The Evolution of Fiscal Impact Analysis and Where it Needs to Go

L. Carson Bise  
*TischlerBise,* carson@tischlerbise.com

Colin McAweeney  
*TischlerBise,* colin@tischlerbise.com

Follow this and additional works at: https://readingroom.law.gsu.edu/jculp

Part of the Finance Commons, Growth and Development Commons, Land Use Law Commons, Urban, Community and Regional Planning Commons, Urban Studies Commons, and the Urban Studies and Planning Commons

**Recommended Citation**

Available at: https://readingroom.law.gsu.edu/jculp/vol5/iss1/33

This Article is brought to you for free and open access by Reading Room. It has been accepted for inclusion in Journal of Comparative Urban Law and Policy by an authorized editor of Reading Room. For more information, please contact gfowke@gsu.edu.
THE EVOLUTION OF FISCAL IMPACT ANALYSIS AND WHERE IT NEEDS TO GO

Carson Bise* and Colin McAweeney†

ABSTRACT

Communities need analytical tools and technical support to assess and balance multiple priorities when making land use and development decisions. For many communities, priorities to be considered regarding land use decisions include resource conservation and climate adaptation, economic development, investing in new versus existing communities, and maintaining fiscal responsibility. This article examines the historical use of fiscal impact analysis and some thoughts on where the field should go in the future.

WHAT IS A FISCAL IMPACT ANALYSIS?

In general, a fiscal impact evaluation analyzes cash flow (revenue generation and operating and capital costs) to a jurisdiction associated with the provision of public services and facilities to serve new development—residential, commercial, industrial, or other land use.

The general process for fiscal impact analysis begins by gathering data for inputs. These data usually include:

1. Land use projections data, which describe development scenarios for which the analyst wants to test the fiscal impact.

2. Baseline demographics data, such as current population, jobs, housing units, nonresidential square footage, and vehicle trips, to derive level of service factors from budgetary (or actuals) information.

3. Data on annual service demand generators, such as population, jobs, and nonresidential building area, to inform the process of determining annual and cumulative tax base increases for development scenarios.

Next, current year budgetary (or actuals) information is used to determine the cost of providing public services to each demand unit. Costs include operating fund expenditures (e.g., the cost of maintaining parks) and/or capital expenditures (e.g., the cost of park land acquisition to build new parks to serve new residents). Finally, the positive or negative impact of new development is determined by

* President, TischlerBise.
† Senior Fiscal & Economic Analyst, TischlerBise.
analyzing the demand created by each development scenario and the cost of meeting that demand, as well as the revenues generated from the development.

A fiscal impact analysis is different than an economic impact analysis (EIA), which evaluates the impact of a change on the economy of an area. An EIA is a process to evaluate the economic benefit of the presence, expansion, or contraction of an entity or industry/industries on a defined geographic location. The key components of any economic impact analysis are typically measured by increases in jobs, income, and economic output.

Economic impact analysis is a process to evaluate a change in the economy or an entity’s effect on the economy of a defined geographic location. It identifies direct impacts, that is, the one-time investment in renovation, demolition, or development, as well as ongoing spending by residents and nonresidents resulting from redevelopment. An economic impact analysis also evaluates the “spin-off” or “multiplier” effects that direct spending has on the location in terms of jobs, labor income, and total economic output or activity through what is referred to as indirect and induced effects. That is, income received by suppliers of goods and services is then used to buy goods and services from other local companies (indirect effect) and household income is used in part to buy goods and services, which creates other economic benefits (induced effect).

An economic impact analysis is in contrast to a fiscal impact evaluation, which analyzes public revenue generation and the operating and capital costs associated with development. Fiscal impact analyses are jurisdiction-specific, typically excluding other local jurisdictions (e.g., counties, school districts, utility districts) while an economic impact includes all jurisdictions within a defined area. Also, to understand more clearly the economic impacts, study areas are typically larger for EIA, at the regional or sub-regional level.

Methodologies

There are two basic approaches to fiscal evaluations: (1) **average costs** and (2) **marginal costs**.

Average-cost techniques tend to use jurisdiction-wide multipliers that do not change over time. These static multipliers represent a snapshot of current revenues and expenses, with the fiscal results dependent upon changes in demographics and land uses. Average cost techniques are discussed below.

**Per Capita Multiplier Method.** This common method uses current local data to determine multipliers based on average revenues and expenditures per resident/per job (if applicable). The approach calculates costs and revenues based on an average cost per unit multiplied by the demand for that unit. A cost per capita—in which the current cost per person in a
community is considered to be the standard for future development—is an example of an average-cost approach. Average-cost approaches assume a linear relationship and do not generally consider excess or deficient capacity of facilities or services over time (unless specifically addressed as part of the analysis).

**Proportional Valuation Method.** The Proportional Valuation Method can be used to evaluate the impacts of residential and nonresidential development. It assigns revenues and costs to a development in proportion to the property taxes collected from existing development. This method aggregates all nonresidential land use and assumes that proportional valuation remains constant over time, which is problematic if a jurisdiction transitions from a bedroom community to an employment center. A proportional valuation analysis may be completed quickly with limited resources, but the method works best in communities where property taxes are the dominant revenue source.

**Comparable Communities Method.** The Comparable Communities Method assumes that municipalities with similar demographic characteristics and growth rates have similar municipal revenues and expenditures. The method uses data typically obtained from the U.S. Census Bureau, or local sources such as Comprehensive Annual Financial Reports. This method is appropriate for a municipality that does not have good precedents for revenues and costs due to high growth rates. It assumes the experience of comparable communities is a good indicator of future conditions.

On the other hand, marginal-cost approaches are more detailed than average cost analyses and consider unique circumstances in a community such as oversized infrastructure or geographic/locational factors affecting level of service. Marginal-cost analysis is most useful in a short two- to ten-year time frame. However, average-cost techniques are generally simpler to use, so for relatively small development projects with modest impacts or impacts that are realized over a long timeframe, they may be preferred.

Although average-cost analyses and marginal analyses may yield similar results when comparing cumulative impacts, the two approaches are likely to result in substantial differences in the interim years of the analysis.¹ Fiscal results tend to follow a smoother pattern when an average-cost approach is used, whereas under a marginal-cost approach results tend to have dips in specific years due to new

---

capacity facilities being triggered. For example, deficits are likely to be incurred when a new capital facility is needed, and the associated operating costs are triggered, which would occur using a marginal-cost approach as opposed to an average-cost approach. As a result, the marginal-cost approach enables a community to understand if, when, and for how long costs to serve growth exceed revenues generated. It can be helpful to identify a breakeven point, particularly when evaluating large development proposals or economic development projects.

A hypothetical example for parks and recreation is provided to illustrate the above distinctions. Parks and recreation departments have traditionally constructed three types of parks: neighborhood, community, and regional. However, a recent trend has been to focus on special-purpose parks, such as athletic complexes, dog parks, aquatic parks, and skateboard or sports-bike parks. These parks can have very different maintenance needs than traditional neighborhood and community parks. Under an average-cost approach, maintenance costs would be calculated on a per capita or per acre basis. Therefore, if current park maintenance costs are $1,000,000 and the current park inventory is 125 acres, the maintenance cost per acre is $8,000. However, this figure is based on an inventory that may not be likely to be constructed in the future, so park maintenance costs may be over- or understated, depending on the community. In contrast, the marginal-cost approach has the ability to factor in different operating costs depending on the park type.

Challenges of Fiscal Impact Analysis

Like most planning-related efforts, a fiscal impact analysis is both “art and science.” Because of this, some challenges occur. Officials should be aware of these challenges prior to embarking on a fiscal impact analysis to determine if the opportunities presented by the process outweigh the challenges.

Common challenges to conducting a fiscal impact analysis include:

- The "outputs are only as good as the inputs." The most frequently mentioned weakness of fiscal impact analysis is related to the inherent limitations of any modeling technique and specific applications to the subject community. For example, many models rely on population data from the decennial census. A fiscal impact analysis should include a clearly written rationale explaining methodologies employed as well as the assumptions included in the analysis.

- Political effects of making data assumptions explicit. While explaining assumptions may generally be considered a benefit, some types of data and information resulting from a fiscal impact analysis may be politically sensitive such as levels of spending for certain services or in specific locations. It may be in the best interest of local officials to consider the impact of this information on the public’s perception of services as well as
how this information may be used to involve citizens in discussing levels of service and related issues. For example, if the number of police officers assigned to a certain area is controversial, then the assumptions used in the fiscal analysis will most likely generate public interest.

- Claims that the results or approach will lead to fiscal zoning. Results from a fiscal impact analysis can lead communities to base land-use decisions entirely upon fiscal considerations at the expense of achieving a healthy and balanced quality of life. This is referred to as fiscal zoning or the “fiscalization” of land uses.

- Often there can be difficulties determining the source of fiscal benefits or costs when land uses interact. Most land uses are not closed systems, so to some degree there will be cause and effect and reinforcing elements that need to be assumed during the fiscal analysis process. For example, for municipalities that receive sales tax, an initial assumption may be that all the sales tax revenue should be attributed to retail land uses. However, residential development may result in greater local retail sales and in turn municipal revenue.

- Since a fiscal impact analysis is a mix of “art and science” as well as quantitative and qualitative aspects, assumptions can be challenged, and results questioned. This is reason to be thorough in data collection and to vet assumptions with key stakeholders throughout the process.

Types of Fiscal Impact Analyses

Cost of Land Uses

The first type of analysis can be classified as a Cost of Land Uses fiscal impact analysis. Other names for this type of analysis are “Product Type Fiscal Impact Analysis,” “Cost to Serve,” or “Cost of Community Services.” In this type of analysis, the characteristics of various residential (single family, townhouse, apartment) and nonresidential (retail, industrial, office) “products” are defined, and the annual costs and revenues associated with each product are determined. This reveals the generalized impacts that each land use has independently on a local government’s budget and is an average cost fiscal analysis. Factors used to define these products typically include persons per household, road frontage per housing unit, employment per 1,000 square feet, vehicle trips, assessed value, and so on.

---


3 A Cost of Community Services study is a specific type of study conducted by the American Farmland Trust (AFT) to highlight the fiscal importance of farms and farmland. However, the term is occasionally used to describe a study similar to a Cost of Land Uses study.
The results from this type of analysis can be used to project average fiscal impacts from growth scenarios.

Project-Level Analysis

The second type of fiscal impact analysis, Project Analysis, is the most common type of fiscal analysis conducted by local governments. In this type of analysis, one or multiple proposed development programs in a limited geographic area are evaluated for their fiscal impact over a specified period of time. Where a Cost of Land Use Fiscal Impact Analysis evaluates the fiscal impact of individual discrete land uses, a Project Analysis evaluates the overall fiscal impacts of a combination of proposed land uses in a development program. As most project-level analyses are prepared in conjunction with specific development proposals, this type of analysis is incremental in that it addresses the impacts of only one development project at a time, typically in isolation from other potential development in the rest of the jurisdiction.

Area-wide Analysis

The third type of fiscal impact analysis, an area-wide analysis, can be applied to a neighborhood, several contiguous neighborhoods, or an entire city, county, or region. This type of analysis is cumulative in that it evaluates the fiscal impacts of all anticipated development within an analysis area over a defined period, usually between 10 and 20 years. In this type of analysis, it is common to evaluate multiple development scenarios that vary in land use mixes or patterns, paces of growth, or economic activity.

History of Fiscal Impact Analysis

Fiscal impact analysis (FIA) has been used by planners in one form or another for more than 75 years. Its origins can be traced back to the 1930s as planners began using FIA in attempts to fully justify investments in public housing and urban renewal programs. The analyses compared revenues that would result from the new land uses to revenues that would have resulted from the old land uses. The scope of fiscal impact analysis broadened over time to consider both the costs

---

and revenues associated with proposed land-use developments. In the 1940s and 1950s, FIA was used to evaluate the impact of urban renewal.

In 1974, *The Costs of Sprawl: Detailed Cost Analysis* had a major impact on fiscal impact analysis and land use planning in the United States. This seminal study—prepared by the Real Estate Research Corporation—compared the costs of an additional 10,000 dwelling units in six hypothetical community types and concluded that high-density development was less costly than lower-density alternatives. Cost was evaluated in terms of four key indicators: (1) energy cost, (2) environmental impact, (3) capital cost, and (4) operating cost. This is generally considered to be the first FIA study that analyzed the fiscal impacts of alternative development patterns.

Due in part to the increased visibility afforded the discipline by the publication of *The Cost of Sprawl*, by the mid-1970s FIA had become widely used by local government planners. Technology played a role as well, making fiscal impacts easier to model and represent visually. During the latter part of the 1970s, FIA began to proceed along two somewhat different paths. Sternlieb, along with Burchell and Listokin, advanced average-cost modeling techniques, which are based on per capita costs and revenues. Burchell and Listokin developed their generic “fiscal hierarchy of land uses,” where office development is at the top of the fiscal hierarchy and residential development (apartments and mobile homes) are at the bottom, albeit with the caveat that findings are heavily dependent on revenue structure and levels of service. Westinghouse Corporation, and later Tischler and Marcou, focused on marginal-cost techniques, which rely heavily on detailed site-specific data that model existing infrastructure capacities.

The use of FIA by planning professionals continued to increase in the 1980s and 1990s, particularly with the advent of the desktop computer and spreadsheet software. Meanwhile, researchers kept using FIA to explore fiscal impacts of varying development patterns. In 1989, Duncan and Frank studied the infrastructure costs of sprawl development compared to compact development in

---

5 “The Cost of Sprawl” was prepared for the Council on Environmental Quality; the Office of Policy Development and Research, U.S. Department of Housing and Urban Development; and the Office of Planning and Management, U.S. Environmental Protection Agency.


8 Tischler and Marcou is the predecessor of TischlerBise.

the state of Florida using engineering relationships. In 1998, Burchell, et al, wrote *The Costs of Sprawl—Revisited*, a comprehensive review and synthesis of the literature on sprawl and its impacts, which was published by the Transportation Research Board. The follow-up to that document, *The Costs of Sprawl—2000*, attempts an objective analysis of the costs of two alternative development patterns—controlled and uncontrolled growth (sprawl)—over a 25-year period for the nation as a whole.

*The Costs of Sprawl—2000* found that sprawl was the dominant form of growth occurring in major metropolitan areas and that the fiscal effects of sprawl growth were mixed. The data suggested there were more costs than benefits of sprawl growth, which the authors found consumes land and various types of infrastructure to a level that compact development does not. The authors also found that sprawl growth generated fewer positive fiscal impacts (more costs and less revenue) than compact development.

FIA has further evolved in the last decade as academics continue to explore the fiscal impacts of alternative development patterns and practitioners continue to expand the use of fiscal impact analyses. Until recently, practitioners tended to limit their analyses to the evaluation of specific development proposals and community-wide analyses of land-use scenarios. In the last decade, however, there has been increased use of FIA for evaluating the fiscal viability of special districts and tax increment financing (TIF) district proposals.

Most states require local governments to prepare a balanced budget on an annual basis, but none that we are aware of require jurisdictions to conduct evaluations of land use decisions on a longer time horizon. At the turn of the century, the Florida Department of Community Affairs attempt to apply a statewide standard to fiscal impact analysis through a statutory mandated comprehensive plan requirement of fiscal sustainability and a state-sponsored analysis model. However, the “Great Recession” and the passage of the “Community Planning Act” saw the end to the mandates and the abandonment of the state-sponsored model.

---


Another recent trend in FIA is the evaluation of both the direct and indirect fiscal impacts of land uses. For example, an evaluation of the fiscal impacts of a semiconductor plant locating in a community would typically examine the direct impact on the community of the revenues generated by the plant and the costs associated with the workers. Analysts are now taking FIA one step further by considering “indirect impacts,” such as the number of workers who are likely to reside in a community and will in turn generate costs and revenues to the locality. Although including indirect impacts into an FIA is acceptable, the analysis may not be seen as a purely fiscal impact analysis since the analysis now includes economic spin-offs.

Since 2000, several regional planning agencies have developed and implemented regional fiscal impact models with varied success. For example, the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) implemented a regional fiscal model in 2010 intended to be used by its member jurisdictions to analyze the fiscal impacts associated with specific development projects, as well as jurisdiction-wide growth scenarios in order to improve local government land use decision-making. After limited use, OKI developed a second version that was implemented in 2020.

The Northeast Florida Regional Council (NEFRC) is the regional planning organization for seven Northeast Florida counties (Baker, Clay, Duval, Flagler, Nassau, Putnam, and St. Johns Counties) and their twenty-six municipalities. Local governments in Northeast Florida, led by Nassau County, expressed an interest in developing a tool to help local decision makers understand the fiscal impacts of development proposals or land use scenarios as it relates to the costs and revenues resulting from development. This fiscal model, developed by TischlerBise, was implemented in 2019.

The third regional example is the Community Planning Association of Southwest Idaho (COMPASS). The success of the TischlerBise fiscal impact models for COMPASS is due to the understanding of the successes and failures of other past regional models. The partnership between the two parties began by considering COMPASS’s short-term needs and long-term goals. The Treasure Valley is a high-growth area and is quickly reaching 1 million residents and, as the area’s MPO, COMPASS needs to quantify the impact of a status quo development buildout compared to other buildout scenarios. Additionally, there are communities in the Valley at all different development phases with varying growth concerns. There are small rural communities deciding how to best to expand public services and utilities and large, mature communities with hyper-growth and redevelopment.

At the onset of the partnership, it was decided that to best analyze regional buildout scenarios and community level development projects, two separate models would be constructed. In about half a year, the regional model was programmed.
The scope of the model allowed for an average-cost approach to be taken for most components while a marginal was used for several elements. After completion, four buildout scenarios were inputted, and the fiscal impact results were included in a public survey for participants to evaluate the scenarios.

In the second phase, TischlerBise took a deep dive into each community’s needs and budget. This included at least one a meeting with each city, county, highway district, and school district in the Treasure Valley. Land use demand factors (e.g., persons per housing unit) were customized for each locality with subareas created when further detail in demand factors were needed or capital facility needs varied. At each project milestone, the team presented to the overseeing subcommittee. Overall, the community level model was a year-long process that allows COMPASS and stakeholders to input development projects and calculate the marginal fiscal impact to the community.

Although there were lessons learned from previous regional fiscal impact models, TischlerBise still came across several challenges. First, the participation and data available from communities varied. Precision of any fiscal impact analysis depends on the availability of data, however, there were a handful of very active and accessible stakeholders which were able to be used as appropriate proxies. Second, there was not a consensus on how to best represent the results. In some cases, a fiscal impact in dollars is useful, while a more relative result can be better conceptualized. Lastly, there was not a consensus on who exactly should use the model. Housing the model in COMPASS gives confidence to the operation of the model and institutional knowledge of the model. However, allowing the model to be used by community leaders or even the public allows for more transparency, but in that case, there were model integrity concerns.

In the last decade, we have seen the alarming use of fiscal impact analysis as “advocacy pieces,” to unilaterally advance smart growth and new urbanist policies unequivocally, regardless of situation. For example, an approach that has become extremely popular with planners focuses on the revenues generated by high-density, mixed-use development in urban cores, specifically citing the higher amount of property taxes per acre for a specific site compared to outlying, low-density suburban examples (e.g., stand-alone Walmart). This is an obvious outcome from the revenue side, but most of the examples we have seen provide little or no analysis of actual costs or assumptions relative to levels of service, rather they are essentially advocacy pieces for a certain type of development pattern. Both of which are weaknesses to this approach that can be exploited.

Further, this approach has been wholeheartedly embraced by advocacy groups, namely Smart Growth America, who in 2013 published a report entitled Building Better Budgets: A National Examination of the Fiscal Benefits of Smart Growth Development. This report surveyed 17 studies that compared different
development scenarios (it should be noted that a TischlerBise study was included in this report). The development scenarios included in the analysis were separated into two categories: “Smart growth development” was characterized by more efficient use of land; a mixture of homes, businesses and services located closer together; and better connections between streets and neighborhoods. “Conventional suburban development” was characterized by less efficient use of land with homes, schools and businesses separated and areas designed primarily for driving. The three major conclusions drawn from this report are as follows:

- **In general, smart growth development costs one-third less for upfront infrastructure.**
  The surveys concluded that smart growth development saves an average of 38 percent on upfront costs for new construction of roads, sewers, water lines and other infrastructure. Many studies concluded that this number is as high as 50 percent.

- **Smart growth development saves an average of 10 percent on ongoing delivery of services.**
  The survey concluded that smart growth development saves municipalities an average of 10 percent on police, ambulance, and fire service costs. In addition, the geographical configuration of a community and the way streets are connected significantly affect public service delivery. Smart growth patterns can reduce costs simply by reducing the distances service vehicles must drive. In some cases, the actual number of vehicles and facilities can also be reduced along with the personnel required.

- **Smart growth development generates 10 times more tax revenue per acre than conventional suburban development.** (It should be noted this generally includes property tax only).

  From our perspective, the conclusions drawn from this report cannot be taken as absolutes, especially given the fact the scope, and more importantly, methodologies widely vary with each case study. Something the report does not compile and/or discuss in the context of the findings. For example, the TischlerBise case study is a citywide analysis that uses the case-study marginal approach, the Raleigh, North Carolina case study focuses purely on the revenue generated per acre as a result of a six-story downtown building, and the Nashville, Tennessee case study is a development project. We would argue that to come to the conclusions communicated in the Smart Growth America Report, the methodology would need to survey group and analyze the case studies by scale (city/countywide analysis vs. development project), methodology (average cost, marginal cost, other), and scope (what costs and revenues are included).
TischlerBise and other studies have shown that in general, sprawling development is typically more expensive to serve for a locality than higher density, mixed use development that utilizes existing infrastructure. For example, in Oklahoma City, TischlerBise found that the future growth scenario that redirected growth to the core/established areas generated a cost saving of $30 million over 10 years. In a regional study TischlerBise conducted for the Metro Council (Minneapolis-St. Paul region) confirmed the “fiscal benefits of pursuing compact development to accommodate future growth.” In fact, the Metro Council study was conducted in the way the Smart Growth America survey should have been conducted.

The Metro Council study examined the costs and revenue of serving new development or redevelopment under two scenarios. One scenario assumed that growth would occur in spread-out patterns that reflect current trends. The other projected a more compact pattern that reflected a higher number of housing units in the same amount of land. Both scenarios assume that each community achieves its affordable housing goals each city has set for itself under the Metropolitan Council's Livable Communities Program. From a methodological perspective, the study used a case-study approach, looking at eight communities around the region at different stages of development – two outlying suburbs with a considerable amount of vacant land (Cottage Grove and Shakopee); two maturing suburbs (Coon Rapids and Apple Valley); two fully developed, first-ring suburbs (Roseville and Richfield); and the region’s two central cities (Minneapolis and St. Paul). Because each case study utilized the same methodology and evaluated similar scenarios in each city, the fiscal findings have much more uniform applicability for Minnesota cities, since they share the same revenue structure.

But in our experience, uniform applicability of fiscal findings is extremely difficult, if not impossible. The truth is, fiscal analysis is both an art and a science, as the fiscal results are driven by so many factors and assumptions. This gets to “reliability and accuracy” of different approaches. The primary factors that affect the fiscal results are revenue structure, demographic characteristics, local levels of service, and available infrastructure capacity. For example, recent TischlerBise fiscal impact studies in Denton, Texas, and Shreveport, Louisiana, found that existing utility infrastructure couldn’t support densities/intensities being considered as part of land use planning processes due to the need for extensive upgrade/replacement of aging transmission and distribution lines.

The Building Better Budgets report concluded that smart growth development saves municipalities an average of 10 percent on police, ambulance, and fire service costs. It has been TischlerBise’s experience that there is little if no operating costs savings between traditional development and smart growth development with those services. This is because all three operating areas are driven
by the presence of people. For example, parks and recreation operating and capital needs are driven by the presence of people. Level of service for park land are most often expressed in terms of acres per 1,000, so if there are 5,000 people living on 100 acres versus the same number of people living on 500 acres, the city in question would need the same park acreage to meet this level of service. Moreover, since the same number of acres need to be maintained and mowed in both scenarios, the operating costs will be similar. Now it can be argued that perhaps there is a cost savings since the distance between parks will likely be less. However, these savings are likely to be de minimis. And from a recreational programing perspective, the costs are likely to be the same as well. The same can be said for public safety services as well. Calls for public safety services tends to be a function of the presence of people, whether it is the resident population or employees and visitors. Therefore, the more density/intensity per acre, the more calls will be generated.

In summary, whereas the Building Better Budgets report claims smart growth development generates 10 times more tax revenue per acre than conventional suburban development, it also generates more cost per acre for most services and facilities. The exceptions being utilities and transportation, and as we hope the previous discussion as illustrated can vary from jurisdiction to jurisdiction, making it impossible to speak in absolutes.

In our experience, the areas of government services and facilities that have the most potential for savings as a result of smart growth development principles are transportation and public utilities. However, these are also the areas that can tip the scale in the other direction, depending on the age and condition. Another consideration in this discussion is the difficulty in determining what intervention strategy is needed to implement a particular scenario or facilitate a particular development project and the cost of that implementation. This is particularly true for the revenue per acre studies that we have seen. We have yet to see a revenue per acre study that analyzes the net revenue per acre, as we’ve yet to find an example with a cost component. In fact, we have seen articles in various publications (particularly the Strong Towns website) and presentations espousing the benefits of smart development. In fact, we attended a keynote address a few years ago at the Virginia Chapter of the American Planning Association that claimed planners could save cities and towns from the impending “fiscal abyss” if their jurisdiction simply increased densities downtown, using revenue per acre case studies to back up that assertion. And we have come across many local government elected/appointed officials, planners and administrators who have sipped from the chalice of “smart growth Kool-Aid,” and have pointed to Building Better Budgets report and/or various revenue per acre studies as the justification. If only it were that simple. In many instances, the market has to be forced (through some type of intervention) in order to realize this vision. That intervention typically has a cost.
associated with it that needs to be considered. For example, the city may need to assemble property, make infrastructure investments, and/or buy down the cost of land in the short term. All of this needs to be considered.

WHERE FISCAL IMPACT ANALYSIS SHOULD GO IN THE FUTURE

Informed land use policy decisions require different types of information and the balancing of multiple objectives, including the costs and benefits relative to new development. To that end, the use of fiscal impact analysis must continue to evolve to meet the needs of local government decision makers, now and in the future. We have several thoughts on how the field should evolve. One, perhaps obvious, way the discipline can evolve is to more frequently incorporate the economic impacts into the fiscal impact analysis (this was discussed previously in this paper). This certainly isn’t a new type of analysis, but it is used infrequently. One of the challenges with fiscal impact analysis, particularly when used to evaluate specific development projects and/or economic development opportunities, is the tendency of elected officials to make decisions solely on the basis of the fiscal impact results, regardless of the economic, health, equity, and other benefits the project may have. It is not uncommon for a land use economist to prepare both a fiscal impact and an economic impact analysis for a development project. However, it is much less common for the indirect (spinoff) and induced economic impacts to be “fed back” into the fiscal impact model to determine the indirect and induced fiscal impacts. This type of analysis can give decision makers a more complete understanding of the benefits of a development project. An example of this type of approach is discussed below.

Orangeburg County, South Carolina was interested in evaluating nonresidential land uses being targeted for the South Carolina Gateway Industrial Park and the Matthews Industrial Park, as well as examining the overall impact of retail land uses. To accomplish this, TischlerBise included an economic impact layer to the fiscal impact analysis that credits the indirect, or “ripple” impact, for each potential land use. For example, TischlerBise projected the direct employment per 1,000 square feet for each nonresidential land use. We also determined the indirect employment per 1,000 square feet of each nonresidential land use as well. This provided an understanding of the “ripple” or multiplier effect of a new job partially creating other jobs, as well as the income generated per job. This is illustrated in the chart below. The tendency is for a jurisdiction to focus economic development efforts on industries that generate a high number of direct jobs per 1,000 square feet, while overlooking the spinoff impact. In Orangeburg County, the finance and insurance sector generate a high number of direct jobs per 1,000 square feet. This sector also typically has high paying jobs as well. However, as shown in the figure, the chemical manufacturing sector generates substantially more indirect jobs than direct jobs, a sector the county has historically overlooked, but should
reconsider given its location to interstates and the Port of Charleston. (See Figure 1.)

As shown in Table 1, this approach and the result of the analysis emphasizes the significance of the positive net fiscal results of the spinoff jobs. For example, of the combined net fiscal results for the two best performing nonresidential land use prototypes (Chemical Manufacturing and Retail Trade) the net fiscal results from spinoff employment account for 97 percent and 62 percent respectively of the total results. Another finding was that the relationship between market value and fiscal impacts from direct employment are relatively strong. However, the relationship between market value and the fiscal impact from spinoff employment is much less evident. This is the result of the number of spinoff commercial/retail jobs and resulting revenues from the one-cent sales tax. The significance influence of the spinoff jobs and one-cent sales tax revenues can be seen in how closely the combined fiscal results mirror the spinoff fiscal results.

A second way fiscal impact analysis should evolve is to find unique ways to include the non-fiscal benefits that accrue as a result of a development project and/or jurisdiction-wide development scenario. For example, communities frequently ask how the cost of various policy decisions can be factored into the fiscal impact analysis? These policy questions can be extremely difficult, if not impossible to measure in the fiscal impact analysis for a variety of reasons. Often times because it is a variable the jurisdiction in question is not responsible for or is not responsible for providing. For example, many communities have asked, “How do we measure the cost to the environment resulting from choosing one future land use scenario over another?” Other examples include determining a cost for various commuting times resulting from different development futures and the social equity costs resulting from different land use policies. One way to include these policies questions in an analysis is through the use of contingent valuation, but this can be a very expensive proposition.

Contingent valuation is a survey-based method frequently used for placing monetary values on environmental goods and services not bought and sold in the marketplace. While these resources do give people utility, certain aspects of them do not have a market price as they are not directly sold – for example, people receive benefit from a beautiful view of a mountain, but it would be tough to value using price-based models. Rather than utilize contingent valuation, fiscal impact practitioners need to pursue innovative ways to convey the non-fiscal benefits that accrue from development decisions. One such example from Delaware, Ohio, is discussed below.
Figure 1
Direct and Spinoff Jobs scenario for South Carolina Gateway Industrial Park and the Matthews Industrial Park
### Table 1
Scenario Ranking of Spinoff Jobs for South Carolina Gateway Industrial Park and the Matthews Industrial Park

<table>
<thead>
<tr>
<th>Nonresidential Prototype</th>
<th>Ranking By:</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Health Care and Social Assistance</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Retail Trade</td>
<td>4</td>
<td>1</td>
<td>9</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Bakeries and Tortilla Manufacturing</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Beverage Manufacturing</td>
<td>5</td>
<td>9</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Chemical Manufacturing</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Fabricated Metal Product Manufacturing</td>
<td>5</td>
<td>11</td>
<td>8</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Machinery Manufacturing</td>
<td>5</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Warehousing and Storage</td>
<td>5</td>
<td>12</td>
<td>12</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Truck Transportation</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>5</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>
The City of Delaware Comprehensive Plan presented strategies to manage Delaware’s land use and growth decisions in a fiscally sustainable manner. The City of Delaware currently enjoys a strong fiscal position as a result of local and regional economic growth and the implementation of thoughtful fiscal and land use policies. The City’s Comprehensive Plan identified development types that currently exist in the City of Delaware; these development types served as the building blocks for the Character and Land Use Plan and Recommendations. Traditional Town/Urban development types reflected higher density, more pedestrian-friendly land uses than Suburban development types, which reflected low-density, auto-oriented land uses.

Given the revenue structure and capital demands of land uses in the city, the best means to maintain fiscal sustainability is to diversify and intensify the land uses with an emphasis on nonresidential and mixed uses. Because if the city relies heavily on income tax from workers who are employed within the municipality it is fiscally beneficial to prioritize mixed-use and nonresidential land uses and to target high-income industries, in particular.

However, as shown in the figure below, no single land use provides strictly positive fiscal results. The city collects property tax and more importantly income tax from nonresidential establishments, nonresidential development tends to generate more vehicle trips, stressing the street infrastructure, and typically has higher rates of public safety calls compared to residential uses.

Suburban residential development types (low density) typically generate higher property tax revenues, but often requires extension and maintenance of streets, water, and utilities out to greater distances than Traditional Town / Urban (higher density clustered development). Suburban development generates more vehicle trips per housing unit than a unit in a multi-unit structure, and on average single residential units in Delaware have more persons per household than units in multi-unit structures, which generates more vehicle trips, and demands for public safety, and parkland capital investments.

Since the State of Ohio’s revenue structure relies heavily on income tax from at-place employment, residential development typically doesn’t generate much revenue. Therefore, the multi-disciplined consulting team worked with city staff and stakeholders to frame the fiscal impact results in the context of other community values that came out of the planning process. This results in a more balanced “fiscal scorecard,” that also rates land uses on a variety of other measures such as social interaction, walkability, and environmental impacts. See Table 2.

Finally, fiscal impact analysis should begin to document unmet demand for infrastructure and services as well as the life cycle costs/infrastructure replacement costs that local governments are accruing as a result of new development. We are
aware of several fiscal studies since 2000 that have included overlays to reflect the costs of replacing deteriorating infrastructure. Several of these, including one prepared by TischlerBise for Howard County, Maryland, were prepared around the time when many local governments were unsure of the requirements of Governmental Accounting Standards Board Statement No. 34 (GASB 34). GASB 34 mandated that governments must report all capital and infrastructure assets in their financial statements. In most instances, these assets are required to be depreciated, which is something local governments have not traditionally done. Given the deteriorating state of infrastructure in many communities across the country, there is a growing need to measure the fiscal impact of replacing existing infrastructure, and we feel that these costs need to be included in jurisdiction-wide analyses.

But we also feel this can be taken a step further. In addition to existing infrastructure replacement needs, fiscal impact analyses should begin documenting the lifecycle cost commitment for the new infrastructure the fiscal model is projecting to serve new development. For example, if a new 3-mile road is constructed in year seven of the fiscal impact analysis, the analysis should attempt to quantify the cost the jurisdiction will incur in twenty years to reconstruct this road segment. As practitioners we have to be careful in applying this standard, particularly as it relates to an analysis associated with a specific development project. If the jurisdiction in question is only reconstructing new roads at a rate of every twenty-seven years versus twenty years due to funding constraints, it isn’t fair to assign a new development project a cost standard the jurisdiction is not presently meeting now, but we should at least acknowledge the jurisdiction has now incurred a financial obligation at some point in the future.

Related to the above discussion, practitioners should begin to use fiscal impact analysis not only to measure the lifecycle costs associated with infrastructure, but also the unmet demand for government services. Similar to a market analysis, by unmet demand we mean the “gap” between the level of service being provided by the jurisdiction versus the actual demand for services. For example, a city may have the capacity to offer 150 yoga classes a month through its recreation and community centers. However, there may be demand for 250 monthly yoga classes. The city’s capacity may be limited by lack of available building space and/or lack of funding for sufficient recreation staff. Either way, this unmet demand exists, and many communities are starting to recognize this “gap” in services through strategic planning and other initiatives. Fiscal impact analysis can be used to quantify this unmet demand in terms of initial and ongoing costs and help frame discussions related to community goals and priorities, which must be balanced with tolerances for new taxes and/or fees that can be used to meet these needs.
## Table 2
Fiscal Scorecard Comparing Traditional Town/Urban to Suburban Development Patterns

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small Block Neighborhood - Traditional</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>Neutral</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Small Block Neighborhood - Neotraditional</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>Neutral</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Large Block Neighborhood - Traditional</td>
<td>Medium</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Negative</td>
<td>Medium</td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>
|                          | Nonresidential/Mixed Use | Traditional Activity District | High | High | Medium | Medium | Neutral/Positive | High | Medium | High | High | High | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium | Medium |Medium
CONCLUSION

Fiscal impact analysis has been included in the planning process for decades, providing clarity to both present and future, local and regional financial issues. Although there may seem to be some “truths” in fiscal impacts from different development types, many budget and environmental elements exist that make results unlikely to be transferrable. Furthermore, analysis that only incorporates revenue projections miss out on the second half of the fiscal impact equation, expenses. Analysis has evolved over these decades with advances in applications, inclusion of economic and environmental components, and the industry’s deeper understanding of the art and science. It is important for the professional to understand the uses of methodologies and incorporate the appropriate analysis for their community.