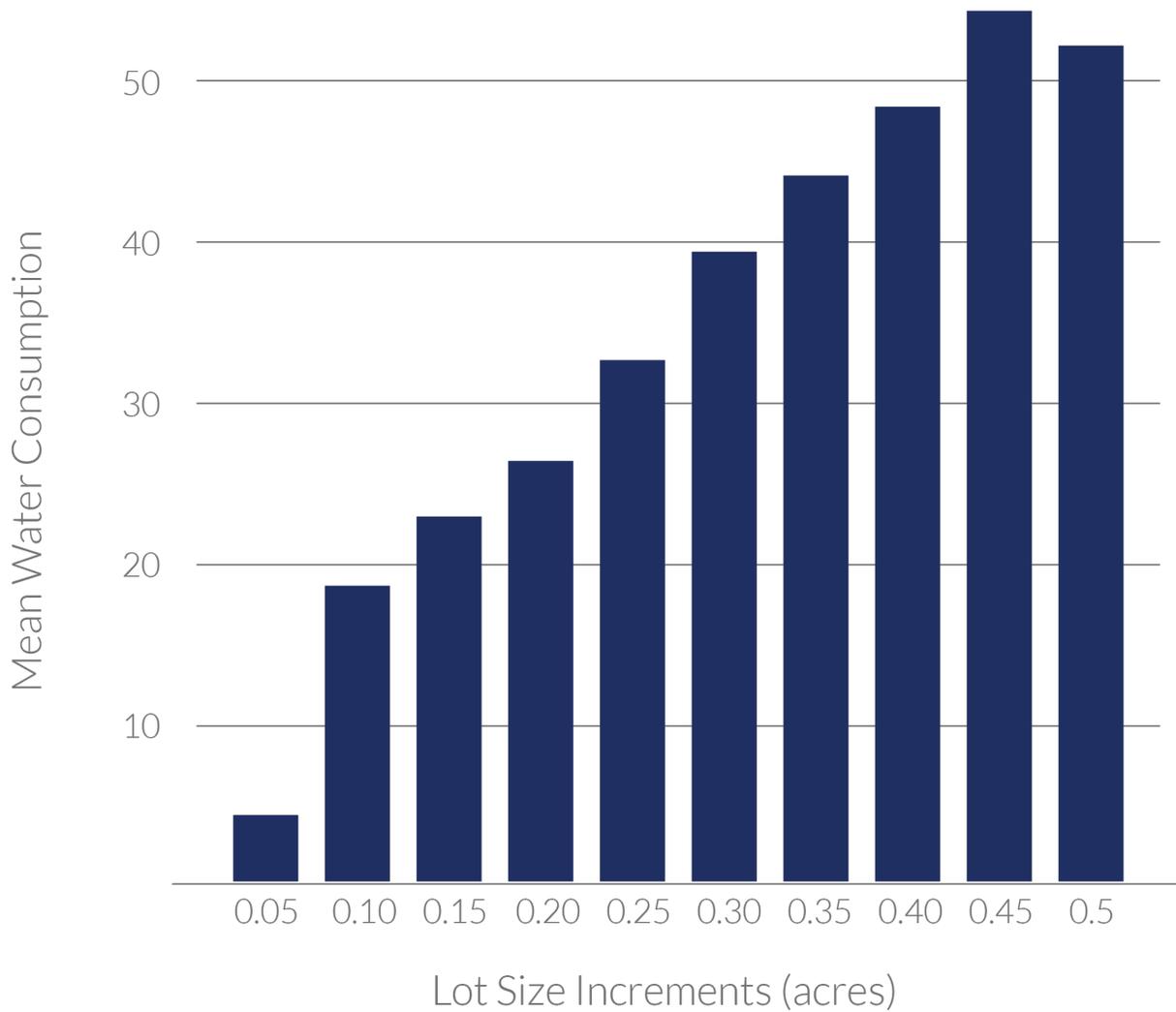


Figure 1.2

Average Water Consumption per Residential Unit by Lot Size

Source: Arthur C. Nelson based on City of Albuquerque water billings by lot size.

Accordingly, as demand falls when density increases so will capital costs per unit. This is illustrated in Table 1.1 which is a recent fee schedule for single-family detached water connections within the city of Denver which are based on cost-recovery calculations with respect to lot size.

Table 1.1
Water Connection Charges for Single Family Detached Units by Lot Size, Denver CO

Lot Size (Square Feet)	Water Connection Fees
5,000	\$6,530
7,500	\$8,280
10,000	\$10,030
15,000	\$13,530
20,000	\$17,030
30,000	\$19,830
40,000	\$23,330

Source: Adapted from <https://www.denverwater.org/contractors/construction-information/system-development-charges> for development inside the city.

In addition, water and wastewater related operations and maintenance, and eventual replacement costs vary by density, as shown in Table 1.2. Here, as lot size increases so do the annual water and sewer life cycle costs which is a combination of capital and operating costs. In this example, the annual revenue per lot is fixed as is often the case. The difference between revenue and costs means that at about a lot size of 0.44 acres, costs exceed revenues. But there is an important equity implication. Smaller lots effectively subsidize larger lots even though smaller lots are often occupied by lower income households than larger ones.

Table 1.2
Density Related Water and Wastewater Life-Cycle Costs

Lot Size (Acres)	Annual Water & Sewer Life-Cycle Costs	Annual Revenue Apportioned to Life-Cycle Costs	Revenue Less Cost
0.17	\$416	\$551	\$134
0.19	\$426	\$551	\$124
0.25	\$456	\$551	\$94
0.27	\$466	\$551	\$84
0.30	\$482	\$551	\$69
0.30	\$482	\$551	\$69
0.33	\$498	\$551	\$53
0.35	\$508	\$551	\$43
0.38	\$522	\$551	\$29
0.44	\$552	\$551	(\$1)
0.49	\$578	\$551	(\$27)
0.50	\$583	\$551	(\$33)
0.79	\$729	\$551	(\$179)
0.85	\$759	\$551	(\$209)
0.91	\$789	\$551	(\$239)

Source: Adapted from The Fiscal Impacts of Alternative Single Family Housing Densities, Michigan State University (2006). Figures adjusted for 2021.

We note that impact fees are typically assessed throughout a jurisdiction without respect to variations in density. The argument is normally made that because public safety facilities serve the entire jurisdiction and each facility backs others, there would be no variation by service area since there would be just one. However, if planning shows clearly different densities between sub-areas of the jurisdiction, density-based impact fees should be considered reflecting the differences in cost illustrated above.

Putting all facilities together, one study evaluated police, fire, highways, schools, sewer, and solid waste costs to serve 1,000 new residents in the 10 counties comprising much of the Lexington, Kentucky metropolitan area.¹³ The central county of Fayette uses urban containment to steer new development substantially into areas already served by public

¹³ Bollinger, Christopher R., Mark C. Berger, and Eric Thompson, *Smart Growth and the Costs of Sprawl in Kentucky: Intercounty Analysis (Phase II)*, Lexington KY: University of Kentucky Center for Business and Economic Research (2001). Figures are adjusted for 2021.

facilities. Analysis shows that adding population reduces costs in Fayette County. In contrast, suburban Pendleton County, where growth occurs substantially in unincorporated areas, that county would need to spend an additional \$1,900 per existing household for every 1,000 new residents added.

Some studies evaluate both initial capital costs and long-term operations and maintenance costs associated with different development patterns. One such study was conducted by the Maryland Department of Planning to evaluate cost savings attributable to the state's "priority finding area" policy. It found that state-level smart growth that steers development into higher densities and intensities would require just 40 percent of local roads from 2010 to 2030 when compared to trends. This translates into \$15 billion in construction savings and \$320 million in maintenance cost savings over the period.¹⁴

National simulation studies show similar results. One study found that if existing development patterns across the United States were 25 percent more densely settled in terms of people and jobs per acre of developed land, public services would cost \$5.6 billion less per year. Another angle in the same study showed that if development were 25 percent less dispersed in terms of the percentage of land that is developed, public services would cost \$10.1 billion less per year.¹⁵

In the next section we look at the literature on fiscal impacts associated with different development patterns.

¹⁴ Choi, Kenneth and Christopher A. Fricke, *Fiscal Impact Analysis—Analyzing the Effects of Smart Growth on Projected Road Development in 2030*, Maryland Department of Planning (2010), available from http://www.mdp.state.md.us/PDF/OurWork/FiscalImpact_RoadProjection.pdf. Figures adjusted to 2021.

¹⁵ Carruthers, John I. and Gudmundur F. Ulfarsson, "Does 'Smart Growth' Matter to Public Finance?" *Urban Studies*, 45.9 (2007): 1791-1823. Figures adjusted to 2021.

Development Patterns and Public Facility Costs

This section uses research to illustrate differences in public facility costs between different development patterns.

We start with pioneering work done by James E. Frank who synthesized numerous fiscal studies mostly focusing on costs of suburban growth from the 1950s into the 1980s.¹⁶ Table 1.3, which is illustrated in Figure 1.3, shows the proportionate costs between infill, contiguous, and leapfrog development near built-up urban areas. Incremental costs are added out to five (for a contiguous pattern of development) and 10 miles (for a leapfrog pattern of development) from built-up urban areas. Schools are excluded in our adaptation of Frank's analysis, however, to focus mostly on transportation, public safety and utility costs. We use infill development costs as the referent. We assume that excess facility capacity exists for infill areas or where capacity expansion is needed costs are comparable to existing infrastructure costs serving existing developed areas. Frank uses residential development to compare costs. The infill density parameter of 30 units per acre is roughly comparable to "missing middle housing"¹⁷ density which is comprised of residential structures no higher than three levels.¹⁸ At the extreme, the cost of public facilities serving leapfrog development on quarter-acre lots more than 10 miles from built-up urban areas is 20 times more than infill costs.¹⁹ As these are costs and not revenues, we will report research on revenue-to-cost ratios next.

¹⁶ James E. Frank, *The Costs of Alternative Development Patterns*, Washington, DC: Urban Land Institute (1989).

¹⁷ See Dan Parolek with Arthur C. Nelson, *Missing Middle Housing*, Washington, DC: Island Press (2020).

¹⁸ Commonly four levels or higher in multi-family structure require elevators.

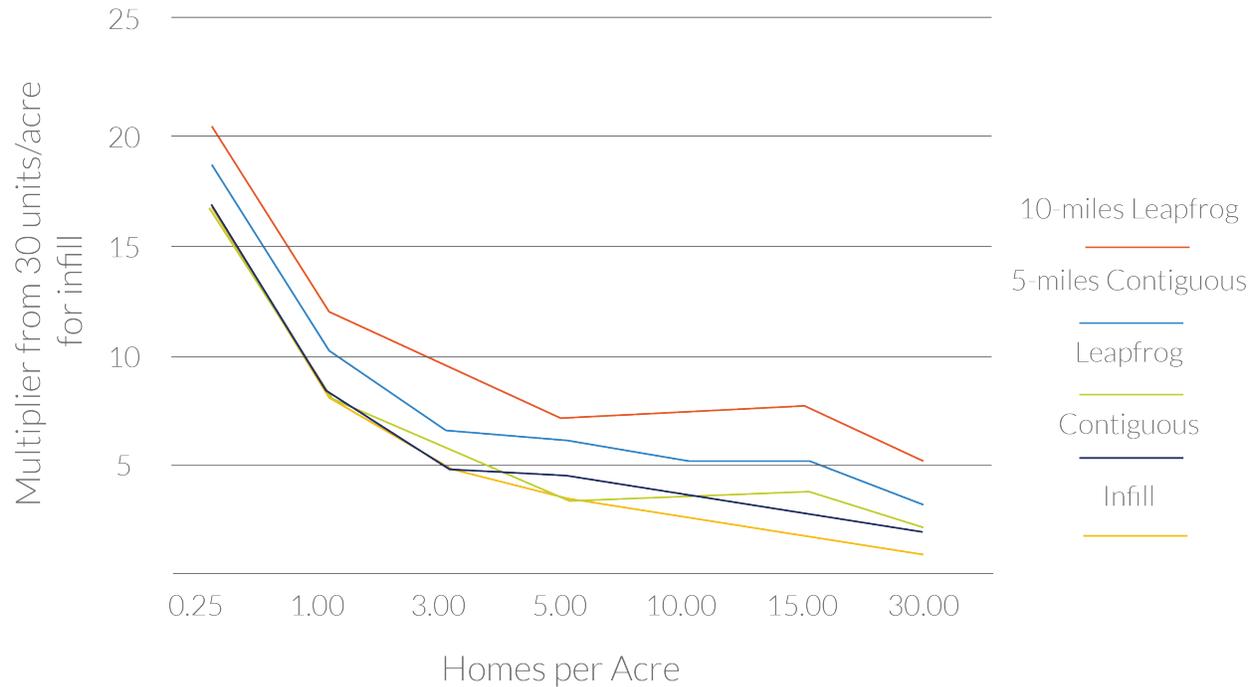
¹⁹ See Jonathan Ford, *Smart Growth & Conventional Suburban Development: Which Costs More?* USEPA, 2009 (www.epa.gov/smartgrowth/sg_business.htm). See also Smart Growth America, *Building Better Budgets: A National Examination of the Fiscal Benefits of Smart Growth Development*, 2013.

Table 1.3
Capital Costs per Housing Unit by Development Pattern with Respect to Infill Development

Units per Acre	Infill	Contiguous	Leapfrog	5-miles Contiguous	10-miles Leapfrog
0.25	16.87	16.87	16.87	18.78	20.55
1.00	8.36	8.36	8.36	10.26	12.03
3.00	4.81	4.81	5.93	6.71	9.60
5.00	3.57	4.27	3.57	6.17	7.24
10.00	2.55	3.33	3.85	5.12	7.43
15.00	1.73	2.52	4.03	5.20	7.61
30.00	1.00	1.79	2.31	3.31	5.35

Source: Adapted from James E. Frank (1989). Costs are converted to proportionalities where the highest density costs for infill development are equal to 1.0. All other costs are multipliers of it.

Figure 1.3
Capital Costs per Housing Unit by Development Pattern with Respect to Infill Development



Source: Adapted from James E. Frank (1989). Costs are converted to proportionalities where the highest density costs for infill development are equal to 1.0. All other costs are multipliers of it.

Studies such as this have led to the American Planning Association's Planning Advisory Service (PAS) to state that "traditional zoning ordinances can result in large-scale, single use, large-lot residential developments. These subdivisions often require costly and redundant municipal infrastructure to function while furthering dependence on non-renewable energy sources".²⁰

Actual Cost of Alternative Development Patterns

Except for one study, we are not aware of any research into the costs of alternative development patterns that compares actual costs between different urban forms. That study is James Duncan and Associates' (JDA) 1989 report, *The Search for Efficient Urban Growth Patterns*.²¹ Using sites selected throughout Florida, the JDA team worked with local public facilities and finance officials to calculate the actual costs to serve specific areas. We synthesize their report here.

JDA identified several sites throughout the state that represented such classically different urban forms as compact, contiguous, linear, satellite/new community and scattered/leapfrog they define as follows²²

Compact: A pattern of urban growth which is generally characterized by higher intensity development that occurs with an established urban area. [The study area chosen was downtown Orlando.]

Contiguous: A pattern of urban growth which is generally characterized by moderate density development and it located adjacent to or near established urban areas. [Two study areas were selected: Countryside which is about seven miles north-east of downtown Clearwater and Southpoint located about 7.5 miles southeast of downtown Jacksonville.]

Linear: A patter of urban growth which is generally characterized by relatively low densities and intensities of mixed use development extending outward from established urban areas along one or more major transportation corridors. [The study used Kendall Drive which is about 15 miles southwest of downtown Miami and University Boulevard which is about nine miles northeast of downtown Orlando serving the University of Central Florida.]

²⁰ PAS QuickNotes No. 6, page 1, retrieved November 16, 2017, from <https://www.planning.org/media/document/9007603/>.

²¹ James Duncan and Associates, *The Search for Efficient Urban Growth Patterns: A Study of the Fiscal Impacts of Development in Florida*, and its companion Technical Appendix, Tallahassee, FL: Department of Community Affairs (1989).

²² Id. at 9. Descriptions of the communities selected for analysis are provided at pages 5-6. We modified some of the urban form labels to improve intuitive understanding of the development pattern.

Satellite/New Community: A pattern of growth which is generally characterized by moderate to high intensity mixed use development that occurs primarily within discrete outlying suburban or exurban areas. [We note that these can include planned unit developments, master planned communities, new towns and the like. The example studied was Tampa Palms, a “development of regional impact” located about 11 miles north of downtown Tampa.]

Scattered/Leapfrog: A pattern of urban growth which is generally characterized by low density development that is prematurely located (“leapfrogged”) past vacant land into relatively undeveloped areas. [Wellington which is about 13 miles west of downtown West Palm Beach and Cantonment which is about 12 miles north of downtown Pensacola were selected as examples.]

The study team considered the current replacement cost of existing infrastructure which would then be financed using long term bonds, and then considered the ongoing operations and maintenance costs. Revenues emanating from each of the areas were calculated using property, sales tax records, water and wastewater billings, and so forth. Costs and revenues were calculated for the areas as a whole and not converted into such common metrics as costs per person, house or worker, or hybrid approaches. Revenue and cost ratios were calculated allowing for fair comparisons of different urban forms. Composite profiles of each urban form and fiscal outcomes are reported in Table 1.4. Key findings are:

None of the urban forms “paid their own way” as costs exceeded revenues. This is an artifact of calculating the capitalized current replacement cost of infrastructure annualized over time.

Two urban forms generate revenue that pay less than half the costs: scattered/leapfrog (43 percent) and satellite/new community (45 percent). Linear generates revenues covering a bit more than half the costs (54 percent).

Both continuous (89 percent) and compact (90 percent) urban forms generated revenues nearly equivalent to costs but only by calculating costs in the manner noted above.

The overall conclusion drawn from the JDA study—again being the only one that considers the actual costs and revenues of different patterns of urban development—is that scattered/leapfrog, satellite/new community, and linear urban growth patterns pay for less than half their public facility costs compared to contiguous and compact urban growth patterns.

Table 1.4
Summary Revenues and Costs Associated with Urban Form Profile in 2021 Dollars

Analysis	Scattered/ Leapfrog	Satellite/ New Community	Linear	Contiguous	Compact
Composite Study					
Area Profile					
Gross Acres	4,395	264	3,005	1,334	106
Resident Population	7,294	1,056	11,304	7,814	3,843
Dwelling Units					
Single Family + MH	1,589	143	1,673	144	122
Multifamily	733	263	1,867	1,488	1,751
Total	2,322	406	3,903	3,377	1,873
Residential Units/Gross Acre	4.1	4.0	7.1	9.9	36.2
Non-Residential Uses					
Commercial (000sf)	331	10	425	3,409	6,756
Industrial (000sf)	359	0	34	640	1,016
Institutional (000sf)	66	65	147	501	1,603
Total (000sf)	756	75	606	4,550	9,375
Costs and Revenues					
Costs (\$000)	\$31,247	\$5,571	\$38,241	\$35,853	\$31,486
Revenue (\$000)	\$13,339	\$2,522	\$20,720	\$32,047	\$28,451
Rev/Cost (%)	43%	45%	54%	89%	90%

Source: James Duncan and Associates (1989). Figures adjusted for 2021.

These findings are consistent with a 2013 study by Smart Growth America that examined development patterns in 17 cities. It found that smart growth development, such as mixed-use development, would “save about 38 percent on infrastructure costs like roads and sewers when serving compact development instead of large-lot subdivisions.” Savings can be expected when there is a decreased need to design, construct, and maintain infrastructure for transportation systems, water and wastewater, electric, telecommunications, and other utilities.²³

²³ Smart Growth America, *Building Better Budgets*, May 2013.

Based on its review of studies, the EPS concluded that:

Developing at higher densities uses land more efficiently to generate more revenue, both private and public, per acre of land. For example, research on the relative fiscal productivity of various land uses in Sarasota County, Florida, has demonstrated that compact, mixed-use developments in central locations generate more property tax revenue per acre than single-use developments in more suburban locations. Similar results have been found for communities in (several states) ... Developers and investors seek to maximize profits when designing projects, but the public sector often has not recognized the economic advantages of higher-density development. Many communities focus on the absolute dollar figure of taxes that large, low-density developments can generate rather than considering the amount of taxes different types of development can generate per acre, the expected return on infrastructure investments, the costs of municipal services, and the impact developments have on surrounding property values. While market feasibility and community character concerns will guide the level of density that is appropriate and achievable in a community, businesses and local governments can benefit from development at higher densities where the market demands it.²⁴

The EPA concludes:

Extensive research has found that compact development patterns, higher density, mixed uses, and other characteristics of smart growth development can reduce the costs of providing public infrastructure and delivering services. Many communities with conventional low-density, single-use development patterns are financially burdened by the cost of maintaining, and ultimately replacing, their existing infrastructure given the tax revenue this development generates. Smart growth strategies can help create vibrant and diverse communities in which public

²⁴ Adapted from Environmental Protection Agency, *Smart Growth and Economic Success: Benefits for Real Estate Developers, Investors, Businesses and Local Governments*, 2014, p. 4. See also Peter Katz, Sarasota's Smart Growth Dividend, *Planning*. American Planning Association. December 2010; John Stroud, Study: Dense Downtowns = Higher Tax Yield, *Glenwood Springs Post-Independent*. July 11, 2011 <http://www.postindependent.com/article/20110712/VALLEYNEWS/110719986&parentprofile=search>; Ed Kemmick, Downtown Development Can Pay Off, Experts Say," *Billings Gazette*, August 30, 2011 http://billingsgazette.com/news/local/article_a086f50b-0bd7-5154-a884-53f1070993a0.html; Philip Langdon, Best Bet for Tax Revenue: Mixed-Use Downtown Development, *New Urban News*. September 13, 2010 <http://newurbannetwork.com/article/best-bet-tax-revenue-mixed-use-downtown-development-13144>; and Joseph Minicozzi, The Smart Math of Mixed-Use Development, *Planetizen*. January 23, 2012. <http://www.planetizen.com/node/53922>.

infrastructure investments yield returns that cover long-term financial obligations.²⁵

We next address the relationship between land use density and intensity, and property tax revenues.

Land Use Density and Intensity, and Property Tax Revenues

Another thread of research measures the revenues generated per acre of specific land uses. These studies always find that higher density/intensity development generates more tax revenue than lower density/intensity development.²⁶ This is illustrated in Table 1.8 below Fairfax County, Virginia.²⁷ These land uses are arranged from the most revenues per acre at the top to the least. Notice that single family detached residential land uses generate the least income per acre than any other land use. Indeed, all other residential land uses generate more.

Likewise, another study found that 3.4 acres of mixed urban development in Sarasota County, Florida provides the same number of housing units as 30.6 acres of suburban housing but has only 57 percent the infrastructure costs yet provides 8.3 times as much tax revenue.²⁸

As school districts are a major source budget obligation, another study found that more compact regional development provides more net municipal government and school

²⁵ Adapted from Environmental Protection Agency, *Smart Growth and Economic Success: Benefits for Real Estate Developers, Investors, Businesses and Local Governments*, 2014, pp. 4-5. See also Todd Litman, *Understanding Smart Growth Savings*, Victoria Transport Policy Institute 2011 http://www.vtpi.org/sg_save.pdf; Mark Muro and Robert Puentes, *Investing in a Better Future: A Review of the Fiscal and Competitive Advantages of Smarter Growth Development Patterns*, The Brookings Institution 2004 <http://www.brookings.edu/research/reports/2004/03/metropolitanpolicy-muro>; and Strong Towns.org, *Curbside Chat*. 2011 <http://www.strongtowns.org/companion-booklet/>.

²⁶ For a synthesis of studies, see from Todd Litman, *Understanding Smart Growth Savings*, Victoria BC: Victoria Transportation Research Institute (2021) available at https://www.vtpi.org/sg_save.pdf. See also Chicago Metropolitan Area Plan (CMAP) 2014, *Fiscal & Economic Impact Analysis of Local Government Decisions*, CMAP, the official regional planning organization for the northeastern Illinois counties (www.cmap.illinois.gov) available at <http://tinyurl.com/lekvp9a>.

²⁷ Alanna McKeeman (2012), *Land Use, Municipal Revenue Impacts, and Land Consumption*, Virginia Tech available at www.baconsrebellion.com/PDFs/2013/02/McKeeman.pdf.

²⁸ Public Interest Projects, *Smart Growth: Making the Financial Case*, presentation to the Sarasota County Board of County Commissioners 2009, available at www.box.net/shared/o4a47iy5th.

district revenue per acre than lower-density sprawl.²⁹ The irony is noted that common perceptions are that high density residential development does not contribute sufficiently to the cost of schools yet research shows such development actually subsidizes low density single family detached development.

²⁹ See Smart Growth America and RCLCO (2015a), *The Fiscal Implications for Madison, Wisconsin*, Smart Growth America www.smartgrowthamerica.org available at <http://bit.ly/1PSiARH> and SGA and RCLCO (2015b), *The Fiscal Implications for West Des Moines, Iowa*, Smart Growth America (www.smartgrowthamerica.org) available at <http://bit.ly/1PC1wVp>.

Table 1.8
Property Tax Revenue per Acre for Selected Land Uses, Fairfax County, Virginia

Land Use	Total Property Tax Revenue per Acre
High rise condos	\$1,307,753
High rise office	\$500,111
Mid-rise condos	\$357,999
Low-rise condos	\$188,878
Hotel with commercial	\$110,884
Super Regional Center	\$85,311
Townhouse	\$83,295
High-rise apartments	\$60,798
Office park	\$52,974
Town center	\$46,509
Low-rise office	\$43,465
Apparel	\$38,302
Drug stores	\$37,888
Regional center	\$37,081
Motel with restaurant	\$36,040
Supermarket	\$35,150
Duplex	\$34,634
Neighborhood Center	\$32,056
Mid-rise apartments	\$29,771
Garden apartments	\$28,140
Community center	\$27,730
Convenience retail	\$26,395
Department store	\$26,197
Service station	\$25,692
Mini warehouse	\$25,126
Restaurant	\$24,876
Discount store	\$21,730
Industrial park	\$21,573
Warehousing	\$19,690
Retirement homes	\$16,131
Auto parking	\$14,198
Low-rise apartments	\$12,550
Single-family	\$11,806

Source: Adapted from McKeeman (2012).

Local governments may not appreciate fully the property tax implications of different development types, especially mixed-use developments in downtowns and other development centers. On a per acre basis, mixed-use developments in downtown and similar locations generate many times more total local government revenue than conventional single-use, lower-density suburban development.³⁰ Moreover, “Compact mixed-use developments in urbanized areas generate property tax revenue at a much higher rate than do single-use developments in more suburban locations”.³¹

Logically, as a community becomes denser, municipalities gain more tax revenue per acre than before development. The revenue increases can be significant as noted by Smart Growth America: “Smart growth could increase Fresno’s tax revenue by 45 percent per acre.” According to a report prepared by Smart Growth America, tax revenue can increase up to 10 times, on average, with the introduction of mixed-use development to a community. The revenues in excess of costs are even larger when developments are built outside of an urban setting. In Nashville-Davidson County, Tenn., Smart Growth may yield up to 42 times more revenue per acre in brownfield as conventional suburban growth in a greenfield area.³²

³⁰ Joseph Minicozzi, “The Smart Math of Mixed-Use Development”, *Planetizen*, January 23, 2012, retrieved November 16, 2017 from <https://www.planetizen.com/node/53922>.

³¹ Peter Katz, “Sarasota's Smart Growth Dividend: Doing the numbers proves that compact, centrally located, mixed use development yields the most property taxes”, *Planning* magazine December 2010, retrieved November 16, 2017, from <https://www.planning.org/planning/2010/dec/sarasota.htm>.

³² Adapted from Benefits of Mixed-Use Development retrieved November 16, 2017, from <http://www.completecommunitiesde.org/planning/landuse/mixed-use-benefits/>. For details, see Smart Growth America, *Building Better Budgets*, May 2013.

Fiscal Benefits of Infill Development and Redevelopment

A key element of smart growth is facilitating infill and redevelopment. According to the Institute for Public Policy and Economic Development:

Infill development involves the development of vacant or underutilized pieces of urban or suburban land into housing strategies... Infill aims to use land more efficiently and spur development in areas that have easy access to existing utilities and transportation options. Much like mixed use development, infill projects can help to revitalize parts of a city.³³

Supporting this perspective is case study research showing that:³⁴

- Infill development costs less to serve per unit and per acre than development on “greenfield” sites;
- Infill development generates the most revenue per unit and per acre than development on “greenfield” sites; and
- Infill development generates the largest surplus on a per unit and per acre basis than development on “greenfield” sites.

We further note that

Infill development encourages a more efficient investment in infrastructure because it encourages growth in designated growth areas where there is existing infrastructure already in place. Additionally, residential infill development can expand homeownership, mixed-use development, and increase a community’s tax base.³⁵

For instance, research at the University of Delaware found that not only did brownfield infill development increase property tax revenue and property values, it also brownfield-

³³ Adapted the Institute for Public Policy and Economic Development, *Infill Development*, 2013, retrieved November 16, 2017 from <http://www.nepahousing.org/wp-content/uploads/2017/07/infill.pdf>.

³⁴ Strategic Economics, Fiscal impact analysis of three development scenarios in Nashville-Davidson County, TN. Retrieved November 16, 2017 from <https://www.smartgrowthamerica.org/app/legacy/documents/fiscal-analysis-of-nashville-development.pdf>.

³⁵ From Benefits of Infill and Redevelopment Activities retrieved November 16, 2017 from <http://www.completecommunitiesde.org/planning/landuse/benefits-of-infill/>.

related employment and wages increased faster than expected. Indeed, for every \$1 invested in (infill) brownfield remediation, \$17 is generated in economic benefits.³⁶

Infill sites are usually more walkable than other areas because many older parts of cities were built when most people moved around by foot, and many destinations are within easy reach. Research has shown that higher levels of walkability are correlated with better real estate performance for both commercial and residential properties. One scientifically validated measure of a location's walkability is Walk Score®, which measures the number of amenities within walking distance of an address, with scores ranging from 0 (car dependent) to 100 (most walkable). An analysis of more than 4,200 properties across the United States found that for office, retail, and apartment properties, higher Walk Scores are associated with higher property values. An office or retail property with a Walk Score of 80 has a market value 54 percent more per square foot than a comparable property with a Walk Score of 20, while an apartment property is worth 6 percent more. A coarse analysis covering 259 cities that considered city-level Walk Scores and regional information on median household income, unemployment, and cost of living found that a 10-point increase in Walk Score is associated with a 5 percent increase in housing prices.³⁷

Infill, redevelopment and even brownfield development enable communities to hedge against economic downturns. The implication is that development closer to urban centers will retain their values better, if not increase in value, relative to development farther away and will thus be a more sustainable fiscal asset. Quoting from EPA's *Smart Growth and Economic Success: Investing in Infill Development* *Smart Growth and Economic Success: Investing in Infill Development*:

³⁶ From Benefits of Infill and Redevelopment Activities retrieved November 16, 2017 from <http://www.completecommunitiesde.org/planning/landuse/benefits-of-infill/>. See also Daniel T. Brown, John M. Laznik, and Edward C. Ratledge, *Economic Impact on Delaware's Economy: The Brownfield Program*, 2010. Retrieved November 16, 2017 from <http://www.dnrec.delaware.gov/dwhs/BAC/Documents/UD%20Economic%20Impact%20Study.pdf>.

³⁷ From *Smart Growth and Economic Success: Investing in Infill Development*, p. 17 based on: Dustin T. Duncan, Jared Aldstadt, John Whalen, Steven J. Melly, and Steven L. Gortmaker, Validation of Walk Score® for Estimating Neighborhood Walkability: An analysis of Four U.S. Metropolitan areas, *International Journal of Environmental Research and Public Health*, 2011 8(11): 4160-4179; Lucas J. Carr, Shira I. Dunsiger, and Bess H. Marcus, Validation of Walk Score for Estimating Access to Walkable Amenities, *British Journal of Sports Medicine*, 2011, 45(14): 1144-1148; Gary Piv and Jeffrey D. Fischer, The Walkability Premium in Commercial Real Estate Investments, *Real Estate Economics*, 2010, 99(2): 195-219; and Emily Washington, Emily, Role of Walkability in Driving Home Values, *Leadership and Management in Engineering*, 2013, 13(3): 123-130.

In the economic downturn that began in 2007, infill development retained its value better than development in outlying areas in many regions. An analysis of home price values for over 30,000 zip codes across 269 metropolitan regions found that for communities within 75 miles of a central business district, the greater the distance from that central business district, the greater the decline in home values during the housing market collapse and the less home values had recovered as of summer 2011.³⁸

Infill, redevelopment and brownfield development locations substantially already have much of the needed infrastructure, unless extraordinary capital improvements are required. Consequently, infrastructure costs can be substantially lower for such development relative to conventional suburban development on a per unit and per acre basis occurring in an undeveloped area.³⁹

However, infill, redevelopment and brownfield redevelopment costs can have considerable up-front costs because of deferred maintenance; reconfiguring land uses, infrastructure and even ownerships; upgrading old facilities to meet new standards, and replacing or expanding existing infrastructure. Work sites can also be more complicated with respect to staging development. Compared to the straight capital costs of doing a new development on in Greenfields, development in these locations can be more expensive in the short term. But this will often be an incorrect comparison- particularly for local government. If development goes to Greenfield sites, local government will still need to address deferred maintenance and other infrastructure needs in infill and redevelopment areas, often upgrading it anyway and then still managing new infrastructure in Greenfield areas. The better comparison is to consider all costs including those associated with infill and redevelopment as those costs will need to be incurred anyway, plus the costs of Greenfield development.

Development Patterns that Improve Property Value

It is not just development patterns that improve value and lower fiscal burdens: being close to key facilities also enhances value and thus increase fiscal benefits. Examples include:

³⁸ From *Smart Growth and Economic Success: Investing in Infill Development*, p. 16, based on Steven E. Sexton, JunJie Wu, and David Zilberman. "How High Gas Prices Triggered the Housing Crisis: Theory and Empirical Evidence." *The Selected Works of Steven E. Sexton*. 2012. Retrieved November 16, 2017 from <http://works.bepress.com/sexton/29>.

³⁹ Adapted from Environmental Protection Agency, *Smart Growth and Economic Success: Investing in Infill Development*, 2014 p. 1, retrieved November 16, 2017 from <https://www.epa.gov/sites/production/files/2014-06/documents/developer-infill-paper-508b.pdf>.

Proximity to Services as a Fiscal Benefit

Property values increase the closer they are to transit stations.⁴⁰

Residential property values also increase with respect to schools proximity.⁴¹

Except for being on the adjacent block, residential development values proximity to fire stations, police precincts/stations, and medical facilities.⁴²

Properties that are closer to downtowns and commercial centers are more valuable than those farther away.⁴³

As a general proposition, property values increase the closer they are to transit stations, schools, public safety facilities, commercial and employment centers. As property values increase so will property tax revenues.

Infrastructure Service Distance Costs and Outcomes

The longer distance water and wastewater facilities are away from property they service, the more costly it is to serve holding density constant.⁴⁴

The farther away properties are from fire stations the greater the risk of loss from fire and the higher the fire insurance costs.⁴⁵

⁴⁰ C. D. Higgins, C. D. and P.S. Kanaroglou. 2015. *40 Years of Modelling Rail Transit's Land Value Uplift in North America: Diverse Methods, Differentiated Outcomes, Debatable Assumptions, and Future Directions*. Transportation Research Board Annual Meeting 2015 Paper #15-4103.

⁴¹ Thomas J. Kane, Stephanie K. Riegg, and Douglas O. Staiger, School Quality, Neighborhoods, and Housing Prices. *American Law and Economics Review* Advance Access published August 9, 2006, doi:10.1093/aler/ahl007

⁴² Trey Dronyk-Trosper, Searching for Goldilocks: The Distance-Based Capitalization Effects of Local Public Services. *Real Estate Economics* 2017 45(3) 650–678.

⁴³ John William Matthews, *The Effect of Proximity to Commercial Uses on Residential Prices*. Georgia State University 2006.

⁴⁴ American Society of Civil Engineers, *Failure to Act: The economic impact of current Investment Trends in Water and Wastewater Treatment Infrastructure*, 2011.

⁴⁵ <https://firechief.iso.com/FCWWeb/mitigation/ppc0001.jsp>,
<https://firechief.iso.com/FCWWeb/mitigation/ppc/3000/ppc3015.jsp> and
<https://firechief.iso.com/FCWWeb/mitigation/ppc/3000/ppc3014.jsp>.

School bus costs increase per student served the farther away students are from schools⁴⁶ while increasing geographic distance from schools lowers attendance rates among students.⁴⁷

Emergency medical transportation costs increase as distance between medical facilities and the patient increases⁴⁸ while mortality also increases.⁴⁹

As the distance between origin and destination increases, the roads costs per trip increases as do the road costs per vehicle mile traveled.⁵⁰

For many facilities (a) as distance increases between the service and those who are served increases the cost of service increases per person served and (b) the amount or quality of service decreases.

⁴⁶ Urban Institute, *Student Transportation and Educational Access*, 2011.

⁴⁷ M. Schlossberg, Greene, J., Phillips, P. P., Johnson, B., & Parker, B. (2006). School trips: Effects of urban form and distance on travel mode. *Journal of the American Planning Association*, 3: 337–346.

⁴⁸ Department of Health and Human Services overview with links in *Ambulance Fee Schedule*, 2016.

⁴⁹ Jon Nicholl, James West, Steve Goodacre, Janette Turner, The relationship between distance to hospital and patient mortality in emergencies. *Emergency Medicine Journal* 2007 24: 665–668. doi: 10.1136.

⁵⁰ Todd Litman, *Transportation Cost and Benefit Analysis*, second edition, retrieved November 13, 2017 from <http://www.vtppi.org/tca/>.

Long-Term Life Cycle Costs and Inherited Obligations

We turn now to facility life-cycle costs and the public burden of inheriting private dedications of infrastructure for public management.

Public Facility Life-Cycle Costs and Density

Over their useful lives, the repair and replacement of public facilities is often comparable to their initial capital cost (adjusting for time). In other words, over their useful lives, taxpayers will pay more than double the cost of roads: Once to build the road, again to maintain and repair the road, and finally to rebuild the road. Literature shows the following relationships between public facility life-cycle costs and density:

Operations and maintenance (O&M) costs are also lower in smart growth development compared to conventional suburban development by about 10 percent.⁵¹

While developers often dedicate to the local government the infrastructure they construct for their development projects, local government inherits O&M costs as well as the long-term costs of repair and eventually replacement. If the dedicated infrastructure is in a smart growth development it will be cheaper to maintain than infrastructure in a conventional development. Therefore, the costs absorbed by the government and taxpayers over time to operate, maintain, repair and replace infrastructure in smart growth development will be lower than the conventional development.

We turn next to the related issue of how these costs affect taxpayers even if developers install infrastructure initially.

⁵¹ Smart Growth America, *Building Better Budgets: A National Examination of the Fiscal Benefits of Smart Growth Development*, 2013.

Inherited Costs of Developer-Provided Infrastructure

Perhaps the single largest, misunderstood component of fiscal impact analysis is the role of inherited costs which are those costs local government “inherits” when a private development is completed and its infrastructure dedicated to the public.

Early subdividers and developers of land would sell lots to buyers without infrastructure. Buyers would then pressure local government into extending utilities and roads to their lots to make them buildable with the expense borne by local taxpayers. Costs were “externalized” from the source of the impact—subdividers and developers—to taxpayers who paid for it. Over several decades, states enabled local governments to withhold subdivision and other development approvals until developers promised to install onsite (and sometimes offsite) infrastructure. Costs were “internalized” to the source of the impact—the development itself. Once installed, developers would “dedicate” infrastructure to local government for perpetual maintenance. Often, it is assumed that the fiscal costs borne by local taxpayers is thus zero since they are not the ones who paid for the initial capital costs, with the corollary assumption that new revenues generated by new development would be more than enough to pay for onsite infrastructure along with all its other impacts.⁵²

This is not true in a large share of instances. For instance, suppose a 100 home subdivision of 7,500 square foot lots with homes averaging \$250,000 each. Table 1.9 shows that the annualized cost of resurfacing subdivision roads are (in this example) nearly a quarter of the property tax revenues generated by the new development. But local governments do not set aside a quarter of the property taxes generated from residential subdivisions to maintain subdivision streets. This leads to the situation that many local governments find themselves in: There is simply not enough money to maintain infrastructure so deferred maintenance accumulates to the point where infrastructure fails, sometimes spectacularly in the case of dams that break or bridges that fall.

In the next section, we will review the economic development benefits of smart growth which is followed by our concluding perspectives.

⁵² James E. Frank, 1989, *The Costs of Alternative Development Patterns: A Review of the Literature*, Urban Land Institute. See also Arthur C. Nelson, 1986, Impact Fees as an Emerging Method of Infrastructure Finance, *Florida Policy Review*. 2(1): 1-6.

Table 1.9
Subdivision Burden on Local Road Costs

Variable	Figure Comment
Average home list price (2018)	\$250,000 https://www.zillow.com/home-values/
Average effective property tax rate	1.00% Assumes no homestead exemption
Average annual property taxes	\$2,500
Assumed lot size	7,500 Smaller than the national average new home lot size
Assumed lot frontage	75 Type of 75-foot by 100-foot smaller subdivision lot
Front foot subdivision road cost	\$300 https://www.michigan.gov/documents/Vol2-40UIP16SubDevCosts-YardCosts-Demolition_121083_7.pdf adjusted for inflation.
Subdivision road cost per home	\$22,500 Paid by developer with future costs inherited by local government
Road resurfacing period	20 Life-cycle period
Resurfacing/rehab share of cost	50% Assumed based on different studies
Annualized cost	\$563
Share of annual tax revenues	22.4%

Source: Calculations by the authors.

Fiscal Impact Assessment Guidance – Fiscal impact analysis must include an assessment of the long term capital costs incurred by new development that are inherited by local government and its taxpayers.

Economic Development Implications of Certain Development Patterns

There are important economic development consequences associated with different development patterns, mostly favoring more dense and integrated land uses over more sprawling and segregated ones.

Literature is clear that more compact development patterns enhance economic productivity in the form of jobs, wages and innovation.⁵³ Research shows for instance that a doubling of population density increases economic productivity by 2 to 6 percent and sometimes the economic thresholds needed to support more economic exchange, increases opportunities for specialization, and induces a faster flow of ideas.⁵⁴ Research on patent activity in metropolitan areas shows that a city with twice the employment density of another will produce 20 percent more patents per capita.⁵⁵

Smart growth strategies can foster the conditions that promote innovation, which is critical for competitiveness in the new economy. Local governments can benefit from making smart growth strategies a key element of a job creation strategy. Developers and investors can benefit from investing in compact, walkable communities where growing, innovative companies will want to locate.

An approach to creating high-skilled and high-paying jobs is to support clusters of interrelated firms, industries, and supporting organizations at the regional level.⁵⁶ Such clustering within mixed-use districts can foster innovation, strengthen entrepreneurship, enhance productivity, and improve regional economic performance. Smart growth strategies have a role to play in developing and maintaining successful clusters by orienting local and regional land use policy, infrastructure investments, and transportation improvements to help effectively connect workers to industry

⁵³ From Environmental Protection Agency, *Smart Growth and Economic Success: Benefits for Real Estate Developers, Investors, Businesses and Local Governments*, 2014, p. 10.

⁵⁴ See Jason Abel et al., Productivity and the Density of Human Capital, *Journal of Regional Science* doi: 10.1111/j.1467-9787.2011.00742.x. 2011 and Antonio Ciccone and Robert Hall, Productivity and the Density of Economic Activity, *The American Economic Review*, 1996, 86(1):54-57

⁵⁵ Edward Glaeser and Joshua Gottlieb, The Wealth of Cities: Agglomeration Economies and Spatial Equilibrium in the United States, *Journal of Economic Literature* 2009, 47(4): 983-1028; and Gerald Carlino et al., *Urban Density and the Rate of Invention*, Working Paper, Federal Reserve Bank of Philadelphia 2006, <http://www.philadelphiafed.org/research-and-data/publications/working-papers/2006/wp06-14.pdf>.

⁵⁶ Mark Muro and Bruce Katz, *The New 'Cluster Moment': How Regional Innovation Clusters Can Foster the Next Economy*, The Brookings Institution 2010, <http://www.brookings.edu/research/papers/2010/09/21-clusters-muro-katz>.

concentrations. Communities can benefit from linking business development and smart growth strategies because companies are seeking locations that support a concentration of both employees and related businesses.

Simply: “(The fiscal logic of smart growth) is straightforward. For 50 years planners and engineers have hypothesized two related ways urban form can decrease public capital and service-delivery costs”:⁵⁷

- *Economies of scale*—because the marginal cost of serving additional population decreases as more residents cluster within a smaller geographic area. Also referred to as “density efficiencies”;⁵⁸ and
- *Economies of geographic scope*—because the marginal cost of serving each additional person decrease as each person locates more closely to existing major public facilities.

Together these theories suggest that more compact and dense settlement reduce government capital and operation costs.

For instance, in terms of capital spending, smarter, more compact growth should entail smaller outlays to extend roadways, sewers, water lines, and other infrastructure to reach each new consumer. This follows from the fact that reducing the distance between houses and businesses can be expected to reduce the necessary length of streets, sidewalks, storm drain systems, and sewer and water lines.

⁵⁷ William Wheaton and Morton J. Schusheim, 1855, *The Cost of Municipal Services in Residential Areas*, Washington, DC: U.S. Department of Commerce. See also John F. Kain, *Urban Form and the Costs of Urban Services*, Cambridge.: Massachusetts Institute of Technology / Harvard Joint Center for Urban Studies, 1967; Gerrit Knaap and Arthur C. Nelson, *The Regulated Landscape: Lessons on State Land Use Planning from Oregon*, Cambridge: Lincoln Institute of Land Policy, 1992 and John Carruthers and Gudmundur F. Ulfarsson, Urban Sprawl and the Cost of Public Services, *Environment and Planning B: Planning and Design* 20 (4): 503–522, 2003.

⁵⁸ Daphne Greenwood, *Does Growth 'Pay for Itself' Through Increased Revenues or Decreased Costs per Person?* Center for Colorado Policy Studies, University of Colorado at Colorado Springs, 2003.

But this is only the fiscal side of smart growth. Largely overshadowed by these more pennywise considerations has been a more positive recognition of the larger economic benefits of reorienting scattershot development (I)n the “knowledge economy” clusterings of talented people, or “human capital,” represent a prime driver of aggregate economic growth (W)hat kind of city works best in economic terms? Building on the theory that knowledge and efficiency matter most, the ... urban (scholars) come very close to endorsing key tenets of smart growth as strategies for competitiveness:

- Ciccone and Hall have shown that average labor productivity increases with the employment density of counties;⁵⁹ and
- Cervero demonstrates that higher productivity levels can be found in cities that are compact—and served by efficiently integrated transportation systems.⁶⁰

⁵⁹ Antonio Ciccone and Robert E. Hall, Productivity and the Density of Economic Activity, *American Economic Review* 86 (1): 54–70, 1996.

⁶⁰ Robert Cervero, *Efficient Urbanization: Economic Performance and the Shape of the Metropolis*, Working Paper. Lincoln Institute of Land Policy, 2000.

Concluding Perspectives

A report by the Chicago Metropolitan Agency for Planning (CMAP) analysis of local fiscal and regional economic impacts provides overall perspectives of the fiscal impacts of different development patterns.⁶¹ Its study focused “on municipal land use decisions and municipal fiscal impacts across 31 case studies, with an additional assessment of regional economic and market impacts. Each case study is set within a unique context of local market conditions, municipal revenue and expenditure policies, and infrastructure capacity and expansion needs -- all of which influence overall municipal fiscal impact. Key findings include:⁶²

- Residential developments can have slightly negative or low municipal fiscal impacts, but high-density, infill residential and mixed-use development can generate very positive fiscal returns.
- Office and industrial developments generally have low to moderate positive fiscal impacts, with costs very dependent upon infrastructure and service impacts. These land uses have a higher potential range of regional economic impacts, with actual impacts driven by tenant types.
- Because of sales taxes, retail developments often generate the highest fiscal benefits for municipalities on a per-acre basis, while economic benefits were lower.
- Mature communities with underutilized infrastructure and a prevalence of infill development generally experience higher net benefits from new development.
- Individual local development decisions can cumulatively lead to overbuilding in regional submarkets or the region as a whole. This can lead to more infrastructure investment than needed to support market demand based development.
- Municipal land use decisions affect the fiscal condition of other jurisdictions.

⁶¹ CMAP, Fiscal and Economic Impact Analysis of Local Development Decisions, 2014 retrieved November 22, 2017 from <http://www.cmap.illinois.gov/documents/10180/82875/Fiscal+Econ+Impacts+Dev+FINAL.pdf/6fc7ed1c-aba7-4d6a-a057-8d251aa7fbd9>.

⁶² Op cit. CMAP: 4

We quote the from the article “Examining the Fiscal Benefits of Smart Growth” published by the Government Finance Officers Association in *Government Finance Review*:

Research clearly shows that smart growth strategies cost less upfront and improve revenue over the long term. Every community is different, and not all communities’ outcomes will be the same; however, this research consistently demonstrated lower costs and higher revenues from development that is designed more efficiently... With at least one-third of local government spending sensitive to the geographic patterns of development, that could amount to billions of dollars each year in savings for local governments nationwide. Most important are the decisions each community makes about its financial future. Every community can use these national figures to inform their decisions about whether to grow in different, perhaps more beneficial, ways.”⁶³

Fiscal impact analysis can help advance smart fiscal outcomes from future development.

Chapter 2 outlines the planning and legal foundations for fiscal impact analysis while Chapter 3 outlines the role of implementing fiscal impact analysis policy. We conclude with Chapter 4 which presents a model fiscal impact analysis ordinance.

⁶³ “Examining the Fiscal Benefits of Smart Growth,” *Government Finance Review*, August 2013: 78-82, retrieved November 16, 2017 from http://www.gfoa.org/sites/default/files/GFR_AUG_13_78.pdf.

Chapter 2

PLANNING AND LEGAL FOUNDATIONS FOR FISCAL IMPACT ANALYSIS

Fiscal impact analysis (FIA) evaluates how a local government's fiscal well-being responds to change, mostly relating to real estate development. Change is usually compared to baseline conditions or alternative scenarios. A key baseline condition is the local Comprehensive Plan; in other words, how does the change affect the Plan? In this section we address the need to create a planning foundation to support FIA.

The Overall Planning Framework

Plans need goals. Such goals may include:

Achieve future land use patterns that maximize economic and fiscal resilience at minimum economic and fiscal cost.⁶⁴

Preserve public goods;

Maximize positive land use interactions and minimize negative ones;

Maximize economic and fiscal benefits for everyone living, working and visiting the community; and

Equitably distribute the costs and benefits of development.

These goals would have principles followed by policies. To advance fiscal benefits, such objectives or principles may include (adapted from the APA Policy Guide on Smart Growth, <https://www.planning.org/policy/guides/adopted/smartgrowth.htm>):

- Efficient use of land and infrastructure
- Creation and/or enhancement of economic value
- A greater mix of uses and housing choices
- Neighborhoods and communities focused around human-scale, mixed-use centers
- A balanced, multi-modal transportation system providing increased transportation choice
- Conservation and enhancement of environmental and cultural resources
- Preservation or creation of a sense of place
- Increased citizen participation in all aspects of the planning process and at every level of government
- Vibrant center city life
- Vital small towns and rural areas

⁶⁴ Adapted from Arthur C. Nelson and James B. Duncan, 1995, *Growth Management Principles and Practices*, American Planning Association.

- A multi-disciplinary and inclusionary process to accomplish smart growth
- Planning processes and regulations at multiple levels that promote diversity and equity
- Regional view of community, economy and ecological sustainability
- Recognition that institutions, governments, businesses and individuals require a concept of cooperation to support smart growth
- Local, state, and federal policies and programs that support urban investment, compact development and land conservation
- Well defined community edges, such as agricultural greenbelts, wildlife corridors or greenways permanently preserved as farmland or open space.

These principles could include discrete objectives such as achieving a specific mix of housing types and tenure, redeveloping target areas, protecting certain lands otherwise in the path of development, and so forth.

Plans have 5- to 20-year (or longer) “planning horizons”, but longer-term plans are also refined about every five years. Recommended texts for comprehensive planning include:

Larz T. Anderson (1995), *Guidelines for Preparing Urban Plans*. Chicago: American Planning Association.

Philip Berke et al. (2006), *Urban Land Use Planning*. Urbana: University of Illinois Press.

Edward J. Jepson, Jr., and Jerry Weitz. (2021), *Fundamentals of Plan Making: Methods and Techniques, second edition*. New York: Routledge.

Eric Damian Kelly (2010), *Community Planning*. Washington: Island Press.

Frederick R. Steiner and Kent S. Butler (2007), *Planning and Urban Design Standards*. Chicago: American Planning Association.

Norman Tyler and Robert M. Ward (2010), *Planning and Community Development*. New York: Norton.

A critical element of those plans is projecting land use and facility needs, and how to pay for public facilities. Later FIA discussions will relate to the need to assess the fiscal impacts of new development on facilities. Recommended texts for infrastructure planning and finance include:

Vicki Elmer and Adam Leigland (2016), *Infrastructure Planning and Finance*. New York: Routledge.

Arthur C. Nelson (2004), *Planners Estimating Guide: Projecting Land Use and Facility Needs*. Chicago: American Planning Association.

Arthur C. Nelson, James C. Nicholas and Julian Conrad Juergensmeyer (2008), *Impact Fees: Principles and Practice of Proportionate-Share Development Impact Fees*. Chicago: American Planning Association.

Arthur C. Nelson, James C. Nicholas, Julian Conrad Juergensmeyer and Clancy Mullin (2022), *Impact Fees: Principles and Practice of Proportionate-Share Development Impact Fees*. New York: Routledge.

The next section explores the legal context of fiscal impact analysis.

Legal Context

From a legal perspective, Fiscal Impact Analysis can best be defined as the process of examining a particular land development proposal and analyzing the fiscal impact it will have on a community. The original, and still most frequently encountered, applications of impact analysis in the development process relate to the fiscal impact on an area's infrastructure. The permitting authorities measure and calculate the impact that the proposed development will have on public infrastructure that will be needed to support or service the proposed development. For example, traffic attraction and generation that will be created by the new development are calculated and translated into the number of lane miles of new roads that will be needed to accommodate the new traffic without lowering existing levels of service. The same is done for relevant infrastructure such as utilities, schools, parks, public building, public safety facilities, and the like. The fiscal impact of those demands is then examined.

The earliest applications of fiscal impact analysis can be found in subdivision regulations' required dedications, since the impact of the platting and subsequent development would necessitate internal improvements such as streets, sidewalks, and drainage easement. However, the infrastructure impact analysis era, according to most commentators, began when capped property taxes combined with decreased or no longer available state and federal infrastructure funding grants left local governments financially desperate to find new sources of revenue for infrastructure. They adopted the concept that development should pay for itself and turned to developer construction and dedication of necessary improvements or developer funding devices such as impact fees and related development charges as conditions imposed as a prerequisite for development approval.

Even though the impact of new development on a community is by no means confined to the physical or "hard" infrastructure items such as roads, parks, schools, and public buildings—or even to infrastructure of any type—local governments were slow to adopt and courts were slow in approving the extension of conditioning approval based on impact analysis beyond "hard" infrastructure. The early extensions of the concept related to what was often called *social* or *soft infrastructure*. Jurisdictions sought to include in the impact analysis such infrastructure items as childcare facilities, public transit, art in public places, and affordable or workforce housing. Requirements that developers construct or fund such "social" infrastructure items were often classified as "mitigation" requirements or fees and in some jurisdictions had relaxed requirements compared to hard impact fees, even though the concept was identical in the sense that impacts of proposed development had to be mitigated or development permission would be withheld.⁶⁵

Environmental impacts of proposed developments were the next to be included in the impact analysis requirement and for which mitigation was required. Open space

⁶⁵ See generally JULIAN JUERGENSMEYER & THOMAS ROBERTS, LAND USE PLANNING AND DEVELOPMENT REGULATION LAW § 9. 9 (Thomson West, 3d ed. 2012).

requirements, protection of prime agricultural land, scenic view, ridgeline protection, and stream bank buffer dedications all fell within the expanded list of the impacts of a proposed development that would be analyzed and turned in to mitigation requirements prerequisite to development approval.

At the same time that the list of impacts to be considered expanded, an accompanying consideration was introduced and combined with fiscal impact analysis requirements. This new concept is often referred to as the *temporal element*. Land use regulation authorities considered what should be developed and where it should be permitted as well as *when* it should be allowed. The introduction of a timing element was usually tied to when infrastructure would be available—for example, when would the proposed development be adequately served by roads, parks, schools, sewer, and water treatment facilities. The Ramapo Plan of Professor Robert Freilich was the seminal application of factoring temporal considerations into the development process, and the Ramapo case⁶⁶ in which he successfully obtained approval of the introduction of the temporal element.

The current state of our land use regulatory system is therefore based on our hundred-year-old zoning system being used to determine what development shall be allowed and where. Our growth management/smart growth system adds fiscal impact analysis considerations to determine whether various types of physical infrastructure are available or need to be partially or totally constructed or funded by the developer. Overlaid with that is the mitigation concept, which includes social and environmental needs such as affordable housing, child care, and climate change protection facilities. Another overlay is an analysis of *when* development should be allowed because of its various other impacts on the community. In Ramapo, for example, development permission was delayed until the developer could demonstrate that adequate infrastructure was available.

Market demand-based permitting would create another overlay or another fiscal impact that needs to be evaluated in the development process. The impact of the proposed development on the market for the type of development proposed—for example, single family homes, apartments, senior living facilities, office parks, condominiums, commercial buildings, and so on—be added to the impact analysis that guides the community in whether development would be permitted. To state it another way, the fiscal impact on the local housing market would be evaluated and development permission would be withheld if those who seek to build cannot establish that there is sufficient market demand for what they propose to build; if they cannot do so, development permission should be withheld until such time as that development demand can be demonstrated.

The following is a recommended text for understanding how market demand based planning and permitting is key to establishing the framework for and rationale of fiscal impact analysis:

⁶⁶ *Golden v. Planning Bd. of Town of Ramapo*, 30 N.Y.2d 359 (1972).

Arthur C. Nelson, John T. Marshall, Julian Conrad Juergensmeyer & James C. Nicholas (2017). Market Demand Based Planning and Permitting. Chicago: American Bar Association. [See especially chapters two and eight.]

Fiscal impact assessment is one tool used to implement comprehensive plans. This section creates the planning foundation for FIA. Indeed, FIA may not proceed if the development proposal is not already in accordance with the local government Comprehensive Plan, unless the FIA is used as part of the process to adjust the plan and other implementing ordinances as needed to allow the development. Nonetheless, depending on state and local circumstances, the FIA may be conducted in the absence of a plan consistency determination. As a tool to implement the Plan, the following sections review how the Plan should address infrastructure issues in a way that guides fiscal impact assessment.

Planning and Infrastructure

In this section, we outline how Plans may address community infrastructure needs and by implication guide fiscal impact analysis. Some of this section is adapted, often verbatim, from the Georgia Department of Community Affairs (GDCA) publication, *How to Address Georgia's Impact Fee Requirements* (2008).⁶⁷ One of the authors of this Model Smart Growth Fiscal Impact Analysis Ordinance (Nelson) helped train GDCA staff about impact fees and then helped draft earlier versions of this publication. The context has been broadened to include fiscal impact analysis.

The local Plan should have a capital improvements element (CIE) otherwise, logically, how can a plan be implemented? The CIE's time frame is usually the same as the Plan horizon. They are *not* a capital improvements program (CIP) that specifies which facilities will be constructed when and where, and how they will be financed. CIPs implement the CIE and are often for two to five year periods.

A key role of the CIE is to assure that public investments are made in accordance with the Plan as this will help guide development so that it, too, is in accordance with the Plan. To be effective, CIEs need the following elements:

- Inventorying of existing facilities;
- Establishing Plan levels of service (LOS) standards to determine excess or deficient capacity of existing facilities;
- Establishing fiscal analysis zones (FAZs) and allocating development to them;
- Establishing LOS standards for FAZs if different from community wide LOS standards;
- Determining the capacity of existing facilities to accommodate future development needs by FAZ;
- Identifying the need for new or expanded facilities to accommodate future development needs;
- Estimating the costs and prospective sources of revenue to finance the CIE; and
- Implementing the CIE through a series of short-term (two to five year) capital improvements programs (CIPs).

Inventory of existing facilities

The first stage of the CIE process is to take stock of the stock of public facilities. This includes quantifying the supply of facilities, such as acre of parks or peak daily wastewater treatment capacity. It should also include an assessment of the age of current facilities and

⁶⁷ See

<http://www.dca.state.ga.us/development/planningqualitygrowth/DOCUMENTS/Publications/ImpactFees/Guide.DIFA.pdf> retrieved November 20, 2017.

the extent to which they may need to be replaced over the Plan horizon. The following is a suggested list of facilities to consider:

- Highways, streets, roads, and bridges;
- Public and mass transit;
- Airports and airways;
- Water supply and water resources;
- Wastewater collection and management;
- Solid-waste treatment and disposal;
- Electric power generation and transmission;
- Telecommunications;
- Hazardous waste management;
- Parks, trails, and open spaces;
- Community centers;
- Libraries;
- Public schools;
- Police;
- Fire and emergency medical;
- Justice facilities, jails and detention centers; and
- Others to be determined based on the nature of the proposed development.

Establishing Plan levels of service (LOS) standards to determine excess or deficient capacity of existing facilities

A distinction should be made between the actual level of service, which can be measured at a given point in time, and the desired level of service. Suppose the community has the equivalent of 5 acres of park per 1,000 residents. In planning future parks, it has three choices:

- Plan future parks to sustain the current level of service;
- Plan future parks to reduce the LOS, to 4 acres per 1,000 residents, for example, in which case fewer parks need to be built in the future than would be needed to sustain the current level of service; or
- Plan future parks to increase the LOS to 6 acres per 1,000 residents, for example, in which case the current inventory of parks needs to be expanded to meet the desired LOS and then sustained into the future.

There is also the possibility that the LOS can vary by geographic area of the community. Perhaps some parts of the community have fewer than 5 acres of parks per 1,000 residents because land is expensive but the dearth of parks may be offset by recreation centers. In other parts of the community, the existing LOS is satisfactory to meet needs even if there are fewer recreation centers. The LOS should be calibrated to meet the needs of geographically similar areas, based on goals, objectives and policies of the Plan.

These geographic areas may be called fiscal analysis zones (FAZs) and would be used to guide fiscal impact analysis. The Plan should identify the LOS for each facility, and determine the extent to which existing facilities have excess or deficient capacity to meet current needs. The extent to which facilities may need to be replaced should also be addressed.

Establishing fiscal Analysis Zones (FAZs) and allocating development to them

Fiscal analysis zones (FAZs) are akin to impact fee service areas but unlike impact fees would be designed for all facilities, including those not supported financially from impact fees. A key purpose of FAZs is to enable analysis of the fiscal impacts of development at a small enough scale to assess the marginal cost impacts of development but large enough to assure that sufficient funds (including exactions) can be collected from and invested into the area. (Marginal versus average cost FIA techniques are reviewed later.) FAZ boundaries should reflect the existing or planned urban form for subareas of the local government. For instance, an FAZ may be created for the downtown and separate ones for first-ring suburbs, new suburban areas, the suburban fringe and rural areas – depending on the size and landscape composition of the local government. Figure 2-1 illustrates FAZs designed for Dublin, Ohio, a suburb of Columbus, Ohio.

Ideally, there would be an FAZ created for each type of facility. The reason is that service areas will vary for most of them. For instance, while a stormwater drainage basin usually serves large land areas, a neighborhood park would serve areas within a mile or two in radius. However, FAZs may include multiple types of facilities as part of an overall planning process that is aimed at steering development to target to achieve more efficient and less costly development patterns, among other reasons.

Second, costs may vary from one part of a jurisdiction to another based on proximity to existing systems, engineering or environmental factors. If revenues collected from infrastructure—such as an average-cost based water or sewer hook-up fee—does not reflect the actual cost of providing the service, leapfrog development may be encouraged. FAZs should be designed to reflect the real cost of providing services to it.

Third, while some FAZs lend themselves to one LOS standard another might lend itself to a different one. For instance, overlapping FAZs for public safety, water, sewer and transportation might take the form of a ring around a growing city where an intensive array of public services would be appropriate, with the balance of the community considered rural with little or no planned growth thereby requiring a different mix of services. Another example would be a special purpose service serving an industrial corridor that might need special wastewater pretreatment facilities or major road expansions. FAZs tailored to planning objectives can be used to assure that the costs of particular facilities are attributable to those land use activities that will benefit from them.

Fourth, while perhaps not necessarily prohibiting development in underserved or environmentally sensitive areas, separate FAZs can be used to assure development elsewhere in the community is not forced to subsidize the extra costs of providing services to those underserved FAZs.

There are also key planning purposes to be addressed in designing FAZs. These include:

- Steer infrastructure away from areas with severe development constraints;
- Phase or prioritize infrastructure investments in different FAZs to advance environmental or land use policies; and
- Minimize problems associated with making older, built-out areas conform to service levels appropriate for developing suburban areas.

The latter point needs more discussion. In some cases, bringing all areas of a community up to a desired service level will be physically impractical. For example, if a downtown business district were included in a road FAZ where a local government proposed to raise the volume-to-capacity ratio of all arterial streets, the city might be forced to condemn some very expensive real estate, remove parking spaces, or narrow sidewalks to an unacceptable width in order to add the required traffic lanes. Conversely, if a community does wish to raise service areas in previously developed areas, there may be benefits to drawing FAZ boundaries to link older neighborhoods with vacant land expected to generate plenty of impact fee revenues for new facilities or improvements. For example, a local government building a community park might want to include both developed and undeveloped land in the same FAZ. In general, FAZ boundaries should encompass the area where a majority of the users of its facilities will live or work.

An alternative is to design FAZs based on:

- Service areas of individual facilities subject to FIA;
- Census geographic units;
- Traffic analysis zones;
- School attendance zones; or
- Other geographic units.

However, FAZs must not be designed based on political representation districts. Instead, they need to be based on objective analysis of the service characteristics of facilities which often cross political representation. Doing so also may reduce the temptation for some elected officials to reward or punish others for political gain.

With respect to each facility assigned to an FAZ, the FAZs should be designated as:

- FAZ-0 meaning that excess capacity exists substantially to serve projected development;

- FAZ-1 meaning there is no capacity in existing facilities to meet the needs of projected development but there exists a plan to provide such facilities concurrent with the impacts of new development; and
- FAZ-2 meaning services are not included in this Plan to serve development during the current Plan horizon.

These broad designations notwithstanding, the same geographic area may be designated at an FAZ-0 for one facility but an FAZ-1 for another and an FAZ-2 for yet another.

The FAZ designations can also address different spatial elements of the same facility class. For instance, for roads, a freeway with excess capacity that serves multiple FAZs may be designated as an FAZ-0 while collector roads serving some FAZs may be classified as an FAZ-1 and local serving streets may be classified as an FAZ-2 suggesting that development proposals may need to include those streets in its proposals rather than relying on local government to plan and finance them during a Plan horizon.

FAZs should be designed reflecting groups of facilities. This was done in Albuquerque, New Mexico, as part of its impact fee program. Major facilities types included public safety, drainage, parks and roads, illustrated in figures 2-2 through 2-5, respectively. Though the impact fee program was based on service areas, their design is consistent with the FAZ concept. Fully served areas were designed based on the extent to which existing facility capacity could serve projected development; in these areas, no impact fees would be assessed since capacity exists to serve development. Partially served FAZs were designed based on planning and engineering objectives to make individual FAZs similar considering projected growth, distance from and accessibility to facilities, and relative differences in costs to provide facilities mostly considering terrain. Impact fees in these partially served FAZs range from modest to the highest, depending mostly on the amount of new or expanded infrastructure needed to serve new development and the cost of building those facilities given the terrain. At the time of FAZ design, parts of the city were without facilities and thus were categorized as underserved, such as Mesa del Sol in the southern part of the city and other areas at the edges of the city limits. The following table illustrates the fully served, partially served and underserved categories of the city's FAZs.

Establishing LOS standards for FAZs when different from community wide LOS standards

Sometimes the LOS for certain facilities will vary because of the location or other characteristics of a jurisdiction. For instance, in sprawling jurisdictions that cannot afford high quality fire protection service everywhere, one FAZ close to the center of the city may be designed for a five-minute response time while another much farther away may be designed for a ten minute response time. Fire insurance ratings will then vary perhaps considerably based on response time. Variations in level of service can be applied to transportation, parks and recreation among other facilities.

Needless to say, decisions about LOS for individual FAZs can have important impacts on the community infrastructure investment, and financial obligations of owners and tenants of new development. In the case of fire station planning, if one FAZ is designed to have a shorter response time than another, its fire insurance premiums could be lower. This may be troublesome politically, leading to decisions to provide all development with the same response time, regardless of the expense. On the other hand, keeping the same response times throughout the community could guide FIAs to show much higher costs per unit of development in low density areas compared to higher density ones, which may influence local government development deliberations.

The rationale for varying the LOS by FAZ should be included in the Plan and then be used to guide the fiscal impact analysis.

Determining the capacity of existing facilities to accommodate future development needs by FAZ

Once LOS standards have been adopted for each FAZ, projections of facilities needs can be calculated based on projections of future development for the FAZ contained in the Plan. If existing facilities can accommodate projected needs, no new facilities may be needed though some may need repairs and rehabilitation. In effect, in these FAZs, the impact of new development on facilities is none; the “marginal” impact is thus zero. The local government benefits from these situations because new development would thus generate net new revenues from a public facility perspective. (New development may impose non-facility related fiscal impacts, however.) These might be classified as an FAZ-0 for those facilities for which existing capacity exists to accommodate future needs.

Identifying the need for new or expanded facilities to accommodate future development needs

In many situations, existing capacity will be unable to accommodate future development needs, and may not even be able to accommodate current needs. In these cases, facilities will need to be planned and financed to meet unmet current needs as well as the needs of future development. Where such plans are made, the FAZ may be classified as an FAZ-1 but if no facilities are planned for some FAZs despite projected needs, they may be classified as an FAZ-2. Table 2-1 illustrates how this was done for Albuquerque.

Estimating the costs and prospective sources of revenue to finance the CIE

The capital improvement element (CIE) should project all new or expanded facilities needed to serve all FAZs over the Plan horizon. It should also identify on maps and tables the nature of the improvements needed, their costs, sources of revenue, and when they would be installed. Chapter 4 reviews key facility planning and financing issues.

Implementing the CIE through a series of short-term (two to five year) capital improvements programs (CIPs)

A capital improvement program (CIP) is a short-range plan, often four to ten years, which identifies when and where capital projects will be installed as well as funding sources. Though the CIP helps implement the long-term Plan, it is also a commitment of the local government budget in the short term.⁶⁸

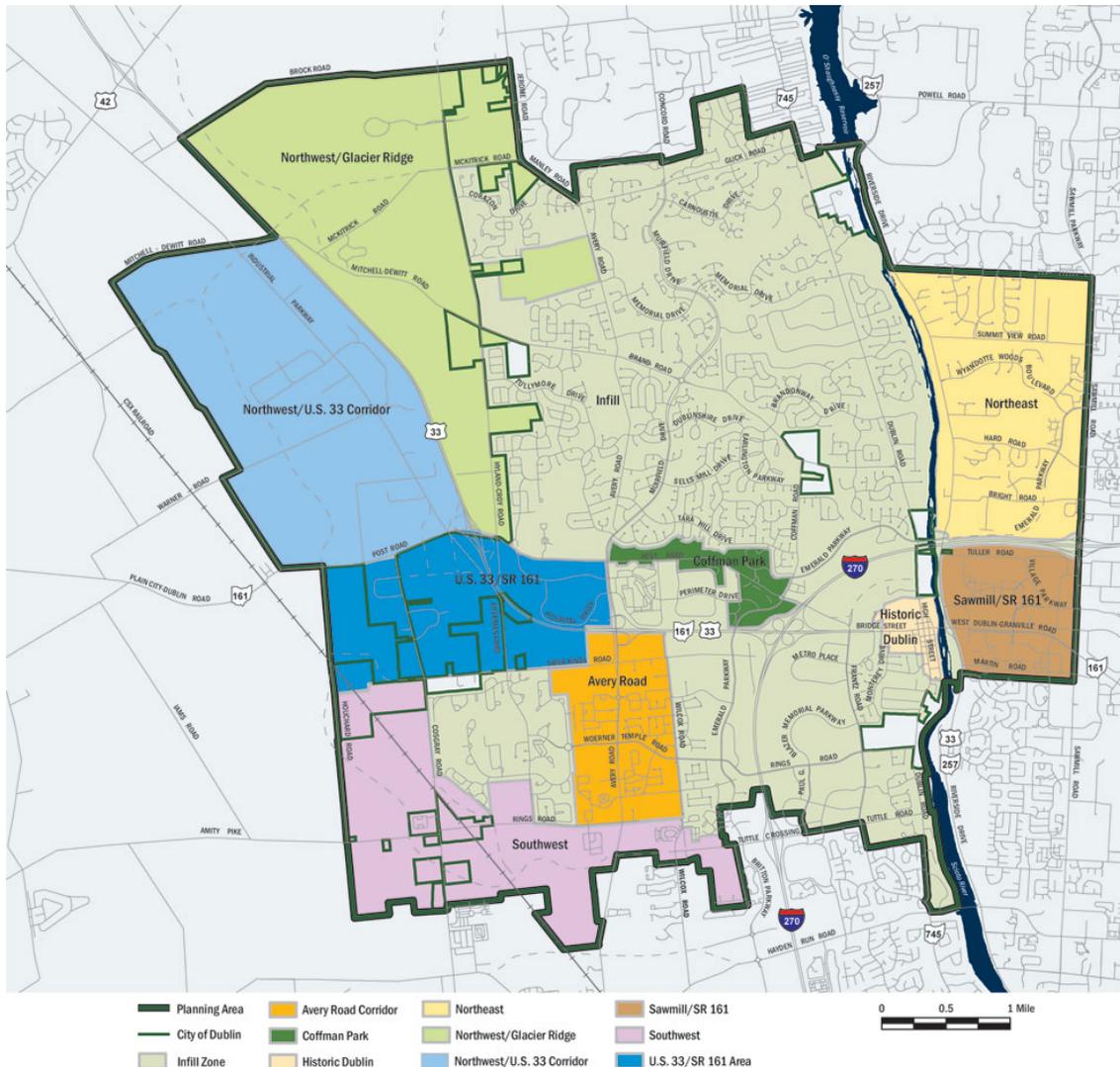


Figure 2-1
Dublin OH fiscal analysis zones

Source: <http://communityplan.dublinohiousa.gov/fiscal-analysis/projectionsfiscal-impact-analysis/>

⁶⁸ For a summary of the CIP process and elements, see <https://opengov.com/article/capital-improvement-plans-101>

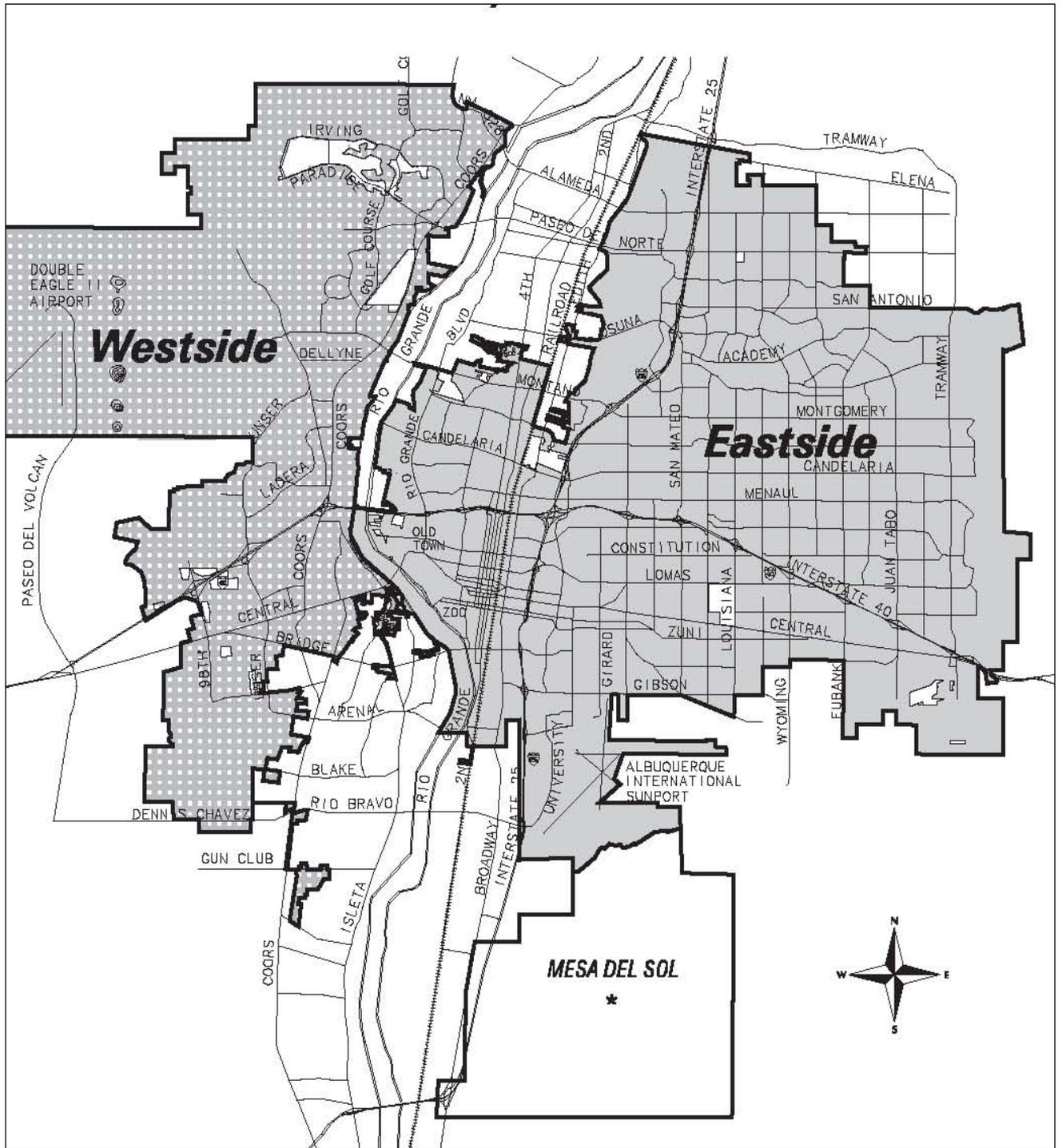


Figure 2-2
Albuquerque public safety service areas (aka fiscal analysis zones); both are partially served. Mesa del Sol is underserved.
 Source: City of Albuquerque

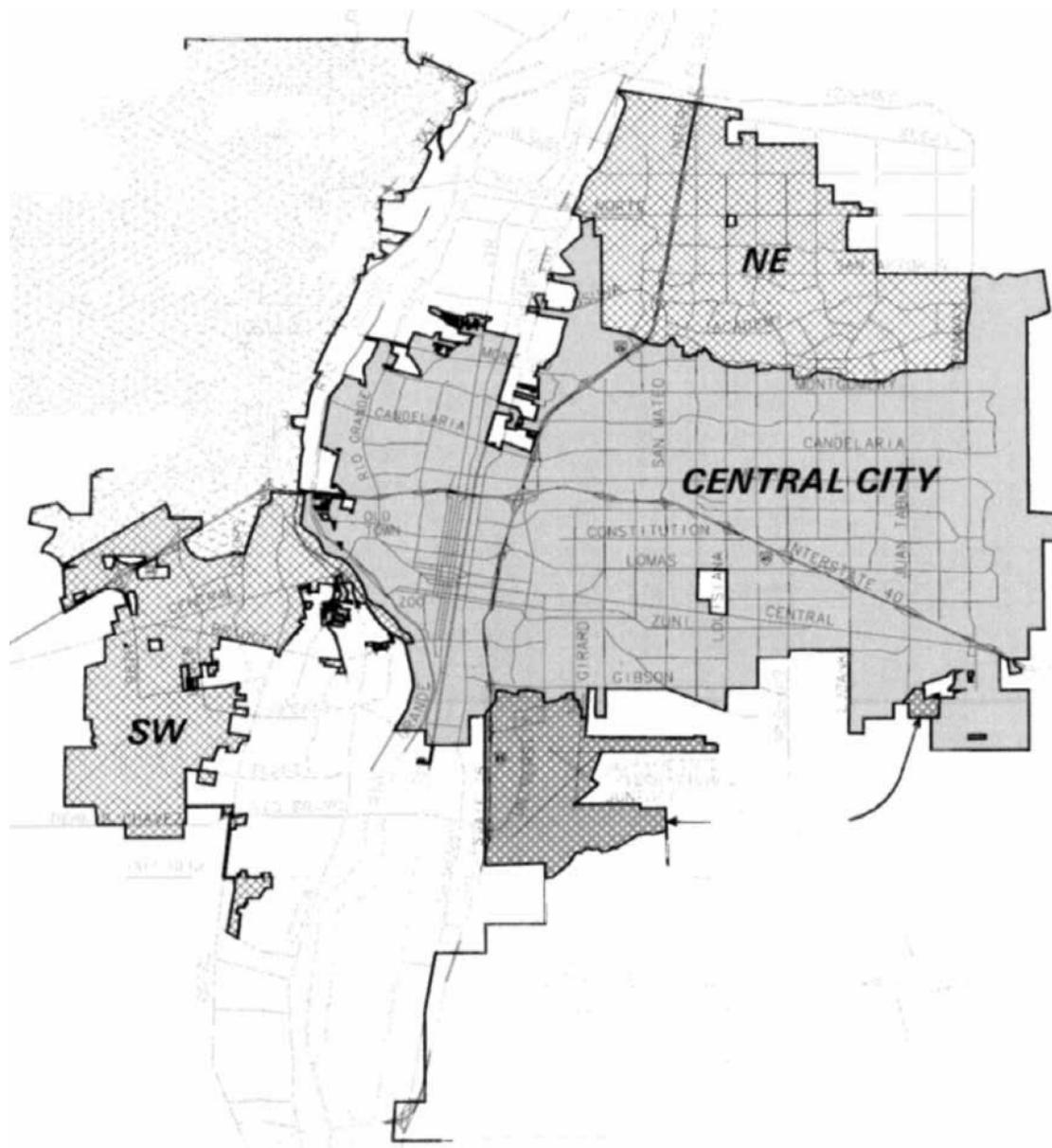


Figure 2-3
Albuquerque drainage service areas (aka fiscal analysis zones). Central city is fully served, all other shaded areas are partially served, and all other areas in the city limits are underserved.
 Source: City of Albuquerque

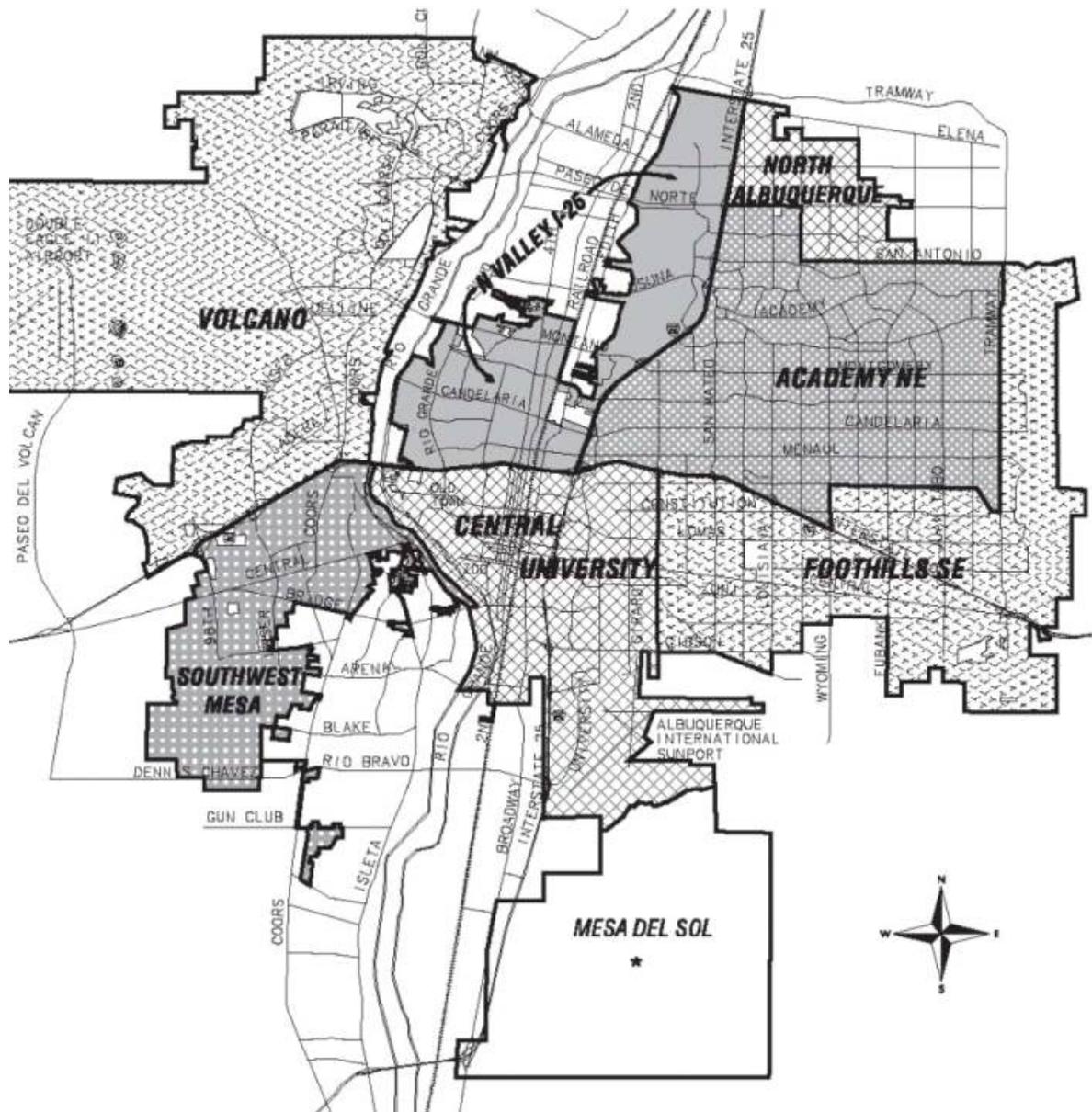


Figure 2-4
Albuquerque park service areas (aka fiscal analysis zones). Central-University is fully served, all other shaded areas are partially served, and Mesa del Sol is underserved.
Source: City of Albuquerque

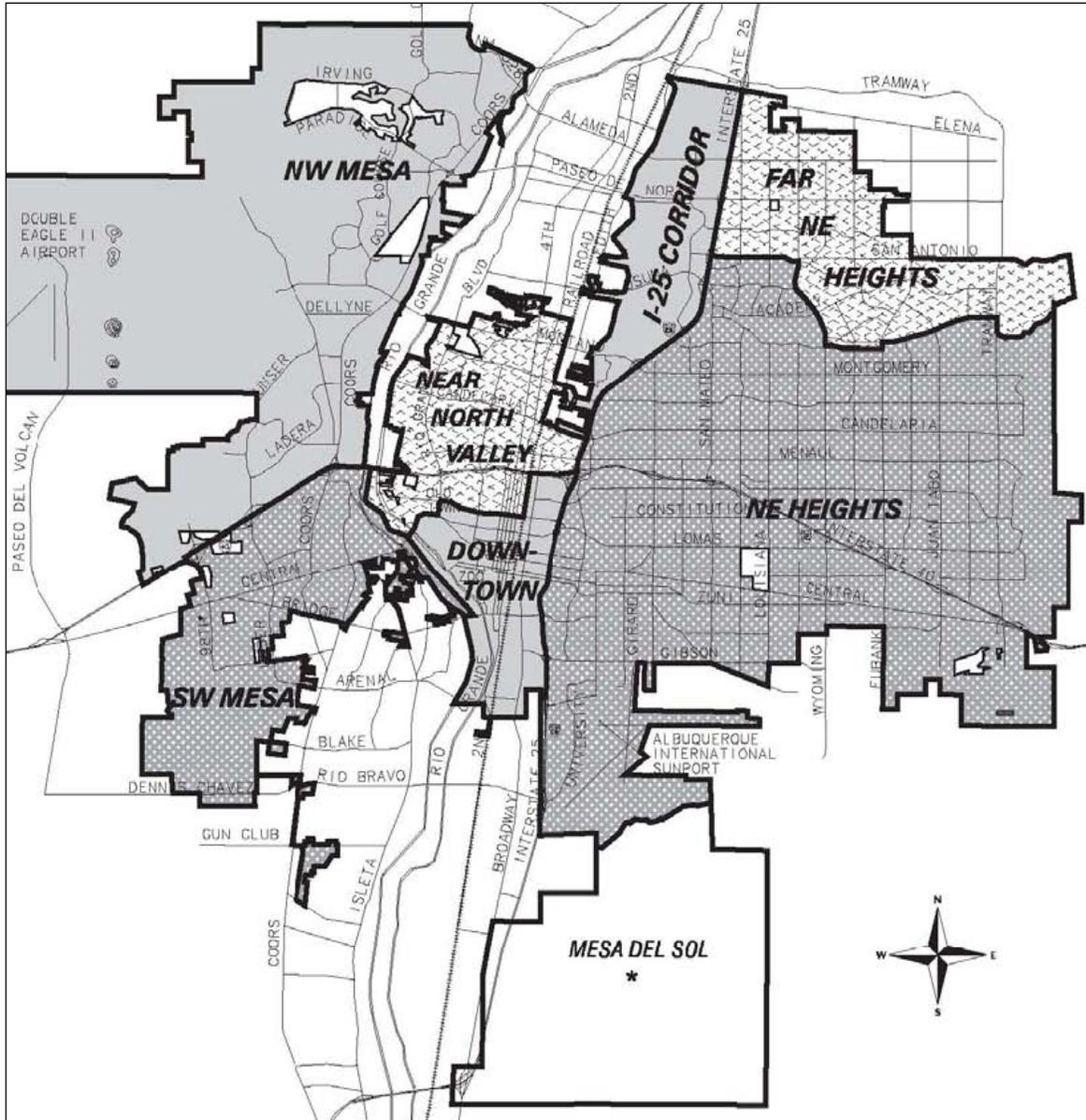


Figure 2-5
Albuquerque road service areas (aka fiscal analysis zones). Downtown, NE Heights and Near North Valley are fully served, all other shaded areas are partially served, and Mesa del Sol is underserved.

Source: City of Albuquerque

Table 2.1
Illustrative Fiscal Analysis Zones

Facility Type	Fully Served	Partially Served	Underserved
Public Safety			
East Side		1	
West Side		1	
Mesa del Sol			2
Drainage			
Northwest		1	
Far Northeast		1	
Central City	0		
Southwest		1	
Tijeras		1	
Rest of City			2
Parks			
Academy NE		1	
Central University	0		
Foothills SE		1	
North Albuquerque		1	
N Valley I-25		1	
Southwest Mesa		1	
Volcano NW		1	
Mesa del Sol			2
Roads			
Downtown	0		
NE Heights		1	
Near North Valley		1	
Far NE Heights		1	
I-25 Corridor		1	
NW Mesa		1	
SW Mesa		1	
Mesa del Sol			2

Source: Adapted from Albuquerque to illustrate application to fiscal analysis zones.

Illustrative Cost Comparisons between Fiscal Analysis Zones and the Community

An example of FAZ-based costs is shown in Table 2.2. In the middle 2000s, the City of Albuquerque created “service areas” (the term FAZ will be used below). They were designed using substantially the criteria noted earlier. Costs per single family unit “net” of revenues were calculated for each FAZ. Facilities included parks and recreation, public safety, transportation, and drainage. Differences are striking. In the central most part of the city, where infill and redevelopment is the most prominent, the total FAZ cost per unit was only 28 percent of the average for the city as a whole. The most expensive area, where new facilities are needed to accommodate nearly all new developments, costs run about 1.5 times the citywide average.

Table 2.2
Comparing Total FAZ to Local Government Average Costs—Albuquerque Example

Service Area	Total FAZ Capital Cost	Percent Total FAZ to Average Cost	Ratio Total FAZ to Average Cost
Central University	\$1,366	28%	3.6
Foothills SE	\$1,633	33%	3.0
Academy NE	\$3,069	63%	1.6
Near North	\$3,911	80%	1.3
North	\$5,344	109%	0.9
Northwest Mesa	\$6,570	134%	0.7
I-25 Corridor	\$7,071	145%	0.7
West Mesa	\$7,280	149%	0.7
Southwest Mesa	\$7,775	159%	0.6
Local Government Average	\$4,891		

Source: Authors.

Let us put this into perspective. If the local government—Albuquerque in this case—based its fiscal impact analysis on city wide average costs, the following may result:

- Development in the lowest cost area of the city would pay 3.6 times more than its costs while development in the highest cost area would pay only 60 percent of its costs;
- Because lower cost development is charged more than its total costs there would be less of it;
- Because higher cost development is charged less than its total costs there would be more of it;
- The effect is that development in lower cost areas subsidizes development in highest costs areas; which results in a

- Fiscal unsustainable outcome as higher-cost development puts increasing stress on local finance.

By designing FAZs to reflect substantial differences in costs between them based on location, terrain, density, and other considerations, local governments can fairly assess fiscal impacts between geographic areas and the local government as a whole.

The Role of Fiscal Impact Analysis in Preparing Plans

While FIA is used to *implement* the Plan, it can also be used to help *prepare* the Plan. The general process works as follows. A community that expects to grow should have some sense of the nature of its growth in terms of population, households, jobs and other characteristics. The community may use fiscal impact analysis tools to compare the fiscal impacts associated with planning scenarios. Suppose a community identifies three scenarios: Trend, Compact, and Sprawl. The Trend scenario would be an extrapolation of past trends into the future. The Compact scenario might assume all future growth occurs on existing developed land as well as infill and redevelopment. The Sprawl scenario might assume mostly new development occurs on Greenfield sites at less density than Trend. For each scenario, FIA can be used to:⁶⁹

- Determine infrastructure demand from proposed development;
- Estimate the capacity of existing infrastructure;
- Determine whether new infrastructure is required for each scenario;
- Estimate capital costs, operations and maintenance, and long-term repair, rehabilitation and replace costs for each scenario;
- Evaluate expected revenues from each scenario and compare them with cost and expenditures; and
- Identify thresholds in land use patterns that may trigger the need for new, larger, or smaller infrastructure.

Spreadsheets can be used to evaluate and compare outcomes for each scenario, and even entertain new scenarios such as something between Trend and Compact.

The next chapter outlines an approach to implementing fiscal impact analysis.

⁶⁹ Adapted from Kate Meis, 2013, Fiscal Impact Tools Change Local Planning, *Government Finance Review* (December): 39-46.

Chapter 3

FISCAL IMPACT ANALYSIS IMPLEMENTATION

Framework for Fiscal Impact Assessment – Applicability

The FIA provisions of the Comprehensive Plan should be applicable to any change in the Comprehensive Plan affecting development, particularly:

- Comprehensive Plan updates;
- Comprehensive Plan amendments; and
- Annexations requiring amendments to or otherwise affecting the Comprehensive Plan.

The above notwithstanding, development otherwise in accordance with the Comprehensive Plan should not be subject to an FIA. The assumption here is that the Plan itself is based on the smart growth goals and principles noted earlier. The term “development” means the carrying out of any building activity or mining operation, the making of any material change in the use or appearance of any structure or land, or the dividing of land into three or more parcels. The following activities or uses shall be considered “development”:

- A reconstruction, alteration of the size, or material change in the external appearance of a structure on land;
- A change in the intensity of use of land, such as an increase in the number of dwelling units in a structure or on land or a material increase in the number of businesses, manufacturing establishments, offices, or dwelling units in a structure or on land;
- Clearing of land as an adjunct of construction;
- A change in use of land or structure from a use within a class specified in an ordinance or rule to another use in the same class; or
- Or any other action identified by the local government as constituting development for purposes of conducting a fiscal impact analysis.

The following development should be exempt from FIA:

- Affordable housing pursuant to definitions of federal and state governments, and local definitions if any;
- Development within redevelopment areas as specified elsewhere in this plan such as but not limited to tax increment financing districts, empowerment zones, enterprise zones, and areas for which special area plans have been prepared, provided development is otherwise in accordance with plans for those area; and
- Other development or development in target areas as determined by the Governing Body to address unforeseen development opportunities that are in

substantial accordance with this Plan and otherwise advances the public health, safety and general welfare.

Prior to granting development approval, the local government should have prepared an FIA of the proposed development. The FIA should address the revenues expected to be received and costs borne by local government, including school districts, with respect to each infrastructure service noted in Chapter 2

However, if there is a determination that excess facility capacity exists to serve the needs of development for any given item above, and provided the development is otherwise in accordance with the plan, the FIA shall not include that item.

Unless otherwise provided elsewhere in this Plan, a development proposal in a Fully Served FAZ (FAZ-0) should be exempt from an FIA provided it is found to be in accordance with this Plan and otherwise advances the public health, safety and general welfare. If an FIA is required, it will be subject to guidelines provided in this section of the Plan.

Unless otherwise provided elsewhere in this Plan, a development proposal in a Partially Served FAZ shall not be exempt from an FIA unless the planned facilities are fully funded (including funding in whole or in part anticipated from new development) and the proposed development is found to be in accordance with this Plan and otherwise advances the public health, safety and general welfare. If any of these provisions cannot be met, an FIA will be required subject to an FIA according to guidelines provided in this section of the Plan.

Unless otherwise provided elsewhere in this Plan, a development proposal in an Underserved FAZ shall be subject to an FIA according to guidelines provided in this section of the Plan.

The FIA required in this Comprehensive Plan should lead to the finding that proposed development results in positive fiscal revenue (i.e. when costs of serving the proposed development are less than the revenues contributed by it) with respect to one or more infrastructure services, or negative fiscal revenue (i.e. when costs of serving the proposed development exceeds the revenues contributed by it) with respect to one or more infrastructure services. The determination by itself shall not be conclusive of the development decision. In addition to the fiscal determination, the decision to approve, deny, or approve the proposed development with conditions shall include consideration of consistency with the comprehensive plan, the extent to which the proposed development meets other broad public interests such as affordable housing and development in certain areas noted above, and the extent to which the proposed development advances public health, safety and general welfare.

Framework for Fiscal Impact Analysis

The precise methodology for FIA is not addressed in the Comprehensive Plan. The implementing ordinance will establish the procedures for analysis, which may vary depending on the nature of the proposed development. Here, a framework is provided to guide analysis.⁷⁰

FIA Scale

FIA is performed at one or both of these scales as determined by the FIA Administrator:

At the jurisdiction wide scale which “allows examination of alternative development scenarios by focusing upon land use patterns, growth rates, service costs, and capital facility spending.”⁷¹

Or

At the FIZ scale to determine the effects of development proposals on the FIZ. Notwithstanding, FIA can also be applied to more than one FIZ or the jurisdiction as a whole if its impacts are deemed by the FIA Administrator as requiring such analysis.

FIA Methodologies

FIA often uses average cost methods:

Average cost is most often used in fiscal impact analysis because it is easy to apply and appears more equitable to public officials and citizens. Costs assigned to new development are based on the average cost of providing the service per unit (i.e., per household, student, or employee) times the number of new service units. This method works best when the project represents an incremental demand for services within the current capacity of local infrastructure.⁷²

Common average cost approaches include:

Per capita multiplier technique. The per capita technique is applied on a jurisdiction-wide basis for most if not all major service providers such as municipalities, school

⁷⁰ Assessing the Fiscal Impact of Local Development: A Survey
<http://krypton.mnsu.edu/~jp5985fj/courses/609/Fiscal/Fiscal1.html>.

⁷¹ Quoted from Zenia Kotval and John Mullin, *Fiscal Impact Analysis: Methods, Cases, and Intellectual Debate*, Cambridge MA: Lincoln Institute of Land Policy, 2006, p. 1.

⁷² Op cit at 4.

districts, special districts and county agencies government. Growth-induced public service costs are determined by multiplying the per capita cost by the total number of people, employees, and pupils introduced by development.⁷³

Service standard technique. The service standard technique uses averages of manpower and capital facility service levels, often obtained from the US Census of Governments, for municipalities and school districts of similar size and geographic location. Annual capital expenditure is obtained through capital-to-operating service ratios derived from census information and applied to the total local operating cost per employee. This approach uses mean employment levels and median capital-to-operating ratios obtained at a regional level.⁷⁴

Proportional valuation technique. The proportional valuation technique is often used to estimate the impacts of nonresidential development. The technique assigns costs attributable to the share of the real property value that a nonresidential use adds to a community's property tax base, for instance.⁷⁵

A key disadvantage of the average cost approach is assuming that a development's impacts in one part of the local jurisdiction will be the same as any other. Yet costs can vary considerably if the proposed development would occur in an FAZ 2, for instance, when conceivably all the rest of the jurisdiction is designated as an 0 FAZ 0. The geographic limitations of the FIA average cost approach are substantially overcome when applied to only the FAZ within which a development is proposed, or perhaps nearby FAZs as well if the FIA Administrator determines that more than one FAZ will have fiscal impacts.

Other techniques are available as well, including hybrids. Without being exclusive, sources of fiscal impact methodologies include the following:

Bise, L.C. II (2010). *Fiscal Impact Analysis: Methodologies for Planners*. American Planning Association.

Burchell, R. W. & D. Listokin (1978). *The Fiscal Impact Handbook*. Center for Urban Policy Research, Rutgers University.

Edwards, M. & J. Huddleston (2010). "Prospects and Perils of Fiscal Impact Analysis," *Journal of the American Planning Association*, 76 (1): 25-41.

Kotval, Zenia and John Mullin (2006), *Fiscal Impact Analysis: Methods, Cases, and Intellectual Debate*, Cambridge MA: Lincoln Institute of Land Policy

⁷³ Op cit at 4.

⁷⁴ Op cit at 6.

⁷⁵ Op cit at 8.

These and other resources notwithstanding, FIA must be designed to estimate full costs and net revenues attributable to the proposed development either based on its specific location or location within one or more Fiscal Analysis Zones, but in any event not based on average costs and revenues applicable to the local government as a whole.

FIA Iterations

FIA is often part of the larger, and sometimes confused with, economic impact analysis – EIA. In EIA, three stages of economic impact are often analyzed. They are:

Direct effects such as when a new firm moves into the jurisdiction, bringing with it 100 new employees. If those workers earn \$100,000 each they generate \$10 million in new income to the jurisdiction. They will buy homes, buy items, and pay taxes. If each worker contributes \$5,000 each back to the jurisdiction in local property and sales taxes, the direct revenue effect is \$500,000.

Indirect effect occurs when those new workers support 50 other workers ranging from suppliers to the firm to teachers for the new workers' children. Assuming for simplicity that they all earn \$100,000 and they also contributed \$5,000 each back to the jurisdiction in local property and sales taxes, the indirect revenue effect is \$250,000.

Induced effect occurs when those new indirect workers themselves support new workers who then support new workers and so forth. The induced effects are often calculated over 30 or so iterations. If the induced total another 50 workers earning, for simplicity, \$100,000 each and also paying \$5,000 each back to the local jurisdiction in total revenues, they contributed another \$250,000 in revenues.

The total economic impact of 100 new jobs is thus a total of 200 jobs, or a “multiplier” of 2.0. The total fiscal impact of those workers is \$1 million in new revenues. But that may assume they all live and spend all their money within the same jurisdiction.

FIA is commonly limited to direct effects for two reasons. First, direct effects are the most obvious and easiest to calculate. But second, unless the new development proposal is truly unique in adding a new dimension to the local economy, chances are it is merely an indirect or induced outcome of other development in the same jurisdiction or even outside the jurisdiction.

If the FIA includes economic analysis such as determining the extent to which the proposed development contributes to, or weakens, local agglomeration economies, the FIA Administrator will determine the method by which such analysis is conducted.

FIA ADMINISTRATOR

There shall be an FIA Administrator whose office will manage all FIA processes for the jurisdiction. The FIA Administrator, as identified in the Official City Organizational Chart, is designated to carry out the general administration of all FIAs. The FIA Administrator shall have the responsibility to carry out the following:

Determine when an FIA is necessary pursuant to other sections of the Plan and the implementing ordinance;

Determine the scale of the FIA pursuant to other sections of the Plan and the implementing ordinance;

Determine the facilities for which an FIA is required pursuant to other sections of the Plan and the implementing ordinance;

Determine the methodology(ies) to be used in the FIA pursuant to other sections of the Plan and the implementing ordinance;

Determine which FAZs are subject to the FIA; and

Determine the iterations of analysis to be used from among direct, indirect and induced methodologies;

Determine the entity(ies) to conduct the FIA pursuant to the following considerations:⁷⁶

FIAs are often prepared by private sector entities such as consulting firms, university professors, or accounting firms. Some agencies have the planning or finance staff expertise to do the analysis in-house. Typically, the analyst has a background in public finance, economics, or urban planning. An outside consultant brings the benefit of objectivity to the analysis and can sometimes do the work more efficiently than if the staff takes the lead role. An interdepartmental work group should be assembled to advise the consultant or staff and review the work product. At a minimum, representatives from the local government as determined by the FIA Administrator should be included;

Because of the wide range of methodologies available and their applications vary based on individual project circumstances, the methodology appropriate to analyze the proposed development shall be identified by the Fiscal Impact Analysis Administrator, provided such analysis is designed to estimate full costs and net revenues attributable to the proposed development either based on its specific location or location within one or more Fiscal Analysis Zones as determined by the

⁷⁶ Adapted from L. Carson Bise II, *Fiscal Impact Analysis: Methodologies for Planners*, American Planning Association 2010, p. 37.

Fiscal Impact Analysis Administrator, but in any event not based on average costs and revenues applicable to the local government as a whole; and

Other duties as may be assigned from time to time by the Governing Body.

The final chapter provides a model fiscal impact analysis ordinance that may be adapted by local governments based on state and local circumstances, and smart growth objectives.

Chapter 4

MODEL FISCAL IMPACT ANALYSIS ORDINANCE FOR SMART GROWTH

This chapter poses a model fiscal impact analysis for smart growth. We attempted to build on existing ordinances, statutes, and administrative procedures elsewhere. None exist. Of the 15 states with state environmental protection acts, none include fiscal impact analysis requirements. Of the dozen or so local governments that mandate fiscal impact assessment, none provide details.⁷⁷ This chapter appears to be the first attempt to offer a model fiscal impact assessment ordinance. As such, it will need to be changed over time as experience is gained in the field.

Model Ordinance

- 1. Legislative Findings. The ordinance should include legislative findings in which the governing body of the local government determines that fiscal impact analyses meet the objectives previously established in the community's _____ plan and other guiding documents. If applying this model ordinance to a specific area, the ordinance should include legislative findings that create relevant boundaries and set out objectives for the area in question. The ordinance also should include a finding that the conduct of fiscal impact analyses for certain new developments will promote and protect public health, safety, and welfare, while achieving desired development.***

Section One: Legislative Findings.

The elected Legislative Body [insert the proper name of the local government's legislative body such as Council, Commission, Board of Commissioners, hereinafter "Governing Body"] of the City/County of _____, determines and declares that:

- The City/County of _____ must exercise due diligence in allowing new development to be assured that the costs to be borne by the community and the revenues to be received are in accord with the broader community objectives of fiscal soundness and while meeting community needs for environmentally sound development, employment opportunities, and affordable housing. This must be done in order to promote and protect the public health, safety and welfare;
- The City/County of _____ finds that the fiscal costs and revenues of new development varies with respect to such factors as density, location, land use mix, and configuration of development among others, and that the full fiscal

⁷⁷ We are indebted to Nicholas J Roger, a Georgia State University law student, for much of this research. We are also indebted to Kevin Shepherd and A.J. Fawver at Verdunity for their review.

cost of development must be considered in light of these factors, and further that fiscal costs and revenues must not be based on community wide averages but particularized to the development and its immediate vicinity based on guidance as provided below;⁷⁸

- C. The conduct of fiscal impact analyses is one of the preferred methods of ensuring that development is consistent with prudent fiscal management; and
- D. The report entitled "Fiscal Impact Modeling for the of the City/County of _____"⁷⁹, dated _____, sets forth a reasonable methodology and analysis for the determination of the fiscal impact of new development on the need for and costs for additional Facilities and Services to meet the needs of new development in the City/ County.

2. Short Title, Authority and Applicability. It is generally recognized as good practice for an ordinance to include a recitation of the authority upon which it is based. In the case of fiscal impact analyses, the clause may cite to the home rule power of counties, the land use and regulatory powers of counties/cities, state statutory/constitutional provisions, and relevant case law history.

Section Two: Short Title, Authority and Applicability.

- A. This ordinance shall be known and may be cited as the City/County of _____ "Fiscal Impact Analysis Ordinance."
- B. The governing body of the City/County of _____ has the authority to adopt this ordinance pursuant to Article _____ of the Constitution of the State of _____, and Chapter _____ of the _____ Statutes.
- C. This ordinance shall apply within the corporate limits of the City of _____ [or in the unincorporated area of _____ County and in the incorporated areas of _____ County to the extent permitted by Article _____ of the Constitution of the State of **.]

3. Intent and Purposes. The local governing body should state its purposes and goals sought to be achieved by the Ordinance. For example, the local governing body states that it is using its police power in enacting the Ordinance to implement its _____ plan and other guiding

⁷⁸ There may be reference to the *Guide to _____ Growth Fiscal Impact Analysis with Model Fiscal Impact Analysis Ordinance* within which this model ordinance is included.

⁷⁹ As the model ordinance does not include specifics on conducting fiscal impact analysis, the local government will need to provide guidance appropriate to its context.

documents to protect its taxpayers from certain fiscal burdens that would otherwise be imposed on them by Development Approvals.

Section Three: Intents and Purposes.

- A. This ordinance is intended to assist in the implementation of the City/County of _____ plan.
- B. The purpose of this ordinance is to regulate the use and development of land so as to assure that new development does not result in an adverse fiscal burden to be borne by the taxpayers of _____ City/County.

4. Rules of Construction. Many ordinances contain rules of construction which facilitate the drafting and understanding of the ordinance. Frequently adopted rules are set forth below.

Section Four: Rules of Construction.

- A. The provisions of this ordinance shall be liberally construed so as to effectively carry out its purposes in the interest of the public health, safety and welfare.
- B. For the purposes of administration and enforcement of this ordinance, unless otherwise stated in this ordinance, the following rules of construction shall apply to the text of this ordinance:
 - 1. In case of any difference of meaning or implication between the text of this ordinance and any caption, illustration, summary table, or illustrative table, the text shall control.
 - 2. The word "shall" is always mandatory and not discretionary; the word "may" is permissive.
 - 3. Words used in the present tense shall include the future; and words used in the singular number shall include the plural, and the plural the singular, unless the context clearly indicates the contrary.
 - 4. The phrase "used for" includes "arranged for", "designed for", "maintained for", or "occupied for".
 - 5. The word "person" includes an individual, a corporation, a partnership, an incorporated association, or any other similar entity.
 - 6. Unless the context clearly indicates the contrary, where a regulation involves two or more items, conditions, provisions, or events connected by the conjunction "and", "or", or "either...or", the conjunction shall be interpreted as

follows:

- a. "And" indicates that all the connected terms, conditions, provisions or events shall apply.
 - b. "Or" indicates that the connected items, conditions, provisions or events may apply singly or in any combination.
 - c. "Either...or" indicates that the connected items, conditions, provisions or events shall apply singly but not in combination.
7. The word "includes" shall not limit a term to the specific example but is intended to extend its meaning to all other instances or circumstances of like kind or character.

5. Definitions. Ordinances typically include a definitional section for words and phrases used precisely and frequently throughout the ordinance to lessen the complexity of the ordinance and facilitate its understanding.

Section Five: Definitions.

- A. "Developer" is a person or entity commencing a land development activity which modifies land and constructs either permanent or temporary structures and which requires the issuance of a development approval or permit by the City/County.
- B. "Capital Costs" includes preliminary engineering and planning, land acquisition, land acquisition costs, land improvements costs, including both on-site and off-site cost, construction costs, financing costs, landscaping, and any other costs associated with the costs of capital improvements defined herein as any improvement with a useful life of more than _____ years.
- C. "Capital Preservation Costs" include dedication costs and mean the following:
 1. "Operations and Maintenance" cost include the costs of personnel including fringe costs to operate and or maintain each relevant facility or service as well as the cost of materials, equipment and supplies necessary to operate and/or maintain the relevant facility or service, and typically involves the routine, annual cost of facility upkeep such as street cleaning, fire station utility bills, and routine servicing of vehicles;
 2. "Repairs" means the costs of correcting damage caused in routine use such as vehicle dents, or potholes in streets and roads;
 3. "Rehabilitation" means the costs of upgrading facilities to meet current needs or standards but not replacement such as interior remodeling and road resurfacing; and

4. "Replacement" means the replacement or total rehabilitation of a facility such as totally rebuilding a fire station, replacing a fire engine or rebuilding a road.
- D. "Dedication Costs" means the operation and maintenance, repair, rehabilitation or replacement costs incurred or to be incurred by the local government when capital facilities installed by a Developer are then dedicated to the local government.
- E. "Development" means any change in land use or any construction of buildings or structures or any change in the use of any structure requiring a development approval.
- F. "Development Approval" means any regulatory approval that would allow the development of land issued by the City/County including the extension of an existing development approval. It includes amendment to the comprehensive plan, rezonings, plat approvals, site plan approvals, and planned unit developments.
- G. "Facilities and Services" may include the following:
1. Roads, streets and other modes of transportation;
 2. Potable water, wells, treatment and distribution lines and facilities;
 3. Waste water collection, treatment and disposal facilities;
 4. Park, recreation, and open space areas, including land, land improvements, buildings and equipment;
 5. Fire protection facilities and equipment;
 6. Law Enforcement facilities and equipment;
 7. Schools;
 8. Public buildings, such as administrative or judicial buildings and space; and/or
 9. Any other facilities as determined by the Fiscal Impact Analysis Administrator.
- H. "Fiscal Impact Analysis Administrator" means the city/county manager or any official(s) as may be designated to carry out the administration of this ordinance.
- I. "Fiscal Analysis Zone" means a geographic area within which one or more facilities and services noted in Five (G) are provided. Fiscal Analysis Zones shall be designated on the basis of sound planning or engineering principles or both considering reasonably homogeneous cost characteristics such that areas of higher costs of facilities per acre of development or other unit of impact perhaps because of terrain or density are distinguished from areas of lower costs of facilities per acre or other unit of impact.
- J. "Present Value" means the current value of past, present, or future payments, contributions or dedications of goods, services, materials, construction, or money based on discount rates as determined by the Fiscal Impact Analysis Administrator.

6. Imposition of Fiscal Impact Analysis requirement. A fiscal impact analysis ordinance will impose the requirement and identify at what point in the development process the analysis must be performed, such as rezoning, site plan review or subdivision approval, or some other point.

Section Six: Imposition of Fiscal Impact Analysis Requirement.

- A. Any person or entity who, after the effective date of this Ordinance, seeks to develop land within _____ City/County, by applying for a Development Approval is hereby subjected to the requirement for the preparation of a fiscal impact analysis unless exempted from this requirement by this ordinance.
- B. No Development Approval for any activity requiring a fiscal impact analysis shall be issued unless and until the fiscal impact analysis hereby required has been prepared and accepted by the City/County.
- C. No extension of a Development Approval issued prior to the effective date of this ordinance, for any activity requiring a fiscal impact analysis pursuant to this ordinance shall be granted unless and until the fiscal impact analysis hereby required has been prepared and accepted by the City/County.
_____ City/County may establish and from time to time amend a fee schedule to help mitigate the cost of implementing this Ordinance.

7. Preparation of the Fiscal Impact Analysis. A fiscal impact analysis ordinance may incorporate and adopt a fiscal impact analysis study which may serve as a model and provide a factual basis for analyses prepared pursuant to the ordinance. Though it is recommended that a fiscal impact analysis guide be developed separate from the ordinance, as noted earlier, the methodology may be actually placed in the ordinance or in a report that is referenced in the ordinance. Many communities elect to have the fiscal analysis prepared and/or reviewed by their staff or by an independent agency selected by the community. A fiscal impact ordinance could authorize a Developer to submit its own calculation of fiscal impact and to provide for a determination by staff as to the accuracy and adequacy of the Developer submission. An appeal process should be specified.

Section Seven: Computation of the Fiscal Impact Analysis.

- A. Prior to the preparation of a fiscal impact analysis, the Developer shall notify the City/County of its intent to develop and a pre-application meeting shall be scheduled by the Fiscal Impact Analysis Administrator. At this meeting, the parties shall review:
 - 1. Which agency or entity will prepare the fiscal impact analysis and how and by whom that entity will be compensated;
 - 2. The Facilities and Services listed in section Five.G., above, that are to be included in the fiscal impact analysis, the period for the analysis to cover,

- and the general approach and data sources to be used;
3. The City/County administrator or his/her designee shall prepare a letter setting out the agreements that have been reached in the application meeting or meetings and provide that letter to the Developer. The Developer is to sign that letter and return it to the City/County administrator or, alternately, suggest alternatives or modifications to the county administrator. The City/County administrator may accept or reject any suggested modifications. That rejection may be appealed to the _____ City/County commission. If the final letter prepared by the City/County administrator is not signed and returned in 30 days after posting of the final letter, the application shall be considered inactive.
- B. The Developer shall provide to the agency or entity that will prepare the fiscal impact analysis the following:
1. The name of the development, the location of the development, the owners and Developers of the development;
 2. The number of total acres and the appraised value thereof, the acres to be developed, the acres of land to be preserved in its natural state, and the number to be used as public space;
 3. The existing and proposed zoning, if applicable;
 4. Whether the development will be located solely within municipal boundaries, county boundaries, the extra-territorial jurisdiction, or a combination;
 5. Whether annexation will be sought by the developer;
 6. The number and type of dwelling units to be constructed along with the anticipated absorption of construction over the life of the development;
 7. The prices or rents for the residential units to be constructed along with documentation to support those prices or rents;
 8. The expected occupancies of residential units by type of residence including the projected number of occupants and school-aged children;
 9. The number of square feet of non-residential floor space to be absorbed by year and by type of use (such as commercial, industrial, office) and the anticipated prices or rents of those spaces along with documentation to support those prices or rents;
 10. The number of employees at such non-residential areas and their estimated average annual incomes from those jobs;
 11. Any donations or dedications of property or funds to offset capital or operating costs, indicating type of dedication or donation and when such dedication or donation would be received;
 12. The existence of any improvement district or similar entity that will assume some or all costs of facilities or services, along with proof of the existence of such a district and the costs that would be assumed;
 13. The existence of any private entity such as a homeowners' association that will assume some or all costs of facilities or services, along with proof of the

existence of such an entity or that such an entity will exist and the costs that would be assumed; and

14. Any other material or information that the Developer would wish to be considered.

If a Developer does not provide some of the information listed above, the preparer of the fiscal impact analysis may provide generally accepted information as alternatives to development provision.

- C. The Fiscal Impact Analysis Administrator may assess whether the proposed development is:
 1. Based on market demand-based needs, considering other approved development projects not yet completed, as determined by a market analysis authorized, commissioned, or other approved by the Administrator;
 2. In an appropriate location generally and considering other properties for which the local Plan, implementing ordinances and other policies may allow reasonably similar development elsewhere;
 3. Consistent with the ability of the local government to provide services concurrent with its impact on facilities as noted above unless otherwise specified by the Administrator and if not, an alternative time frame that better achieves concurrency objectives; and
 4. Beneficial to the local economy considering the scale, configuration, land use interactions and other design features of the proposed development with respect to reducing the per unit demand for public facilities and increasing the per unit contribution of the proposed development to the local economy.
- D. The methodology of the fiscal impact analysis shall be appropriate to the proposed development and shall, to the maximum extent practicable, project total and marginal costs and revenues attributable to the proposed development based on the location and density of the development within one or more Fiscal Analysis Zones and avoiding the use of average costs and revenues for the _____ City/County as a whole.
- E. The fiscal impact of a development shall be determined by projecting capital and Capital Preservation Costs and revenues over a period of time established by the Fiscal Impact Analysis Administrator. Both capital and Capital Preservation Costs shall be derived from generally accepted sources, with high priority being given to sources provided by _____ City/County.
- F. The fiscal impact analysis will be prepared using the data and information provided by the Developer or alternatives, together with data and information provided by _____ City/County or other reputable sources. The preparation and presentation of the fiscal analysis shall follow best professional practices.

- G. The analysis shall be expressed as:
1. Total Present Value of project fiscal impact costs and revenues, costs and revenues per acre of gross or net area of land developed as applicable;
 2. Present Value costs and revenues per unit of residential and/or nonresidential development; and
 3. Other measures of fiscal cost and revenue impact as determined by the Fiscal Impact Analysis Administrator.

- H. The Fiscal Impact Analysis Administrator may compare the Present Value of net costs of a proposed development with respect to:
1. The average costs of existing or planned development within the Fiscal Analysis Zone; or
 2. The average costs of existing or planned development within the local jurisdiction; or
 3. The average costs of existing or planned development for any other geographic area.

The purpose of such comparisons is to show the extent to which the proposed development may result in higher or lower costs on the local government with respect to the Fiscal Analysis Zone, the local government, and any other geographic area.

- I. The fiscal impact analysis shall be provided in draft form to the Developer and the City/County administrator for their review and comment.
- J. The final fiscal impact analysis is to be submitted to the City/County administrator with copies to the Developer and interested public. The county administrator shall forward the analysis to the planning commission and the City/County commission for their consideration as they review the application(s) for Development Approval.
- K. At any time prior to, during, or after the fiscal impact analysis a Developer may propose changes or modifications to the development with such changes or modifications to be incorporated into the fiscal impact analysis. Additionally, the Developer may propose donations, dedications, or other means to lessen fiscal burdens. Any suggestions of this type also shall be incorporated into the fiscal impact analysis.
- L. The Fiscal Impact Analysis Administrator, in consultation with others, may make the following determinations as appropriate:

1. The extent to which the proposed development is consistent with the _____ Plan or other policies such as but not limited to affordable housing, infill and redevelopment, targeted economic development, and related policies; and
2. Identification of the means by which negative impacts (where costs exceed net revenues) for any given facility may be offset as appropriate, including alternative development scenarios as applicable.

8. Exemptions. A fiscal impact analysis ordinance may provide for exemptions from the ordinance.

Section Eight: Exemptions.

- A. Any area of the City/County that has been designated an infill area.
- B. The issuance of buildings permits, final plat, site plan and land use approvals and other activities as may be determined by the local governing body to be vested applications.
- C. All land development activities equal to or less than ___ acres, __ dwelling units, or _____ square feet of floor area, whichever is appropriate based on a determination of the Administrator.
- D. The following development activities shall also be exempted from the requirement to prepare fiscal impact analyses:
 1. Alterations or expansion of an existing building or buildings where no additional units are created, where the use is not changed, and where no additional activity over and above those produced by the existing use;
 2. The construction of accessory buildings or structures which will not produce additional occupants over and above those produced by the principal building or use of the land;
 3. The replacement of a destroyed or partially destroyed building or structure with a new building or structure of the same size; and
 4. Developments or portions of developments that meet the City/County's definition of low- and moderate-income housing or workforce housing.
- E. Any claim of exemption must be made no later than the time of Development Approval. Any claim not so made shall be deemed invalid.

9. Review. *To assure the continued relevancy of the fiscal impact analysis requirement, the ordinance should provide for a periodic review. The ordinance should provide for the future review and update of the underlying cost, revenue, and demographic data upon which the analysis are to be based.*

Section Nine: Review.

This ordinance shall be reviewed by the City/County Commission at least every ____ years.

10. Severability. *Ordinances with numerous distinct provisions should provide that in the event a portion of the ordinance is found unlawful, the remainder of it is to be considered valid, and the unlawful portion is to be deemed severed.*

Section Ten: Severability.

If any section, phrase, sentence, or portion of this ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions thereof.

11. Effective date. *Most land use regulatory ordinances do not become fully effective on the day they are adopted. In general, the effective dates of new development regulatory ordinances range from about 30 days to three months from the date of enactment, with some effective dates ranging more than a year in advance. Communities may delay effective dates of fiscal impact analysis requirements for several reasons. First, there is the practical consideration of gearing local government agencies up to handle the new program. Fiscal impact analyses are usually undertaken prior to the consideration of a development. As such, coordination is usually required between agencies, to assure that requirements are consistent with land use and other plans; revenue or budget agencies, and the various agencies that are responsible for the particular service or function are prepared to undertake the requirement analyses. Second, there is the practical political consideration of giving the development community enough time to adequately respond to a new assessment program.*

Effective Date. A land development regulation ordinance typically provides an effective date for new requirements so that the requirements apply to new development at a date certain in the future.