IMPACT FEES & HOUSING AFFORDABILITY

A Guidebook for Practitioners

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

PD&R

IMPACT FEES: EQUITY AND HOUSING AFFORDABILITY

A Guidebook for Practitioners

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Washington, DC

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April 2007

About the Guidebook

This Guidebook was prepared by Liza K. Bowles of Newport Partners, LLC and Arthur C. Nelson of Virginia Polytechnic Institute and State University under contract to the Department of Housing and Urban Development. It draws heavily on various research papers prepared under subcontract to Newport Partners. These papers and their authors are listed here:

- *The Past, Present and Future of Impact Fees*, August 2005, prepared by James C. Nicholas, University of Florida;

- *State Impact Fee Enabling Acts and Housing Affordability*, February 2005, prepared by Arthur C. Nelson, Ph.D., Professor and Director of Graduate Studies in Urban Affairs and Planning, Virginia Polytechnic Institute and State University, and Clancy Mullen, Duncan Associates;

- *Proportionate Share Impact Fees and Housing Affordability,* January 2006, prepared by Arthur C. Nelson, Ph.D., Professor and Director of Graduate Studies in Urban Affairs and Planning, Virginia Polytechnic Institute and State University; and Liza K. Bowles and David J. Dacquisto, Newport Partners; and,

- *Infrastructure Financing Techniques: Impact Fees and Alternatives*, June 2005, prepared by Arthur C. Nelson, Ph.D., Professor and Director of Graduate Studies in Urban Affairs and Planning, Virginia Polytechnic Institute and State University.

- The case study material was developed by Bowles and Dacquisto of Newport Partners in conjunction with Nicholas, Nelson, Mullen and Juergensmeyer.

Full copies of the briefing papers as well as additional resource material prepared under this project are available at HUD's Regulatory Barriers Clearinghouse http://www.huduser.org/rbc/.

Acknowledgements

In addition to the authors listed here, we would like to acknowledge the help of Lorie Ebersberger for cover design, Kermit Baker for thoughtful review and input, Matthew Hawkins for preparation for publication and Ed Stromberg of HUD for his timely and constructive review and support throughout the project.

We would also like to thank the following impact fee experts for serving as a review group on the Guidebook and offering additional insights and information:

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Finally, we acknowledge the constructive review by David Crowe (who also provided data on the relationship between house size and occupants per unit by unit type) and Paul Emrath, both of the National Association of Home Builders.

NOTICE

This report was prepared as an account of work sponsored by the U.S. Department of Housing and Urban Development. Views and opinions expressed herein are the responsibility of the authors. References herein to any product, process or system do not constitute an endorsement, but are included solely because they are considered essential to the object of the report.

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Executive Summary

Impact fees are one-time charges applied to new development. Impact fees are a form of land-use regulation designed to assure that communities maintain adequate levels of public facilities in the face of growth. The resulting revenue generated for the construction or expansion of new facilities is coincidental to their land-use regulatory (i.e. police power) purpose. Were it not for growth many communities would have adequate public facilities and often if growth is at a manageable pace adequate public facilities can be provided concurrent with the impacts of growth. To assure adequate public facilities, impact fees are assessed and dedicated principally for the provision of additional water and sewer systems, schools, libraries, parks and recreation facilities, and other infrastructure made necessary by the presence of new residents in the area. The funds collected cannot be used for operation and maintenance, repair, alteration, or replacement of capital facilities.

As will be noted, impact fees are not the best way in which to finance most public facilities from a variety of theoretical perspectives and instead taxes are. However, in the absence of the legal or political ability to raise taxes combined with a desire to maintain level-of-service quality in their communities, elected officials may see impact fees as a pragmatic solution.[1]

Impact fees have expanded and evolved substantially throughout the United States over recent decades, and currently appear in a wide variety of forms covering different types of infrastructure in varying amounts around the country. These changes have taken place through legislation, regulations and court cases. While the process is extraordinarily complex and there have been many debates over the specifics, in some ways the underlying fee principles are now better defined and more straightforward than in the past. Indeed, it may be one reason impact fees have grown substantially in many communities.

However, impact fees remain somewhat controversial. Different interests naturally have different perspectives on impact fees, as the table below notes.

Stakeholder	Perceptions and Concerns
HUD	Need to keep housing affordable, need to help communities struggling with infrastructure financing problems
States	Financing of infrastructure is important to economic growth, new taxes are not popular
Local government (planners, elected officials, active citizens)	Often want to manage growth, want to preserve housing values, don't want new taxes, may have little financial incentive to promote affordable housing
Developers	Want to maximize return, want a predictable system, cannot always pass fees on to builder or land owner
Builders	Want to maximize return, cannot justify building affordable homes if lot costs and fees are too high
Home buyers	Low and moderate income buyers cannot afford high fees, often there is no substitute choice of housing
General population	Impact fees keep general taxes lower, often do not understand the impact that fees have on housing prices and the need for affordable housing

[1] While local general funds are composed of many sources of revenue, for the most part they come from local taxes. The 2002 Census of Government Finances shows local government "general revenues" totaled $727 billion with taxes accounting for $535 billion or nearly 75%.

One of the central themes in structuring and implementing impact fees of all types is the concept of "proportionate share," which has been generally accepted and dates back to at least the 1970's. From a legal standpoint, impact fees are legally prohibited from charging developments more than a proportionate share of the cost of new facilities. This is closely related to the very definition of impact fees, which are distinguished from taxes or general charges and required to be based on actual or projected expenditures. Charging proportionate shares is also frequently supported from a policy and fairness standpoint. Ensuring that impact fees do not charge more than the proportionate share is fair and equitable and protects affordable housing from paying a disproportionate share.

Notwithstanding the broad underlying support for proportionate shares, it also leads directly to significant questions and complications. In reality while the courts have made it clear that lawful impact fees must reflect proportionate shares, they have also accepted very relaxed approaches including the common use of impact fees set at average levels and then applied to every case in the community. In other words, so long as the process achieved an overall, general correspondence between costs and fees, it could be legally accepted as an impact fee. Yet using flat fees to pay costs that do not vary with unit size has had serious drawbacks because it charges smaller homes and apartments disproportionately large shares of costs, and larger homes and apartments disproportionately smaller shares. Unlike real property taxes, flat fees tend to have a “regressive” effect; that is, they fall disproportionately on those with lower incomes than with higher ones.

Designing More Equitable Fees

The purpose of this guidebook is to help practitioners design fees that more equitably reflect actual proportionate share and therefore have less of a negative impact on housing affordability. It is not a primer on impact fees and assumes some general familiarity with public financing terminology. It is not a research report but a guideline, based on substantial research, for addressing issues of housing affordability and equity. Fortunately, modern information systems make it easier than ever before for communities to develop impact fees that correspond more accurately to actual costs associated with new homes. While there are different variables that might be used for this purpose, based on a comprehensive literature review and research conducted in the course of this project, the authors found that the simplest and most universal factor associated with actual costs is the square footage of the home. For certain impact fees, particularly those covering libraries, parks, open space and construction of schools, square footage of the homes may be sufficient for allocating costs. For other fees, such as those covering roads, public safety and water or drainage, additional significant variables should also be considered along with dwelling unit square footage in determining the appropriate costs and payments. Depending on the particular fee, these variables might include size of lots and the density of subdivisions or broader neighborhoods. But the key point is that basing all types of impact fees in whole or in part on house or apartment square footage rather than charging uniform rates is straightforward to implement and helps to avoid overcharging smaller units more than their true proportionate share.

This Guidebook takes this core research finding and applies it to the construction of impact fee programs. It includes information that is useful to local jurisdictions that are either in the process of implementing impact fees, or considering revisions to current impact fee programs. It includes information on the history of impact fees; discusses alternative financing models to ensure the most appropriate financing tools are at least considered; summarizes state legislation which can influence the design of local impact fee programs; and addresses how to design impact fees to be more progressive. Case studies of local government impact fee programs that should provide valuable insights to the reader on the development of innovative impact fee programs that are sensitive to affordable housing are also included.

Additional information is presented in this Guidebook in the form of a series of decision guides that include model questions and potential answers. Some of the questions and answers are potentially applicable to all local governments with infrastructure financing needs, with the balance geared toward increasing the level of understanding and providing guidance on questions of equity and revenue credits. These decision guides draw off the text in each chapter and will help the user make decisions based on their unique needs and circumstances. The issues are presented in two specific sets of decision guides which lead the reader through a series of questions and answers.

- The first set of decision guides is included in Chapter Two, Capital Facility and Infrastructure Financing Options, relates to categorizing the financing needs and providing for various financing options based on subject matter. This series of guides is meant to help the practitioner take the material presented in this chapter on infrastructure financing options and decide whether impact fees are the most appropriate financing tool. Infrastructure financing needs range from very simple and clear needs to complex situations. The simplest infrastructure needs for public facilities that will be constructed without any regard to user ability to pay (such as fire stations) are under one decision guide, while complex infrastructure needs dealing with the extent users are willing to pay for specifics are under another decision guide.
- The second set of decision guides is included in Chapter Four, Impact Fees and Housing Affordability. This set of decision guides delves more deeply into issues relating to specific impact fee program design to help practitioners take the material presented in this chapter relating to equity and apply the material through the question and answer format. The decision guides are intended to help practitioners determine whether their existing impact fee programs meet basic equity and fairness criteria; and, in the case of new programs, ensure a program design that is fair and equitable.

The appendices included in this Guidebook include core background and research information for reference purposes. We have included these pieces as they can contribute to a better understanding of impact fees and how the authors arrived at the recommendations contained in the Guidebook.

Additional Resources

Key to both designing fair and equitable impact fees, and ensuring that they withstand the scrutiny of the legal system, is incorporating good data. Fortunately, there is substantial data often available at the local level. In addition, the Department of Housing and Urban Development maintains a website where practitioners can find useful resources that form the underlying basis for this Guidebook. This website is: http://www.huduser.org/rbc/.

Introduction

On January 9, 2003, Lincoln, Nebraska's Mayor Don Wesely stood on a bumpy graveled portion of West Adams Street that leads to new homes in northwest Lincoln to drive home his attitude on the need for impact fees.

> "The washboard-like graveled West Adams Street is an example of how big the funding gap for extending arterial streets really is and why impact fees are needed," said Mayor Wesely. "The City has fallen so far behind that the City is not scheduled to pave this street for another six years. It's less safe than a paved road, it's dusty, and it's a daily problem for the residents.
>
> This is the wrong way to build our community. If impact fees had been in place, West Adams would have been paved much sooner because the street fees would have helped pay for the improvements.
>
> Critics have said impact fees will stop growth," said Mayor Wesely. "What stops growth is uncertainty and the inability to pay for new streets, water and sewer systems and parks. Impact fees are not the whole solution, but they are a fair way to share the costs between the new development and the taxpayer."[2]

Mayor Wesely's comments echo those of many city officials who want to find a way to pay for growth. Impact fees have now become a fact of life in an ever-increasing number of communities. Originally a phenomenon of fast-growing coastal communities in Florida and California, the use of such fees has now spread to mid-America. Increasingly impact fees are seen by local officials as the best option available. .

Impact fees, one-time charges on new development, provide revenue for new or expanded infrastructure to support new development. Impact fees take the form of a predetermined monetary payment -- a fee -- and are generally levied against developers to fund capital expansion of large-scale public facilities and services.[3] Increasingly, such fees play an integral part in giving local governments the ability to cope with the many burdens of rapid population growth such as the need for new parks, roads, schools, jails, public buildings, sewer and water treatment facilities, and public safety (fire, police, and Emergency Medical Service) facilities.[4]

Impact fees have become widely used especially in growing regions for a variety of reasons but three in particular: a) locally elected officials are increasingly loathe to ask voters and voters are generally unwilling to raise their taxes in part to help provide increasingly higher levels of new facilities demanded by new development, and b) state and local governments have municipal financing constraints including state constitutional limits on property tax rates, and c) there is little financing provided by state and federal governments for infrastructure to local governments. While in theory there are many better ways to finance infrastructure, in practice impact fees often become the path of least political and legal resistance.

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[2] News release accessed from http://www.lincoln.ne.gov/city/mayor/media/2003/011303a.htm.

[3] See Susan M. Denbo, Development Exactions: A New Way to Fund State and Local Government Infrastructure Improvements and Affordable Housing?, 23 REAL EST. L.J. 7, 11 (1994).

[4] Juergensmeyer & Roberts, supra note 1, at 421.

In one form or another, impact fees now exist in nearly all U.S. states and are a common technique used to generate revenue for capital funding necessitated by new development.[5] To date, approximately twenty-six states have enacted impact fee enabling legislation and in most other states impact fees are enacted pursuant to home rule powers or pursuant to individual local government enablement.

Historically, it has been a primary function of state and local governments to construct, operate, maintain, and improve the basic physical infrastructure of American communities. However, as a result of three significant events in American history, this traditional approach began to break down. The first of these events was the sharp rise in inflation in the 1970s[6] and the decimation of fixed-base taxes such as the motor fuels tax. The second factor leading to the breakdown of the traditional approach was the general hostility to the taxation of real property, thus forcing local jurisdictions to look elsewhere to fund the ever-increasing demands of constituents.[7] Third, was the failed expectation that the federal government would pay a significant portion of infrastructure costs. Although, historically, the federal government has paid little or no portion of such costs, many environmental mandates enacted in the '70's, especially regarding clean water, did initially include significant federal financial support. Many communities began to rely on these funds just at the time the federal government returned to a more traditional role of limited financial support for local infrastructure. Because these factors were occurring at a time when the pace of urban development was increasing, especially in the fast growing communities in Florida and California, both the demand for and the cost of investment in public infrastructure began to climb, while at the same time the available financial resources were falling. As a result, there arose an increasing need for investment concurrent with declining means.

Florida, especially, presented a financial "perfect storm". Population was growing rapidly, homebuyers were expecting higher levels of services, and the lessening of state and federal support resulted in ever-increasing demands of localities. An increasing share of the responsibility to pay for these and other public investments fell directly on local jurisdictions by default.[8] In order to assume control of providing these infrastructure needs, local governments were forced to pay the associated costs commonly by raising local property taxes. At the same time, they were hit by the "taxpayers' revolt." Increasingly, local elected officials faced a public demand to increase public services without increasing taxes. Impact fees arose from this environment as an acceptable political alternative to solve the need for financing. Because of their intrinsic attractiveness to local governments, their use for an ever-increasing number of facilities and services spread rapidly.

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5 See J. Juergensmeyer & T. Roberts, Land Use Planning and Development Regulation Law 421 (Practitioner Treatise 2003), and J. Nicholas, A. Nelson, & J. Juergensmeyer, A Practitioner's Guide to Development Impact Fees 13 (1991) [hereinafter cited as Nicholas, Nelson & Juergensmeyer].

6 For most of the county's history inflation averaged two percent or less, with the periods of war being significant exceptions. Beginning in the 1960s and continuing through the 1980s, inflation existed at hitherto unprecedented rates, peaking at over 18 percent in the late 1970s. See U.S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS website, available at www.bls.gov (last visited Oct. 2, 2003).

7 See generally Lawrence Susskind, Proposition 2 ½: Its Impact on Massachusetts (1983).

8 Both state governments and the federal government limited funding programs for public investments because of a sharp rise in cost. Furthermore, there was a greater burden on the local governments responsible for handling these matters because of required improvements to many infrastructure facilities, such as water pollution control facilities. See, e.g.,The Water Pollution Control (Clean Water) Act, 33 U.S.C. § § 1251 et seq. (1994).

However, impact fees are often criticized for having adverse effects on housing affordability either by raising prices, reducing supply or both. Some recent studies show that carefully tailored impact fees may not necessarily reduce the supply of housing that is affordable and in fact may increase it.[9] Nonetheless, Vicki Been observes that:

> "…impact fees also can be abused, either to exclude low-and moderate-income residents or people of color from communities, or to exploit new homebuyers, who have no vote in the community. They also can be unfair to those caught in the transition from other forms of infrastructure finance. By careful attention to the myriad of issues …*researchers can help local governments seize the potential impact fees offer for promoting* more efficient development patterns while minimizing any negative effects impact fees might have on *the affordability of housing and the distribution of housing opportunities to all residents (emphasis added).*[10]

Her concluding observation is the very purpose of this Guidebook: to educate practitioners on impact fees and present recommended approaches that can reduce potentially adverse effects of impact fees on housing affordability. Two approaches are recommended. The first is to calculate impact fees based on house size in square feet because, as noted by the National Association of Home Builders, as the size of the house increases so does the number of occupants at least up to a certain size (see Chapter 5). The second is to waiver or defer impact fees on affordable housing, as done in several communities around the nation (see Chapter 6).

Why is housing affordability an important impact fee local policy consideration? In many (and some would say most) growing metropolitan areas, school teachers, first responders, building maintenance, retail and service workers among many others are simply unable to afford to buy or rent housing in the very communities in which they work. Instead they either pay a disproportionate amount of their income for housing in or near communities where they work or, more often, live in other communities incurring substantial commuting costs.[11] As a result, many become detached from communities where they work – and in the case of public service workers such as teachers and first responders this undermines community cohesion. Indeed, first responders may not be able to respond timely to catastrophic events because they may live so far away. The extent to which impact fees may by themselves weaken housing affordability to people working in the community and what can be done to offset this outcome is the focus of this Guidebook.

The overall guidance presented in this document is based on considerable research conducted over the years and additional research conducted specifically for this project. The research findings clearly support

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9 Gregory Burge and Keith Ihlanfeldt of the DeVoe Moore Center and the Department of Economics at Florida State University found that through a cause-and-effect analysis the supply of multi-family and higher-density single-family homes increased in suburban communities that had impact fee programs. Among the reasons are removing "NIMBY" concerns about such housing "paying its own way". In *Impact Fees and Single-Family Home Construction* they note "(i)mpact fees earmarked for public services other than water and sewer system improvements are found to increase the construction of small homes within inner suburban areas and of medium and large homes within all suburban areas" and in *The Effects of Impact Fees on Multifamily Housing* they state "(i)mpact fees earmarked for public services other than for offsite water and sewer system improvements are found to expand the stock of multifamily housing construction within inner suburban areas."

10 Vicki Been synthesizes these issues in "Impact Fees and Housing Affordability", *Cityscape: A Journal of Policy Development and Research,* 8(1): 139-185 (2005).

11 See *Paycheck to Paycheck*, National Housing Coalition (2004).

the intuitively obvious assumption that bigger houses place more demand on services. Thus, bigger homes should pay higher fees to be fair and equitable. The basic conclusion of the authors and the underlying premise of the guidance is that to be fair and equitable, impact fees need to be based on square footage as a starting point, followed, in some cases, by additional elements that further vary costs across households to reflect other underlying cost differences. The guidance offered here is meant to be a balanced and pragmatic approach to implementing equitable fees.

The Guidebook has six chapters, a series of questions presented as decision guides included within two of the chapters, and three appendices.

- Chapter 1 examines the use of impact fees historically and currently, and briefly looks at future patterns and the need to structure fees progressively to limit the impact on affordable housing.

- Chapter 2 provides an overview of various infrastructure financing options to help practitioners understand the basic financing options and ensure that a thoughtful approach is taken to considering various options. The simplest infrastructure financing needs, covered in Decision Guide 2-1, are public facilities or services that need to be provided without any regard to user ability to pay or extent of use; for example, fire services or police protection. The most complex infrastructure needs, covered in Decision Guide 2-4, tend to be infrastructure necessary but with a substantial ability to assess the users for specifics; for example, roads, which might be funded at least in part by tolls. Other programs fall somewhere between the simple and complex.

- Chapter 3 provides an overview of the role of the state in impact fee programs. It includes summary information about the states with enabling legislation and reports the types of facilities eligible for impact fee financing.

- Chapter 4 is designed to give clear guidance on how to set impact fees that are consistent with the concept of proportionate share. The chapter begins with a review of key elements associated with setting the amounts of particular impact fees. It explains the rationale for the use of impact fees based on square footage, and in some cases, additional elements. This chapter includes decision guides that serve as checklists of procedures that local governments can follow to assure that impact fee design does not unduly affect housing affordability. The focus here is on proactive measures to alleviate impact fee effects.

- Chapter 5 presents case studies documenting how impact fees incorporating these principles have been implemented in three jurisdictions around the U.S.: Atlanta, Georgia; Albuquerque, New Mexico; and, Alachua County, Florida.

- Chapter 6 concludes this Guidebook. It is an overall summary of the Guidebook contents.

Supplemental materials which local government planners may find useful in understanding the relationship between impact fees and the comprehensive plan; and the provision of infrastructure financing through special assessment districts are included as Appendix A and B. Appendix C is sample land purchase option contract language that the authors received from a developer showing how such contracts may be used to "internalize" impact fee payments to the seller of land – consistent with land economic theory. Appendix D is a briefing paper prepared while doing research for the Guidebook. This is a core piece of research that examines the variables that can create the greatest negative impact on housing affordability and inadvertent inequities that disproportionately affect the smallest and most affordable units. Conversely, it also details the variables that should be included to create impact fees that are fair and equitable. This briefing paper serves as a reference piece for the approach suggested in this Guidebook.

Chapter 1 - Impact Fees - Past, Present and Future

This chapter serves as a background on impact fees and how they have evolved over time. It also includes data on how impact fees are being assessed today with tables summarizing national data and several useful local examples illustrating specific impact fee structures. This chapter concludes by introducing the concept of equity as applied to impact fees and the impact on affordable housing.

TABLE 1-1. METROPOLITAN POPULATION, CITIES & POPULATION PER CITY 1980 - 2000

	1980	1990	2000	% Increase 1980-2000
Population (000)				
Total	226,546	248,719	281,422	24.2%
Metropolitan	177,143	198,023	229,192	29.4%
Non-Metro	49,399	50,696	52,229	5.73%
% Urban	78.20%	79.60%	81.40%	
Cities 500K and Over				
Number	22	23	29	31.8%
Population	28,400.00	30,100.00	35,888.25	26.4%
Per City	1,290,909	1,308,696	1,237,526	-4.14%
Cities 100K – 500K				
Number	147	172	213	44.9%
Population	28,400.00	33,300.00	40,193.32	41.5%
Per City	193,197	193,605	187,819	-2.78%
Cities under 100K				
Number	18,513	19,067	19,214	3.79%
Population	83,800.00	89,700.00	98,800.00	17.9%
Per City	4,527	4,704	5,142	13.6%

Source: Statistical Abstract of the US, 2001, p. 1-67.

The Need for Infrastructure Financing Tools

The financing of basic community infrastructure in the United States has become more complex and more expensive as each year passes. It has become more complex because we are continually expanding our urbanized areas and, thereby, requiring increased quantities of infrastructure. Table 1-1 shows some basic trends for the United States. The urbanization of the nation's population has continued and with continued urbanization come increasing numbers of people and households looking to government for services, including the provision of infrastructure. The population continues its shift to metropolitan areas,[12] although at a lower rate than in the past.[13] Both the number and the populations of all urban areas have continued to grow, with growth of the medium-sized cities being the greatest. In both the medium and largest cities the population per city declined, simply indicating that the cities added to that size grouping would be at the lower end of the size range, thus reducing the average size.

But increased numbers of people in cities alone understates the demand. As incomes have increased, the public's expectations of and demand for public facilities have grown. Schools are no longer aggregations of classrooms but have become multimedia learning and social/cultural centers. The transition has greatly

[12] There is a circularity here as new metropolitan areas continue to be created, thus adding to the metropolitan population by the simple act of creating more metropolitan areas.

[13] In 1920 the urban population first equalled the non-urban population in the U.S. Since then urbanization has grown to reach over 80 percent by the year 2000.

increased the cost of providing educational facilities. The same is true for park and recreational facilities. Gone are the days when a ballfield was simply an otherwise vacant area where ball was played. Now they are stadiums with all the accoutrements, including red dirt. A fire department no longer simply puts out fires; today it offers advanced life support. These evolutions are responses to public demands. Few would doubt that the quality of modern public services is greatly improved.[14] Few would doubt that the cost of these services has greatly increased.

The federal government has long since reached a peak in being a growth source of revenue to state and local governments. Since 1972, the federal portion of state and local revenues has remained constant at about 20%,[15] leaving state and local governments to rely on their own revenue-generating abilities to meet the demands of the public. Some suggest that the federal government is responsible for many of the increased costs being borne by local governments through the use of unfunded and partially mandates.[16]

As urbanization and public demands grew, inflation became an important political/economic fact of life. For most of the life of the nation, inflation was not an issue.[17] During the 1970s and 80s this was not the case. One of the more pernicious aspects of inflation is that it significantly weakens the revenue from fixed-base taxes, such as the motor fuel taxes. Inflation increases the cost that fixed-base revenue sources are to cover without increasing the means to pay those costs. Inflation increases the cost of road construction and maintenance but does nothing to the proceeds derived from a 6¢ or 8¢ per gallon levy. In the face of such a problem the logical thing to do is to raise the fixed-base tax. Property taxes, while not fixed-base, require action to be increased. The action required is an increase in the assessed or taxable value of the property.

Figure 1-1 shows annual rates of inflation from 1970 to 2004. During the time period the average was 4.95% per year, approximately twice the long-term rate of inflation. Annual inflation during 1980 was 13.5% and the year-over-year rate peaked during 1980 at over 17%. Such rates of price growth meant that the purchasing power of fixed-base taxes, such as the motor fuels tax, declined by 13.5% during 1980. One of the commodities most responsive to inflation is real estate, including development property. In fact, real property inflation tends to proceed

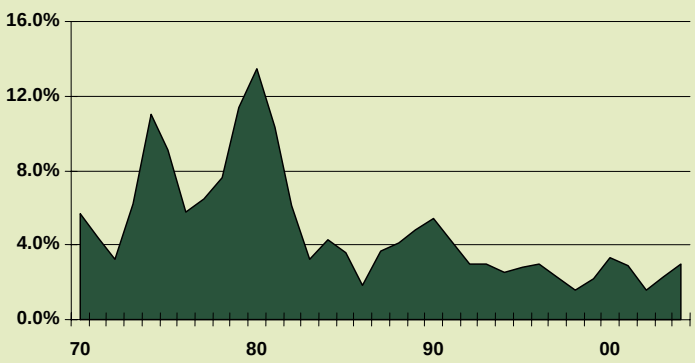

FIGURE 1-1. RATE OF INFLATION 1970-2004

[14] Nostalgia notwithstanding.

[15] *Stat. Abstract of the US*, 2001, page 262.

[16] The Clean Water Act required massive expenditures to be made largely by local governments. Of course, it could be argued that it was those local jurisdictions that dirtied the water so the burden of clearing that same water should be borne by them.

[17] From 1929 (the first year of consistent price indices) to date, the annual increase in prices has averaged 3.3%. If the two periods of rapid inflation are removed, the long-term rate of inflation drops to 2%.

faster than general inflation.[18] General inflation increased public facility operating and capital costs but it also increased the prices of both new and existing homes, thereby increasing the property taxes on those properties. It should not be surprising that California's Proposition 13 was enacted in 1978, during a period of unprecedented inflation. Proposition 13 rolled back property taxable values to 1975 and capped their rate of increase.[19]

Massachusetts soon followed in 1980 with Proposition 2½, which took its name from the limit on property taxes being no more than 2.5% of taxable value.[20] Since the referendum enactment of these two limits, all states have taken some action on limiting property taxes.[21] Thus, property taxes tend to act like fixed-base taxes because of the limitations imposed by legislation or constitutional amendment.

Local governments were faced with conflicting demands:

- Increase the supply of facilities, especially infrastructure, to larger populations;
- Increase the quality of public facilities, also to larger populations; and,
- Avoid tax increases in meeting these demands.

As these events unfolded, the philosophy of taxation moved more toward the use of the *Benefit Principle* and away from *Ability to Pay Principle*.[22] This shift, combined with continuing urbanization and inflation eroding the tax base, set the stage for "alternative" sources of revenues.

As a result of new federal environmental mandates local jurisdictions were also being directed to make massive investments in water pollution control facilities.[23] These investments originally were funded up to 85% by federal grants. They are now funded by federal loans amounting to 45%. The highway system that was to be primarily funded by federal sources has fallen into disrepair with increasing congestion because of the inadequacy of federal funding. States elected not to assume the primary role that the federal government was abandoning for precisely the same reason that the federal government was abandoning it: cost. The responsibility for highway maintenance and other major public investments have fallen to local jurisdictions by default. Where local governments attempted to assume these responsibilities they were met with the "taxpayers' revolt," a reaction to the increase in property taxes that resulted from increasing local absorption of these responsibilities as well as a more general unwillingness to pay the costs for homebuyers that did not yet live in their communities.. Clearly some other means of funding were needed. When the power to tax proved unsuccessful, local jurisdictions looked to their police powers as a means to address the problem.

American local jurisdictions have great discretion in the exercise of their power to protect the public's health, safety and welfare. By contrast, they have almost no independent discretion in the exercise of their power to tax without voter approval. It was natural then that the police powers would be turned to as an

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18 Between 1980 and 2000, all prices rose at 3.8% percent per year while shelter costs rose at 4.4%. See *Stat. Abstract of the U.S.*, 2001, p. 454. The median sales price of a new single-family home grew by 4.9% per year. See *Ibid*. p. 598. The median price of existing home sales rose by 4.1% per year.

19 See John Kirlin. *The Political Economy of Fiscal Limits*. Lexington, MA: Lexington Books.

20 *Ibid.*

21 Therese J. McGuire, "Proposition 13 and Its Offspring: For Good or Evil?", 52 *National Tax Journal*, 1999, 129-138.

22 Musgrave, Richard A., and Peggy B. Musgrave. 1989. *Public Finance in Theory and Practice.* 5th ed. New York: McGraw-Hill.

23 The "Water Pollution Control Act," commonly known as the Clean Water Act, PL 92-500.

alternative. Local communities found that growth and development meant more traffic, wastewater, and school children that somehow had to be accommodated. Absent the funds to make physical improvements, congestion resulted and with congestion also came citizen outrage. Increasingly, local elected officials faced a public demand to reduce taxes and maintain or even increase services. In such an environment, growth and development came to be viewed as detrimental rather than beneficial.[24] The detrimental aspects of urban growth provided the basis to invoke the police powers and protect the public against the congestion and loss of "quality of life" that further growth and development would entail.

The impact fee arose not out of any great thought or plan, but simply from desperation resulting from conflicting demands placed on local officials. Citizens demanded quality public services and taxpayers insisted on lower taxes. Builders demanded that they be allowed to serve a clearly apparent market for their products and those that earned their livings from development fought for their jobs. Local governments were vested with the authority to impose on new development reasonable conditions that were consistent with the protection of the public's health, safety and welfare in all of its manifestations. The impact fee filled this role. As a result, the use of impact fees spread rapidly with Florida in the forefront.

To understand the evolution of the impact fee it may be helpful to understand the state of urban infrastructure through considering a representative example. The small community of Key West, Florida, originally a private enclave, that still maintains those traditions today, is an island jutting out into the Straits of Florida. The city had been dumping its untreated sewage into the Straits. In order for the City of Key West to fund an Environmental Protection Agency mandated sewage treatment system, it would have to raise the monthly bill for each home owner by $65 to fund the expansion with revenue bonds.[25] An increase of $65 per month was considered to be outrageous and the citizens turned it down, thus creating an environmental and funding crisis. This crisis ultimately became an issue in the further development of the City in that the City was barred from making new sewer connections and thus new construction could not proceed. A cost-sharing agreement was struck between the City and the development interests that included a monthly bill increase of $15 which, combined with an impact fee, funded the sewage treatment system and development was allowed to proceed. As a result, the City stopped pumping its raw sewage into the Gulf Stream.

Education presented another area in which impact fees have filled a funding gap. Like sanitary and road infrastructure, school construction tended to be financed from inelastic revenue sources, and, these too failed to keep pace with need in areas of rapid growth with many schools becoming increasingly over-crowded.

Large scale, fast paced growth is not nationwide or even state-wide. In rapidly growing Florida, the actual growth areas are confined to no more that 10% of the geographic area of the state. Significant state funding support could not be expected for that would mean taxing both the growing and the non-growing (and therefore poorer[26]) areas with the result being taxing the poor to subsidize the more affluent. The state's legislatures joined the federal government in the position that if the needs were great enough, the

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24 See William K. Reiley, *The Use of Land*, New York: Crowell, 1972.

25 One of the authors (Nicholas) served as a consultant to the City of Key West during this period and these facts are from the author's on-site observations.

26 In Florida, the per capita incomes of the non-growing portions of the state amount to approximately 50% of those of the growth areas. See *Florida Statistical Abstract*, 1995, pp. 199-204.

prosperous growth areas had the ability to fund the improvements needed to serve growth. What they lacked was the willingness to raise the funds.

Now, given this situation, what realistic alternatives were available to local governments? Although some communities did agree to raise local taxes, as a general rule, this approach did not get very far. Even in areas that increased taxes, they were generally insufficient to respond to the magnitude of the needs. Some communities sought to restrict growth to a level which could be accommodated by existing infrastructure. As could be expected, this "solution" has been has been hotly opposed by the building industry. Impact fees were the alternative to further congestion and a shut-down of building. Impact fees charged new construction and generated revenue that the community could use to expand the physical infrastructure needed to accommodate that growth.

However, impact fees have significant drawbacks. Capital improvements and infrastructure are needed "up front," but impact fees dribble in.[27] Roads, schools, parks and utilities are all needed ahead of development.[28] The problem is that funding is not available "up front" unless it is put up by the developer or borrowed by the host local government. Developers and local governments assiduously avoid both of these actions. Impact fees, while becoming an important component of local government finance, do not address the timing problem. Impact fees, as they are commonly implemented, charge new development when the construction is actually permitted. Thus the impact fee receipts "dribble in" as construction occurs. While jurisdictions prefer any revenues" to no revenues at all, they would prefer up-front revenues so that facilities can be constructed and be available as new development occurs.

The key to resolving the "dribble in" problem is bonding, but bonding requires a secure source of revenue that can be pledged. Impact fees are not considered to be secure because their receipt will rise and fall with the level of construction in a community. The solution is to create some type of security, borrow against that security, and then use impact fees to make the required payments.

Alpharetta, Georgia, received public support for a general obligation bond issue for road and fire facilities improvements. A large portion of this debt was for growth accommodating improvements that would be paid for by impact fees. The impact fees collected were used to pay debt service, thereby reducing the necessary tax rate. The key to this program was the public's willingness to support a general obligation bond. This support facilitated an impact fee funding program that provided road and fire protection improvements "up front" and did so at the lowest possible cost.

[27] Sometimes this is referred to as "trickle in."

[28] There is the question of where in the development process impact fees should be assessed. In particular, the earlier in the development process a given impact fees is collected, the longer the developer has to pay financing and other carrying costs and the more costly the home may become. The issue of timing is addressed in Chapter 4.

The Proliferation of Impact Fees

Table 1-2 shows the national average impact fees for 2003-2004 for single-family dwellings by type and it illustrates the wide range of fees with school impact fees being the most expensive and libraries the least. These norms are derived from a sample of 152 local governments including 44 in California, 51 in Florida and 57 in other states. These data are for jurisdictions that charge impact fees of various types. Not all of the 152 local governments charge each type listed in the table so the number per impact fees varies. The method of sampling is not scientific. Rather, the sampling was done by opportunity, meaning that when the opportunity presented itself, data were included in the sample.[29] Even with the caveats on sampling methodology, the table is useful in illustrating the types of fees and relative costs.

TABLE 1-2. AVERAGE IMPACT FEES BY TYPE

ROADS		SCHOOLS	
Maximum	$7373	Maximum	9,936
Minimum	130	Minimum	348
Average	1,761	Average	3,169
PARKS		PUBLIC SAFETY	
Maximum	8228	Maximum	8,031
Minimum	102	Minimum	79
Average	1344	Average	568
STORM DRAINAGE		LIBRARY	
Maximum	6,000	Maximum	1,843
Minimum	160	Minimum	54
Average	1,227	Average	415
WATER		SEWER	
Maximum	7,763	Maximum	6,998
Minimum	237	Minimum	265
Average	2,237	Average	2,061

As interesting as the cost of impact fees is the rate of growth in such fees. Table 1-3 shows the average non-utility (not including water and sewer) impact fee amount and annual growth rate from 1988 to 2004.

TABLE 1-3. AVERAGE TOTAL NON-UTILITY IMPACT FEE SINGLE FAMILY HOME
1988 – 2004

Year	Amount	Avg. Annual % increase
1988	$5,781	
1991	$7,649	10.8%
1995	$7,849	0.65%
1997	$8,006	0.99%
1999	$8,970	6.0%
2000	$9,767	8.9%
2002	$10,183	2.1%
2004	$11,012	4.1%
1988 - 2004		5.66%

The data shown in Table 1-3 are the results of the national survey conducted by Duncan Associates and are the averages for the jurisdictions included in this survey. (The 2005 survey can be found at http://www.huduser.org/rbc or obtained from Duncan Associates.) The average has grown at an annual rate of 4.07%. This may be contrasted with a rate of inflation (CPI) of 2.7% during the same period, and a construction cost index of about 2.9% (Engineering News Record, Annual Cost of Construction Index). It is apparent that the rate of increase has not been steady over the period. The trend line shown in Figure 1-2 is simply the annual rate of growth over the 16-year period rather than the year-to-year rate seen in Table 1-3.

[29] Impact fee data for inclusion in the sample was prepared by James C. Nicholas.

The data shown in Table 1-3 are the averages for all jurisdictions included in the sample. Over time many more jurisdictions have been included and some have dropped out. Given that the sample is not scientifically drawn, the conclusions drawn must be tempered. Table 1-4 presents a constant sample of impact fees.

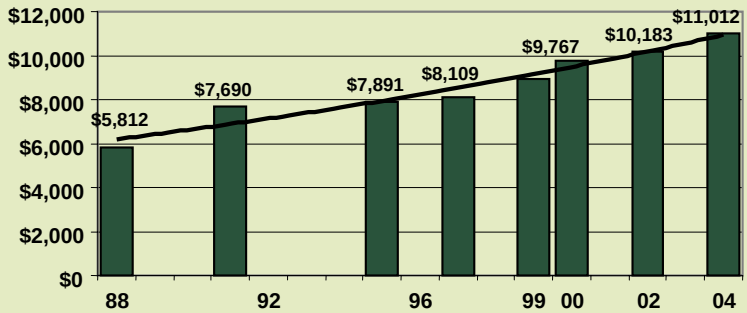

FIGURE 1-2.
AVERAGE NON-UTILITY IMPACT FEE

The amounts in Table 1-4 are substantially less that those of Tables 1-2 or 1-3 because not all fees were included in the constant sample. When the sample was begun in 1988 only a few types of impact fees were included. Those impact fees for the named jurisdictions have been followed over the 16 years and these results are shown in Table 1-4. It is interesting to note that the rate of increase of residential impact fees for the constant sample is in general accord with the variable sample; and that the data in Table 1-4 (depicted graphically in Figure 1-3) show the non-residential fees, especially industrial fees, have been growing more rapidly than residential fees. One explanation might be the lack of developer opposition in commercial versus residential.

TABLE 1-4. CONSTANT SAMPLE IMPACT FEE
1988 – 2004

	1988	2004	Avg. Annual % Increase
Residence	$2,782	$7,564	10.7%
Industrial	$481	$2,913	31.6%
Office	$1,316	$4,518	15.2%
Retail	$2,277	$3,978	4.7%

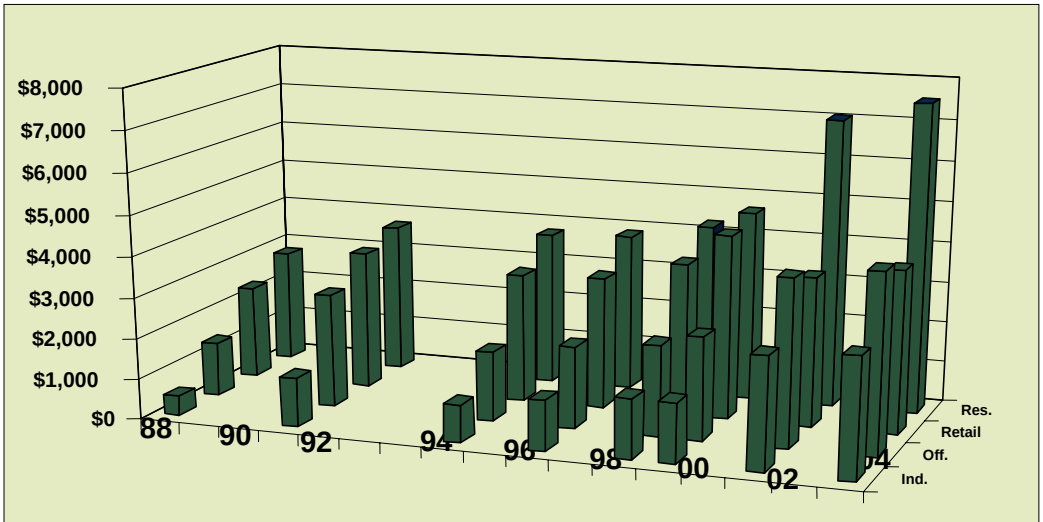

FIGURE 1-3. IMPACT FEES BY TYPE 1988-2004

General Trends in Impact Fees

Subsequent chapters of this Guide will provide detailed guidance as to how future impact fees can be shaped to be more equitable and more sensitive to housing affordability while also providing for sound fiscal decision-making. This section addresses the issue more generally providing historical perspectives, emerging practices, and lingering realities.

Impact fees began as minor supplements to traditional sources of capital improvement finance. The water and sewer impact fees that were at issue in the 1975 case of *Contractors and Builders Association of Pinellas County v. City of Dunedin*[30] were $325 for water and $475 for sewer.[31] These 1975 amounts are substantially below the $2,131 and $1,963 of today.[32] Similarly, the "transportation" fee litigated in *Broward County v. Janis Development Corp.*[33] was $100 which is very much less than the average road impact fee of $1,679, even after considering inflation.[34] The amounts of impact fees thus began small and became much larger. The role of impact fees began as supplemental and is now primary. But, the impact fee debate continues. That debate has evolved, however, from *whether* impact fees should be assessed at all to *how* they are assessed.

Local level debates concerning impact fees can address different types of equity. Intergenerational equity may be of concern because impact fees assessed on new homes may adversely affect the ability of the children of current residents of the community to buy homes where they grew up. Representational equity may be of concern because to the extent that impact fees are assessed on new homes bought by new residents of the community, these new residents had no say in the adoption of the policy. Equity in endowments may be of concern to the extent that impact fees are considered a form of "initiation" fee into a community much like country clubs charge high initiation fees affordable only to the affluent. While these concepts of equity are important, the focus of this Guidebook is how to address proportionate equity – that is, the extent to which the fee reflects the actual impact different housing units have on community facilities.

A critical aspect of proportionality is the extent to which impact fees are based on the impact of new development on facilities. Many impact fee programs assume that each residential unit had the same impact on facilities regardless of size, type, density, location, or other factors. Hence, the impact fee for a large single-family detached home is the same as for a small efficiency apartment despite the fact that census figures clearly show substantial differences in occupancy rates. These impact fees are described as "flat rate" fees, and are inherently unfair. The result is that flat rate impact fees have a "regressive" effect; that is, they fall disproportionately on those with lower incomes than with higher ones.

This Guidebook focuses on methodologies for calculating impact fees to ensure that the regressive effect is reduced if not eliminated. Through taking an approach that more correctly allocates the proportionate share, the resulting fees are far less regressive.[35] When done properly, impact fees as presently practiced

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30 329 So. 2d 314.

31 *Ibid.* at 315. These fees are for a single-family detached unit.

32 The 1975 water fee of $325 would be $1,265 after adjustment for changes in the CPI, and the $475 sewer fee would amount to $1,603. These indicate that the relative amount of Dunedin's fees has remained about the same.

33 311 So.2d 371.

34 Adjusting the $200 from 1974 to 2002 by the CPI yields a 2002 value of $683.

35 In Dolan v. Tigard (512 U.S. 687 (1994)) the US Supreme Court established the "rough proportionality" standard for exactions such as impact fees. The court ruled that "the necessary connection required by the Fifth Amendment is 'rough proportionality.' No precise mathematical calculation is required but the (local government) must make some sort of . . .

in many if not most places would be reduced for smaller units on smaller lots, in locations where facilities currently exist including public transit, and in configurations that economize especially on vehicular trips.

For example, a study by James Duncan and Associates for Santa Fe, New Mexico found that trips per dwelling unit rose consistently with respect to unit size, from 6.7 trips per day for two-bedroom units averaging about 1,800 square feet and 2.07 persons up to 11.93 daily trips for five bedroom units averaging 4,985 square feet and 4.06 persons. [36] Further reductions are possible when transit is accessible. In metropolitan areas without rail transit about 93 percent of all trips are done by the automobile but in metropolitan areas with rail transit the figure drops to about 75 percent.[37]

Regressivity and the Impact on Affordable Housing

A common practice has been to charge residential impact fees based on the type of residence: single-family detached, single-family attached, multi-family, mobile home, etc. This method (although much preferable to flat impact fees with no variations) implicitly assumes that the only relevant distinction among dwellings is the type of unit and that there is at least some degree of homogeneity within unit types. Both of these implicit assumptions are simply incorrect. The net effect of the unit-type approach to levying impact fees has been to ignore all characteristics other than the type of dwelling unit. The result has been that while multifamily and mobile home units tend to have lower fees than detached units, a modest single-family detached unit of 1,200 square feet will pay the same amount as a mansion of 10,000 feet or more. The problems inherent with such an approach led some jurisdictions to look for other variables that when applied can result in more equitable fee structures. Recently, several jurisdictions have set impact fees that look to the size rather than the type of unit as the basis for assessing impact fees.[38] The premise of this approach is that it is the size of the dwelling, rather than its type, that is the better predictor of impact on the need for infrastructure. Three examples illustrate the benefit of this approach.

One of the first jurisdictions to address the regressivity problem was Palm Beach County, Florida. Palm Beach County had been using a unit type approach to residential impact fees and was dissatisfied with the relative burden on that approach between less expensive and more expensive dwellings. In response, the County incorporated unit size in calculating its residential impact fees. An example is its school impact fee, as shown in Table 1-5.

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determination that the required (exaction) is related both in nature and extent to the proposed development's impact. Data such as that developed by the National Association of Home Builders reported in Chapter 5 showing the relationship between house size and occupancy (up to 3,000 or perhaps more square feet) nationally may help meet the rough proportionality test.

36 Duncan Associates, *Capital Improvements Plan for Water, Wastewater, Road, Park, Fire and Police Development Impact Fees for the City of Santa Fe*, March 2003 draft.

37 Authors' calculations based on the *Nationwide Household Transportation Survey for 2001*.

38 See J. Nicholas, "On The Progression of Impact Fees," *Journal of the American Planning Association*, Vol. 58, No.4, 1992.

TABLE 1-5. PALM BEACH COUNTY SCHOOL IMPACT FEE	
Unit Size:	Impact Fee
800 Square Feet and Under	$272.05
801 - 1,399	$557.62
1,400 - 1,999	$893.35
2,000 - 3,599	$1,259.95
3,600 and Over	$1,543.59

Had the traditional unit type approach been used, the single-family detached fee would have been $1,221. Smaller and presumably more affordable units receive a substantial reduction in the fee paid.

Miami-Dade County, Florida, also assesses its school impact fee on the basis of unit size. Rather than using size groupings, a simple formula calculates the fee based on a fixed $612 amount plus 91.8 cents per square foot of unit size:

$$\text{School Fee} = \$612 + \$0.918 * FT^2$$

Canton, Georgia recently adopted park and recreation impact fees that also use unit size as the basis for fees, as shown in Table 1-6.

TABLE 1-6. CANTON PARK IMPACT FEES	
Total Growth Cost	$42,054,887
Residential	26,094,512
Non-residential	4,349,086
Net Growth Cost*	$12,233,362
Residential	$10,485,738
New Residential FT^2	19,905,404
Cost per FT^2	$0.53
Non-residential	$2,250,246
New Non-residential FT^2	12,972,159
Cost per FT^2	$0.17

*After amount paid by taxes

As shown in the table, the park impact fee in Canton is simply 53¢ per square foot of living area regardless of the type of dwelling. These and several other jurisdictions have been shifting away from unit type and towards assessment bases that reduce the regressivity of impact fees and properly assess fees based on impact. These attempts have been rather cautious and have tended to be incremental steps rather than giant leaps. Each jurisdiction has tended to build upon the experience of the previous one and to extend anti-regressive methodologies. Chapter Four, Impact Fees and Housing Affordability, includes a much more detailed discussion of these issues.

In summary, while impact fees appear to be here to stay, the role and scope of impact fees can continue to evolve. The task is to continue the expansion of new methodologies that satisfy the legal criteria for impact fees while accommodating both the interests of cities and counties looking to finance an ever-increasing share of capital costs and the legitimate concerns of the shelter industry for equity in the application of impact fees. This Guidebook deals with the regressivity problem and suggests methods of developing impact fees that are more equitable and, as a result, are more sensitive to the impact upon affordability.

Chapter 2 - Capital Facility and Infrastructure Financing Options

The purpose of this chapter is to discuss a range of infrastructure financing options, including impact fees, in order that the practitioner might have a more complete understanding of the options available and make informed choices. Impact fees, as well as other financing mechanisms, must be considered within the context of the local planning process. The relationship between impact fees, planning and exactions is described in Appendix A. This chapter also includes several decision guides which lay out various financing options in the form of questions, and present choices in the form of decision trees. The chapter opens with a general discussion of pricing as the underlying economic theory helps to determine the best options.

Included in this chapter is a discussion of developer exactions, special financing districts, and development taxes, as well as impact fees. Despite their differences, these alternative funding techniques all have a common theme: they shift the costs of new infrastructure from the general public to the new developments that create the need.

Principles of Efficient Facility Pricing

Economic theory supports the view that efficient pricing of public facilities alone will make land-use patterns more efficient, thereby saving resource lands for resource uses and facilitating efficient urban development. If public facilities were priced according to the costs of serving different locations, efficient development patterns would be encouraged. However, the choice of a local facility financing method affects the pattern of urban development. For example, residential density and distance from a water or sewer treatment plant influences the costs of sewer facilities and services. If the true costs of providing water or sewer service are subsidized and new development does not pay its full share of those costs, inefficient development will occur. It is "inefficient" in the sense that costs exceed benefits, which is seen in the form of infrastructure expansion and maintenance backlogs. It may also be inequitable in the sense that lower-cost development may subsidize higher-cost development.

In order to understand the efficiency and equity issues, the general nature of the costs of providing public facilities such as water and sewer services will be used to illustrate these concepts. These costs can be divided into three basic components:

The capital costs of producing the service. As a rule, these facilities, such as treatment plants, are subject to economies of scale and declining average cost. Being a function of the number of users and not necessarily distance from the facility, these costs usually are independent of residential distance away from the facilities or density of development.

The costs associated with the delivery of the service, such as sanitary sewer lines. Generally, these costs increase proportionally as distance increases. Increased residential density usually results in economies. For example, greater density allows for economies due to larger sewer pipe sizes run over shorter distances.

The short-run costs of actually producing the good; in other words, the maintenance and operation costs. These costs are incurred independent of density or distance, and are determined by actual use, such as the cost of actually processing the sewage once collected.

Average cost pricing occurs when the government charges everyone equally for the same service, regardless of the real cost to provide that service to a particular user. For example, sewer fees set on an average basis would charge connections to homes on half-acre lots five miles from the treatment plant the same as homes on 6,000 square foot lots one mile from the plant. As a result of average cost pricing, outlying developments are subsidized by other residents. Urban sprawl is encouraged when new development does not take account of the additional or marginal costs of providing service to it.

Table 2-1 illustrates this situation using actual figures from Loudoun County, Virginia, in 1984.[39] Notice that if all development is charged the same for service, some developments effectively subsidize other developments. If subsidized development is actually occupied by households that are more affluent than development being overcharged, there is also an inequity created. Unfortunately, Loudoun County is not at all an isolated example of this kind of inefficiency and inequity.

TABLE 2-1. ANNUAL CAPITAL FACILITY AND SERVICE DELIVERY COSTS 1,000 HOUSING UNITS CONSTRUCTED AT DIFFERENT DENSITIES, LOUDOUN COUNTY, VIRGINIA
[Prototypical communities of 1,000 units, 3,260 residents and 1,200 students.]

Facility Cost Category	Rural Low-Density *1 du/5 acres*	Rural Cluster *1 du/acre*	Moderate Density *2.67 du/acre*	High Density *4.5 du/acre*
Costs that vary with density	$4,052	$3,609	$2,621	$2,555
School operating costs	$3,046	$3,046	$2,256	$2,256
School transportation costs	$187	$153	$67	$33
Road maintenance costs	$110	$55	$38	$26
Water, sewer operating costs	$709	$355	$260	$240
Costs that do not vary with density	$908	$908	$908	$908
Public schools capital costs	$243	$243	$243	$243
Law enforcement	$165	$165	$165	$165
Fire/rescue services	$58	$58	$58	$58
Health/welfare services	$295	$295	$295	$295
General administration	$147	$147	$147	$147
Total Annual Costs	$4,960	$4,517	$3,529	$3,463

Source: Smythe and Laidlaw 1986. Figures not adjusted for inflation.

Public finance economists advocate marginal cost pricing, the cost of producing one more unit of output, in the form of a three-part tariff as an alternative to average cost pricing. One part of the tariff would be a charge for the costs of the capital facility used to produce the good, such as the cost of building a water or sewer treatment plant. This charge is a flat fee per connection since these costs do not vary by density or distance, although the charge may vary by size of connection to reflect approximate variation in treatment-plant capacity that must be reserved for that use.

The second part of the tariff is a charge for the costs of delivering the service, such as the cost of extending sewer lines to the house. It is a flat rate per house based on the average cost of extending a sewer line to

[39] Robert B Smythe and Charles D. Laidlaw, "Density-Related Public Costs," American Farmland Trust (Washington D.C.), 1986.

that and other homes in the same subdivision. The longer the sewer line and the lower the density, the higher the charge.

The third part of the tariff is a charge for actual use, based on the short-run costs of producing the service. It is a charge on the per-unit cost of providing potable water or processing sewage. A sewerage charge could be based on the volume of sewage passing out of the home and into the sewer line. More typically, it is based partly on the volume of water passing through a water meter into the home.

Planners argue that costs associated with lower-density development patterns may be reduced if facility-use was charged based on the three-part tariff. More-distant and less-dense development would only occur if its expected benefits to both developers and purchasers exceeded its additional or marginal costs to the public. Developers would not build and purchasers would not buy homes in inefficient developments since the charges would price such development out of the market. Under this theory, the primary task of planners is simply to determine the location of central facilities such as water and sewer plants and then price their use according to the three-part tariff. The market would then dictate appropriate land-use patterns. Although this discussion is simplistic, it does convey that marginal cost pricing can force developers to take account of all the fiscal costs and benefits of development before they try to have their plans approved.

The key question is, why is marginal cost pricing not being used, and why instead do communities look to rather inefficient growth controls? One reason is that the costs of developing and implementing a more accurate pricing system are high. It is a much more difficult technical task to determine marginal versus average-cost pricing systems. In a perfect situation, the marginal costs of serving each development and the extent of facility use by each household would be calibrated and assessed. In practice, this is beyond the technical capacities of most local governments. Even calculating marginal costs by area, such as for neighborhoods or sewage drainage basins, is difficult to understand and explain making adoption and implementation unlikely.

Another reason is that political costs are high. Communities may choose not to employ marginal cost pricing because they do not want to discriminate among members of the community, especially if the community is homogeneous in many respects. For example, if cost pricing is based on geographic service areas, then boundary lines must be drawn, and it is often difficult to convince people near the boundary that their cost of service is significantly higher than their neighbor's on the other side of the line. Many communities apply only a flat charge for residential water, regardless of the distance a home is from the supply or how much water is consumed. Such policy may seem fair; all residents have equal access to the facility and are free to consume what they need. To such communities, it does not matter that some may use more or less than others. It also is the situation that in most communities taxes on commercial and industrial enterprises subsidize residential public services. Marginal pricing would mean sharing this subsidy with new residents and thereby reducing the welfare of existing residents.

General Financing Options

There are five very broad ways to raise revenue for public facilities: general taxes, dedicated taxes, special assessments, user fees, and impact fees. There are certainly more categories that may be considered (such as federal and state grants and low-interest loans, charitable donations and lotteries), but this section focuses on the principal revenue sources available to most, albeit not all, local governments. Each is discussed below.

General Taxes. In the past general taxes, particularly property taxes, funded all infrastructure. Given the need of localities to now limit general taxes, such taxes today are most appropriate where there are exclusivity and free-rider issues, such as in parks and public safety, and where the general public well-being is enhanced, such as education and libraries.

Dedicated Taxes. A good example of a dedicated tax is the gasoline tax where revenues go exclusively for enhancing roads (including in some instances transit), normally under the argument that higher transit use preserves road capacity. There are examples of other dedicated taxes, such as California's per-square-foot tax on new buildings to help finance local schools, and Florida's real estate transfer tax where a share is dedicated to acquiring environmentally sensitive land by the state.

Special Assessments. In Texas, Municipal Utility Districts are often formed by private developers then turned over to local government to charge property within master-planned communities for the cost of installing and maintaining infrastructure within and, in some cases, outside the community. This is also the case with many developments-of-regional-impact in Florida. Indeed, the fastest growing segment of governance nationally is in the formation of special districts which usually serve the sole function of providing and maintaining infrastructure, as shown in Table 2-3. Special districts will be discussed in the next section.

User Fees. User fees are the most direct way in which to connect the benefit of the service to those who pay for it. Water and wastewater meter connections and subsequent charges by volume of use may be the best example of such a direct connection, because if one does not pay to connect to public water one does not receive it. Indeed, some of the earliest court cases surrounding impact fees related to that portion of the water and wastewater connection fee used to finance capital expansion.

Impact Fees. Impact fees are an attempt to generate revenue where general or dedicated taxes/assessments cannot cover all the capacity expansion costs. These are differentiated from user fees because they are, in effect, a reservation capacity fee – they provide the facility capacity whether or not those who paid actually use that capacity at any given point in time. Also, unlike user fees, they are directly tied to planning in that they are used to help finance a local capital improvement program that itself implements overall community planning objectives.

Public finance criteria indicate that for most facilities impact fees may be inappropriate for a variety of economic efficiency and social welfare reasons. Only water and wastewater facilities would seem to be appropriate facilities for which impact fees should be assessed. Other facilities, such as public safety, parks, libraries, and schools, are best financed through general funds and debt retired through general obligation bonds. Roads are financed best from user fees and dedicated taxes. Yet, impact fees are used to help finance all these and other facilities by an ever-increasing number of communities.

Table 2-2 summarizes the nature of facility financing in terms of the economic variables that should be considered in selecting financing: marginal cost, scale economy, exclusivity, and price elasticity of demand. The rightmost column identifies the most rational choice on pure economic grounds, without consideration for local conditions.

TABLE 2-2. ECONOMIC CHARACTERISTICS AND PREFERRED FUNDING FOR SELECTED MAJOR FACILITIES

Facility	Marginal Cost Characteristic	Scale Economy	Exclusivity	Demand Elasticity	Preferred Capital Expansion Financing
Water	Lumpy for central facilities	Large	Exclusive	Low	*Impact Fees*
Wastewater	Lumpy for central facilities	Large	Exclusive	Low	*Impact Fees*
Stormwater	Lumpy for central facilities	Large	Nonexclusive	Low	*Special assessment based on impervious surface*
Parks	Lumpy for major parks, relatively smooth for smaller parks	Small to moderate	Nonexclusive	Moderate	*General taxes*
Recreation Centers	Lumpy for most	Small to moderate	Can be exclusive	Moderate	*General taxes and user fees*
Library	Lumpy	Small to moderate	Nonexclusive	Moderate	*General taxes*
Fire	Lumpy for central facilities, moderate for stations, smooth for vehicles	Small	Nonexclusive	Low	*General taxes*
Police	Lumpy for central facilities, moderate for precincts, smooth for vehicles	Small	Nonexclusive	Low	*General taxes*
Emergency Medical	Lumpy for central facilities, moderate for stations, smooth for vehicles	Small	Nonexclusive	Low	*General taxes*
Highways	Lumpy for most, smooth for local streets	Large to moderate	Exclusive through tolls	High	*Dedicated taxes and tolls*
Schools	Lumpy	Small to moderate	Nonexclusive	Moderate	*General taxes*
Colleges	Lumpy	Large	Exclusive through tuition	Moderate	*User fees (tuition) and general taxes*
Transit	Lumpy	Large	Exclusive through fares	High	*User fees (fares) and general or dedicated taxes*

For the most part, impact fees do not appear to comport with public finance principles as they relate to capital financing. Yet, there is a growing use of impact fees to build new parks, libraries, public safety

facilities, schools, and roads – all facilities that are better-financed from other means. Why is this? The next section reviews the practicalities of employing some development or project-specific alternative financing mechanisms to see why impact fees are gaining popularity.

Principal Revenue Methods

Although there are numerous financing alternatives available, discussion in this section is limited to the following three broad categories:

Developer Exactions;
Special Assessment Districts; and,
Impact Assessments

The principal alternatives within each category are reviewed first and then assessed relative to policy-making criteria which will be introduced later.

Developer Exactions

Developer exactions are generally defined as the private provision of land or facilities to serve public infrastructure needs created by new development; they are made as a condition of development approval. In some states, private contributions must be “volunteered” (often not truly voluntary) by the developer and are referred to as "proffers." Note that impact fees are not considered a developer exaction per se but instead fall into the "impact assessment" category.

In most communities, developers are already required to construct at their own expense and dedicate to the local government all public improvements within a subdivision that are designed to serve only that subdivision. These internal improvements, which must be constructed to standards set by the local government, typically include local streets, sidewalks, water distribution lines, wastewater collection mains, and storm sewers.

Clearly, however, the improvements within a subdivision are only a part of the total public improvements that are needed or affected by a new subdivision. Off-site facilities such as schools and parks typically serve residents of a number of different subdivisions. Streets in new subdivisions will always connect to a network of collector and arterial roads outside the subdivision. Similarly, most subdivisions tie into larger networks of water, wastewater, and stormwater systems.

Typical exactions include the dedication of park land, school sites, and road rights-of-way. In addition to the dedication of land, developers may be required to construct public facilities, such as widening the portion of a substandard street on which the development has frontage, or installing a traffic signal at a nearby congested intersection. Finally, exactions may take the form of monetary contributions, such as fees in lieu of dedication, or developer participation in a pro rata share of the cost of installing a traffic signal.

Monetary exactions are superficially similar to impact fees. Indeed, fees in lieu of dedication are a direct precursor of impact fees. The distinction lies in the manner in which the fee is assessed and the purposes of the fee. In-lieu fees are usually based on land costs only and are ill-suited for public services not requiring extensive amounts of land. Impact fees, on the other hand, are designed to cover a proportionate

share of the capital facility costs and may be applied to a wider variety of services. Monetary or in-kind exactions other than land are typically site-specific and often negotiated on a case-by-case basis, whereas impact fees are based on a general formula that applies equally to all developments.

In general, exactions fall into two broad categories: mandatory land dedication requirements and negotiated exactions. A major limitation common to both types of exactions is that they tend to address only those public improvements that are either on-site or in close proximity to the development. Such needs as roadway systems to relieve congestion or treatment plants to relieve the overloaded are generally beyond the power of an individual developer to address through the exaction process.

Mandatory Dedication Requirements. Mandatory park or school dedication requirements with in-lieu fee provisions typically apply only to residential subdivisions and are based on the number of dwelling units proposed. Requirements based on a percentage of site area have been overturned by the courts, since they do not recognize the differing service demands created by low- and high-density developments. Land dedication usually is required at the subdivision stage of the development process.

Land-dedication exactions have the advantage of being closely related to on-site needs created by new development. They have a long history of use and are generally accepted as legitimate exercises of local police power. They treat all residential subdivisions similarly and are relatively simple to administer.

A major drawback, however, is that land dedication only covers the cost of land and makes no contribution toward the cost of new capital improvements required by new development. In addition, since they are generally administered through the subdivision ordinance, developments not requiring land subdivision, such as apartments or previously platted land, are often exempted from the requirements.

Negotiated Exactions. Monetary or in-kind exactions are generally the result of open-ended negotiations between the developer and the local government, rather than from the application of a previously defined methodology. They may be imposed at any stage of the development process, particularly during requests for regulatory approvals such as zoning, special permits, or planned unit developments, where the local governing body has broad discretionary authority. Such exactions typically involve public improvements in close proximity to the development.

While negotiated exactions are standard procedure in many communities, they are tightly regulated in some states. In North Carolina and Virginia, for example, the state governments have authorized two kinds of zoning districts: general-use districts and conditional-use districts. Local governments cannot require developer contributions as a condition of granting general-use zoning, and can accept proffers only when conditional-use zoning is requested. In Virginia, jurisdictions outside of Northern Virginia and the Eastern Shore that have not been expressly granted conditional zoning authority are severely limited by the types of proffers that may legally be accepted.

In comparison with land-dedication requirements, negotiated exactions may cover the capital cost of public facilities in addition to land costs. Since such exactions are based on the specifics of an individual development proposal, they can address public-facility improvement needs, such as driveway turning lanes, that are directly related to the development.

Another drawback of negotiated exactions is that they lack the attributes of predictability and equity that gained park dedications their early and wide acceptance. The amount of the exaction may depend on

accidents of geography, such as the amount of land owned by a developer that happens to coincide with right-of-way needs, or on the political or bargaining skill of the applicant. Small developments, although they may cumulatively result in the need for significant capital improvements, often escape such exaction requirements because individually they are not capable of making significant contributions. Negotiations are often time-consuming and expensive for both the developer and the local permitting authority. Roadway exactions, for example, may be based on a traffic impact study required for each major development project.

Development Agreements. A variant of both of these approaches is the development agreement that is negotiated between the developer and the local government. Unlike mandatory dedications and negotiated exactions, development agreements cover a broad range of facilities (and other issues), provide for timing, phasing, and financing schedules, establish obligations of both parties, and help to settle issues that may otherwise have emerged in the future. Once in place, development agreements provide certainty to both the developer and local government on what to expect as the project builds out. Development agreements are widely used throughout California and Florida, and are increasingly seen in other growing states (Porter and Marsh 1989).

Special Assessment Districts

While developer exactions may be gaining in popularity, they do have their limitations. Exactions are only one-time assessments usually dedicated to capital improvements. As such, developer exactions have little relationship to maintenance and operating expenses, and they do not aid in the process of getting existing development to contribute its proportionate share of capital improvements. Special assessment techniques reviewed here help solve this problem. Many local governments will use both developer exactions and special assessment programs.

Special assessment districts are the broad title that includes local improvement districts, municipal utility districts, and other sub-jurisdictional entities whose purpose is to finance and often maintain capital facilities to accommodate growth and development. They are commonly characterized as geographic areas within which fees or taxes are collected (in addition to jurisdiction-wide general taxes) to fund capital investments or special services that clearly benefit properties within the district. The distinctive feature of special assessment districts is the very close and visible tie between the facility constructed or maintained and those who benefit from and pay for it. Unlike other financing options that target new development to pay for a share of communitywide improvements, special assessment districts assess all properties in a defined area for the range of facilities being provided. Assessments can finance debt service needed to provide the initial capital facilities and subsequently finance operations and maintenance costs. It is perhaps for this reason that they are the largest growing segment of American government. Table 2-3 reports the change in government units by type for the period 1972 through 2002.

TABLE 2-3. GOVERNMENT UNITS: 1972 - 2002[40]

Type of Government	1972	1982	1992	2002	Change From 1972	Percent Change
Federal	1	1	1	1	0	0.00%
State	50	50	50	50	0	0.00%
County	3,044	3,041	3,043	3,043	(1)	-0.03%
City	18,517	19,076	19,296	19,431	914	4.94%
Township	16,991	16,734	16,666	16,506	(485)	-2.85%
School District	15,781	14,851	14,556	13,522	(2,259)	-14.31%
Special District	*23,885*	*28,078*	*33,131*	*35,356*	*11,471*	*48.03%*

Special assessment districts are attractive for several reasons. They shift the burden of infrastructure finance from the general public to properties receiving direct benefit, while avoiding the short-term time horizon of purely private infrastructure provision. Property owners are assured that their additional taxes or fees will be spent in a manner that will benefit them, with a more single-minded focus than is characteristic of general-purpose government activities. Most states permit the creation of local improvement districts with the approval of the majority of property owners within the district. In Florida, the developer can unilaterally impose a local improvement district on all development subject to approval by the governing body. In Texas, "municipal improvement districts" serve the same function and are often tied to eventual annexation to a nearby city if the development is outside the city limits. In most cases, once the district is created, participation is mandatory for all property owners. An exception is Colorado, which permits the creation of special districts with voluntary participation of property owners within the district.

Assessments within special assessment districts are based on attributes of property--such as property value, parcel size, street frontage or use--assumed to be directly proportional to benefits accruing to property owners. However, the basis and level of assessments may vary within the district. For water and wastewater, utility assessments can reflect use. For drainage, stormwater assessments can be based on impervious surface area. For roads, assessments are often based on road frontage. For all other facilities, assessments can be based on value.

Special assessment districts have the ability to assess both existing development and vacant land in the immediate vicinity of the capital improvement. Particularly in local improvement districts with a considerable amount of existing development, revenue streams are more predictable than those of impact fees, development taxes, and developer exactions, which are dependent on development cycles. One concrete advantage resulting from the greater predictability of the revenue stream is that bonds can be issued by pledging to levy assessments necessary to repay the bonds.

Once established to provide infrastructure services, special assessment districts often operate outside the public spotlight that is focused, in most communities, on elected general governments. The proliferation of special assessment districts can weaken the authority of general governments to deal effectively with growth and to govern in the comprehensive way that they should. Widespread use of such districts can create a confusing hodgepodge of overlapping, independent taxing and assessment jurisdictions that lack the visibility and accountability, as well as the ability to coordinate different activities that characterize

[40] Census Bureau, 2002 Census of Governments, CGO2-1(P), July 2002, accessed January 22, 2005 from http://ftp2.census.gov/govs/cog/2002COGprelim_report.pdf

general-purpose governmental entities. Appendix B reviews details of a typical special assessment district process from the State of Washington.

Tax Increment Financing. A variant of special assessment districts is tax increment financing (TIF) districts. They differ from other special financing districts in that no special fees are assessed in addition to jurisdiction-wide taxes. District revenues consist of a diversion of that portion of revenues attributable to new development within the district. District revenues are used to retire bonds that finance the initial improvements that stimulated the new development. It is this internal financing, or bootstrap redevelopment, approach that accounts for much of the popularity of the TIF technique.

TIF is particularly attractive to cities because other taxing authorities, such as counties and school districts, may be required to contribute to the redevelopment fund, and that fund is ordinarily under the control of the city or its redevelopment agency. In theory, the other jurisdictions do not lose revenue because there would be no growth in the TIF district's tax base without the stimulating public investment. Even if this were true, however, the development attracted to the TIF district might have otherwise occurred elsewhere in the region.

Impact Assessments

Impact assessments are scheduled charges made against new development for the purpose of financing public facilities. Impact fees are obviously included in this category, but so are impact taxes and dedicated real estate transfer taxes.

Impact Taxes. A development impact tax, also called an improvement tax, is a tax on new construction, usually assessed at the time of application for a building permit. Impact taxes are generally based on the value of new improvements, and tend to be more popular than other kinds of taxes because they are levied on new construction rather than existing development. However, re-roofing, remodeling, and alterations to existing structures are also subject to such a tax. Even in a high-growth community like San Jose, California, over one-third of total building permit valuation is for such remodeling activities.

Unlike impact fees, impact taxes need not be based on the cost of facilities needed to serve the development, and the special studies required to justify impact fees are not required. In addition, revenues from such taxes may be spent in any way the local jurisdiction sees fit, subject to the provisions of state enabling legislation.

Impact taxes are not widely used. One exception is California; since passage of Proposition 13 in 1978, which limited local government revenue substantially, many California communities have resorted to impact taxes as a way to finance public facilities. The legislature also enabled impact taxes for schools affecting all new development, not just residential. California is not alone. Oregon enables local governments to impose a transportation impact tax, and Tennessee enables an “adequate public facilities” tax, as needed, to match infrastructure to new development demands.

Real Estate Transfer Taxes. Real estate transfer taxes are levied on real estate transactions. While impact taxes are generally based only on the value of new improvements, real estate transfer taxes are assessed on sales price, which includes the value of both land and improvements. As with all taxes, real estate transfer taxes cannot be adopted by local governments without state enabling legislation. Real estate transfer taxes are not dependent on new development, but rather on an active real estate market.

Transfer tax revenues are more predictable than revenues from impact fees or exactions and hence more suitable for bond financing. However, to solve infrastructure problems, there must be an explicit dedication of such taxes for infrastructure. In addition, if the real estate transfer tax is applied to all transactions including resales of existing homes, it would have a markedly different incidence than a program of developer exactions or impact fees.

Impact Fees. Impact fees (also known as development impact fees, system development charges, and connection charges) are charges levied on new development to pay for the construction of off-site capital improvements that benefit the contributing development. Impact fees are typically assessed using a fee schedule that sets forth the charge per dwelling unit or per 1,000 square feet of nonresidential floor space. Impact fees are one-time, up-front charges, with the payment usually made at the time of building permit approval, although some jurisdictions allow extended payments over a period of years.

Impact fees are a political response to the notion that development should pay its own way. In some communities, impact fees are actually considered a pro-growth tool because of their ability to defuse rising no-growth sentiments, ensure facility adequacy, and facilitate development approval. In addition, because they are typically used as a replacement for negotiated exactions, impact fees add speed and predictability to the development process. Impact fees are also more equitable than informal systems of negotiated exactions and are likely to generate considerably more revenue.

Impact fees can be used to fund a wider variety of services and types of facilities than is possible with exactions or special districts. Unlike dedication requirements that cover only land costs, impact fees can be used to cover the full capital cost of new facilities. Impact fees can also be structured to require new development to buy into service delivery systems with existing excess capacity, thus recouping prior public investments made in anticipation of growth demands. Recoupment of prior investments is generally not possible with other types of exactions.

The requirement that impact fees be spent to benefit the fee-paying development is typically met by earmarking revenues for expenditure in the zone in which they are collected. The requirement that fee revenues be spent within a reasonable period of time following fee payment imposes an additional constraint. However, proper design of benefit zones, provisions for pooling revenues from adjacent zones, and supplementing impact fee revenues with funds from other sources can overcome obstacles to successful fee implementation.

Sometimes impact fee revenue is pledged to support bonded debt service incurred to provide facilities needed to accommodate growth. In these cases bond covenants may call for using impact fee revenue first for this purpose, but to assure timely and adequate payment of debt service the fiscal base of the community is also pledged to the extent needed.

The primary strengths of impact fees include applicability to a wide range of public services, ability to promote efficient development patterns, predictability for public and private sectors, acceptability due to a clear linkage with the needs of new development, and some ability to help with bonded debt service. Their limitations weaknesses include inability to fund operating costs, lack of expenditure flexibility, and dependence on construction cycles.

Policy-Making Criteria

Each alternative likely has its own limitations, so how does one know which is best from the perspective of local government's need to meet facility financing needs and society's interest in supporting housing affordability? The following sections identify certain policy-making criteria and apply them to a comparative assessment.[41]

Revenue Potential. Any financing scheme must generate sufficient revenue to meet needs. In this context, however, revenue potential means the ability to generate revenue roughly concurrent with the development as well as the ability to use the revenue as supplemental security for general obligation and revenue bonds and for certificates of participation that are used to finance large-scale improvements meeting present and future needs. Finally, revenue potential means the ability to have all development contribute revenues, not just certain development under certain conditions.

The chief limitation of *developer exactions* is that only development triggering these actions pays and payment is usually limited to what is negotiated. For example, *mandatory dedications* address only a limited range of facilities, usually school and park land, and affect only new subdivisions and, often, only those exceeding a certain size. Although in-lieu fees for land dedication are common, our research indicates in-lieu revenues are insufficient to provide land of suitable quality at other locations. *Negotiated exactions* and *development agreements* can address a broader range of facilities including funds for them. Developer exactions as a class are poorly to moderately able to generate the revenue needed.

Impact assessments may be better able to generate the revenue needed because the base includes all new development. Here, however, *development taxes* are not widely used and are usually limited to a small range of facilities. On a practical level, *real estate transfer taxes* will not solve infrastructure financing problems unless they are dedicated to that purpose, because otherwise they will quickly be spent on other needs and the infrastructure financing problems will remain. *Impact fees* are seen as having the broadest base of dedicated revenue for new facilities of the three alternatives, but even here state statutes can limit impact fees to a small range of facilities. New Mexico, for example, does not allow impact fees to be assessed for schools, libraries, and community centers, and Georgia does not allow impact fees for transit.

Local improvement districts have potentially the greatest power of all financing mechanisms to generate revenue to finance capital expansion needed to accommodate development, but they often cannot finance off-site facilities impacted by the development they serve.

Proportionality. This is the connection between the demand for facilities created by new development, the cost of meeting those demands, and the extent to which the alternative apportions those costs to new development. Proportionality can also mean geographic equity and housing affordability if costs vary appropriately, but these two issues are separately discussed below.

Proportionality relates to equity, but equity comes in two broad forms: horizontal and vertical. Horizontal equity means essentially that similarly situated people will be treated similarly. Impact fees have survived challenge on this charge because at their simplest they meet this equity principle. Vertical equity considers differences within the same class based on objective measures or criteria. The trouble is that impact fees can be horizontally equitable but vertically inequitable. For example, under horizontal equity all dwellings

[41] This scheme was initially devised by Dr. Arthur C. Nelson and James B. Duncan for application to Hickory, North Carolina and has since been adapted by Duncan & Associates for use in numerous other communities.

would be assessed the same impact fee for parks. If dwelling units differ by the number of people living in them based on type or size of dwelling then vertical equity is not achieved. Federal data show, for example, that in 2003 the average household size of units less than 500 square feet was nearly 2.0 while for units over 2,500 square feet it was more than 3.0. Charging each unit the same means that the smaller unit over-pays with respect to its occupancy level while the larger unit under-pays.

In reviewing the options that are available against the criterion of proportionality, *developer exactions* are poor methods by which to assure proportionality. There exists some potential to achieve this in *development agreements* and, to some extent, in *negotiated exactions,* but our collective experience is that proportionality is a secondary concern to primarily mitigating impacts of new development. Moreover, not all development is subject to developer exactions. Among the *impact assessment* mechanisms, *impact taxes* and *real estate transfer taxes* are not required by law to be proportionate, but this is the very underpinning of *impact fees*. *Local improvement districts* are probably proportionate since all costs are internalized and apportioned usually based on some formula, but since they do not usually address off-site impacts, proportionality overall is not likely achieved.

Geographic Equity. This issue results from the fact that some areas are more costly to serve than others. This is one area where marginal cost pricing can become an element of policy-making even where the political will to charge prices based on marginal cost may not otherwise be present. An element of geographic equity is infill and redevelopment, since we often find older areas have excess infrastructure capacity (such as under-utilized schools). Even where the infrastructure needs to be upgraded, the cost can be less per unit of development if infill and redevelopment is encouraged.

It is difficult to presume that any *developer exaction* alternative by its design attempts to achieve geographic equity. The same can be said for *local improvement districts*. Neither *impact taxes* nor *real estate transfer taxes* are sensitive to geographic equity. Only *impact fees* have this potential and, while not widely used to achieve this form of equity, they are becoming more common across the country.

Administrative Ease. This factor refers to whether an alternative can be administered efficiently, and whether compliance can be achieved at reasonable cost.

Developer exactions are costly on local governments in two respects: first because such exactions typically engage local government and attorneys on all cases involving exactions; second because revenue generated (or its in-kind value from dedications) comes only from affected development. Moreover, developer exactions normally do not generate adequate revenue to compensate for the cost of processing them.

Impact assessments and *local improvement districts* are quite efficient in achieving their purposes. *Impact taxes*, *real estate transfer taxes*, and *impact fees* are assessed and collected easily through standard government processes. *Local improvement districts* are like developer exactions in that they involve usually extensive negotiations between the parties, but the result is a stream of revenue some of which may be used to offset the local government cost, and the continuing revenue supports development-specific infrastructure.

Public Acceptance. Above all, the alternative policy must have the potential for receiving broad public acceptance. In our view, this means that current taxpayers/ratepayers will not face higher taxes or rates for the benefit of new development, both in the near and long terms.

Most of these alternatives enjoy broad public acceptance. The *real estate transfer tax* may not enjoy a broader base of support since anyone selling property has to pay it, and almost everyone sells some property in his or her life. *Developer exactions* may allow citizens a chance to extract concessions but only on the most visible proposals. *Impact taxes* and *impact fees* probably have broad public appeal, but because impact taxes are not as widely used (perhaps because of the word "tax"), impact fees by default are probably more widely accepted.

Housing Affordability. This criterion relates to the ability of any alternative to be created or calibrated to reflect differences in facility cost by size and type of housing unit (proportionality), as well as the ability to offset costs for certain housing based on ability to pay.

None of the *developer exaction* alternatives are explicitly sensitive to housing affordability. *Development agreements* may include housing affordability features, but only on a case-by-case basis. Except for assessing residential development based on type and size of unit, *local improvement districts* are not explicitly sensitive to housing affordability. *Impact taxes* are usually based on house size so they appear to address housing affordability indirectly; similarly, *real estate transfer taxes* based on property value only address affordability implicitly. *Impact fees* have the greatest potential for being designed to minimize effects on housing affordability and can include provisions to waive fees altogether, as most impact fee enabling statutes provide.

Table 2-4 summarizes these alternative financing mechanisms in terms of these criteria.

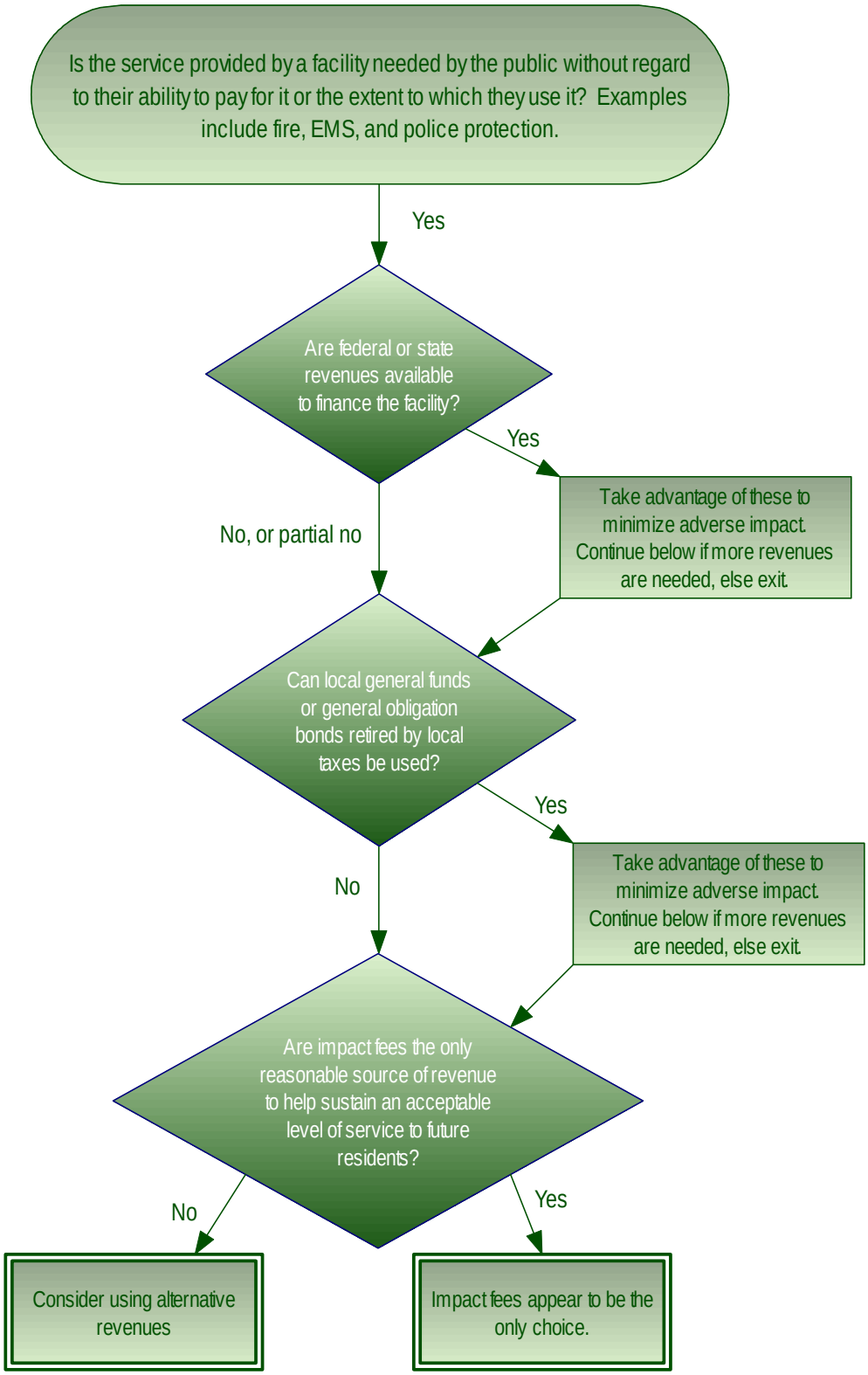
TABLE 2-4. SUMMARIZING THE POLICY-MAKING ISSUES OF ALTERNATIVE FINANCING MECHANISMS

Mechanism	Revenue Potential	Proportionality	Geographic Equity	Administrative Ease	Public Acceptance	Calibrated to Reflect House Impact Differences
Mandatory Dedications	Low – Usually applies to subdivisions.	Low – Often based on how much can be exacted in ad hoc negotiations.	Low – Exaction does not vary by geographic need.	Moderate – Features of actual dedications (such as location of park dedication land) can be disputed.	High – Affects only new development.	Low – Essentially a flat fee type of exaction.
Development Agreements	High – Can internalize project costs and fund off-site externalities.	Low – Often based on how much can be exacted in ad hoc negotiations.	High – Can take account of geographic variations.	Low – Often requires complex & expensive negotiations.	High – Affects only new development and can lead to more concessions than other exactions.	Low – Based only on an ad hoc negotiation that need not consider.
Impact Taxes	Moderate – Usually based on statutory limits.	Low – Based usually on statutory limits.	Low – Assessed without respect to geographic variations.	High – Usually based on simple assessment and collection procedures.	Moderate – Existing residents may pay when they buy a new home.	Low to Moderate – Usually based on value or a flat fee per unit.
Impact Fees	Moderate – Only based on difference between available revenue and revenue needed.	High – Legal standards require it.	High – Based on service area design which varies based on geographic differences.	High – Usually based on simple assessment and collection procedures.	Moderate – Existing residents may pay when they buy a new home.	Moderate to High – Can be designed to reflect differences in impact based on house occupancy characteristics.
Real Estate Transfer Taxes	Moderate – Limited to real estate sales and subject to statutory limits.	Low – Based on value but not on proportionality of impact.	Low – Assessed without respect to geographic variations.	High – Usually based on simple assessment and collection procedures.	Low to Moderate – Existing residents may pay when they buy and sale homes.	Moderate – Based on value which can reflect house impact differences.
Local Improvement Districts	Low – Limited usually to project and does not include development outside districts.	Moderate – Can be designed reflecting proportionate impacts and benefits but often not.	High – Can take account of geographic variations.	High – Usually based on simple assessment and collection procedures.	High – Affects only new development.	Low – Not usually designed to reflect differences in impact based on house occupancy characteristics.

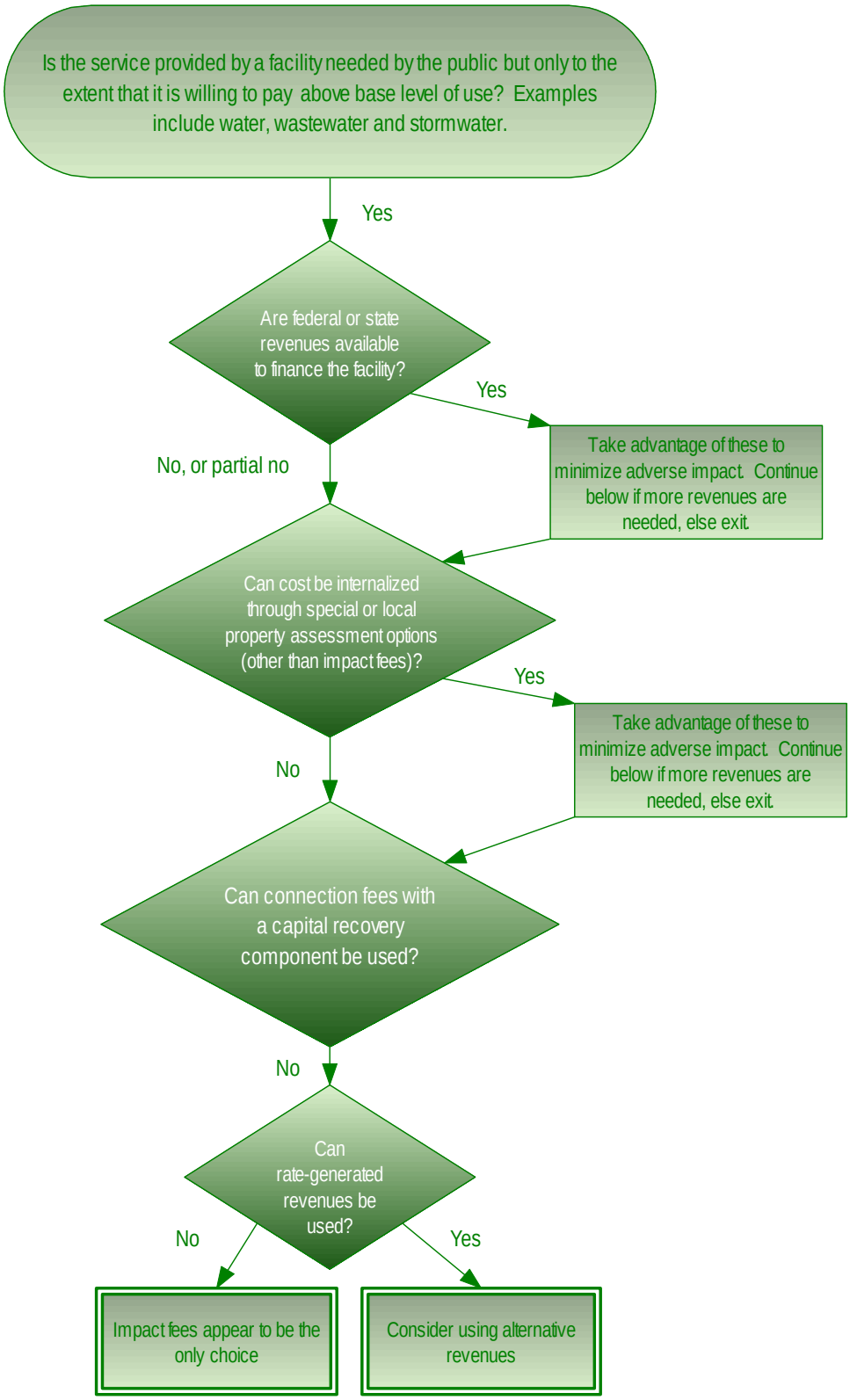
Alternative Funding Decision Charts

For a variety of political, legal, and pragmatic reasons impact fees are often seen as the most flexible option to address facility financing needs even though for the most part other funding alternatives may appear superior. Nonetheless, it is important to consider alternatives first to be sure that the impact fee choice is the best available option. The decision charts for specific facilities that follow are designed to help practitioners make rational decisions on potential funding mechanisms and consider if impact fees meet their needs. They should be used as a guide in the decision-making process.

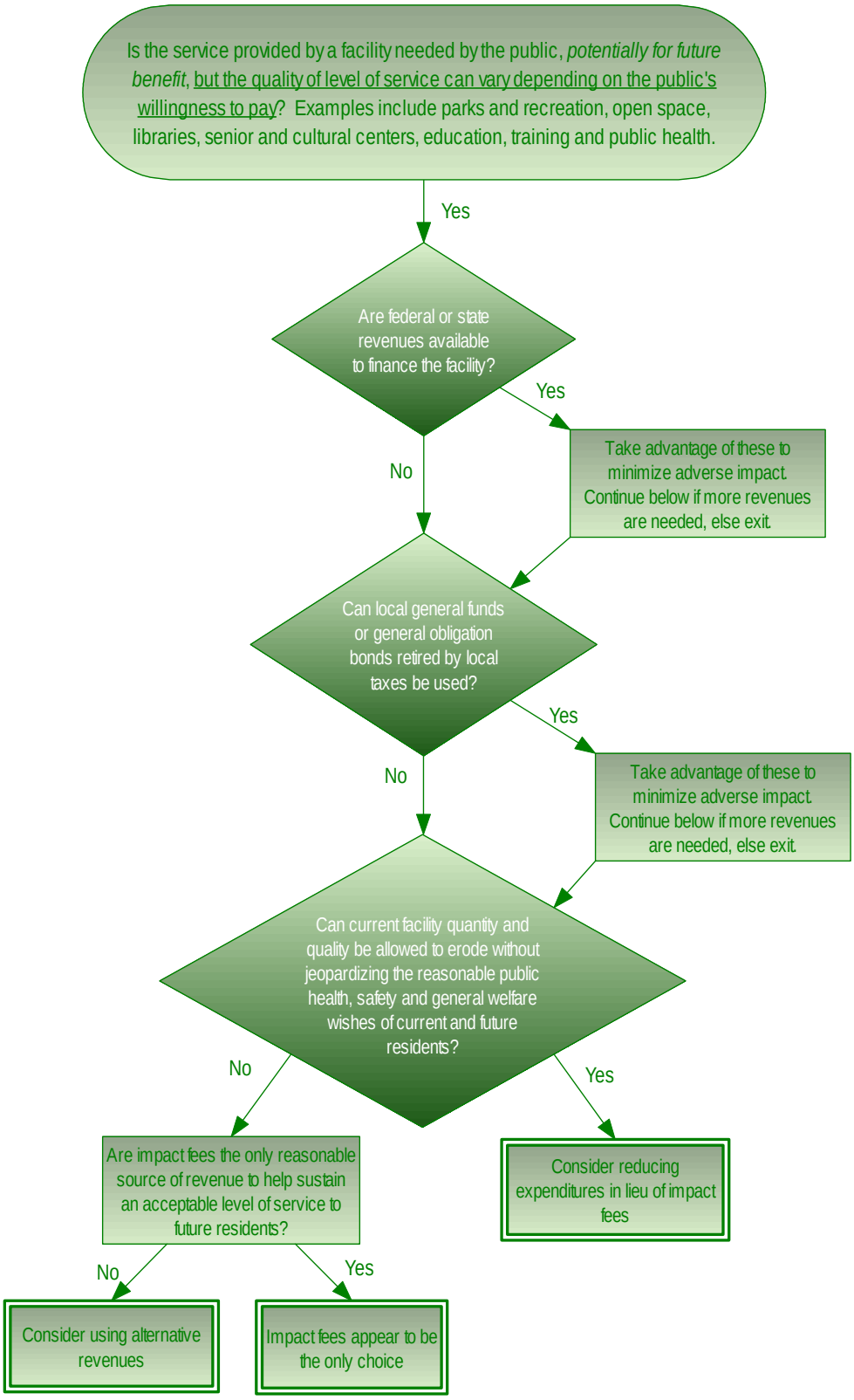
Decision Chart 2.1 Public Safety Facilities



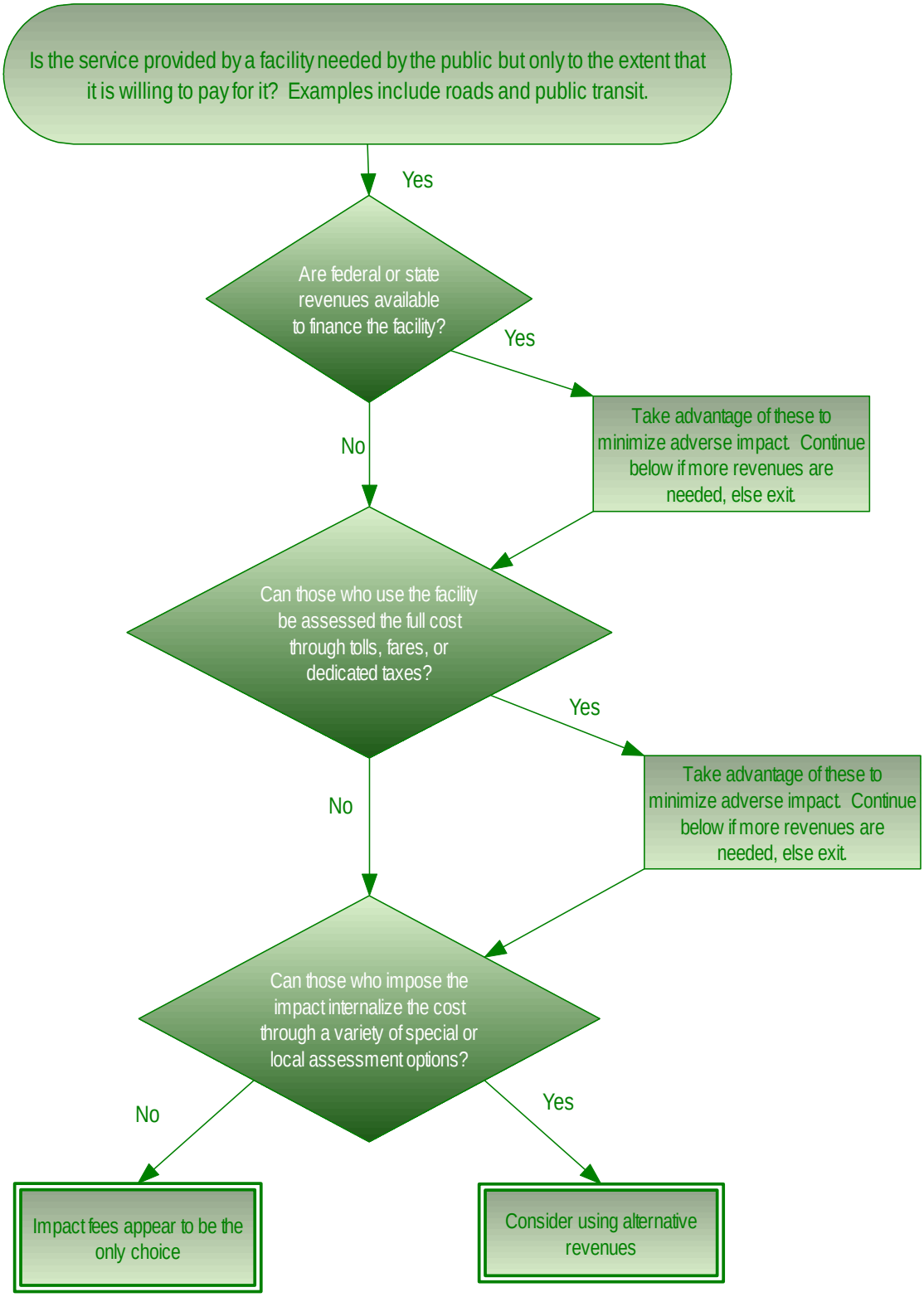
Decision Chart 2.2 Water-Based Utilities



Decision Chart 2.3 Public Amenity Facilities



Decision Chart 2.4 Transportation



Chapter 3 - The Role of the State

This chapter briefly summarizes states with impact fee enabling acts, and includes summary tables, and examples of evolving state statutes. It highlights those states that address affordable housing, reviewing how they enable facilitation of affordable housing in light of locally assessed impact fees. This information is useful to practitioners as the state statutes obviously affect the local impact fee design. For those states without enabling legislation, practitioners should look to case law.

Impact fees were originally developed by local governments in the absence of explicit state enabling legislation. Consequently, such fees were originally defended as an exercise of local government's broad "police power" to protect the health, safety and welfare of the community. The courts gradually developed guidelines for constitutionally valid impact fees, based on the relationship (in legal parlance "rational nexus") that must exist between the regulatory fee or exaction and the activity that is being regulated. Texas adopted the first general impact fee enabling act in 1987. To date, 26 states (illustrated in Figure 3-1) have adopted impact fee enabling legislation (for other than water and wastewater fees). These acts have tended to embody the constitutional standards that have been developed by the courts. Some states where impact fees are popular, such as Florida, currently do not have impact fee enabling legislation. In Florida, the authority of cities and counties to adopt impact fees is solidly established in case law. In some other states, such as Tennessee and North Carolina, impact fees and development taxes are generally authorized for individual jurisdictions through special acts of the legislature.

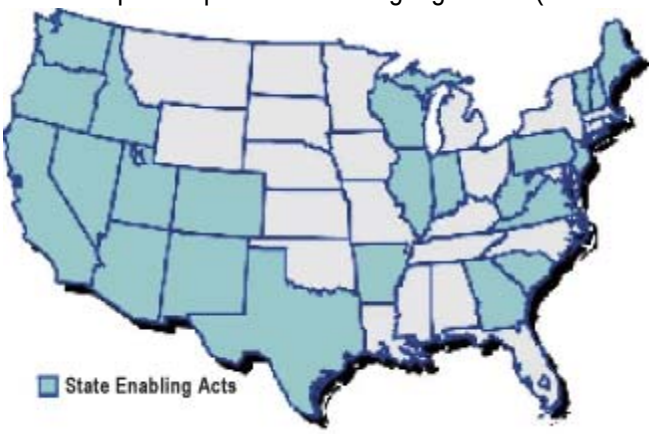


FIGURE 3-1. STATES WITH IMPACT FEE ACTS

Review of State Enabling Acts

Table 3-1 lists the states with enabling acts and reports the facilities eligible for impact fee financing. Some notable recent developments in impact fee legislation illustrate that states continue to wrestle with impact fee authority, parameters, and procedures. Several examples are highlighted here, and the full text of all the state statutes is posted at http://www.huduser.org/rbc/ and may be obtained from HUD or the authors.

The Texas legislature amended that state's impact fee enabling act, effective September 1, 2001. Credits against the impact fees for other taxes or fees that would be paid by new development and used for capital improvements of the same facility type as the impact fee are now required. As an alternative to performing a revenue credit calculation, cities[42] can simply reduce the impact fees by 50 percent. The maximum width of road impact fee service areas was increased from three to six miles, and the amount of time between mandatory updates was increased from three to five years. The recalculation requirement described above

[42] In Texas, counties have very limited authority to regulate development and do not have impact fee authority.

was eliminated. Finally, the number of public hearings required before impact fees could be updated was reduced from two to one (two are still required for initial adoption).

The Idaho legislature recently amended that state's impact fee enabling act in a way that favored a manufacturer in its dispute with the local highway district. Micron, a local manufacturer, had filed an independent assessment with the highway district for an expansion to its existing manufacturing facilities in Boise in which it claimed that it should get credit for all property taxes paid in the past or in the future by Micron to the district and available for capital improvements. The amendments to the act, which became effective July 1, 2002, seem to require local governments to calculate revenue credits in such a way that an existing business that expands its operations or builds a new facility gets credit for past and future tax payments by the business within the same service area, even though the gross fee before credits is based only on the net increase in traffic generated by the expansion or new construction. If interpreted as the act appears to intend, an existing business that expands or opens a new branch within the same service area would likely never pay a road impact fee, while a business that does not have existing operations within a service area would be required to pay. Such an inequitable outcome would be subject to challenge as contrary to the enabling act's more general "proportionate share" language. As a result, the amendments to the state act cast a cloud of uncertainty over how revenue credits should be calculated in Idaho.

Two brief examples of states' continuing efforts to refine impact fee authority are illustrated here:

- Arkansas adopted an impact fee enabling act on April 22, 2003. The act only applies to municipalities and water or wastewater providers, it does not authorize impact fees for counties. It clarified the authority of cities to enact impact fees, which had not been firmly established before this. Like most state acts, it does not allow school impact fees. It is relatively short and has few requirements. Its only unusual feature is that it requires that the amount of the impact fee paid be itemized separately on the closing statements when property is sold. The original version of the bill, drafted at the request of the state homebuilders association, had proposed that the fees for single-family homes actually be paid at time of closing by the buyer, but this requirement was dropped in conference committee.
- Colorado also adopted an impact fee enabling act. Senate Bill 15 was signed by the governor on November 16, 2001. Among other things, this bill created a new Section 104.5: Impact Fees, in Article 20 of Title 29, Colorado Revised Statutes, which specifically provides that:

  Pursuant to the authority granted in section 29-20-104 (1) (g) and as a condition of issuance of a development permit, a local government may impose an impact fee or other similar development charge to fund expenditures by such local government on capital facilities needed to serve new development.

  Home-rule cities in Colorado had long assessed impact fees, but the authority of counties and towns to assess impact fees was less clear. While clarifying the authority issue, the enabling act has created some confusion about whether local governments can assess impact fees at time of building permit, or whether they must assess them at some earlier stage in the development process.

In New Mexico, House Bill 334, which was signed by the governor and became law in 2001, specifically authorizes impact fee waivers for affordable housing projects.

The Nevada legislature passed Assembly Bill 458, which became effective July 1, 2001. The bill added traffic signals, parks, police stations and fire stations to the list of facilities that could be funded with impact fees.

TABLE 3-1. FACILITIES ELIGIBLE FOR IMPACT FEE ASSESSMENT BY STATE

State	Roads	Water	Sewer	Storm Water	Parks	Fire	Police	Library	Solid Waste	School
Arizona (cities)	●	●	●	●	●	●	●	●	●	
Arizona (counties)	●	●	●		●	●	●			
Arkansas	●	●	●	●	●	●	●	●		
California	●	●	●	●	●	●	●	●	●	●
Colorado	●	●	●	●	●	●	●	●	●	
Georgia	●	●	●	●	●	●	●	●		
Hawaii	●	●	●	●	●	●	●	●	●	●
Idaho	●	●	●	●	●	●	●			
Illinois	●									
Indiana	●	●	●	●	●					
Maine	●	●	●		●	●			●	
Montana	●	●	●	●	●	●	●	●	●	
Nevada	●	●	●	●	●	●	●			
New Hampshire	●	●	●	●	●	●	●	●	●	●
New Jersey	●	●	●	●						
New Mexico	●	●	●	●	●	●	●			
Oregon	●	●	●	●	●					
Pennsylvania	●									
Rhode Island	●	●	●	●	●	●	●	●	●	●
South Carolina	●	●	●	●	●	●	●			
Texas	●	●	●	●						
Utah	●	●	●	●	●	●	●			
Vermont	●	●	●	●	●	●	●	●	●	●
Virginia	●									
Washington	●				●	●				●
West Virginia	●	●	●	●	●	●	●			●
Wisconsin (cities)	●	●	●	●	●	●	●	●	●	
Wisconsin (counties)		●	●	●	●	●	●	●	●	

Selected provisions of state impact fee enabling acts are summarized in Table 3-2. The first column shows the maximum number of years that impact fees can be retained by a local government before being spent on eligible facilities or refunded back to the fee payer. The second column indicates the presence of a rather onerous recalculation requirement, which mandates that the local government recalculate the impact fees after completion of the capital improvements plan, then refund any excess collected if actual costs were less than projected costs. This provision was in the original Texas act and was copied virtually verbatim in several other acts. The third column indicates whether and for how long fee assessment locks in the amount of the fee. In the Texas act, the fee schedule in effect at time of platting is the maximum fee that may be charged to development within the subdivision, regardless of when development actually occurs. The final column indicates the frequency within which the fees must be updated.

TABLE 3-2. SELECTED IMPACT FEE PROVISIONS

State	Time Limit for Expenditures	Recalculation Requirement	Assessment Locks in Fee	Update Frequency
Arizona (cities)	None	no	No	none
Arizona (counties)	5 years	no	No	2 years
Arkansas	7 years	no	No	none
California	5 years	no	No	none
Colorado	none	no	No	none
Georgia	6 years	no	180 days	none
Hawaii	6 years	no	No	none
Idaho	10 years	no	1 year	5 years
Illinois	5 years	no	No	5 years
Indiana	6 years	no	3 years	5 years
Maine	none	yes	No	none
Montana	none	no	No	none
Nevada	10 years	yes	No	3 years
New Hampshire	6 years	no	No	none
New Jersey	none	no	No	none
New Mexico	7 years	yes	4 years	5 years
Oregon	none	no	No	none
Pennsylvania	none	yes	No	none
Rhode Island	8 years	no	No	none
South Carolina	5 years	no	Forever	none
Texas	10 years	no	Forever	5 years
Utah	6 years	no	No	none
Vermont	6 years	yes	No	none
Virginia	15 years	yes	Forever	2 years
Washington	6 years	no	No	none
West Virginia	6 years	no	No	none
Wisconsin (cities)	none	no	No	none
Wisconsin (counties)	none	no	No	none

Impact Fee Statutes and Affordable Housing

Of the 26 states that have explicit impact fee enabling statutes, 14 address affordable housing: California, Colorado, Georgia, Idaho, Indiana, New Jersey, New Mexico, Pennsylvania, South Carolina, Texas, Vermont, Washington, West Virginia, and Wisconsin. Only Idaho, New Mexico, Pennsylvania, and South Carolina define affordable housing and all use variations of HUD's 80 percent median income standards. The rest would presumably leave it to local governments to define the term for local application.

Fourteen states enable impact fees to be waived on qualifying affordable housing developments. Of those, five require waived fees to be financed or paid for from a source of revenue not related to impact fees: Georgia, Idaho, South Carolina, Utah, and Washington. Another nine states enable waivers without making up the lost revenue: Colorado, Indiana, New Jersey, New Mexico, Pennsylvania, Texas, Vermont, West Virginia and Wisconsin.

Other states address affordable housing in different ways. California exempts housing dedicated for elderly occupants and state-owned migrant farm labor housing from school impact fees. Texas requires that local governments failing to properly certify impact fees would be assessed a penalty of 10 percent of their collections with the funds deposited in a housing trust fund.

Two states require an affordable housing impact assessment of sorts. South Carolina requires that "Before imposing a development impact fee on residential units, a governmental entity shall prepare a report which

estimates the effect of recovering capital costs through impact fees on the availability of affordable housing within the political jurisdiction of the governmental entity" (6-1-930(A)(2)). Wisconsin has a similar provision requiring that local governments devising impact fees ". . . includ(e) an estimate of the effect of recovering these capital costs through impact fees on the availability of affordable housing within the political subdivision" (66.0617(4)(a)3.).

Chapter 4 - Impact Fees and Housing Affordability

This Guidebook encourages local governments to consider issues of fairness and equity which work in favor of affordable housing. This chapter reviews key elements associated with setting the amounts of particular impact fees in different jurisdictions. It explains the rationale for the use of impact fees based on square footage as a starting point, followed, in some cases, by additional elements that further vary costs across households to reflect other underlying cost differences.

The chapter begins by reviewing the general choice of impact fee cost variables and possible approaches to defining choices faced by many jurisdictions. Next, the chapter presents the recommended logical method of using household square footage to determine the impact fees of a wide variety of improvements, ranging from parks, to fire, to roads, to water and sewage. This section also describes methods in addition to residential square footage that can be used to set impact fees for facilities such as water supplies or roads. Next, simplified methods are further explained through the use of real-world examples of specific kinds of impact fee setups that have occurred in selected locations. Finally, underlying policy approaches commonly used to limit the effect of impact fees on particular types of affordable housing, with supplemental decision guides about affordability exemptions, exclusions, waivers and forgivable loans are included.

It is important to note that the guidance given in this chapter is based on years of research and consulting with local governments, and has come together in this Guidebook as the authors' best recommendation based on this experience base. Readers should also refer to Appendix C of the Guidebook for further understanding and discussion of the methodology suggested in this chapter.

Review of Impact Fee Cost Variables

Impact fees can be calculated in a range of different amounts and imposed using a wide variety of different structures that ultimately depend on the state, the local jurisdiction, and the preferences of citizens who influence the local government process. This is partly a reflection of legal distinctions and partly a reflection of policy matters. Over time, fees have evolved as the complexity of impact fee arrangements and amounts of money being collected have grown.

Early uses of impact fees were typically in simple forms using constant or flat fees across houses or apartments, often without regard to any notion of size or type of unit that was covered under the fee. This kind of fee structure charges impact fees to purchasers in a way that is simple to calculate and provides the necessary revenues for construction of infrastructure. Many jurisdictions still charge flat impact fees on all residential units regardless of type or size. However, underlying costs across units range widely based on size of the unit and number of occupants that tend to use more or less of particular services. While the fixed amounts are undoubtedly simple to understand and enforce, they are inherently unfair. Flat rate impact fees compromise affordability and are socially negative to the degree they systematically overcharge purchasers in smaller, less expensive houses or apartments and undercharge others in the most valuable houses.

If impact fees are to be varied based on differences between units, then what is the appropriate variable? Choices are essentially unit type (single-family detached, townhouse, condominium, apartment and

manufactured home are usual types), number of bedrooms, or size in square feet. Then the per capita multiplier would be characterized as persons per unit, based on unit type, number of bedrooms, or square footage of heated space. (In the case of schools the measure would be based on public school students.) All would be an improvement over assessing a flat fee on all residential units despite differences in occupancies between them.

Research done as background for this project indicates that assessing impact fees for residential development based on persons per 1,000 square feet may be the easiest and fairest way to make such assessments. It is fair because persons per dwelling unit rise as the size of the unit increases, to a point, so this relationship may be necessary to meet the proportionality criterion of impact fees. It is easier because the relationship can be calculated simply as the quotient of total residential square feet from assessor records and total population for the same year of the assessor records. From this at least a rough proportionality is derived that assures more equitable treatment than a flat fee. This simple yet equitable approach to calculating impact fees is based on several studies showing a general pattern that persons per 1,000 square feet do not vary much by type of unit within a jurisdiction. Table 4-1 summarizes results from five such studies. While variations exist in occupancy levels between types of units, they are considered *de minimus*. Exactions such as impact fees need only meet the principle of "rough" proportionality so focusing on precise differences in levels of occupancy between types of units should not be necessary. All that should be necessary is calculating the overall average figure of persons per 1,000 square feet for the jurisdiction for which impact fees may be assessed.

TABLE 4-1 PERSONS PER 1,000 SQUARE FEET

County	SF Detached	SF Attached	Apartment/Condo	Average
Brevard FL	1.5	1.4	1.4	1.4
Collier FL	1.2	1.1	1.2	1.2
DeKalb GA	1.4	1.3	1.3	1.3
Douglas CO	1.4	1.3	1.6	1.4
Stafford VA	1.4	1.6	1.4	1.4

Source: Compendium of studies conducted by the authors.

Mechanically, for any given jurisdiction the relevant impact fee (except for public school impact fees) should be proportional to the following expression:

*[Total Residents / Total Residential Heated Space] * 1,000*

where:

Total Residents is either based on the most recent census or a current estimate,

Total Residential Heated Space is the sum of residential space in square feet based on property assessor records for the same year as the residential estimate.[43]

** The multiplier 1,000 provides a figure for persons per 1,000 square feet of heated area.*

[43] If the 2000 census is used, then the denominator should be the sum of total residential heated space constructed 2000 or earlier based on assessor records.

Note that where the impact fees involve public school services, *Total Public School Students* should be substituted for *Total Residents* with the balance of the formula remaining the same. Technically, there may also be a floor (such as a minimum assessment for all units under 800 square feet) and a ceiling (such as a maximum assessment for units more than 3,500 square feet (see Table 4-3), unless local knowledge suggests otherwise.[44] This approach was pioneered by the metropolitan Atlanta chapter of the National Association of Home Builders and used widely throughout that metropolitan area. It is also becoming increasingly used in Florida and in numerous Mountain and Western states. To a very large extent, this approach to calculating impact fees may do more to lessen potentially adverse effects on housing affordability than any other – aside from waiving fees outright (see the case studies and related discussions below).

Research by the National Association of Home Builders based on the American Housing Survey data appears to support this approach with some refinement.[45] Table 4-2, reporting NAHB's analysis, shows the national average persons per unit for different categories of house base based in 500 square foot increments above 1,000 square feet. It is more precise than the more general calculation reported in Table 4-1. It confirms that between a range of house sizes – in this case 1,000 and 3,000 square feet – persons per unit increases as house size increases. The rate of increase between categories falls as size increases, however.

Using NAHB's data, one way in which to refine estimates of persons per unit based on house size is to establish a base number of persons for the first 1,000 square feet of a residential unit, then increase the number of persons per unit in 500-square foot categories up to 3,000 square feet. This would show that for all residential units the average occupancy is 2.03 persons for units at or less than 1,000 square feet and increases at an average of about 0.16 persons per unit for each increment of 500 square feet to 3,000 square feet, capped at 3.05 persons per unit thereafter. Detached units would have slightly higher base and cap figures at 2.35 to 3.07 respectively. For single-family attached (townhouse) units, the range to be 2.03 to 2.66 and for multifamily the range is 1.89 to 2.29.

The NAHB analysis does not consider smaller units (under 500 and between 500 and 1,000 square feet) or larger ones up to 3,500 square feet. The data also appear to considers only occupied ones – thus over-stating the impact by removing vacant units nonetheless intended for occupancy (such as those for-sale, for-rent, or vacant between moves). This would have the effect of increasing impact fees more than normally recommended in practice. Using the NAHB's reporting format for persons per unit by increments of 500 square feet, Table 4-3 reports a refined analysis. It extends the detached unit analysis for detached units because of the very sizeable number of homes in those categories but has fewer categories for all forms of attached units (townhouses, condominiums, cooperatives and apartments) because of reduced sample size.

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44 For example, in popular coastal areas, new homes within walking distance of the beach range from 4,000 square feet to more than 10,000 square feet because they are rented by multiple families during holidays. At the other end of the spectrum, a college town may have four or more persons per small apartment unit even though the national average is around half that.

45 Memorandum July 7, 2006 from David A. Crowe, Senior Staff Vice President, to David Engel, Director, Affordable Housing Research and Technology Division, U.S. Department of Housing and Urban Development.

TABLE 4-2. OCCUPANCY BY OCCUPIED UNIT SIZE BASED ON UNIT TYPE

Unit Type	Square Foot Range	Persons Per Unit	Change in Persons Per 1,000 Square Feet	Percent Change in Persons Per 1,000 Square Feet
All	<1,000	2.03		
	1,000-1,500	2.49	0.46	22.7%
	1,500-2,000	2.67	0.18	7.2%
	2,000-2,500	2.83	0.16	6.0%
	2,500-3,000	2.95	0.12	4.2%
	3,000+	3.05	0.10	3.4%
Single Family Detached	<1,000	2.35		
	1,000-1,500	2.57	0.22	9.4%
	1,500-2,000	2.70	0.13	5.1%
	2,000-2,500	2.86	0.16	5.9%
	2,500-3,000	2.96	0.10	3.5%
	3,000+	3.07	0.11	3.7%
Single Family Attached	<1,000	2.03		
	1,000-1,500	2.33	0.30	14.8%
	1,500-2,000	2.42	0.09	3.9%
	2,000-2,500	2.50	0.08	3.3%
	2,500-3,000	2.62	0.12	4.8%
	3,000+	2.66	0.04	1.5%
Multi-Family	<1,000	1.89		
	1,000-1,500	2.27	0.38	20.1%
	1,500-2,000	2.42	0.15	6.6%
	2,000-2,500	2.30	-0.12	-5.0%
	2,500-3,000	2.43	0.13	5.7%
	3,000+	2.29	-0.14	-5.8%

Source: National Association of Home Builders based on analysis of *American Housing Survey for the United States in 2003*.

TABLE 4-3. OCCUPANCY BY UNIT SIZE BASED ON UNIT TYPE FOR ALL UNITS

Unit Type	Square Foot Range	Persons Per Unit	Change in Persons Per 1,000 Square Feet	Percent Change in Persons Per 1,000 Square Feet
Detached	<500	2.01		
	500-1,000	2.15	0.14	7.0%
	1,000-1,500	2.44	0.29	13.5%
	1,500-2,000	2.60	0.16	6.6%
	2,000-2,500	2.77	0.17	6.5%
	2,500-3,000	2.86	0.09	3.2%
	3,000-3,500	2.94	0.08	2.8%
	3,500+	3.02	0.08	2.7%
Attached	<500	1.36		
	500-1,000	1.61	0.25	18.4%
	1,000-1,500	1.95	0.34	21.1%
	1,500-2,000	2.20	0.25	12.8%
	2,000-2,500	2.21	0.01	0.5%
	2,500+	2.29	0.08	3.6%

Source: Weighted-unit analysis of *American Housing Survey for the United States in 2003*, based on number of nonseasonal occupants per unit by unit type and size, including vacant units.

This application of the NAHB approach results in the following formulas based on national data, which is a refinement to the approach illustrated in Table 4-1:

Detached Units

Occupancy = *2.02* persons per unit beginning at *500* square feet
plus *0.000333* persons per square foot (equivalent to about 0.333 persons per 1,000 square feet) up to *3,500* square feet then
3.02 persons at 3,500 square feet and larger

Attached Units

Occupancy = *1.36* persons per unit beginning at *500* square feet
plus *0.000465* persons per square foot (equivalent to 0.465 persons per 1,000 square feet) up to *2,500* square feet then up to 2,500 square feet then
2.29 persons at 2,500 square feet and large

The actual figures can be estimated for each of the more than 40 metropolitan areas included in the *American Housing Survey*, including the more than 200 sub areas. They may be more difficult to estimate for individual communities, however, because of data limitations. This is why the simple approach suggested in Table 4.1 and its associated discussion may be practical. Adjusting locally derived figures by national trends may help refine local analysis. [46]

In addition, the maximum or cap figures shown above for detached and attached units are more an artifact of sampling limitation than reality in many situations. While the occupancy level may flatten out above a certain size in some communities it may increase in others. Moreover, very large homes may provide living quarters for support staff. For example, in some affluent sections of all metropolitan areas families may employ nannies with one benefit being living quarters for them and their children. In resort areas, large homes may not be occupied by many people during the off-season but during peak season a large home may serve multiple families each renting sections of the home or pooling resources to rent the entire home. Finally, there is some concern that inevitably as population pressures increase along with rising energy prices and rising home mortgage interest rates larger homes may become available for formal (such as separate entrances and kitchens and such) to informal (such as one entrance and common use of certain rooms) thereby resulting in larger homes being occupied by more people than may have been assumed when the home is constructed. It may be reasonable local planning policy to include this contingency in long-range land-use and facility planning.

There are other considerations. Even with the characteristics determined, the actual analysis of impact fees based on societal costs is not entirely straightforward. For example, every home effectively has a set of unique occupants based on number of people, gender, ages and other characteristics, yet impact fees for

[46] If local conditions are roughly proportionate to national experience it may be possible to use the formulas adjusted to reflect local conditions.

the specific house do not vary in this level of detail. Checking each family each year to set fees is not only impractical but it would be a charge on each family rather than an impact fee on the house. Therefore, rather than basing individual household charges on actual family characteristics the fees should properly be based on amounts that would *typically* be charged on the property. These charges would reflect the fees from the average, projected occupants that tend to occupy the property being taxed and who pay the costs resulting from the fee. Setting typical fees generally avoids the need to review occupants of the house over time, while still charging fees based on the likely potential charges from such a house. Although the actual fees to owners could easily be more or less than costs they incur in any particular year, the idea is that over time the occupants will evolve, owners will change, and average differences between actual families in a home and typical families that might occupy the same home will tend to become smaller. As a result, to the extent that impact fees vary across houses the differences are based on characteristics of the home and its location, and while those characteristics will typically relate to specific occupants they may not do so in particular cases.

A final point is necessary. Measuring impact based on the occupancy of the original tenants will mask overall occupancy over the life of the structure. This will have the effect of over- or under-charging. For example, the authors are aware of homes constructed in resort coastal areas that are used principally as second homes so the apparent occupancy level is small when averaged over the year – and school impacts are negligible since the school children, if any, attend elsewhere. Yet, over a generation, that same home may become part of the regular stock of homes occupied by permanent residents and their children. Impact fees assessed based on the original occupancy characteristics in this case would be under-charged based on long-term impacts of the home on the community. At the other end of the spectrum, a new subdivision in a metropolitan area may be occupied initially by families with children and the public school student generation rate can appear quite large. Yet, over time, as the children move out of the house, the parents remain often becoming “empty nesters” before they sell perhaps to a new family with children. Impact fees based on the original occupancy in this case would be over-charged relative to long-term impacts of the home. It is for these reasons that long-term, average occupancy characteristics are the normally recommended basis for calculating impact fees.

Description of Square Footage Valuations Using Impact Fees

Experience has shown that impact fees can potentially be imposed for financing a wide range of public facilities and services. Of course, there are variations in the underlying laws as well as in the particular fees that communities want and need to put into place. This section presents basic descriptions of the logical procedures that can potentially be used to set different types of impact fees, assuming the community is legally authorized to do so and the residents have chosen to act this way. Note that in this section the discussion is designed to be general, so that it works across communities.

For this analysis, impact fees are organized into the following five types:

- Parks and libraries
- Police and fire
- Water, sewer and stormwater
- Roads
- Schools

There are some general principles used in these procedures that apply to all types of impact fees, and are perhaps the most important guidance in this document. This includes basing impact fees on the size or square footage, because setting any fee at a fixed amount regardless of house size tends to overcharge small houses and undercharge large houses. Even though fees that are equal for all houses might be legal, that approach is unnecessarily simplified and will clearly compromise housing affordability. The recommendation is to use conditioned square footage as the best parameter capturing size of home. While the number of bedrooms or internal rooms might also work, they are discouraged here. The most important reason is that designation of rooms as bedrooms and division of internal rooms both are more subject to irrelevant manipulation than conditioned square footage. In the simplest case, basing impact fees entirely on house size may be sufficient.

General Principles. The preliminary steps in determining the amount of any particular impact fee are as follows.

1. Identify a specific target service and an affected geographic area,
2. Determine the size of the affected population (the number and square footage of houses projected and, for impact fees on schools, the number of schoolchildren),
3. Estimate the total capital cost required to provide the target service, and the amount of capital currently provided or expected to be provided by revenue sources other than impact fees, and
4. Calculate the balance of capital costs for the target services that need to be covered by impact fees because they are not currently provided or expected to be provided by other sources.

The other principles used to set impact fees typically differ from one type of fee to another. This happens when the underlying costs vary significantly based not only on house size, but also on house characteristics or neighborhood attributes other than size. Examples include distance from the home to a specific facility, or density around the home in a small neighborhood. The most basic variability factors related to each type of impact fee are discussed in the following sections. While actual impact fees may ultimately vary with other factors as well, so long as the variables laid out here correspond to most of the variation across homes, the need for using additional variables is relatively small and the added complexity may be large.

It is most common for the straightforward situation to arise when new facilities being analyzed are based on serving new development alone, since that simplifies identifying the amount of funding (and limit on that amount) that can be collected from new facilities. Once the amount of capital needed from impact fees is calculated and the number of homes expected to be built and covered by the fees is determined, then the fee amounts can be calculated. As noted above, in the simplest cases these data may be sufficient to set specific impact fees applicable throughout the relevant community. In other more complex cases the impact fees should vary based on additional factors related to the underlying project. If for some reason the impact fee amounts determined at this stage are unworkable or unacceptable, then this process must be repeated starting with the preliminary steps above until an acceptable case is identified.

The basic process for setting different types of impact fees is illustrated under each of the five types: parks and libraries; police and fire; water, sewer and stormwater; roads; and schools.

Parks and Libraries. The general principles can readily be used to cover the cost of building public parks and libraries. Unlike other impact fees these typically do not depend on factors such as distance from the home to the service, since users must pay their own travel costs. Similarly, given the number of users, the costs are independent of the sizes of lots where user homes are located, and the overall density of the neighborhoods where users live because such services are based not on density but delivery of the service

consistent with level-of-service standards. The single factor with the greatest effect on costs is the size of houses in the service area, because larger homes will house larger families that will generally tend to use parks and libraries more than smaller families. As shown earlier, larger homes up to some threshold have more occupants than smaller ones. It is simple and straightforward to vary impact fees between houses based on house area, with overall amounts of all the fees set to cover the underlying costs.

Example:
If a new library will serve 25,000 new residents and cost $1,000,000 to build, then the total library impact fee per new resident would be $40. Assuming all new residents live in detached homes and using the formula above, the impact fee for a 2,000 square foot home would be:

(2.02 x $40) + (0.000333 x (2,000 – 500) x $40) = $100.80.

Police and Fire. Another common type of impact fees is for police or fire services. These funds will cover items such as new or enlarged police stations or firehouses, or long-lived capital equipment used by these departments. Generally speaking, larger homes clearly present greater potential demands on these services because they contain more occupants and more property. As a result, fees could properly increase with house square footage. Furthermore, both police and fire departments will experience costs that vary with the square mileage of their jurisdictions because of the need to travel. This means that the impact fee can vary across properties based on the distance from the property to the government office.

Example:
If a new fire station will serve 25,000 residents and cost $20,000,000 to build, then the total fire station impact fee per new resident is $800. If a new detached home is 2,000 square feet, the fire department impact fee would be:

(2.02 x $800) + (0.000333 x (2,000 – 500) x $800) = $2,016.00.

To the extent the distance from the fire department to the new house affects the cost of providing protection, the fees should be higher or lower at varying distances. For example, in Missoula, MT, the impact fee for rural areas is on the order of 10 times that for urban areas because lower densities mean more fire stations per unit for the same response time than higher density areas.

Water, Sewer and Stormwater. Many communities provide homeowners with water from publicly owned facilities. Frequently they will also treat or dispose of household sewage, and manage stormwater from large or medium-sized subdivisions. While the day-to-day costs of operations are typically covered by tax receipts or marginal fees collected from all users, the capital expense needed to invest in construction or expansion of the required equipment and facilities may be raised from impact fees on new homes.

Example:
If a new water supply facility will serve 10,000 new residents and cost $10,000,000 to build, then the water supply impact fee on new houses averages $1,000 per resident. If a new detached home is 2,000 square feet the impact fee would be:

(2.02 x $1,000) + (0.000333 x (2,000 – 500) x $1,000) = $2,520.00

However, two additional factors affect the appropriate fee per house.

Distance from House to Water Supply Facility. First, to the extent the separation between houses and the water supply facility significantly increases the cost of the water system, the impact fees should be higher at above-average distances from the water supply facility and lower at below-average distances. For example, if the water source serves an area extending 10 miles in each direction, then the cost experienced by the water supplier might rise and the fees imposed on purchasers should be increased over a range from, say, $500 per new resident at a distance of up to 2 miles to $2,000 per new resident at distances from 8 to 10 miles. The effect is to vary the fees imposed on purchasers to the extent costs vary with distances from their homes to the water supply.

Neighborhood Density. Second, to the extent the separation between nearby houses varies significantly across users, the cost of the pipe approaching the houses will also vary, even assuming the distances to the supply facility is the same. Other things equal, the result is for larger pipes that can serve multiple houses to be less expensive per house than smaller pipes dedicated to a single house. If the increase or decrease in cost associated with neighborhood density was 10 percent above or below the average, then this component of impact fees could logically vary by 10 percent across neighborhoods.

The combination of distance to water supply, neighborhood density, and house size would determine the actual fees on particular houses. Based on the particular values in this example, homes located at high (low) distances from the water supplier and from one another would face fees up to 30 percent higher (lower) than average, as listed in Table 4-4.

TABLE 4-4. IMPACT FEE ADJUSTMENTS BASED ON DISTANCE TO WATER SUPPLIER AND NEIGHBORING HOUSES

	Low distance to water supplier	Average distance to water supplier	High distance to water supplier
Low distance to neighboring houses	-30%	-10%	+10%
Average distance to neighboring houses	-20%	0%	+20%
High distance to neighboring houses	-10%	+10%	+30%

Roads. Roads may be the single facility most often covered by modern impact fees on new residential construction. This could properly include the entire cost of building new roads inside a newly built subdivision, as well as the incremental costs of expanding existing roads located close to the subdivision.

To date, few road impact fees have been adopted that vary by the size of the dwelling unit. This is largely because road impact fees are generally based on national trip generation rate data, and the ITE manual[47] does not provide rates by dwelling unit size. However, the fact that trip generation rates for residential uses vary by the size of the household is actually well documented in the transportation planning literature. As

[47] Institute of Transportation Engineers (ITE), *Trip Generation* 7th ed., 2003.

shown in Table 4-5 below, the average number of vehicle trips generated per day is almost directly proportional to the number of people living in the dwelling unit, which as discussed earlier, is strongly related to the size of the dwelling unit.

TABLE 4-5. VEHICLE TRIPS BY HOUSEHOLD SIZE

Household Size	Daily Trips	PM Peak Hr Trips	
		Single-Family	Multi-Family
One Person	3.5	0.369	0.323
Two Persons	6.7	0.707	0.618
Three Persons	8.8	0.928	0.812
Four Persons	10.6	1.118	0.978
Five Persons or More	12.5	1.319	1.154

Source: Daily trips from Transportation Research Board, NCHRP Report 365, "Travel Estimation Techniques for Urban Planning," Washington, D.C.: National Academy Press, Table 9 (for urban areas with populations of 500,000 to 1 million), 1998; PM peak hour trips based on 10.55% of daily trips in PM peak hour for single-family and 9.23% of daily trips in PM peak hour for apartment units from ITE, Trip Generation, 7th edition, 2003.

Other factors can also be considered. First, data from one source indicate that vehicle miles per driver drop by about 50 percent between low-density homes (one unit per 4 acres) and high-density homes (10 units per acre). Second, a further adjustment should be made to the extent it can be shown that new homes located in high-density urban areas generally lead to less traffic than equally sized new homes in rural areas, because more alternative forms of transportation are available for the urban homes and the distances separating them from important destinations are less. Note that this is a factor different from and broader than the density of the immediate neighborhood where the home is located.

Example:
If new roads to serve 5,000 new residents will cost $10,000,000 to build, then the road construction impact fee on new houses averages $2,000 per new resident. If a new house size is 2,000 square feet, the impact fee would be the:

(2.02 x $2,000) + (0.000333 x (2,000 – 500) x $2,000) = 5,040.00

However, it is also appropriate for the impact fees to be set higher in low-density, rural areas and lower than average in high-density ones. Note that these factors could be considered both in the subdivision or local neighborhood where the house lies, as well as the larger general neighborhood where the subdivision lies, since both can affect the cost of road construction or improvement in different ways.

As an example, in one location the amount of traffic per driver per year was found to drop by 50 percent as house density grows from a low of one unit per 4 acres to a high of 10 units per acre. This obviously affects the necessary road construction in which case the impact fee for road construction should change accordingly. If the distribution of house densities is symmetrical, this would correspond to a maximum 50% increase or 50% decrease from an impact fee of say $2,000 per resident based on density. This means that the road impact fees would range from a maximum of $1,000 to $4,000 per resident between high- and low-density areas.

Schools. Schools are one of the property types that are less commonly covered by modern impact fees, although fees on schools are certainly not rare (Table 3-1 lists 7 states out of 25, including California, that specifically provide for impact fees on schools). Those fees appear conceptually similar to impact fees that finance parks and libraries in that they do not vary directly with individual lot size or overall housing density. One exception is the extent that the school district pays for student transportation and therefore experiences higher cost in low-density communities. However, note that the school bus operating costs are not capital costs and should not be covered by impact fees. The other substantial difference between schools and other public facilities is that overall school costs are clearly driven by *student* population, not *total* population. This suggests that school-related impact fees on different sizes of houses should be set based on the community's typical number of public school students in houses of those sizes, rather than the total number of occupants or adults in the houses. It makes a difference to the extent that the ratio of students to house size varies substantially across house types, since that was not considered to be an issue with other fees based on occupants per 1,000 square feet.

Example:
If new public schools to serve 3,000 new students will cost $30,000,000 to build, then the public school impact fee would be $10,000 per new student. If public school students are equivalent roughly to one-quarter of the household size this is equivalent to $2,500 per new resident. If the average new house size is 2,000 square feet, then the impact fee per new house should the following:

(2.02 x $2,500) + (0.000333 x (2,000 – 500) x $2,500) = 6,300.00.

Summary
Impact fees can be set once the amount of funds needed for particular projects in specified areas has been determined. While the idea is to set each impact fee based on underlying costs, the appropriate methods for calculating particular fees can vary across fee category. There is reason to believe that essentially all fees would justifiably vary based on square footage of houses in the service area, and for some types of fees including parks and libraries this may be the only variable needed. By contrast, for other fees there are additional factors that may affect costs to the point where they should be considered. For example,

- police and fire costs may also depend to some degree on the distance from a house to the police or fire station,
- costs of water, sewer and stormwater facilities can vary significantly with distance from the house to the central facility, as well as based on the overall density of homes near the target home,
- costs of roads per house will reflect the amount of roads built primarily for that house as well as the additional roads built to serve groups of homes in the same general area, and
- setting impact fees for schools involves analyzing whether the square footage used to support students is similar or different across housing types. If it is different then the impact fees should be adjusted for different housing types to be consistent with numbers of students per 1,000 square feet in each type.

Note that while examples given above listed impact fees at fixed amounts per square footage over a range of square footage, those amounts might in principle vary depending on structure size. This means they might, for example, add fewer fees to additional square footage in large houses than in smaller houses. For example, the fee might go up per 1,000 square feet by a fixed amount, up to 3,000 square feet, then by a lesser amount for each additional 1,000 square feet. The result would be for cost to increase in both sizes, but by less in the large house than in the small house.

The information presented in this section is summarized in the following table.

TABLE 4-6. BASIC FACTORS FOR SETTING HOUSE-LEVEL IMPACT FEES

Impact Fee Category	Factors for Setting House-Level Impact Fees
Parks and Libraries	Square footage of house
Police and Fire	Square footage of house Distance from house to police or fire service
Water, Sewer and Stormwater	Square footage of house Distance from house to water or drainage facility Density of neighborhood where house is located
Roads	Square footage of house Amount of roads built primarily to serve the specific house Amount of roads built to serve groups of houses including the specific house
Schools	Square footage of house Number of students per 1000 square feet by housing type

Elements of Program Design

The approach to setting impact fees as described in the previous section is only part of the issue to be considered. From a practical standpoint, communities must make many decisions ultimately leading up to the design and implementation of the impact fees, and the results will likely depend on those details. This section reviews each of the following impact fee design and service issues:

- Service area design
- Level of service standards
- Situation-specific reductions
- Revenue credits
- Broadest reasonable base
- Timing of payment

Designing Service Areas

Impact fee practice requires that fees collected in a "service area" are spent in that area. But this is really just a starting point. Users have some flexibility in setting the service area, and as a matter of practice the larger the service area the more flexibility there is in spending the revenue where (and when) needed most. Service areas that are too small and/or too numerous can result in insufficient revenue generated in many of them to spend on infrastructure improvements. Finally, many services – especially public safety – act as a system in serving the entire jurisdiction. Even though it is may be easiest to design and administer one service area for an entire jurisdiction, it is also important to consider refining service area design and fee structure in ways that preserve or promote housing affordability. There are several ways this can be approached, as discussed below.

Service Area Design Based on Extent of Existing Infrastructure. If the infrastructure needed to serve growth in one large part of the community is already in-place, but substantial new investment is needed in another, then service areas may be drawn reflecting this. In Albuquerque, for example, city staff and consultants determined that the park system served seven different parts of the city. In "fully served" areas, park land was sufficient to serve projected development needs, while in "partially served" areas, substantial new investment was needed. As a result, in areas where parks were sufficient to meet future needs the park impact fees were zero. In this situation, impact fees would have no effect on housing affordability where infrastructure already exists to meet future needs.

Subject to applicable laws and customs, the kinds of facilities that lend themselves to this analysis include neighborhood and community parks, branch libraries, public safety, roads, community centers, and schools.

Service Area Design Based on Extent of Revenue Credit. Even where all parts of a community need new or expanded infrastructure to meet development needs, in some cases locally generated revenue may be sufficient to finance those needs while in others it is not. This was the case in Albuquerque as it designed its seven road service areas. In areas where road needs were the greatest to meet relatively rapid growth, impact fees were high. In other areas that needed some road enhancements, however, the fee became zero because the aggregate road-related revenue generated by all existing and projected development in those cases was sufficient to finance road needs.

Only those facilities that have a relatively predictable revenue stream dedicated to them (such as roads where there are dedicated gasoline taxes) may be appropriate for this kind of service area design.

Service Area Design Based on Response Time. In cases where a constant level of service is desired, the cost to provide the service can vary greatly based on density of development. For example, Missoula County, Montana, wished to maintain an eight-minute public safety response time throughout the county. This meant building more fire stations in remote and less densely settled areas than in closer areas developed at higher density. It settled on a three-tier service-area design that charges impact fees reflecting differential cost of maintaining the desired level of service where those costs varied considerably based on location and density.

Service Area Design Based on Alternative Funding. There are circumstances when parts of a jurisdiction already have the revenue stream needed to assure adequate public facilities. For example, in Texas, many Municipal Service Districts (MSDs) generate their own revenue to construct and maintain facilities. In Florida, many Developments of Regional Impact form local improvement districts for the same purpose. More specialized arrangements can have the same effect, such as tax increment financing districts and various forms of special assessment districts. Where these alternative financing mechanisms fund the same facilities that impact fees would, service areas may be drawn to exclude them or implementing ordinances drafted to exempt them from impact fee assessments – and expenditures of impact fees in those areas. Care must be taken, however, to assure this is done properly. For example, while Texas MSDs may finance their own infrastructure, they typically do not finance the regional roads and regional parks serving them.

Service Area Exclusions. Sometimes parts of a jurisdiction may be excluded from service areas even if the service area otherwise surrounds them. This could be the case in redevelopment areas where, although

there is no taxing or special assessment district in place, adequate funding sources have been identified to meet infrastructure needs. For example, one part of Albuquerque, Mesa del Sol, is not in any service area principally because separate planning and financing mechanisms are being developed to facilitate growth there. Through a development agreement with the city, all on-site and relevant off-site infrastructure will be financed through a variety of mechanisms uniquely available to it.

Level of Service Standards

Although it is usual practice to adopt the same level of service (LOS) standard across an entire jurisdiction – such as Level of Service D for roads, or 3.50 acres of park per 1,000 residents – this need not be the case. Variable LOS standards are suitable when past, present or future development patterns, constraints, or other factors combined with policy provide a rational basis for it. For example, some Florida counties have an LOS Standard of D for urban areas and C for suburban/rural areas. The rationale is that urban areas are understood to be more prone to congestion than areas farther away, and the cost to maintain the same level of service area could discourage development closer in. Another possibility is public safety response-time level of service differences. Although Missoula chose to have the same response time everywhere, it might have decided to vary response times within each of the tiers. Fees would have gone down but fire insurance premiums would likely have gone up in the non-urban tier. Note that variable LOS standards may not be suitable for libraries, schools, water or wastewater facilities. Decision chart 4.1 is designed to help guide decisions on the appropriate LOS standards.

It is important to note that, if a higher level-of-service is adopted in an area, infrastructure should be brought up to the new standard through revenue from sources other than impact fees.

Situation-Specific Reductions

Because there are always exceptions to any rule, impact fee ordinances usually have the option for the feepayer to conduct an independent fee calculation study to show that the impacts of a particular development may be less than assumed in the impact fee schedule. This assures due process but it can be cumbersome and does not allow for situations in which research has shown reasonably conclusively that impacts are reduced across-the-board in a class of situations. For example, in the early 1990s, Atlanta was the first city in the nation to reduce

Atlanta, Georgia: An Innovative Approach to Affordability

Key Atlanta officials were concerned about potentially adverse effects of impact fees on affordable housing. To address these concerns, Atlanta became the first jurisdiction in the nation to adopt the following features.

- 50% reduction if within 1,000 feet of a rail transit station.
- 100% reduction if located within an enterprise zone.
- 100% reduction if located within a federally-chartered empowerment zone.
- 100% reduction if part of a qualified historic preservation project
- 100% reduction if the unit rents for less than 60% of the regional median rent or sells for less than 1.5 times the regional new home sale price.
- 50% reduction if the unit rents for between 60% and 80% of the regional median rent or sells for between 1.5 and 2.5 times the regional new home sale price.
- Broadens the assessment base for parks and recreation by charging non-residential development.

Georgia law requires that revenues waived through these reductions must be offset from sources of revenue other than impact fees. This requirement does not apply to the 50% reduction for being within 1,000 feet of a rail station because studies show that traffic impact is reduced roughly proportionate with this relationship. More information is included in Chapter 5, Case Studies.

road impact fees for development near heavy-rail transit stations automatically – and to this date remains the only city to do so. A few jurisdictions reduce water, wastewater and stormwater impact fees based on density of development, with Scottsdale having perhaps the most detailed approach. Individual jurisdictions may make refinements to impact fee calculations affecting specific developments based on their particular situation.[48]

Situation-specific reductions may be mostly applicable to transportation and water-related utilities in the following ways:

Transportation. As density increases, vehicle miles traveled per person decreases, based on census data compiled in 2001 for the National Household Transportation Survey. Reductions increase further with the presence of public transit. Generally speaking, the reduction in miles per person from the lowest residential density category (fewer than 75 units per square mile) to the highest (more than 6,000 units per square mile) is about half.

TABLE 4-7. AVERAGE DAILY VEHICLE MILES TRAVELED PER HOUSEHOLD PERSON BY UNIT TYPE

Units Per Square Mile	Miles Per Person	Percent Change Between Categories
151 - 700	29.5	
701 - 2,000	27.1	8.4%
2,001 – 4,000	24.0	11.3%
4,001 – 6,000	20.3	15.6%
6,000+	14.2	30.0%

Source: Nationwide Household Transportation Study 2001, calculated by authors based on annual average vehicle miles per drive times drivers per household person by density category divided by 365.

Proximity of rail stations also reduces vehicle trips. Although the reduction varies by system, a sample of studies indicates the reduction ranges by a third to a half for projects located within about one-quarter mile of rail transit stations.

Water-Related Utilities. Unlike transportation, no national data exist to indicate the range of reductions in water, wastewater, and stormwater impacts associated with residential development features. Scottsdale evaluated costs associated with providing capital facilities throughout the city to several residential unit types and derived the following impact fee schedule based on residential unit density:

[48] There is a unique situation-specific reduction used in some jurisdictions that is important to note. Age-restricted residential developments such as retirement communities ostensibly do not generate school children, have fewer persons per unit and per 1,000 square feet, and in other respects impose fewer demands on many facilities than other communities. Some jurisdictions exempt such communities from school impact fees and lower impact fees for other facilities. The age-restriction is enforced via covenant that runs with the title that current and future owners must oblige. In some cases, however, covenants are not enforced resulting in owners and/or tenants raising children (theirs or others from their kin or kith) thus increasing school impacts. The school district, which never received the impact fees to expand schools to meet this unexpected demand must enforce the covenant through legal action or doing nothing. The latter option seems to be the norm. Some local governments choose not to recognize these and similar covenants because of their inability or unwillingness to enforce them, and thus impact fees are not reduced. This is purely a local policy decision.

Transportation and water-related utilities have significant situation-specific reduction potential. Since they also tend to have among the highest impact fee levels, they merit reductions based on density to help assure that such fees do not impact adversely on housing affordability.

Density	Impact Fee per Unit
1 unit per 2.5 acres	$5,492
1 unit per acre	$3,382
2-4 unclustered units per acre	$2,203
2-4 clustered units per acre	$1,802
5-8 units per acre	$1,585
9+ units per acre	$1,337

Source: Duncan Associates.

Similarly, Denver's water impact fee schedule is based on density, as shown in the following:

Density	Impact Fee per Unit
1 unit per acre	$17,767
2 units per acre	$9,709
3 units per acre	$7,022
4 units per acre	$5,679
5 units per acre	$4,873
6 units per acre	$4,336
7 units per acre	$3,952
Duplex	$3,100
Multi-Family 3+ units	$1,350

Source: Denver Water.

Revenue Credits

New development often brings with it new revenue that is in some ways help provide the same facilities for which impact fees are also assessed. For example, general obligation bonds used to finance new or expanded capital facilities that are retired by property taxes will result in new development paying part of those bonds. Dedicated gasoline taxes, school capital assessments on real property, special levies for parks, and so forth, are candidates for revenue credit calculation to reduce certain impact fees. The reason is that unless the impact fee is reduced by this "revenue credit" the effect may be that new development pays for the same facility twice.

For example, consider a recent court case out of Florida, *Florida Home Builders Association v. Osceola County School Board*. In this case, the county adopted an impact fee for schools essentially as follows (using rounded figures and simplifying the calculation for illustration purposes only):

$20,000	Cost per student
0.50	Students per single-family detached unit
0.25	Students per townhouse
0.20	Students per apartment, condominium unit
$10,000	Impact fee per single-family detached unit
$5,000	Impact fee per townhouse unit
$4,000	Impact fee per apartment, condominium unit

However, the fee did not consider the new taxes new development generates that flow in part to help finance the very class of facilities for which impact fees are assessed. Florida enables local school boards to charge up to 2 mills[49] ($200 per $100,000 assessed value) for school capital purposes. This assessment is on all development, not just residential development. In this case, the local school board was assessing the maximum and using about half the dedicated revenue stream to retire debt for new schools. (The other half is used for maintenance and repair.) Because all development is assessed – not just residential development – an appropriate estimate of the revenue credit would be based on calculating the average assessed value per student, then estimating the present (discounted) value of the stream of revenue new development would contribute to help finance school facilities (excluding maintenance and repair), and deducting that from the gross cost per student. If the average assessed value per student in this county was $512,000 and 1 mill was assessed to finance school capital facilities, then over 25 years (the typical bond period) assuming 4% government borrowing, new development would generate about $8,000 (rounded up) for school capital facilities. The revised calculation would be as follows:

$20,000	Gross impact cost per student
($8,000)	Revenue credit per student
$12,000	Net impact cost per student
0.50	Students per single-family detached unit
0.25	Students per townhouse
0.20	Students per apartment, condominium unit
$6,000	Impact fee per single-family detached unit
$3,000	Impact fee per townhouse unit
$2,400	Impact fee per apartment, condominium unit

The fees would thus be on the order of 40% lower when considering the revenue credit. (In fact, the court ordered the school district to calculate a revenue credit.)

Broadest Reasonable Base

Impact fees for parks and recreation, library and school facilities usually fall on only residential development. Residential impact fees are thus assessed on only a subset of the total base of development in the jurisdiction. One way to reduce potentially adverse effects of impact fees on housing affordability is to broaden the base of impact fee assessment to include all development. In some instances – notably for parks – local governments have been able to quantify the impact of non-residential development and thus

[49] A mill is short for the word millage, a term used in property taxes. The easiest way to understand tax millages is to use a 1 mill tax as an example. A one mill property tax will produce $1.00 in taxes on each 1,000 dollars of "assessed value".

justify assessing non-residential impact fees. Except for California, however, school facility impact fees are assessed on only residential development.

To expand the impact fee assessment base, two factors must be taken into account: what is the impact of non-residential development on these facilities, and how would they benefit from their provision?

The first factor is addressed simply as follows: There is a very high correlation between new jobs and new population and housing growth. In most American communities, job growth attracts new residents. Indeed, the relationship between job growth and overall community growth is so strong that input-output analysis – the mainstay of economic impact assessment – focuses only on jobs and not on residents or households. It is perhaps by definition that new jobs cause the impacts on facilities that need community amenities to be remedied in part by impact fees.

The second factor is also addressed easily. Richard Florida has chronicled the relationship among such services as parks and recreation, libraries, and education. He found that firms are attracted to areas that provide these facilities and without them in sufficient quality, firms will locate elsewhere. Firms thus benefit from the provision of such facilities.[50] Moreover, the Supreme Court in *Dolan v. City of Tigard, OR*, noted that "no precise mathematical calculation is required" to establish a relationship between the impact of development and exactions necessary to offset it. A reasonable case can be made that all impact fees should be assessed to all development because (a) in various ways all development impacts on all facilities; and (b) all development benefits from all facilities in various ways.

Timing of Payments

Where in the development process should impact fees be paid to lessen their potential burden on housing affordability? Numerous statues specify that impact fee assessments and collections occur at the building permit state. Others are silent and in states without impact fee enabling acts the timing of payment is mostly local option. There are two issues here: the point of assessment and the point of collection. Sometimes they are simultaneous such as being assessed and collected concurrent with the building permit – this is perhaps the most common approach as it is the most efficient administratively. It is also the earliest point in the development process where the expected impacts of new development are known best. Impact fees assessed and collected at that stage increase the chance that fees will flow into new or expanded infrastructure roughly concurrent with the impacts of new development.

This does not mean to exclude consideration of assessing and collecting impact fees at other stages of the development process. Perhaps the best stage theoretically is during the sale of law from the land owner to a developer because this increases the likelihood that the land market – through the seller of land – internalizes the impact fee, consistent with economic theory. In many situations this is not practical because final development plans may not be known for years. However, where a land transfer is part of a land sale option agreement that itself is based on securing necessary land-use decisions, including entitlements providing reasonable specificity in overall development, it may be possible to assess and collect the impact fee as part of the condition of land-use and development approval. Under these circumstances, developers purchasing land may include in their land purchase option contract a clause specifying how the price will be adjusted reflecting fees anticipated to be paid. (See Appendix C for sample language.) This may be a

[50] Richard Florida, *The Flight of the Creative Class*, 2005, Collins (New York); *Cities and the Creative Class*, 2005, Routledge (London); *The Rise of the Creative Class*, 2004, Basic Books (New York).

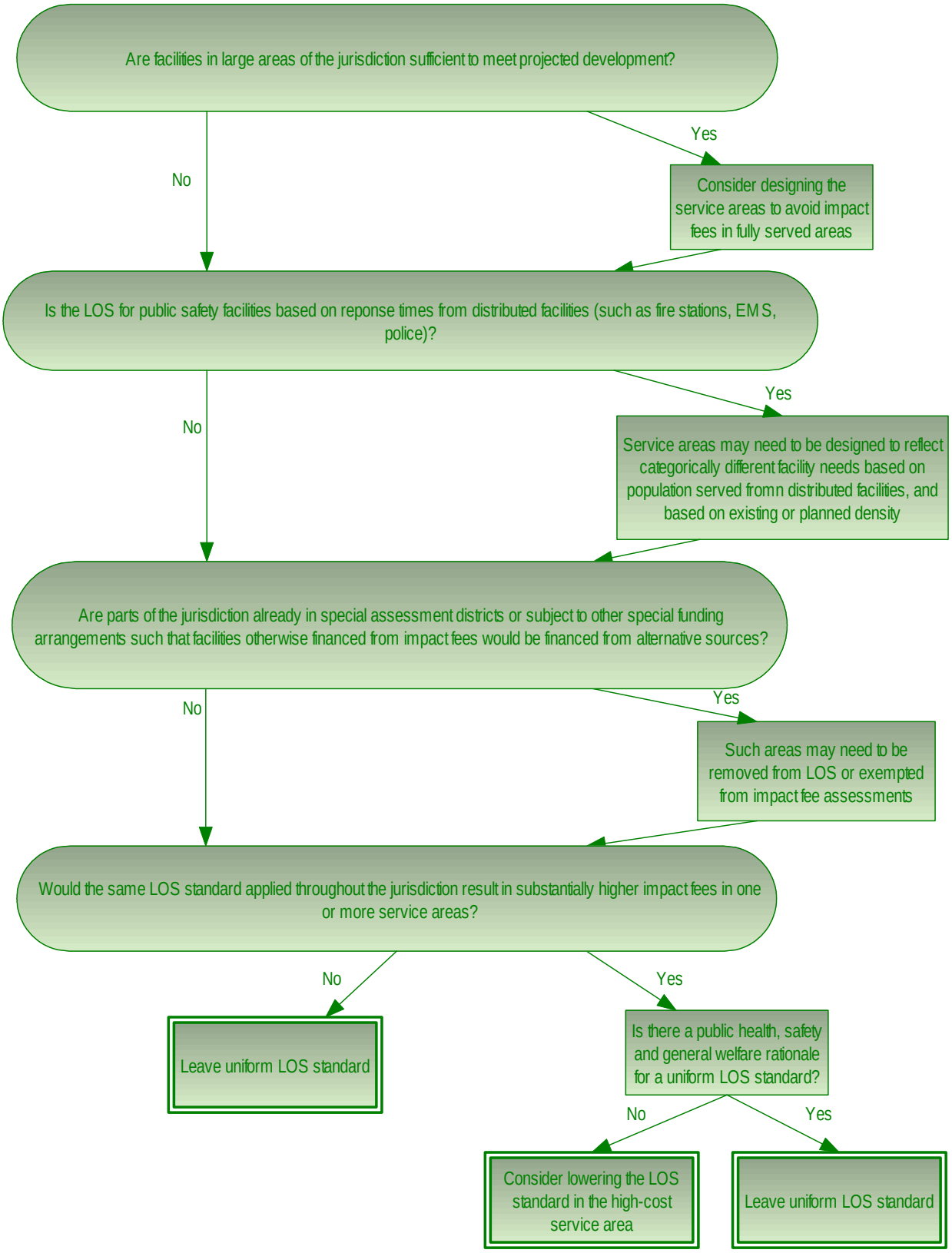
practice in only those cases where there is a transfer of land that also engages the land-use decision-making process.

Some local governments assess and collect impact fees at the end of the development process concurrent with the final inspection or issuance of the certificate of occupancy. This has the advantage of preventing the builder from incurring finance costs on the period between the impact fee payment at the building permit stage and sale of the home. Where a residential structure is to be held for rental it allows the builder/owner to finance the fee with lower-cost "take-out" financing, the long-term or permanent financing that replaces interim or construction financing. A variant on this approach is assessing impact fees at the building permit stage but collecting them at the final inspection or certificate of occupancy stage. This has the advantage of allowing local government to budget for the revenue before it is paid and provides the developer with increased certainty on the amount. This is the approach used by Alachua County, Florida in the case study to be reviewed later. Timing payments in this way may help reduce potentially adverse effects of impact fees on housing affordability.

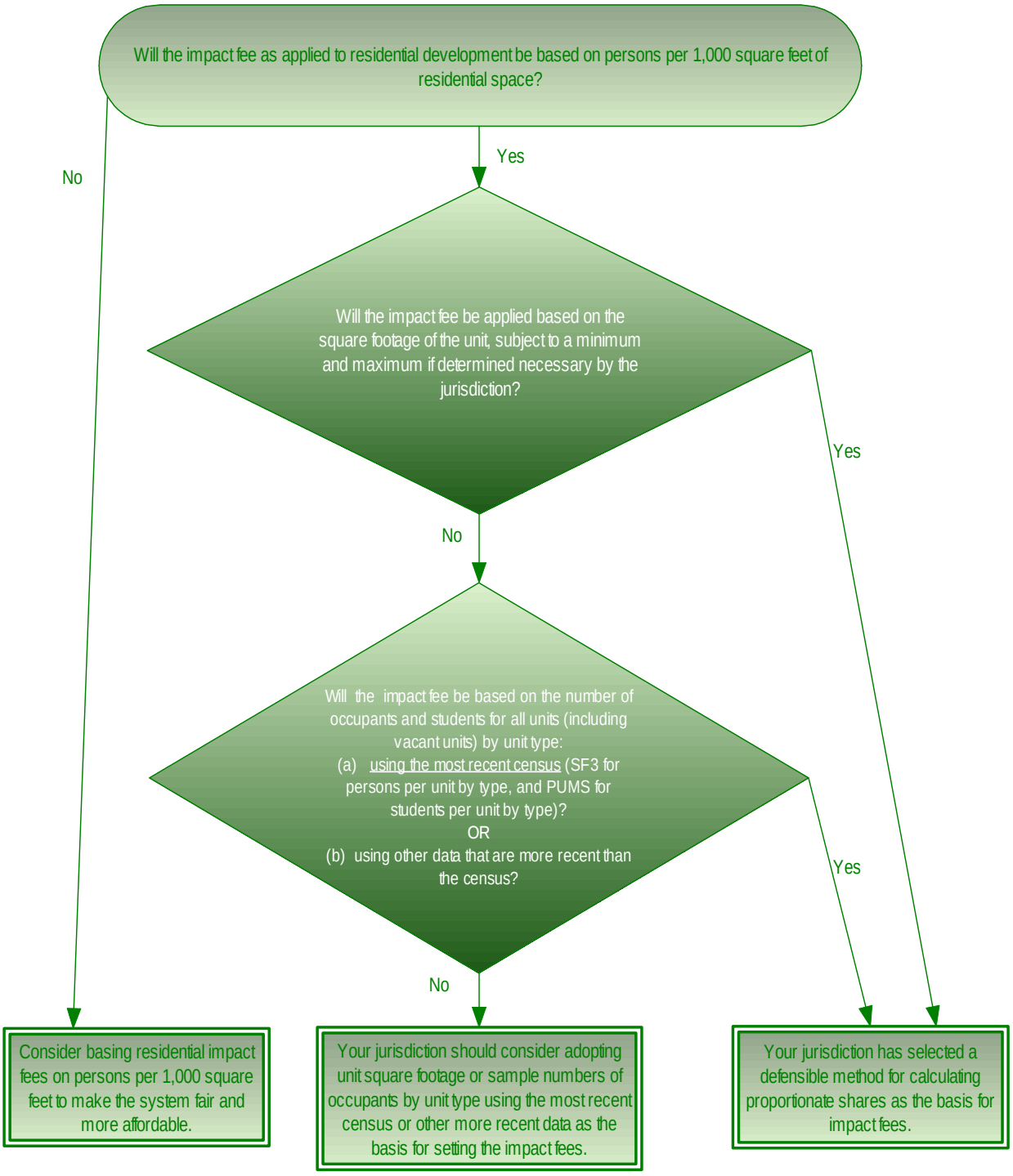
Impact Fee Decision Charts

The following section includes several additional decision charts designed to help practitioners apply the guidance included in this chapter.

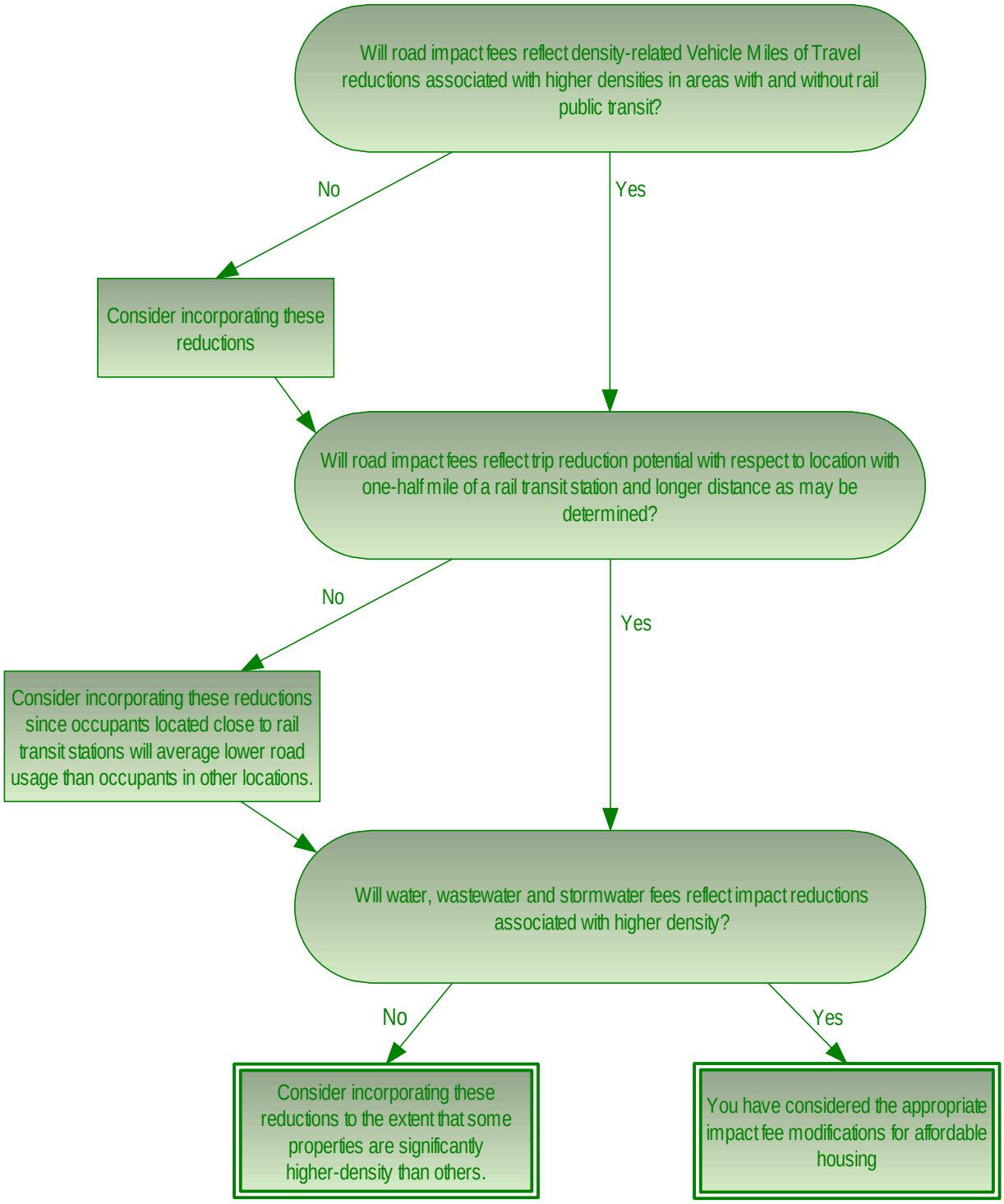
Decision Chart 4.1 Designing a Level of Service (LOS) Area



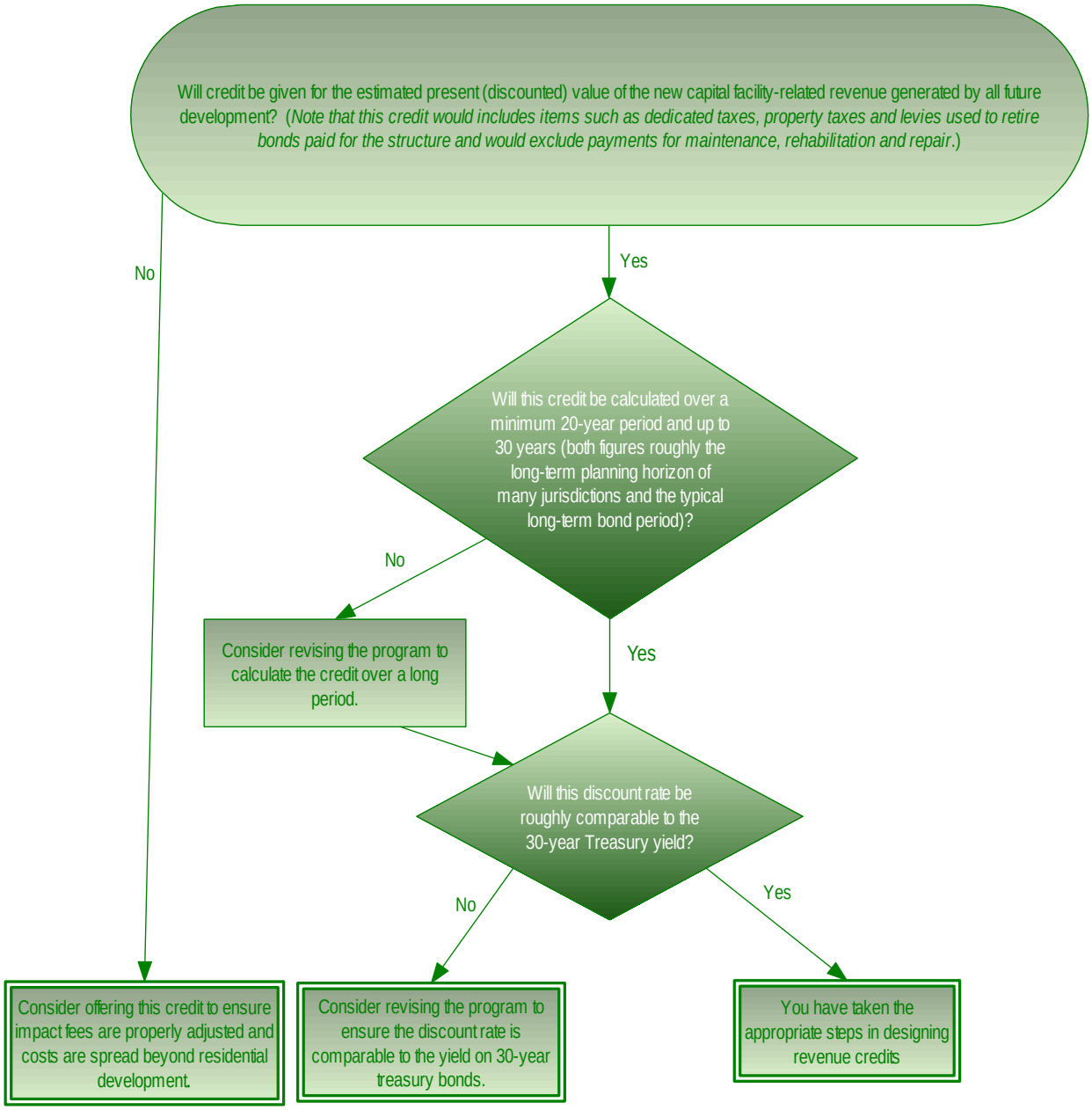
Decision Chart 4.2 Designing for Affordable Housing



Decision Chart 4.3 Including Situation Specific Reductions



Decision Chart 4.4 Assessing Appropriate Revenue Credits



Specific Housing Affordability Measures as Part of Impact Fee Policy

Impact fee design can go a considerable way towards reducing potentially adverse effects of impact fees on housing affordability, but there are other affordability measures that should also be considered. The most important possibility is that even where impact fees are generally charged in an equitable manner, qualifying affordable housing may still need to be *exempted* from fees. Particular relevant circumstances relating to exemptions are reviewed in this section, including exemptions, exclusions, waivers and forgivable downpayment loans.

Exemptions

Exemptions are given when new development does not create a new impact. For example, a home that is removed and rebuilt does not increase its impact on facilities – unless of course the home is made bigger and will over time presumably allow more people to occupy it.

Another potential form of exemption could be the remodeling of a structure formerly used for a non-residential purpose into a residential one. Converting abandoned warehouses into lofts has been popular for a generation and in recent years there has been the conversion of older high-rise office towers into residential units. Sometimes jurisdictions exempt these kinds of conversions on the assumption that they create no new impact relative to that occasioned by the tenants in a prior use. Other jurisdictions, however, impose impact fees on the estimated difference in impact when moving from one use to another, and the full impact fee if the conversion involves a structure that has been vacant for five or 10 years or so.

Reuse and rehabilitation of existing structures is an efficient urban development activity and the view posed here is that it should be encouraged. Moreover, converting a structure from a nonresidential use to a residential one may result in fewer impacts relative to the prior tenants. For example, a 200,000 square foot general office

Collier County: Impact Fee Assistance Program Designed to Promote Affordable Housing and Encourage Rehabilitation

The County has adopted three affordable/workforce housing programs which are funded by a combination of County resources. Two of the programs provide impact fee deferrals to qualified applicants for the lifetime of their ownership of the home. The home must be homesteaded and owner-occupied; however, there is no limit to the number of years an owner may participate in the program and the payment does not balloon at the end of the term of the agreement. The third deferral program is for affordable rental apartments, which provides a deferral from the payment of the impact fees for a term of six years and nine months. The County also provides for the waiver of impact fees (except for Water and Sewer and Educational Facilities Impact Fees) for publicly owned residential housing. – Excerpted from a letter to Alton Colvin, Executive Director Florida Legislative Committee on Intergovernmental Relations from James V. Mudd, Collier County Manager, November 9, 2005.

In addition, the Collier County Community Redevelopment Agency has created the Impact Fee Assistance Program to provide financial assistance to redevelopment projects in targeted areas as a way to encourage rehabilitation of degraded structures. The funding for this program comes in part from Tax Increment Financing.

For each project, the county may provide up to 50% of the total impact fees. There is a maximum amount of funding allocated each year for impact fee assistance, so the program is managed on a "first come, first served" basis as well as an eligibility point system.

building will generate about 1,100 one-way trips during a typical weekday.[51] If converted into 200 units averaging 1,000 square feet each, one-way weekday trips will fall about 70% to about 420.[52] Clearly, the community may gain from such a conversion especially if the building is already vacant or in other ways underutilized.

Many urban areas are ripe or becoming ripe for conversion to other land uses and in the process become revitalized. Exempting impact fees in situations where existing space is being rehabilitated but no new space added can help facilitate revitalization. Indeed, in the office building example above, even adding space to accommodate a doubling of units would still result in a net reduction in trips than were generated by the tenants of the office building.

Exclusions

Excluding certain new development from impact fees may be warranted when alternative revenues are available to finance the very infrastructure that would be financed from impact fees. For example, in Albuquerque, the city does not charge water or wastewater impact fees in areas where federal and state funds are being used to construct related infrastructure. Not only was the area an imminent health hazard but the existing and new homes being built there catered to low-income households. Likewise, DeKalb County, Georgia, will be excluding development in community improvement districts, business improvement districts, empowerment zones, and enterprise zones where alternative financing mechanisms are or will be used to finance the same facilities that would be financed from impact fees.

In these examples, excluded areas are identified clearly on maps, facilities constructed in those areas that may otherwise have been funded from impact fees are identified, and alternative sources of revenue are allocated for their construction.

Waivers

Sometimes it is desirable from a public policy perspective to simply waive all or a share of the impact fees on certain, qualifying residential development. In some states, however, outright waivers may not be allowed and a waiver can be accomplished only by identifying substitute revenue. These forms of waiver are reviewed, along with the concept of the *de minimus* waiver described below.

Outright Waiver. In states that have no impact fee enabling act (such as Florida, Nebraska and Ohio) waivers can be provided. Presumably they are targeted for residential units or their occupants meeting certain conditions and presumably consistent with public policy purposes. In New Mexico, however, the enabling act specifically provides for such an outright waiver.

Substitute Revenues. Most state impact fee enabling legislation requires that waived revenues be replaced with others that are identified. Sometimes this may be Community Development Block Grants and in others a local housing trust. The usual solution is not to waive, however.

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51 Institute of Transportation Engineers, Trip Generation, (2003), for general office building, p. 1158. One-way is total multiplied by 50% to avoid double-counting the same trip.

52 Institute of Transportation Engineers, Trip Generation, (2003), for high-rise apartment building, p. 348. One-way is total multiplied by 50% to avoid double-counting the same trip.

Atlanta, Georgia, has devised a unique way to solve this problem. Because of its already high quality of infrastructure, the city established the level of service for parks and recreation, and public safety *below* the current level of service meaning that for planning purposes it had excess facility capacity. Impact fees thus "recouped" the value of this excess capacity. New residential development in targeted areas defined for housing affordability purposes became eligible for 50% to 100% waivers with the waived revenues replaced by recoupment revenues. Recoupment revenues not used for waivers are then reinvested in the facilities so that over time facility capacity has increased while impact fees were waived or reduced on qualifying affordable housing.

De Minimus. In states with and without impact fee legislation there is the concern that if a substantial amount of impact fee revenue is lost through waivers, then facilities that would have been financed from impact fees will not get built when planned and overall facility quality might erode. The term *de minimus* is used to indicate that it is a very minor amount or low risk.

Although hard statistical evidence is illusive in this regard, the general impression is that waived impact fees constitute a *de minimus* share of the total facility financing package. Even in Atlanta where officials admit freely that the waiver program was too generous, lost revenues have not affected its expansion of facilities to meet new development needs.

Unless experience shows otherwise, it may be reasonable for local governments to waive all or part the impact fees assessed on qualifying affordable housing and assume the impact on revenue needed to provide new or expanded facilities will be *de minimus*. In states with impact fee enabling legislation, local governments may consider inserting *de minimus* language into impact fees ordinances and codes, and noting on capital improvement programs that in the event impact fee revenues fall short of projections because of waivers, other revenue will be generated as needed from such sources as federal and state grants and loans, and allowable inter-fund transfers.

Forgivable Downpayment Loans

There are two concerns about waiving impact fees for qualifying housing. First, what if the short-term market-clearing price for a house is the same whether or not impact fees are charged? In a normally competitive housing market this would be the case. While some development interests would argue that impact fees are simply passed on to home buyers, in fact economic theory shows this not to be the case in the short term. Waived impact fees may not reduce the sales price of the housing resulting in no benefit to the low- and moderate-income buyer and may also deprive the local government of revenue it may need to construct facilities. In this scenario, the builder is the beneficiary of a "windfall" profit.

Second, what if the household for whom the waiver was granted moves and sells the home to a higher-income household – what long-term benefit did the waiver accomplish?

Recognizing these limitations on waiving impact fees directly, a small but growing number of jurisdictions are using a forgivable downpayment loan as an indirect way to waive the fees. Here's how it works:

- The developer pays the impact fee. However, to reduce the financing and administrative costs associated with paying the fee at the building permit stage, the fee is assessed there but collected

upon issuance of the certificate of occupancy (or final inspection – depending on the state), which can be timed to occur roughly coincidental with closing to a buyer.

- The local government collects the impact fee and uses it as it would for all impact fees.

- The local government uses other funds to lend the home buyer an amount equal to the impact fee to be used for the downpayment. The local government uses federal (CDBG), state (SHIP in the case of Florida), or local (housing trust) funds for this purpose.

- The loan to the homebuyer is forgiven over time; for example in Alachua County, Florida, the loan is forgiven at the rate of 20% per year for each year the household remains in the house for up to five years. If the home is sold before then, the remaining balance becomes due without interest.

Technically, these steps do not waive the impact fee. Rather, the impact fee is paid by the developer while the homebuyer is assisted in purchasing the home with a downpayment loan equal to the fee, and the fee is forgiven in five years if the home is not sold by the homebuyer.

Deferred Impact Fee Payment

Martin County, Florida, uses another approach. It allows developers of very low, low, and moderate income housing to have impact fee payments deferred for 10 to 15 years. Relevant features include[53]:

- Buyers of very low and low income housing may apply for a loan from the County for 100 percent of the impact fees assessed on very low and low income housing as defined in the Martin County Comprehensive Plan. Repayment is due upon sale or transfer of the affected property, or at the end of 15 years, whichever occurs first, unless the County chooses to allow refinancing of the loan if the affected housing continues to meet the County's definition of very low or low income housing.

- Buyers of moderate income housing may apply for a loan from the County for 50 percent of the impact fees assessed on moderate income housing as defined in the Martin County Comprehensive Plan. The interest on the loan shall be equivalent to the County's long term borrowing rate at the time of the loan. Repayment of the loan plus interest is due upon sale or transfer of the affected property, or at the end of ten years, whichever occurs first, unless the County chooses to allow refinancing of the loan if the affected housing continues to meet the County's definition of moderate income housing.

- To receive a deferral of impact fees the sales prices of the homes cannot exceed 90 percent of median area purchase price as established by the United States Department of the Treasury in accordance with section 3(b)2 of the United States Housing Act of 1937. In addition, house size is correlated to household size, so that the home to be constructed does not exceed HUD income guidelines.

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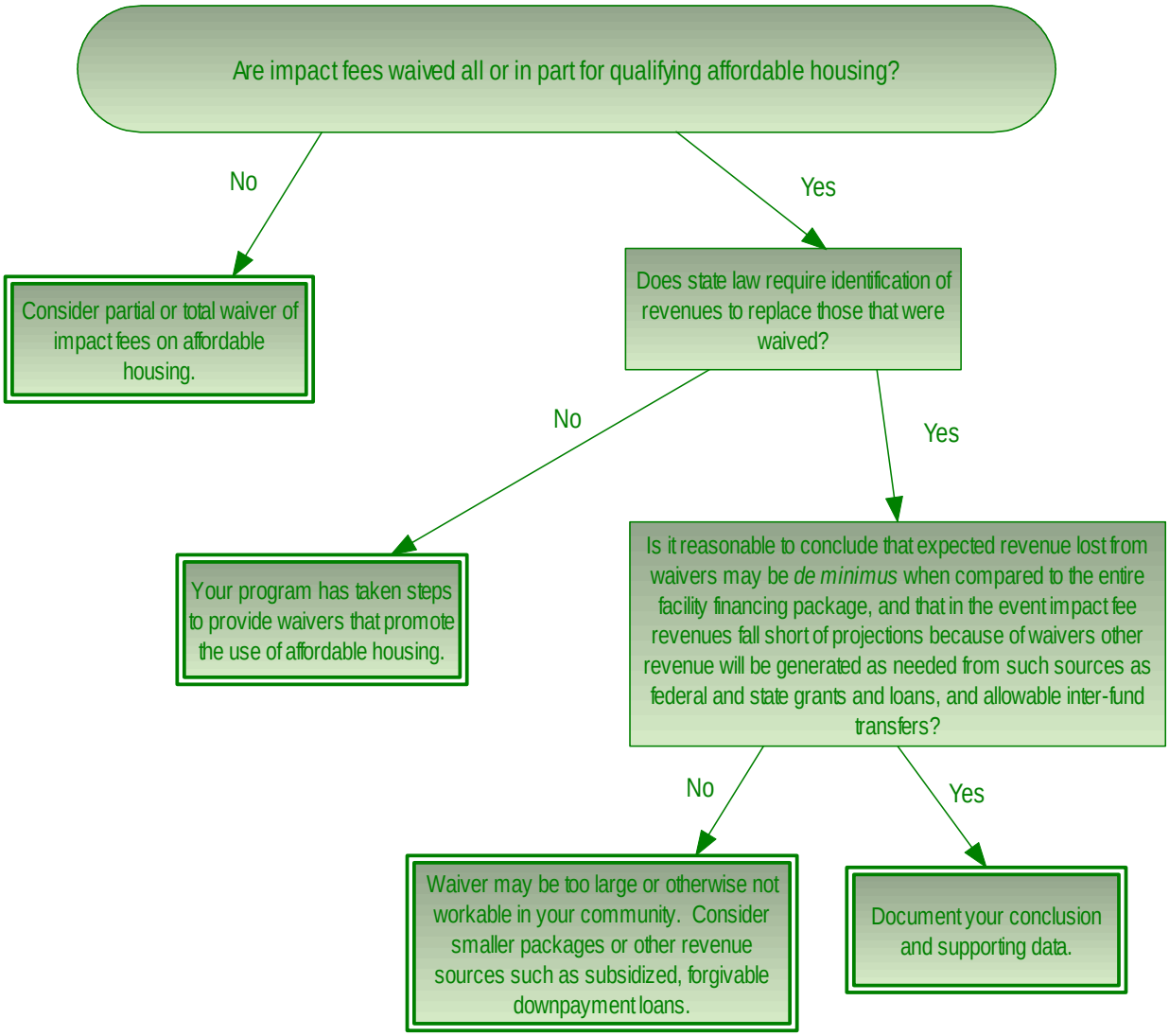
[53] See Martin County Ordinance No. 562, pt. 1, § 6.11, 12-7-1999.

Housing Affordability Questions to Consider

The following decision guide poses questions on specific ways in which impact fees should be waived or exempted from certain new residential developments to help advance housing affordability.

Decision Chart 4.5 Affordable Housing



Chapter 5 - Case Studies

The impact fee systems of three jurisdictions are described in this section: Atlanta, Georgia; Albuquerque, New Mexico; and, Alachua County, Florida. These communities were chosen for their innovative approaches to devising progressive impact fees (meaning that the fees are structured to be higher for higher income houses that correspondingly use more services) and sheltering affordable housing from potentially adverse impacts of impact fees. This chapter should be highly useful to communities that are considering impact fees and concerned with affordability.

Atlanta, Georgia

In 1993, the City of Atlanta, Georgia, adopted the state's second development impact fee program and the first since passage of the Georgia Development Impact Fee Act in 1990. It was then and probably remains today a national leader in how it tailors the impact fee program to address affordable housing concerns. Lessons learned may be applicable broadly especially in jurisdictions that have significant prior investments in infrastructure and are growing but not stressed with growth.

The City of Atlanta, Georgia, is the state's largest city at over 435,000 residents. It also has about as many jobs bringing its "daytime" functional population to more than 800,000 as more people commute into work or school than out. The state constitution confers home rule authority to cities thereby providing Atlanta with a broad range of powers and flexibility with which to use them. At the time of the impact fee policy-making process, the city was governed by a mayor, an 18-member council elected by districts (13) and at-large (5), and an elected council president. It is a strong-mayor government in that the mayor proposes legislation including an annual city budget, and administers policies adopted by council. In 1990, the city was anticipating adding about 40,000 new residents and 180,000 new jobs by 2010, based on projections of the Atlanta Regional Commission. The city also had a history of not incurring large debt and thus paying for many new capital items on a pay-as-you-go basis. Since the city did not want to ask voters to authorize more bonds to finance new capital facilities in advance of growth, it saw impact fees as a way to help bridge the financing gap. Yet, it was also more sensitive than most jurisdictions about the effects of impact fees on affordable housing.

Enabling Legislation for Atlanta

Although arguably enabled through home rule authority, the Georgia legislature adopted the Development Impact Fee in 1990 to provide guidance to local governments in how impact fees would be crafted and implemented. The Act enables local governments to assess impact fees for fire and emergency medical, police, road, library, parks and recreation, stormwater, water and wastewater facilities. Initially, Atlanta wished to assess fees on all facilities except libraries since they are administered by counties. Although the city did adopt impact fees for water and wastewater systems, they were quickly dropped in large part because the language of the Act essentially waives the requirement to apply the Act to those facilities. A stormwater fee was considered but never implemented; the city instead is considering a city-wide special

district to manage these facilities. The impact fees adopted by the city generate revenues for parks and recreation, fire and EMS, police, and roads.

It is important to note that although setting impact fees based on the size of the unit is recommended in this Guidebook such was not done in Atlanta. The Atlanta program pre-dates many advances in impact fee practice such as this but the authors have been informed that when the city updates its program it will use the size-based approach. There are so many other pioneering features of the program affecting housing affordability however that Atlanta deserves review as an important case study. Practitioners would be advised to consider many of Atlanta's approaches in addition to considering varying impact fees by the size of the unit at least up to a certain size threshold based on local conditions.

The Act requires service areas for each facility. Recognizing that public safety activities function best as a system of facilities serving the entire city, only one service area was designed for those facilities. Parks and recreation services were considered more locally serving, so three service areas were crafted (see Figure 5-1) . Although two service areas were considered initially for roads (north and south), in the end the city was considered one large service area. This decision was made in part by recognizing that traffic patterns are decided north-south throughout the day and because at 32 square miles the city is not physically very large.

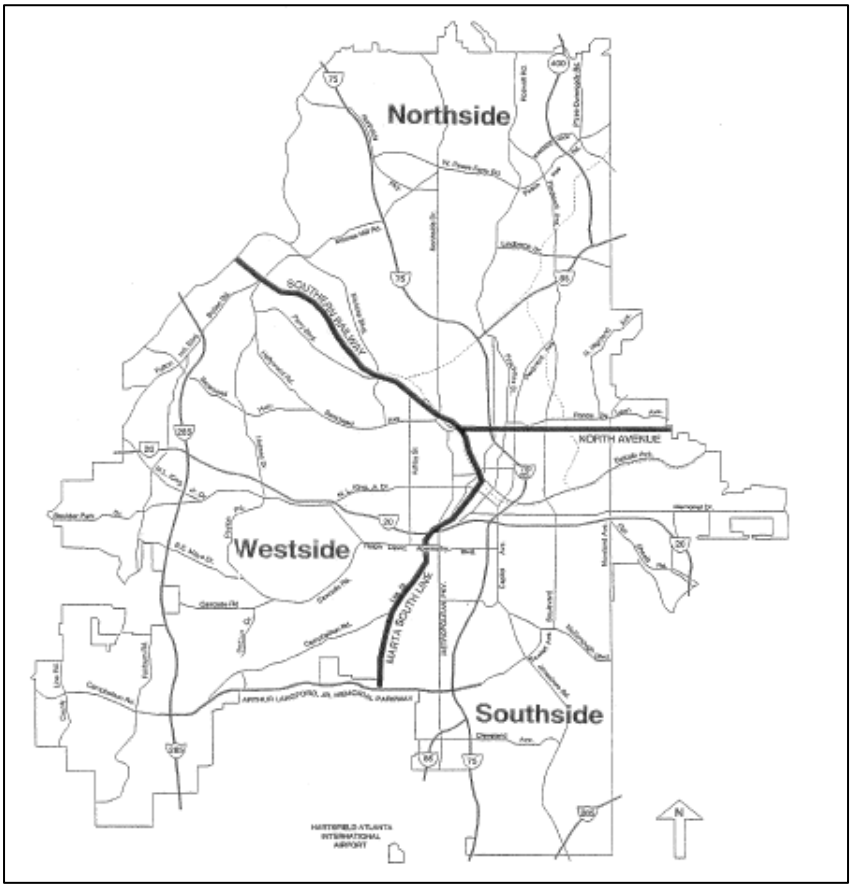


FIGURE 5-1. ATLANTA PARKS AND RECREATION SERVICE AREAS

The Act requires that level of service standards be adopted as a way to measure current capacity deficiencies or surpluses, and in part to help project future development needs. However, to measure development impacts across different land uses, such as residential, commercial, industrial, and institutional, a uniform measure was devised based on functional population. Conceptually, functional population estimates the full-time equivalent number of people any given facility needs to serve during work days ("daytime functional population") or around the clock ("24/7 functional population"). It adopted functional population levels of service for parks and recreation, and public safety facilities – being the first in the nation to do so.

The city inventoried its park and recreation facilities and found that on a city-wide basis it had nearly 7 acres of park per 1,000 functional residents. It adopted a level of service (LOS) standard of 5.75 acres per

1,000 functional residents meaning that it had sufficient excess capacity to accommodate growth to 2010. Impact fees collected for park and recreation facilities could thus be considered "recoupment" revenues under provisions of the Act, essentially recovering for the taxpayers the value of excess capacity it financed for the benefit of new development.

The consulting team also determined that the city had about 500 square feet of fire/EMS space and about 790 square feet of police space per 1,000 functional residents. The city adopted LOS standards of 470 and 660 square feet per 1,000 functional residents, respectively, which was the projected 2010 LOS, based on existing facilities and growth projections. This also created a "recoupment" situation for the city.

For roads, the city adopted an LOS standard calling for a volume-to-capacity ratio of 0.75 for all major roads, meaning that the road system should have 25 percent more capacity than used; the ratio translates roughly into a level "D" in transportation engineering terms. Because the city was then at a 0.71 ratio, this implied that excess capacity existed, but the city determined all the impact fee revenues generated from road impact fees should be used to expand capacity and thus recoupment was not an administrative feature.

The Act requires that costs be estimated based on historical and/or projected expenditures and rendered to a cost per unit of service based on the adopted LOS. That cost must be reduced to reflect any non-local revenue credits such as state or federal grants, and local revenue credits such as the present value of that share of debt service on bonds used to finance the same type of facilities for which impact fees are assessed generated by new development. The fees themselves were calculated as follows in Table 5-1 (below):

TABLE 5-1. ATLANTA IMPACT FEE CALCULATIONS

Parks and Recreation		
Cost Feature	North	South + West
Improvement Cost per Acre	$43,000	$43,000
Land Cost per Acre	$46,047	$10,442
Total Cost per Acre	$89,047	$53,442
Non-Local Revenue Credits	$ 0	$ 0
Local Revenue Credits	$ 0	$ 0
Net Impact Cost per Acre	$89,047	$53,442
Acres per Functional Resident	0.00575	0.00575
Impact Fee per Resident	$ 512	$ 351
Fire/Emergency Medical Service		
Cost Feature	Citywide	
Improvement Cost per Square Foot	$152.00	
Non-Local Revenue Credits	$ 0	
Local Revenue Credits	$ 0	
Total Impact Cost per Square Foot	$152.00	
Square Feet per Functional Resident	0.47	
Impact Fee per Resident	$ 71.44	
Police		
Cost Feature	Citywide	
Improvement Cost per Square Foot	$ 31.00	
Non-Local Revenue Credits	$ 0	
Local Revenue Credits	$ 0	
Total Impact Cost per Square Foot	$ 31.00	
Square Feet per Functional Resident	0.66	
Impact Fee per Resident	$ 20.46	
Transportation (Roads)		
Cost Feature	Citywide	
Cost Per Vehicle Mile Traveled at LOS	$1,869	
Non-Local Revenue Credits	($ 787)	
Net Cost per Mile	$1,082	
Local Revenue Credits	Variable	

Note: Road impact fees are reduced based on property values of different land uses.

The Act allows developers to offer improvements to those facilities that are scheduled for impact fee financing and thereby reduce the fees charged per unit. For example, if a road impact fee is $1 million but the $600,000 road improvement project in front of the development is scheduled to be improved using impact fees in part, the developer may make those improvements (probably at lower cost than the city and earlier than scheduled) and reduce the impact fee accordingly – in this case down to $400,000. The fee schedules for Atlanta appear in Table 5-2.

TABLE 5-2. ATLANTA FEE SCHEDULES

	Land Use Type	Number of Dwelling Units	Pop*/ Unit	Acres per 1,000 Pop*	Acres per Unit	Cost per Acre	Net Cost per Unit
PARKS & RECREATION – NORTHSIDE	Single-family	1	1.60	5.75	0.0092	$89,047	$819
	Multi-family	1	1.11	5.75	0.0064	$89,047	$570
PARKS & RECREATION – SOUTHSIDE & WESTSIDE	Single-family	1	1.60	5.75	0.0092	$53,442	$492
	Multi-family	1	1.11	5.75	0.0064	$53,442	$342
	Land Use Type	Number of Dwelling Units	Pop*/ Unit	Sq Footage/ 1,000 Pop*	Sq Ft per Unit	Cost per Sq Ft	Cost per Unit
FIRE/EMS	Single-family	1	1.60	470	0.7520	$152	$114
	Multi-family	1	1.11	470	0.5217	$152	$79
POLICE	Single-family	1	1.60	660	1.0560	$31	$33
	Multi-family	1	1.11	660	0.7326	$31	$23
	Land Use Type	Number of Dwelling Units	Peak Hr VMT/ Unit	Cost/ Peak Hr VMT	Cost per Unit	Property Tax Credit	Net Cost per Unit
TRANSPORTATION	Single-family	1	1.02	$1,154	$1,177	$190	$987
	Multi-family	1	0.5	$1,154	$577	$107	$470

* Pop refers to functional population. The population numbers adjusted for the daytime commuting population.

The unique ways in which Atlanta facilitates affordable housing production through its impact fee program are also important to understand. Key Atlanta officials, such as Leon Eplan and Fernando Costa, then Commissioner of Planning and Director of Planning, respectively, under the Maynard Jackson Administration, were concerned about the potentially adverse effects of impact fees on affordable housing. To address these concerns, Atlanta became the first jurisdiction in the nation to adopt the following features:

- 50% reduction if within 1,000 feet of a rail transit station.
- 100% reduction if located within an enterprise zone.
- 100% reduction if located within a federally chartered empowerment zone.
- 100% reduction if part of a qualified historic preservation project
- 100% reduction if the unit rents for less than 60% of the regional median rent or sells for less than 1.5 times the regional new home sale price.
- 50% reduction if the unit rents for between 60% and 80% of the regional median rent or sells for between 1.5 and 2.5 times the regional new home sale price.
- Broadens the assessment base for parks and recreation by charging non-residential development.

Georgia law requires that revenues not collected from impact fees must be offset from sources of revenue other than impact fees. This requirement to collect from other sources does not apply to the 50% reduction for being within 1,000 feet of a rail station because studies show that traffic impact is reduced roughly proportionate with this relationship. The analysis indicates that Atlanta remains the only jurisdiction that recognizes this relationship. In all other respects, however, the city is required by law to offset lost impact fee revenues through identified sources. This is where recoupment comes into play.

For parks and recreation, and public safety, impact fees essentially reimburse taxpayers for investments generating excess capacity for the benefit of new development. It is these "recoupment" revenues that are used to reduce the fees assessed on qualifying affordable housing. This approach is used in no other jurisdiction. In addition, although the city does not recoup road impact fees (all revenues are dedicated to capacity-expansion), it has nonetheless been able to offset road impact fees for qualifying affordable housing through bond arbitrage (interest from bond proceeds before bond revenue is spent), community development block grant, and even general fund sources.

Recoupment is based on adopting a level of service standard below the current service level so that at least for a while impact fees reimburse for the value of excess capacity. Yet, Atlanta has been even more creative in sheltering affordable housing from impact fee burdens while *expanding* parks and recreation, and public safety facilities in excess of adopted LOS standards. This is a unique win-win innovation. Here is how it works:

By setting the adopted impact fee level of service standard below current levels – which carries the risk that services over time will be degraded relative to the present – impact fee revenues can be used to offset assessments on affordable housing. Because not all revenues are used for this purpose – more likely about a quarter – the remaining revenue is in fact used to expand capacity and to leverage investment. For example, because parks and recreation impact fees generated new revenue in excess of covering affordable housing offsets, the new revenue could be used as match to leverage even more investment in parks. The effect is that affordable housing is sheltered from impact fee effects yet facility capacity is increased. Moreover, the combination of impact fees leveraging investment means that today Atlanta's current acreage of parks per 1,000 residents is *more* than in 1993. The same is true for public safety.

Atlanta was also the first jurisdiction that expands the base of impact fee assessments across all land uses for parks and recreation. The usual custom is to assess only residential development for parks and recreation facilities, and libraries. (This is also the case in those states where school facility impact fees are assessed, the exception being California where non-residential development is required by statute to also pay school impact fees.) Thus, the entire burden for financing these facilities falls on roughly half to two-thirds of the development base. However, because Atlanta kept park and recreation facility reservation records by type of reservation (company picnic, church league, etc.), the consultants were able to determine that a very high percentage of the formal use of these facilities was for the benefit of non-residential land uses. The city thus had a reasonable basis on which to assess all land uses thereby reducing the magnitude of impact fees assessed on residential property.

Research for this project indicates that no other jurisdiction assessing impact fees is as comprehensive as Atlanta in sheltering affordable housing from potentially adverse effects.

Lessons from Atlanta

More than a decade after implementing its pioneering program, Atlanta is reflecting on its pioneering approach. Several lessons became evident during the case study. First, using the regional median measures for housing affordability in Atlanta during the 1990s meant that because housing values and incomes were lower in the city than in much of the metropolitan area (the city used HUD's regional figures), many more housing units qualified for reductions than if only city-specific value were used. In effect, for Atlanta, the reductions may have been too generous.

Second, not all development in targeted areas needed to have the impact fee reduced. It turned out that several developers of properties in targeted areas had no knowledge of the impact fee reductions and came to pull building permits assuming the impact fee would be paid, only to learn from staff that fees would be waived. This finding suggests that impact fee reductions may need to be targeted to a smaller group or more specific situations.

Third, as the city updates its impact program, it may cut back on the number and nature of reductions. Its initial concern in the 1990s was whether impact fees may affect growth in the city. That concern has dissipated as the city is attracting more higher-income residents yet it is still able to provide affordable housing.

Fourth, Atlanta as elsewhere has learned that impact fees do not by themselves facilitate construction of new facilities but may stimulate leveraging. City officials informed us that parks and recreation impact fees have enabled the city to leverage foundation (like Ford, Rockefeller, etc.) and other investments that result in a higher effective level of service now than in 1992, despite an officially adopted level of service that is lower.

As Atlanta prepares for an update, it is likely to reduce the scope of affordable housing reductions such as those for targeted geographic areas, enterprise and empowerment zones in particular, but retain many key reductions relating to transportation and affordable housing per se. As former commissioners of planning Leon Eplan and Michael Dobbins observed, the broad scale of impact fee reductions did its job of encouraging housing construction in blighted or other targeted areas. Now that Atlanta's housing market is healthy, future reductions should be more targeted.

Legal Issues for Atlanta

Since the Act was adopted in 1990 there have only been two legal challenges in Georgia, both decided favorably to local government. In *Metro Atlanta Home Builders Association v. Cherokee County*, the state Court of Appeal ruled that a single county-wide service area including cities was consistent with the Act even though impact fees are not collected from building permits issued by the cities themselves.

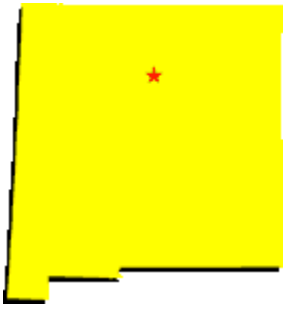
More recently, in *Southeast Legal Foundation v. City of Atlanta*, the federal District Court ruled that the plaintiff had no legal standing to challenge the city's use of only one service area instead of two for roads. In that case, the plaintiff alleged that while most impact fees for roads were collected in the northern part of the city in the areas of Midtown and Buckhead, those revenues were being spent mostly in the south for such purposes as sidewalks along streets. Had the case gone to trial, the City was prepared to show that more than 80% of the impact fees assessed were credited back to developers who constructed road improvements that would have been financed by impact fees instead. Of the remaining funds, much if not

most were used to improve sidewalks in the south so that workers living in the south could get to their jobs in the north – consistent with the city's strong city-wide north-south travel pattern.

Next Steps for Atlanta

Atlanta will undertake a major updating of its impact fee program in the near future. As it does, it will retain key affordable housing features and be more refined in impact fee calculations and assessments on housing. For example, road impact fees may be reduced for situations where development occurs along transit corridors (not just within 1,000 feet of a rail station), or in configurations that reduce vehicle use. The number and size of areas targeted for impact fee reductions will be reduced and fewer homes will likely be eligible for reduced impact fees but all homes meeting affordable housing criteria will remain eligible for reductions. The update will likely raise impact fees, which are currently a modest $1,400 per unit on average. This will provide the city with even more funds with which to leverage non-local and private funding for key facilities. As former commissioners of planning Eplan and Dobbins observed, the real benefit of impact fees to the city was their role in leveraging multiple sources of revenues especially for parks and recreation facilities, and roads.

Albuquerque, New Mexico



In 2005, the City of Albuquerque, New Mexico, adopted an impact fee program that is unique for 1) its attention to differences in facility costs between parts of the city, 2) its reductions in impact fees for attaining land-use efficiencies that by their nature reduce facility impacts, and 3) its outright waivers for affordable housing. Consequently, it is one of the most sophisticated impact fee programs yet adopted. Lessons learned may be applicable broadly especially in jurisdictions that are committed to minimizing potentially adverse effects of impact fees on affordable housing through direct (waiver) and indirect (cost-variation and impact-reduction) approaches.

The City of Albuquerque, New Mexico, is the state's largest city at over 510,000 residents and is projected to reach nearly 625,000 residents by 2025. The state constitution confers home rule authority to cities thereby providing Albuquerque with a broad range of powers and flexibility with which to use them. The city's governance structure can be characterized as a strong-mayor, the position of which serves as the chief administrator for city policy. The city council is composed of seven members elected by district, with a council president elected from among council members.

The City started its impact fee deliberations in the early 1990s then decided to embark on a large-scale, community-driven visioning approach to address issues of urban form, land use and facility efficiencies, equity, long-range capital facility financing, and related "big picture" issues. That process led to the Planned Growth Strategies (PGS) plan which was adopted in 2004. Chief among its many innovations was establishing tiers called "fully served," "partially served," and "unserved." The purpose of the tiers was to recognize that some areas of the city already had most or all the infrastructure needed to serve new development but other areas did not. Also, "fully served" areas were more likely than "partially served" ones to have infill and redevelopment opportunities. From the city's perspective, it would be a more efficient use of existing resources to encourage development in fully served areas – where facilities already exist – and also encourage more efficient development patterns in partially served areas through a pricing

structure in part based on impact fees. The rest of this section reviews how the impact fee structure emerged from this basic planning objective.

The fees went into effect on July 1, 2005.

Enabling Legislation for Albuquerque

The City of Albuquerque is authorized to impose development impact fees. The New Mexico Development Fees Act [5-8-1 to 5-8-42 NMSA 1978] authorizes all cities and counties to enact or impose impact fees on land within their respective corporate boundaries and to pay specified costs of constructing capital improvements or facility expansions with impact fees. Section 5-8-3.B "If it complies with the Development Fees Act, a municipality or county may enact or impose impact fees on land within its respective corporate boundaries." Section 5-8-2.I defines an impact fee as:

> *[A] charge or assessment imposed by a municipality or county on new development in order to generate revenue for funding or recouping the costs of capital improvements or facility expansions necessitated by and attributable to the new development. The term includes amortized charges, lump-sum charges, capital recovery fees, contributions in aid of construction, development fees and any other fee that functions as described by this definition. The term does not include hook-up fees, dedication of rights of way or easements or construction or dedication of on-site water distribution, wastewater collection or drainage facilities, or streets, sidewalks or curbs if the dedication or construction is required by a previously adopted valid ordinance or regulation and is necessitated by and attributable to the new development.*

The statute authorizes specific services to be funded with impact fees. Section 5-8-2. provides the list:

> *"[C]apital improvement" means any of the following facilities that have a life expectancy of ten or more years and are owned and operated by or on behalf of a municipality or county:*
> *(1) water supply, treatment and distribution facilities; wastewater collection and treatment facilities; and storm water, drainage and flood control facilities;*
> *(2) roadway facilities located within the service area, including roads, bridges, bike and pedestrian trails, bus bays, rights of way, traffic signals, landscaping and any local components of state and federal highways;*
> *(3) buildings for fire, police and rescue and essential equipment costing ten thousand dollars ($10,000) or more and having a life expectancy of ten years or more; and*
> *(4) parks, recreational areas, open space trails and related areas and facilities.*

The New Mexico enabling act adopts the proportionate share concept in Section 5-8-7: "[t]he fee shall not exceed the cost to pay for a proportionate share of the cost of system improvements, based upon service units, needed to serve new development."

In Section 5-8-2.G "facility expansion" is defined in the statute as the "expansion of the capacity of an existing facility that serves the same function as an otherwise necessary new capital improvement, in order that the existing facility may serve new development." Section 5-8-2.G further specifies that "facility expansion" does not include "the repair, maintenance, modernization or expansion of an existing facility to

better serve existing development..."

The Act specifies that no impact fees shall be spent to provide new or better facilities for existing development. Furthermore, fees collected for public safety capital improvements and facility expansion can only be spent for public safety capital facilities and facility expansions and not for any other type of improvements or facilities.

A capital improvement plan is required by the Act to be the basis of impact fee programs. Section 5-8-23 requires that "If the governing body adopts an ordinance, order or resolution approving the land use assumptions, the municipality or county shall provide for a capital improvements plan to be developed by qualified professionals using generally accepted engineering and planning practices…"

Therefore, the City of Albuquerque is authorized to adopt public safety impact fees provided that the fees do not exceed a proportionate share of the cost of providing capital improvements to new developments within service areas. Furthermore, those impact fees must be in accord with land use assumptions adopted by the City Council and be incorporated into Capital Improvement Plans. What follows are the calculations for public safety impact fees consistent with these requirements.

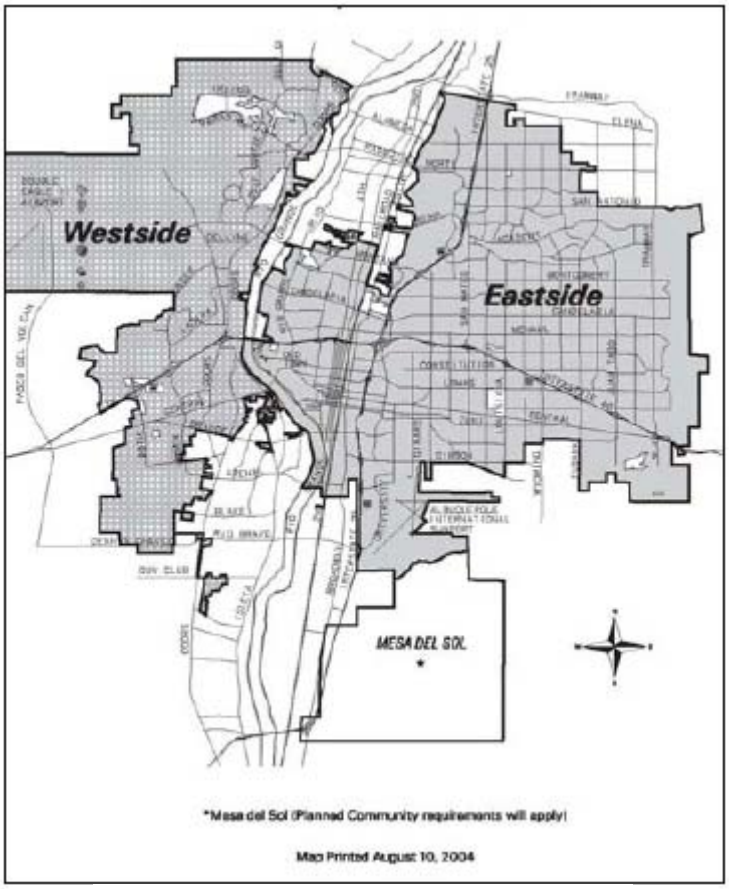


FIGURE 5-2. PUBLIC SAFETY SERVICE AREA

The Act also requires service areas for each facility. The Act also allows different levels of service for individual service areas – similar to other impact fee statutes – but rarely applied. In Albuquerque, the city decided that for public safety facilities not only were two service areas logical but different levels of service within each. The city reasons that although public safety activities function best as a system of facilities serving the entire city, the city is actually divided by the Rio Grande River into eastern and western parts so two service areas were devised (Figure 5-2). For parks and recreation, seven areas were created (Figure 5-3). To account for topographical features creating unique drainage sheds, five drainage facility service areas were created (Figure 5-4). Finally, in recognizing important differences in travel patterns and the extent to which road facilities were fully developed, seven service areas were drafted (Figure 5-5).

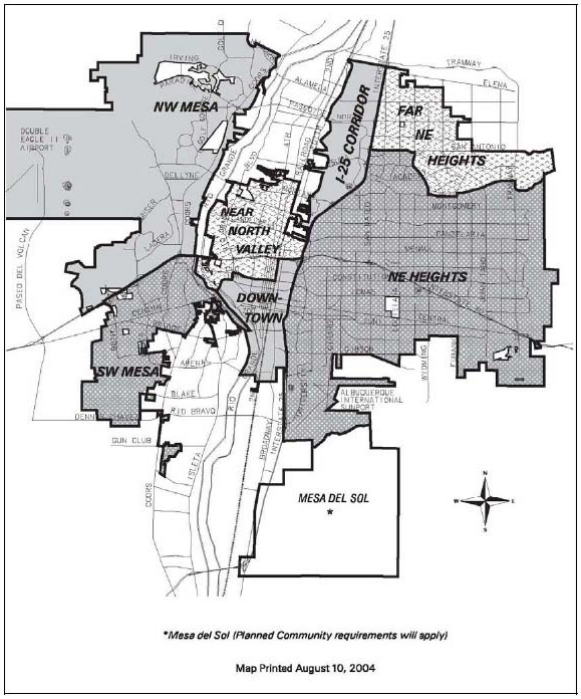


FIGURE 5-3. PARKS, RECREATION FACILITIES AND OPEN SPACE SERVICE AREAS

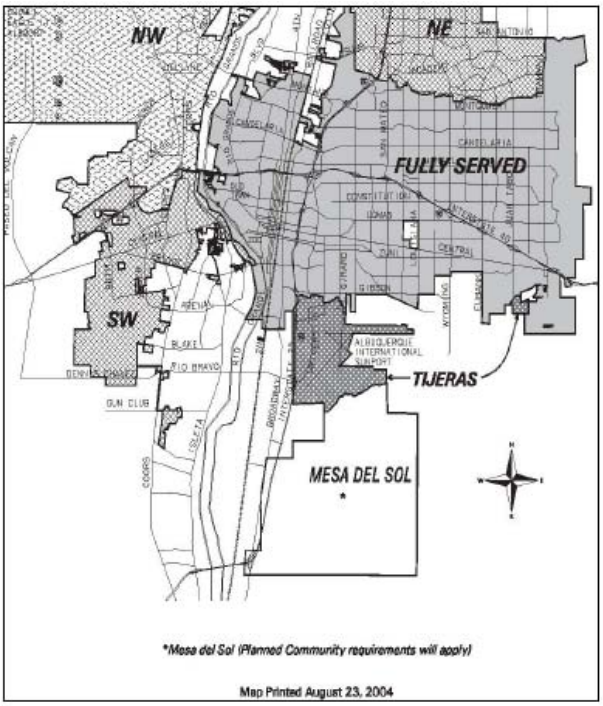


FIGURE 5-4. DRAINAGE FACILITY SERVICE AREAS

The Act requires that levels of service standards be adopted as a way to measure current capacity deficiencies or surpluses, and in part to help project future development needs. Capital improvement plans and costs need to be related to service areas, and impact fees calculated accordingly. Where revenue was known to be available to help finance needed facilities, costs were reduced to a "net" impact cost. For public safety facilities, the level of service standard was based on functional population while for parks, recreation facilities, trails and open space it was based on residents. For drainage it was based on impervious surface, and for roads it was based on travel behavior by land use. Tables 5-3 through 5-6 provide the impact fee calculations for residential structures.

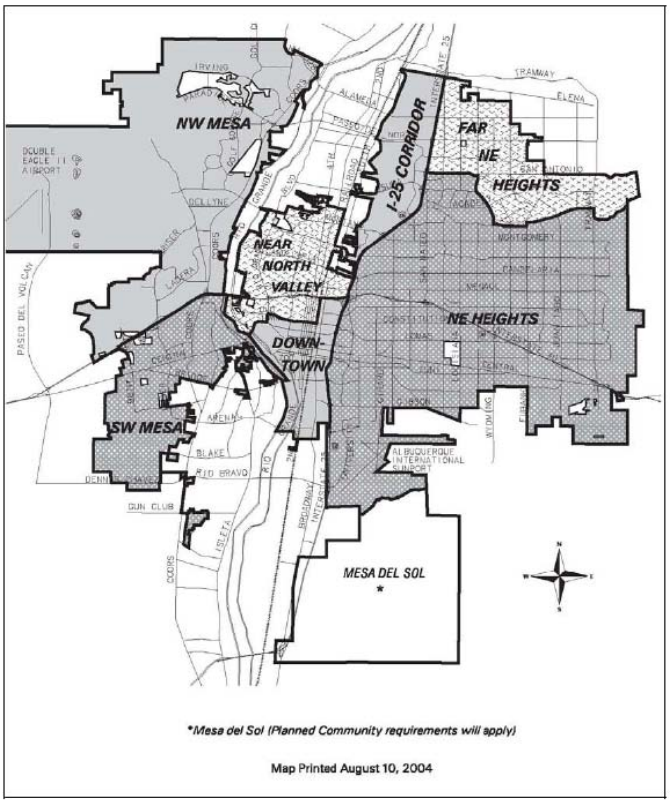


FIGURE 5-5. ROAD FACILITY SERVICE AREAS

TABLE 5-3. ALBUQUERQUE PUBLIC SAFETY LEVEL OF SERVICE, NET IMPACT COSTS, AND IMPACT FEES BY SERVICE AREA

Step		East Side	West Side
New Functional Population 2004 – 2025		47,991	63,779
Total Public Safety Cost per Capita		$371.47	$278.17
Fire and Emergency Protection Levels of Service			
Persons Served per Fire Station		22,886	20,782
New Stations Needed by 2025		3	2
Fire Improvement Costs		$11,395,311	$9,175,144
Fire Cost Per Capita		$237.45	$143.86
Police Levels of Service			
Citywide Facilities, Square Ft. per Capita		0.444	0.444
Citywide Cost per Capita		$94.77	$94.77
Service Area Facilities, Square Ft. per Capita		0.163	0.163
Service Area Costs per Capita		$39.25	$39.54
Police Cost per Capita		$134.02	$134.31
Development Type	Functional Occupants	Unit Costs per 1,000 Square Feet	
		East Side	West Side
Residential	0.743	$275.92	$206.62

TABLE 5-4. ALBUQUERQUE PARKS, RECREATION FACILITY, TRAIN AND OPEN SPACE LEVEL OF SERVICE, NET IMPACT COST, AND IMPACT FEES BY SERVICE AREA

SERVICE AREA	Academy/ NE	Central/ University	Foothills/ SE	North Albuquerque	North Valley/I-25	SW Mesa	NW Mesa/ Volcano
Local Parks (Neighborhood & Community)							
Level of Service per 1,000 People	2.600	2.600	2.600	2.600	2.600	2.600	2.600
Needed Additional Acres	2.13	0.00	8.88	20.07	16.71	71.29	110.44
Acres Available in Inventory	26.49	12.74	47.61	59.00	3.95	81.53	109.02
Acres to be Acquired	0.00	0.00	0.00	0.00	12.76	0.00	0.00
Acquisition Cost per Acre	$125,000	$110,000	$105,000	$125,000	$122,500	$72,000	$120,000
Acquisition Cost	$0	$0	$0	$0	$1,562,708	$0	0.00
Acres to be Developed	2.13	0.00	8.88	20.07	16.71	71.29	110.44
Existing Surplus	0.00	78.17	7.11	0.00	0.00	0.00	22.90
Net Acres to be Developed	2.13	0.00	1.77	20.07	16.71	71.29	87.54
Development Cost per Acre	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000	$175,000
Development Cost	$373,555	$0	$309,225	$3,511,690	$2,923,830	$12,475,645	$15,319,465
Facilities Cost per Acre	$226,007	$226,007	$226,007	$226,007	$226,007	$226,007	$226,007
Facilities Cost	$482,434	$0	$399,354	$4,535,228	$3,776,027	$16,111,871	$19,784,567
Total Cost Local Parks	$855,989	$0	$708,579	$8,046,918	$8,262,565	$28,587,516	$35,274,864
Cost per Capita	$1,042.62	$0	$207.49	$1,042.62	$1,285.80	$1,042.62	$830.45
Less Grants	($70.41)	$0	($14.01)	($70.41)	($86.84)	($70.41)	($56.08)
Less Bond Credit	($208.52)	$0	($41.50)	($208.52)	($257.16)	($208.52)	($166.09)
Net Local Park Cost	*$763.69*	*$0*	*$151.98*	*$763.69*	*$941.80*	*$763.69*	*$608.28*
Trails							
Cost per Capita	$21.88	$21.88	$21.88	$21.88	$21.88	$21.88	$21.88
Less Grants	($1.48)	($1.48)	($1.48)	($1.48)	($1.48)	($1.48)	($1.48)
Less Bond Credit	($4.38)	($4.38)	($4.38)	($4.38)	($4.38)	($4.38)	($4.38)
Net Trails Cost	*$16.03*	*$16.03*	*$16.03*	*$16.03*	*$16.03*	*$16.03*	*$16.03*

TABLE 5-5. ALBUQUERQUE NET IMPACT COSTS, PROJECTED IMPERVIOUS ACRES, AND DRAINAGE IMPACT FEE PER ACRE BY SERVICE AREA

Service Area	Net Impact Costs	Total Area (Acres)	Projected Impervious Acres, 2000-2025	Cost Per Impervious Acre
NW	$ 55,015,528	15,490	3,915	$ 14,052
SW	$ 35,393,166	9,021	2,757	$ 12,836
Fully Served	$ 0	40,250	2,009	$ 0
Tijeras	$ 2,933,604	2,611	221	$ 13,290
Far NE	$ 15,044,434	11,753	1,474	$ 10,208

TABLE 5-6. ALBUQUERQUE LEVEL OF SERVICE, NET IMPACT COST, ROAD IMPACT FEES BY SERVICE AREA

Land Use	Trip Rate (PM Peak)	Trip Rate (Daily)	Assessable Trip Length	Total Trip Length	% New Trips	Total Impact Cost	Annual Gas Tax Proxy	Gas Tax Proxy Offset	Net Impact Cost	Downtown	NE Heights	Near North Valley	Far NE Heights	I-25 Corridor	NW Mesa	SW Mesa	Fee
Single Family Detached																	
Less than 1,500 sf	0.68	6.35	6.28	6.78	100%	$3,617	$17	$233	$3,384	$0	$0	$0	$1,069	R2,113	$2,626	$2,702	N/D
1,500 sf to 2,499 sf	1.02	9.57	6.28	6.78	100%	$5,425	$25	$351	$5,075	$0	$0	$0	$1,585	$3,160	$3,933	$4,046	$3,068
2,500 sf or Larger	1.14	10.74	6.28	6.78	100%	$6,063	$28	$394	$5,670	$0	$0	$0	$1,754	$3,521	$4,388	$4,516	N/D
Multi-Family	0.67	6.72	4.19	4.69	100%	$2,376	$12	$170	$2,206	$0	$0	$0	$512	$1,276	$1,651	$1,706	$1,902
Condominium/Townhouse	0.52	5.86	4.19	4.69	100%	$1,844	$11	$148	$1,695	$0	$0	$0	$218	$885	$1,212	$1,260	$1,657
Mobile Home Park	0.60	4.99	4.29	4.79	100%	$2,178	$9	$129	$2,049	$0	$0	$0	$765	$1,344	$1,629	$1,671	$1,687
Retirement Home	0.35	3.71	2.39	2.89	100%	$709	$4	$58	$651	$0	$0	$0	$74	$335	$462	$481	$828
Congregate Care Facility	0.20	2.02	3.09	3.59	71.6%	$375	$2	$28	$347	$0	$0	$0	$67	$193	$255	$264	N/D

By and large, these fee schedules are notable for their treatment of affordable housing in two significant respects. First, the service areas are carefully designed with respect to parks, recreation facilities, trails and open space, drainage, and road facilities. Generally, the more built-out and compact an area, the lower the fee – in several cases being zero. In effect, when existing facilities are sufficient to meet future demand no impact fee need be assessed. On the other hand, the lower the investment in facilities and the greater the projected growth, the higher the fees. The effect is to encourage infill and redevelopment in closer-in areas where excess capacity exists while charging substantial fees where new facilities are needed to accommodate growth. It is possible that some development may be lured away from lower-density areas where new facilities are needed and into higher-density ones where facilities that can accommodate development needs exist.

Second, the fees are based on the size of structures and in particular residential units. Census data show clearly that larger dwellings on average have more residents than smaller ones (such as shown in Tables 4-2 and 4-3 above). By apportioning impact fees based on dwelling unit size, the smaller and more affordable residential units pay a lower fee than larger ones.

By themselves, these two features are notable improvements in impact fee policy and "Smart Growth" friendly. The City is going further, as will be seen in the next section.

Special Affordable Housing Provisions for Albuquerque

The City of Albuquerque has taken two additional actions to reduce the potentially adverse effect of impact fees on affordable housing: waiving fees; and, encouraging designs and configurations of new development to reduce facilities impacts – thereby reducing fees potentially for all affected housing stock.

New Mexico's impact fee Act enables local governments to waive impact fees on affordable housing. At 5-8-3, the Act allows that a "municipality or county may waive impact fee requirements for affordable housing projects" while 5-8-1 defines affordable housing as "any housing development built to benefit those whose income is at or below eighty percent of the area median income; and who will pay no more than thirty percent of their gross monthly income towards such housing." The City is taking advantage of these statutory provisions to waive or reduce impact fees for qualified housing in the following respects:

- Impact fees for owner-occupied housing affordable to households earning 80% or less of the Metropolitan "area median income" (AMI) are waived completely.

- Impact fees for owner-occupied housing affordable to households earning 80% or less of AMI within "Planned Village Development Zones" – essentially areas targeted for compact suburban villages, and "Infill Development Zones" – essentially areas targeted for urban-scale infill and redevelopment, are waived completely.

- Impact fees for the affordable units in projects located within certain Centers and Corridors identified in the Comprehensive Plan are waived completely.

- Impact fees for affordable units within mixed-income projects located elsewhere are reduced by 60%. The City defines "mixed-income projects" as (a) for owner-occupied housing, not less than 20% or more than 50% of the total owner-occupied units in the development affordable to

> households earning 80% or less of AMI and at least 40% of remaining units affordable at 120% or more of AMI, and (b) for rental housing, not less than 20% or more than 40% of the total rental units in the development affordable to households earning 60% or less of AMI and at least 30% of the total units serving families at 80% or more of AMI.

In addition, the City is finding through policy-making that certain developments by their nature in specific parts of the city can lead to efficiencies, such as reducing travel by providing employment or shopping services near existing residential areas. It thus reduces impact fees for nonresidential development from 30% (for retail) to 70% (for industrial) west of the Rio Grande River, an area that is devoid of substantial employment, shopping, or service opportunities. While not directly related to affordable housing, the policy recognizes that achieving the jobs-housing balance will nonetheless help advance housing affordability by reducing costs associated with commuting.

During 2005 and 2006, the City anticipates adjusting fees downward for many types of development, including housing, in a variety of targeted areas.

How will the City offset lost revenue and continue building new facilities? Where facilities already exist and where efficiencies can be attained where new facilities are needed, the lost revenue is *per se* not needed. The real revenue that is lost comes from waiving fees on certain housing where fees would be otherwise assessed. In other states that enable fee waivers, replacement revenues need to be identified but this is not the case in New Mexico. One theory is that in the scheme of things the lost revenue is *de minimus* and not sufficient to warrant concern at least from a legal perspective. Another is that the general fund will be used to fill in revenue gaps as needed to provide facilities when needed. The general fund includes tax revenue from existing and new development, including taxes paid by occupants of affordable housing, so it would be a matter of public policy that everyone in the community would offset revenues through impact fee waivers on affordable housing.

Legal Issues for Albuquerque

After adopting impact fees in late 2004 but having not implemented them until mid-2005, the New Mexico legislature considered amending the Act to undercut the City's program. It would have done so by disallowing "marginal cost" calculations of impact fees, a term used in the Planned Growth Strategies (PGS) to guide impact fee calculations. The bill would instead require "average cost" calculations. The bill passed the House but failed to be moved out of a Senate committee before adjournment. It is uncertain how the amendment would actually have changed the City's program since, technically, the fees were actually calculated based on long-term average cost principles (total future costs divided by total future development). Since the law would not have required that the same impact fee be assessed throughout a jurisdiction -- which was supportive of the principles of apportioning impacts based on differences in costs by service areas – experts were uncertain what practical down-side effects there would be.

Lessons from Albuquerque

It may be too early to learn many lessons from Albuquerque's unique approach, especially as it relates to affordable housing, but some may be apparent. First, the City has shown that multiple service areas reflecting substantially different levels of facility availability between them can result in much lower (and sometimes no) impact fees where sufficient facilities already exist. Care must be taken not to make service

areas too small, however, as this may reduce revenue to levels below those needed to actually make facility investments.

Second, the City is pioneering efforts to include impact fee reductions for certain developments that reduce facility impacts through an across-the-board adjustment. Normally, such adjustments are done on a case-by-case "independent fee calculation study" that could be expensive, time-consuming, and contentious. Time will tell whether actual impacts were reduced. Nonetheless, the logic would appear sound, and if overall facility impact reductions are somewhat less than assumed, they may still be more than would have occurred in the absence of such policy.

Third, the City may have one of the most aggressive approaches to reducing potentially adverse effects of impact fees on affordable housing. The extent to which this may lead to delay in constructing facilities or require significant contributions from the general fund will not be known perhaps for years. Even if these outcomes are realized, the City's approach may lead to more dispersion of affordable housing, improved jobs-housing and workforce-housing balance, more stable neighborhoods, greater housing choices, and other benefits that may offset the costs.

From the broader perspective, one must not lose sight that the whole impact fee approach pursued by Albuquerque is rooted in its PGS policy, a variation of a "Smart Growth" policy. At its heart, the PGS seeks to encourage infill and redevelopment, encourage development to go where facilities exist and away from areas where they don't, increase housing options, improve housing affordability, and result in more efficient land uses, among other things. Impact fees merely help implement these and related policies, not guide them.

Alachua County, Florida

Alachua County is a moderately fast growing county in north-central Florida, about 100 miles north of Orlando, and home to the University of Florida, the state's largest university and the County's largest employer. During the 1990s, it grew from about 183,000 to 218,000 residents, or a little less than 20%. (Florida grew by about 23% during the same period.) As in many growing jurisdictions throughout Florida, impact fees have long been considered one option to facilitate new development without raising taxes or imposing lower standards of service on existing development.

The County initially adopted a road impact fee in 1991 (a flat $686 per single-family unit) but repealed it in 1993 principally because of concerns about the effect of impact fees on housing affordability. As growth continued and along with it demand for new facilities increased yet revenues available for new facilities could not keep pace, interest in impact fees was renewed in the early 2000s. In 2004, a technical report was prepared covering public buildings, fire, rescue, parks, and roads, and in 2005 all the fees except those for rescue and public buildings were implemented. To address affordable housing concerns, the County also implemented a pioneering affordable housing impact fee set-aside program. The discussion leading to this program and how it works may be instructive to other communities.

Alachua County's population in 2005 was estimated at 230,000. The largest city is Gainesville which has a population of about 100,000. More than half the county population lives in unincorporated areas. In Florida, all counties have home rule powers which, when combined with police powers, provide local governments with considerable flexibility to address problems. The county commission is composed of five elected officials serving staggered four-year terms. The chairman is selected annually by the board.

In the early 2000s, county commissioners began to express their concern about the county's ability to expand facilities to meet development needs given its current funding levels. It was also concerned about affordable housing.[54] In 2003, the County commissioned a study into affordable housing needs. It found that production of affordable housing requires proactive measures through policies and financial incentives.

After that study was issued, the County engaged Dr. James C. Nicholas of the University of Florida in 2004 to prepare a technical report for impact fees to help finance public buildings, fire/rescue, parks, and roads.[55] Both studies led the County to adopt impact fees for three facilities (public buildings and rescue were deferred) but with an impact fee set-aside program for affordable housing, details of which will be discussed later.

Enabling Legislation for Alachua County

In Florida, impact fees are based on case law emanating from the 1970s and refined through the early 1990s, with little change in case law since then (see Nicholas, Nelson and Juergensmeyer 1991; Juergensmeyer and Roberts 2001). In addition, state planning law (Chapter 163 Part II, F.S.) requires local governments to project capital facility needs and identify revenues sufficient to fully fund them. Implementing state law is Rule 9J-5 of the Florida Administrative Code, which identifies impact fees as a potential source of revenue to help finance capital improvements.

Although Florida does not have an impact fee enabling statute, Florida case law requires that communities meet the "dual rational nexus test" (Nicholas, Nelson & Juergensmeyer 1991). This test has two major components:

(1) The facilities to be charged to new development as impact fees must be needed to serve that new development, and

(2) The funds collected as impact fees must be earmarked and spent for the purposes for which they were collected.

Implied in this test is that no impact fee can exceed a pro rata or proportionate share of the anticipated costs of providing new developments with capital facilities.

Today, impact fees in Florida are used to finance a wide range of activities including but not limited to schools, parks, beaches, trails, open space, public safety, public buildings, roads, drainage, water, wastewater, emergency shelters, boat docks, community centers, cemeteries, and golf courses.

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54 The online affordable housing needs study and the appendix can both be accessed via: http://growth-management.alachua.fl.us/housing/housing_study.php.

55 The technical report by Dr. Nicholas can be found in the public hearing materials package at http://publicinformation.alachua.fl.us/documents/impact_fees/092804 Impact Fee Public Hearing.pdf.

Impact Fees in Alachua County

The method employed in the Alachua County impact fee program is the so-called "needs driven" approach, also known as the "standards approach." This method begins by identifying the level of service for a facility or service, such as 3 acres of parks per 1,000 residents. This would convert to 131 square feet of park area per capita. It would follow that a new home with 2.5 persons in residence would need 327 square feet of park area in order to maintain that standard. Using the historic or projected costs of the jurisdiction, the cost for providing an acre of parks is calculated and then applied to the needs of particular units or types of development. If park costs per acre are found to be $20,000, the cost per square foot would be $0.46, the cost per capita would be $60 and the cost per residence would be $150.

The alternate method is the so-called "improvements driven" approach. This approach begins by developing an improvement program for a service such as parks. The costs of the growth-serving park improvements are then spread over the units of growth expected during the life of the improvement program. If the level of service is 3 acres of parks per 1,000 residents and if parks cost $20,000 per acre in the future, the cost would be the same as that of the needs driven calculation. However, it is a rare occurrence when future costs for capital improvements, especially land acquisition, are equal to historic costs. The result is that improvements based impact fees tend to be higher than needs based.

The first set of data needed to calculate impact fees are the land use assumptions, shown in Table 5-7. These data are drawn from the census and other available data from the Alachua County Comprehensive Plan. Between 2002 and 2003, the unincorporated area of the County lost population. This was due to annexations by the City of Gainesville. All the fees except roads are assessed county-wide since those facilities serve county-wide needs.

TABLE 5-7. LAND USE ASSUMPTIONS

	2000	2004	2005	2009	2010
COUNTYWIDE					
Population	215,498	225,501	229,967	248,722	253,643
Dwelling Units	95,113	99,528	101,499	109,777	111,949
Households	87,509	91,571	93,384	101,001	102,999
Res. Floor Area	171,203,400	179,150,337	182,698,225	197,598,576	201,507,875
Office Floor Area	9,405,834	10,391,501	10,577,108	11,317,313	11,557,267
Ind. Floor Area	9,549,169	10,270,777	10,405,283	11,125,264	11,356,194
Retail Floor Area	8,034,555	8,617,640	8,735,609	9,181,358	9,355,909
Total Area	198,192,958	208,430,255	212,416,225	229,222,511	233,777,245
UNINCORPORATED					
Population	104,479	97,388	100,114	111,725	114,814
Dwelling Units	47,535	44,309	45,549	50,832	52,237
Households	43,350	40,408	41,539	46,357	47,638
Res. Floor Area	85,563,000	79,755,787	81,987,886	91,497,211	94,026,841
Office Floor Area	7,793,405	8,181,599	8,763,889	9,413,595	9,576,021
Ind. Floor Area	5,545,421	5,744,287	6,042,586	6,484,359	6,594,802
Retail Floor Area	5,515,470	5,707,971	5,996,722	6,337,375	6,422,538
Total Area	104,417,296	99,389,643	102,791,084	113,732,539	116,620,202

SOURCES: Bureau of the Census, 2000 Decennial Census; Alachua County, March 2004; Florida Statistical Abstract, various years; Bureau of the Census, Annual Estimates of Population for Counties of Florida: April 1,2000 to July 1,2003 (CO-EST2003-01-12); Bureau of Economic and Business Research, Florida Population Studies: Projections of Florida Population by County 2003-2030, Bulletin 138, February 2004; Bureau of Economic and Business Research, Florida Estimates of Population, January 2004. Fishkind & Associates, March 19, 2001, memo to Ken Zeichner, Alachua County Principal Planner. Note: The population reported is the total population less those institutionalized.

These assumptions were supplemented with other data on service standards, impact costs, non-local revenues, and new revenues new development may generate that may be used to help finance the same facilities for which impact fees are assessed. The impact fee technical report used these land use assumptions plus cost and revenue data to prepare impact fees for public buildings, fire, rescue, parks, and roads. Except for public buildings and rescue, all fees were adopted. The impact fee calculations for those facilities are summarized in the Appendix A.

Impact fees for all housing units are assessed on a per-square-foot basis for all residential units. Although the technical report recommended that impact fees top-out for homes larger than 3,900 square feet, the impact fee advisory committee recommended and the County Commission adopted a fee that tops-out at 2,600 square feet.[56] This is purely a policy decision. To further reduce potential effects on housing affordability, the County reduced the road impact fees (the largest of those implemented) to 65% of the potential amount that could be assessed. This was also purely a policy decision. In this case, the concern was that because road impact fees would be by far the largest of all fees, they may impact more on housing affordability. This approach was endorsed by a coalition of residential and commercial developers.

The County's assessment approach is very much in keeping with the guidance contained in this document. It means that larger homes will be charged more than smaller ones. Only a few jurisdictions apply impact fees in this way with most assessing fees based on type of dwelling (single-family detached, townhouse, apartment, manufactured home, etc.) and sometimes by type that is tiered reflecting different size categories. The Alachua County approach is thus designed to reduce potentially adverse effects of impact fees on lower-cost housing because, usually, smaller homes cost less than larger ones. The rationale is sound because larger homes on average have more people living in them than smaller ones (see Table 4-2).

Mechanically, impact fees are assessed at the building permit stage but collected prior to the issuance of the Certificate of Occupancy (when the home is finished and ready for occupancy.) That is, the size of the house is determined when application for a building permit is made and the fee is assessed based on the total number of square feet up to 2,600.

Affordable Housing Impact Fee Relief Program for Alachua County

In response to information presented in the 2003 affordable housing study and local residential developers, Alachua County established an *Affordable Housing Impact Fee Relief Program*. In 2005, the County apportioned $100,000 into the fund. Here is how it works:

Qualifying homebuyers must have gross annual incomes less than 80% of Area Median Income, adjusted for family size, as established annually by the United States Department of Housing and Urban Development. In 2004, the most recent year applicable, the median family income was $52,200[57] of which 80% would be $41,760.[58] It is difficult to tell how many households seeking to purchase new homes would benefit from this approach, however.

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56 These draft reports are not official but give some insight into deliberations.

57 From http://www.web-mtg.com/Public/florida_news/florida_median_income_areas_cities_counties.htm#median_income_2004_florida_counties accessed September 9, 2005.

58 Table 5-7 indicates that the average household size was 2.41 in 2004. Assuming 5% down, 30-year period, 6% interest, and

The maximum purchase price of a qualifying single-family home cannot exceed the maximum allowable purchase price as established in the Alachua County State Housing Initiatives Partnership Program Local Housing Assistance Plan (2004). That plan, adopted in 2004, capped purchase prices at $131,603 for new construction and $103,000 for existing homes. The 2006-2008 SHIP Local Housing Assistance Plan, adopted in 2005, caps purchase prices at $140,000 for new construction and $103,000 for existing homes. (Note: an existing home would be subject to payment of impact fees in the case where a permit is issued to build additional living space.) The most recent federal income tax return is used to verify household income and family size.[59]

For qualifying sale of new homes to low-income households, the impact fees assessed at the building permit stage are turned into a "soft second"[60] mortgage at the certificate of occupancy stage with 0% interest as a deferred mortgage over five years. At the end of each year, 20% of the second mortgage is forgiven and at five years it is forgiven completely. The balance of the second mortgage is due on sale or refinance if homes are sold or refinanced within the five-year term, regardless of the buyer's or seller's current income. No income tests are necessary after the initial assistance is provided to the buyer as the soft second mortgage is not transferable.

The extent to which this program is effective cannot be immediately known. The County budgeted $100,000 in general revenue to fund the first year of the program, but as of October 1, 2005, no funds have been expended for this purpose. Nevertheless, it may be too early to assess the effectiveness of this program as impact fees have been assessed only on building permit applications submitted after March 28, 2005. Community outreach by county staff to realtors, builders, and manufactured housing dealerships is in the initial stage. Other potential beneficiaries include homeowners with room additions or accessory dwellings, where building permits are being issued. Local market rate home builders are simply not building homes meeting the affordable housing parameters in unincorporated Alachua County. Indeed, a recent Internet search of homes[61] that would fit the affordable price range for the average household at low income found only 13 new homes of 166 on the market meeting the price parameters, and all these were on one condominium project. However, affordable housing providers do produce new housing under $140,000 in Alachua County. The Alachua County Property Appraiser's sales records indicate that 22 new homes sold between September 2004 and January 2005 for a sales price between $85,000 and $138,100, for an average of $114,750.[62]

$300 other monthly obligations, such a household could afford to purchase a home of about $93,000. Payments would be $675 per month.

59 If no tax return is available, then eligibility is based on verification of current income and family size of the household intending to reside in the unit.

60 Also called a "silent second" in some applications. This term is used by the County to characterize its program.

61 www.realtor.com accessed September 9, 2005, for Gainesville and surrounding communities searching for homes built in 2005 (thus "new" homes) under $145,000.

62 Alachua County Property Appraiser website sales search at www.acpafl.org/saleresults.asp for homes built in 2004-2005 between September 2004 to September 2005 in unincorporated Alachua County (city code 0400).

Lessons from the Case Studies

The case studies presented here offer some real-world examples of the affordable housing guidance contained in this Guidebook. Currently, very few communities waive impact fees for affordable housing entirely. The Albuquerque case study shows this can be done where state enabling legislation allows waivers without identifying replacement or substitute revenues. The Atlanta case study reports waivers are financed through a unique "recoupment" system that may be the only one of its kind in the nation, despite being adopted more than a decade ago in 1993. These are two extremes that may not be possible in many states whether or not they have impact fee enabling legislation.

The Alachua County case study offers a third and perhaps more realistic approach to reducing, if not eliminating, impact fees for qualified affordable housing. A modest general fund allocation is provided to offset the cost of impact fees for qualifying affordable housing, and is provided as a soft-second no-interest deferred mortgage. If the subject dwelling remains occupied by the initial buyer for five years, the deferred loan is forgiven.

Chapter 6 - Summary and Conclusions

During the next 30 years, America will need to build about 2 million homes annually to keep pace with demand. It has produced this level of new homes for much of the past decade in large part because of favorable interest rates and reasonably ample land on which to build. Still, the past five years have seen some of the highest rates of housing price increases on record – and for a lot of reasons these are the "good times" in the residential real estate market.

Challenges are looming. Rising interest rates are already cooling new construction. Rising energy prices will erode personal disposable income. Foreign competition for such building materials as steel, concrete, lumber, and even gypsum (for wallboard) reduces domestic supply and increases construction prices. The next few years in new housing construction may see a reduction in supply that when coupled with growing demand and rising prices may reduce greatly the amount of housing that is considered "affordable."

Against this backdrop is increasing demand put on local governments to provide quality public services and facilities. Congress and most statehouses are devolving responsibility for local financing of local public facilities and service to local governments. States have also acted in numerous ways to restrict facility financing options.

Impact fees have evolved as an important means of bridging the gap between facility needs and the revenue available to pay for them. Impact fees have many detractors who argue correctly on public finance and social welfare grounds that impact fees are not the best solution to solving local facility financing problems. However, for reasons related to taxpayer resistance, legal constraints and pragmatism, impact fees are often viewed as the necessary evil to solve pressing needs.

The potential effect of impact fees on housing affordability is hotly debated, with evidence seemingly supporting all views. Impact fees are likely here to stay but that does not mean they are rigidly implemented instruments of public policy. To the contrary, the impact fees of the 1970s bear little resemblance to those of the 2000s. One significant area of evolution is in calculating the fees. As noted above, much can be achieved to soften the potentially adverse effect of impact fees on housing affordability. And if that is still not enough there exist other approaches in which potentially adverse effects can be softened further if not eliminated entirely.

It is hoped that HUD's Guidebook will elevate impact fee practice to the point where every reasonable design and calculation approach is used to protect or advance housing affordability, while fairly and accurately serving underlying societal needs.

APPENDICES

Appendix A. The Relationship between Impact Fees, Planning and Exactions

This appendix puts impact fees into the context of planning and broadly reviews their relationship to exactions.

Impact Fees and Planning

Impact fees come near the tail-end of a planning and implementation process.[63] The legal logic for impact fees came initially through the exercise of local police powers provided in home rule charters, subdivision regulation authority, zoning enabling legislation, and utility statutes. Since they must be tied to regulation, they are sometimes called regulatory impact fees. They must be based on the relationship between growth and its demand on facilities needed to serve it. Also, they must not exceed the "proportionate share" of the impact of growth on facilities. This is the foundation of the "dual rational nexus test" (see section on proportionate-share impact fees).

The Georgia Department of Community Affairs, provides useful guidance on how this is established. First, long-range projections of population, housing unit demand, and employment growth are made and adopted officially. This is typically over a 10- to 20-year planning horizon.

Second, community planning goals are established that are designed to guide growth consistent with them. One or more goals may relate to housing affordability – a topic addressed elsewhere in this Guidebook.

Third, a comprehensive, long-range (typically 10- to 20-year) land use plan is prepared to help guide development to achieve planning goals.

Fourth, the projections are converted into facility demand. Suppose a community will double in population, adding 100,000 new residents over the planning horizon. Suppose also that it already has 500 acres of park land or 5 acres per 1,000 residents. Its current "level of service" is thus 5 acres per 1,000 residents. If the community is satisfied with the current level of service, it may adopt it as the official level of service standard. The next 500 acres of park are thus included generally in a long-range capital improvement element (CIE).

The Capital Improvement Element is implemented by a capital improvement program (CIP) which in Georgia is typically five to 10 years. This is the fifth step. In the case of parks, it shows the park land and acquisition improvement projects needed over that period to accommodate new development. Costs are estimated and sources of revenue available to cover those costs are identified. These revenue sources may include federal, state, and local funds, gifts from foundations, civic groups or individuals, and

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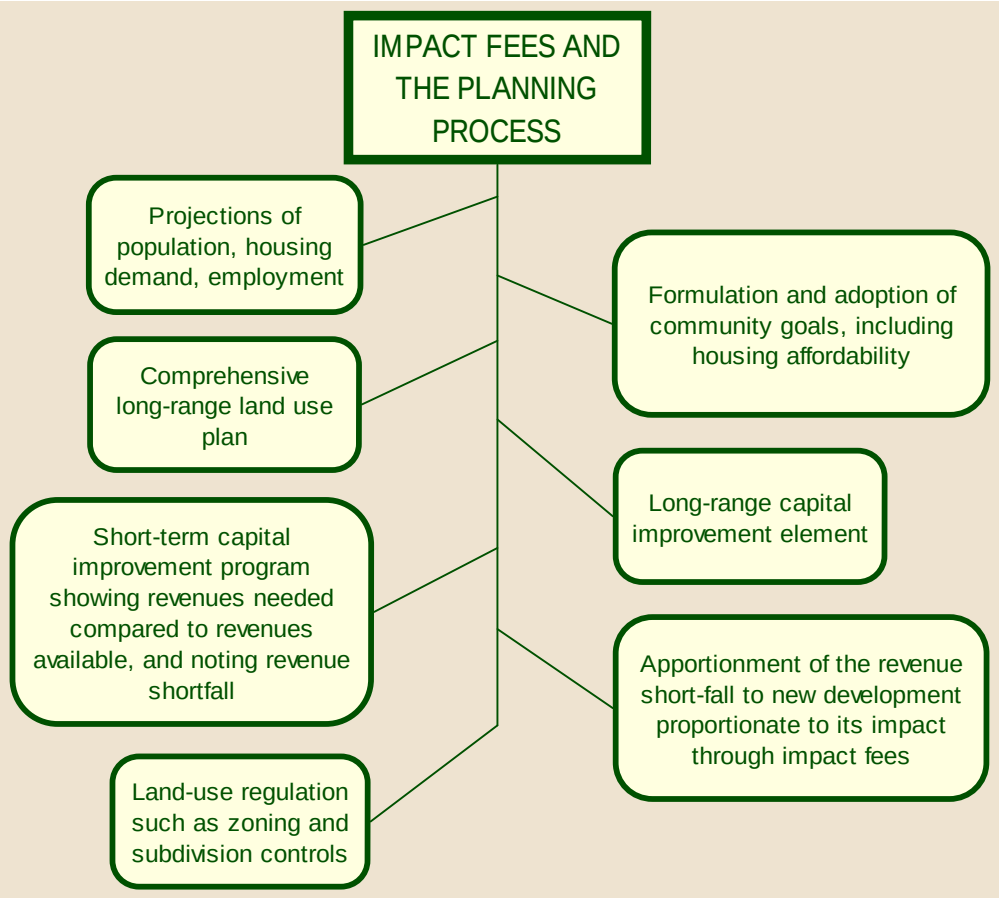
63 For a review of the planning and impact fee process, see Edward J. Kaiser and Raymond J. Burby "Exactions in Managing Growth: The Land Use Perspective" in *Private Supply of Public Services* edited by Rachelle Alterman New York University Press (1988). See also James C. Nicholas, Arthur C. Nelson, and Julian C. Juergensmeyer, *A Practitioners' Guide to Development Impact Fees*, American Planning Association (1991). For a general review of the land-use and facility planning process, see Edward Kaiser, David Godschalk, Philip Berke and F. Stuart Chapin, *Urban Land Use Planning*, fourth edition, University of Illinois Press (2006).

dedicated sources of revenue such as a dedicated property tax used to expand park inventory. If there is a short-fall in revenue needed to fully-fund the park CIP, impact fees are used to make up the gap.

Impact fees are themselves the sixth step of the planning and implementation process. Once the CIP gap has been identified a process is undertaken to apportion the shortfall in revenues to benefiting development. An impact fee schedule is developed and applied to land development permits, building permits, and/or certificates of occupancy as determined locally.

The last step in the process is designing and implementing land development regulations. Zoning and subdivision controls regulate the actual timing, shape, density and other features of development especially including residential development. Once a development has been deemed consistent with zoning and subdivision regulations – and others as locally required, it is then assessed impact fees proportionate to its impact on facilities as determined from the first five steps in the planning and implementation process.



Impact Fees and Exactions

The land-use regulatory step itself may include other forms of exactions. Suppose for example that land needs to be rezoned and then subdivided to meet a developer's objectives presumably consistent with the goals and framework of the comprehensive land-use plan. The rezoning process may identify unique or unanticipated impacts of it on the community. These may include environmental, habitat, localized facility, and other impacts. Comprehensive plans, CIE's, CIP's and impact fees cannot anticipate all potential

forms of development impacts so it is the rezoning and subdivision stage that does so. Drainage, stream setback, buffers, access improvements, utility extensions and so forth may be needed to assure the development mitigates impacts not covered by impact fees or other community-based investments shown in the CIP. Subdivision regulations also assure that on-site improvements are made at no or relatively little cost to the community – although those improvements are usually dedicated to the community for long-term maintenance after they are installed and accepted.

Rezoning and subdivision exactions are negotiated as part of the development approval process. After the rezoning (if needed) and subdivision final orders have been adopted, the developer then pays impact fees to mitigate the off-site facility impacts the final orders do not cover. The distinction here is that there is a two-stage development approval process, one that addresses unique and development-specific impacts and the other that addresses community-wide development impacts on facilities.

Two qualifications are in order. About half the states have impact fee enabling statutes but nearly all of them limit the use of impact fees to a list of facilities (see Chapter 3). Thus, if a development impacts facilities for which impact fees are not or cannot be assessed, it may be required to mitigate its impact on those facilities through additional exactions. In addition, if a development exaction includes money or improvements to mitigate off-site improvements that would otherwise have been paid through impact fees, the development receives a credit against those impact fees to avoid double-charging.

There is another set of "near impact fee" exactions that are used commonly. For example, many communities require a share of land within developments to be dedicated to the public for such uses as parks, school sites, and other facilities. Where a community park impact fee pays only for community- and regional-scale parks but not local ones, mandatory land dedications for local parks may not be subject to an impact fee credit. In states where school impact fees are not enabled or communities that choose not to have them, mandatory land dedications for school sites – or fees in-lieu based on the land value – do not result in an impact fee credit.

There is probably room for improvement in how exactions other than impact fees are implemented. In many communities, impact fees are a relatively minor part of the total package of development exactions. On-site infrastructure exactions such as for subdivision improvements are usually far larger in total cost than impact fees. Thus, from the perspective of housing affordability, understanding the nature of how other exactions are negotiated or calculated is recommended. Often, exactions provide benefits to future development that are not recovered by the exacted development. In part this is simple expediency on behalf of local government and even the developer. To craft a non-impact system to recoup the value of infrastructure for the benefit of the exacted development can be complex, and can obligate local government to more burdens. Nonetheless, this Guidebook recommends that some effort be made to do so.

For example, so-called "latecomer" assessments should be allowed more liberally than they are perhaps at present. A latecomer assessment is a public-to-private agreement that new development benefiting from improvements installed by previous developments for its benefit is assessed its proportionate share of the benefit value. The funds are collected by the local government – based on a formula akin to impact fees – and then rebated to the developer creating the benefits. Latecomer fees are allowed in many states but should be enabled by all and used more liberally in those that already have the authority. This is just another way in which to soften the effect of exactions on housing affordability.

Appendix B. Special Assessment Districts

This appendix draws heavily from local improvement district concepts and procedures in Washington State, particularly Chapters 35.43 through 35.56 RCW. The procedures reviewed here are common among local improvement districts, special assessment districts, municipal utility districts, and other mechanisms by which a project's infrastructure – including off-site infrastructure – can be financed through long-term debt retired by new development, thereby avoiding impact fees. A distinct advantage over impact fees is also that special assessment districts can finance operating expenses, rehabilitation, and renewal of infrastructure.

Once approved locally, special assessment district processes ultimately lead to the sale of bonds to investors and the retirement of those bonds via annual assessments on the property owners within a district. Goals of the special assessment district process are twofold:

- ✓ to present a bond portfolio to investors that will entice them to invest at as low a rate of return as possible; and

- ✓ to assess property owners as fairly as possible in relation to special benefits received.

Washington State statutes specify that the assessment per parcel must not exceed the special benefit of the improvement to that parcel, which is defined as the difference between the fair market value of the property before and after the local improvement project. This helps improve equity as higher value properties will be assessed higher amounts. In addition, Washington State statutes require that the assessments must be proportionate to one another.

Washington statutes provide for two specific methods of assessing benefited properties, but also allow the local government to choose any other method which meets the basic criteria. The two main assessment methods are:

- ✓ The "mathematical" method, which is relatively inexpensive to create and easy to explain to property owners. It can be composed of front-foot assessments for roads (per lineal foot of property street frontage), area (per square foot of property), zones or sectors, and units (per lot or parcel). It is possible to use several different types of mathematical assessment within one district.

- ✓ The "special benefit analysis," which furthers proportionality but is more costly to implement. It involves using a certified appraiser to calculate the value of each parcel with and without the infrastructure improvement project, calculate the difference between those two values (the special benefit), apportion project costs assignable to the special assessment district to all special benefits, and use the ratio to determine the assessment for each parcel.

One important feature of Washington's special assessment district statute is that off-site infrastructure improvements can be provided. Thus, instead of charging development within the special assessment district impact fees for off-site infrastructure, the special assessment district itself can theoretically generate the equivalent in fees through either in-kind construction or revenue produced through the sale of special assessment district bonds.

In Washington, special assessment districts have been found to be very well-suited for filling in gaps in a city's existing infrastructure such as in older plats where the full complement of today's required improvements do not exist. Special assessment districts can also provide a means for whole neighborhoods to improve their quality of life, using long-term financing at relatively lower interest rates.

Typically, because special assessment districts are governmental entities complete with their own budget, the local governing body becomes the governing body for them. Although the typical special assessment district dissolves once the bonds have been retired, expanded versions of special assessment districts can allow for the local governing body to establish a budget, provide staff or contract out as needed, make and collect assessments, and provide for operations, rehabilitation, and replacement over the long term.

Appendix C. Land Purchase Option Contract Language Accounting for Impact Fees at the Purchase of Land

The following is sample language included in the land purchase option contract provided to the authors by a developer/builder in Florida. It provides in part that the final price of land to be purchased will be reduced by the anticipated impact fees to be paid.

Section [___]. Purchase Price Adjustment. To the extent the purchaser is required to pay, either before Closing or within one (1) year after the Closing, to the City of [_____], and/or to the County of [_____], and/or to the State of [_____] or any other governmental or quasi-governmental authority or entity any development "impact" fees or other surcharges (hereinafter referred to as "Charges") associated with the development of the Property (other than fees or charges for customary permits such as zoning, site disturbance and building permits), the Purchase Price shall be reduced by the sum equal to the amount actually assessed and paid by the Purchaser for such Charges. In the event such Charges are assessed against the Purchaser or the Property prior to Closing, the Purchase Price shall be reduced by such amount, in addition to any other adjustments, credits or prorations otherwise provided in this Agreement. The Purchaser shall provide the Seller with such documentation as the Seller shall reasonably require with respect to the assessment of such Charges. In the event such Charges are assessed against the Purchaser or the Property after Closing, the Purchaser shall promptly deliver to the Seller notice of such assessment, whereupon the Seller shall have ten (10) days after the receipt of notice of such assessment within which to remit to the Purchaser a portion of the Purchase Price representing the amount of such Charges. Nothing set forth in this Section [___] shall vest, or be deemed to vest, in favor of the Seller any right to appeal, contest or otherwise challenge the validity or amount of any Charges assessed against the Purchaser or the Property, and the Seller hereby expressly covenants and agrees not to contest the validity or amount of any such Charges. The provisions of this Section [___] shall survive Closing and the delivery of all instruments of conveyance set forth herein.

Newport Partners L.L.C.

Proportionate Share Impact Fees and Housing Affordability

August 2005

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Introduction and Overview

An examination of impact fees nationwide and in individual markets shows a remarkable range in the approach and methodologies by which impact fees are assessed. Given the large number of localities that have implemented impact fees and the range in purposes, this range is not surprising. What is increasingly clear is that there are considerable inequities in the ways impact fees are often assessed. Variations in housing type, unit size, density, and other factors have an effect on costs but are often not accounted for in impact fee studies. Impact fees, if not carefully constructed, can be regressive as applied and a fundamental violation of equity. The purpose of this briefing paper is to highlight the variables that can create the greatest negative impact on housing affordability and inadvertent inequities that disproportionately affect the smallest and most affordable units. The approach is to provide an overview of the concerns and a series of examples with appropriate data to validate the issues.

An article in *Units*, the trade magazine for the National Apartment Association, offers important insights into differences in impact between different types of dwellings.[64] The example is of Volusia County, Florida, which charges impact fees of $1,927 for each new dwelling unit to help cover its cost of providing fire protection, parks, and public schools to apartment residents – regardless of type. Because impact fees for residential units are based on occupancy or number of persons per unit, the County perhaps reckoned that with an average of 2.02 persons (based on the 2000 Census), the impact of the typical dwelling on these facilities amounts to $953 per person, or $1,925 per unit.

A closer look at Census figures, however, reveals that the average persons per occupied unit for single-family detached homes is 2.39, but for apartments it is 1.17, less than half. To be equitable, these impact fees should be $2,277 for single-family homes and $1,115 for apartments. Instead, single-family homes pay $350 less than they should while apartments pay $812 more. In Volusia County, impact fees are not proportionately assessed on apartments considering average apartment occupancy rates. Unfortunately, this is not an isolated example.

This briefing paper begins with a review of equity principles, explores different conceptual applications, reviews actual applications in selected communities, and offers insights to advance professional impact fee practice.

Equity Basics

Impact fees are one-time charges assessed on new development to help pay for the new or expanded infrastructure it needs. After a generation of rapidly growing national acceptance, the impact fee debate continues. That debate has evolved, however, from *whether* impact fees should be assessed at all to *how* they are assessed.

Impact fees elicit concerns about equity. Intergenerational equity may be of concern because impact fees assessed on new homes may adversely affect the ability of the children of current residents of the community to buy homes where they grew up. Representational equity may be of concern because to the extent that impact fees are assessed on new homes bought by new residents of the community, these new residents had no say in the adoption of the policy. Equity in endowments may be of concern to the extent

[64] Arthur C. Nelson, National Apartment Association, *Units,* (2004).

that impact fees are considered a form of "initiation" fee into a community much like country clubs charge high initiation fees affordable only to the affluent. While these concepts of equity are important, the focus of this briefing paper is on proportionate equity – that is, the extent to which the fee reflects the actual impact different housing units have on community facilities. The legal principle of proportionality is reviewed in another briefing paper so the focus here is on applying the principle through calculations.

A critical aspect of proportionality is the extent to which impact fees are based on the *impact* of new development on facilities. Consider new residential development. In the Volusia County example above, the county merely assumed that each residential unit had the same impact on facilities regardless of size, type, density, location, or other factors. Hence, the impact fee for a large single-family detached home is the same as for a small efficiency apartment despite the fact that census figures clearly show substantial differences in occupancy rates. The following discussion reviews differences in proportionate impacts based on dwelling unit type, size, density, location, and configuration.

Dwelling Unit Type: The Volusia County example illustrates that different residential unit types have proportionately different levels of occupancy that in turn impact facilities differently. The example of school impact fees, which tend to be among the highest of all impact fees, is reviewed here. Based on data from the 2000 Census, the average student generation rate in Volusia County is 0.41 per single-family home but only 0.13 for apartments with an overall county average of 0.31 students.[65] In other words, charging the same school impact fees for apartments as for single-family detached homes means that apartments are charged proportionately about 2.5 times more than their average impact while single-family detached homes are charged about a quarter less. The effect is that apartments are subsidizing detached homes.

Size: Size also matters. Remember that impact fees are one-time charges on new development to help pay for the public facilities needed to serve it. Conceptually, if new single family detached homes built in the community averages 2.5 persons per unit, the construction of an average new single family detached home adds 2.5 people to the community. If the community wishes to maintain the current "level of service" that is, say, 5 acres of improved park land per 1,000 residents, this would be 0.005 acres per new resident which, multiplied by 2.5 persons per unit, means the new home will require 0.0125 acres of new park land to maintain the desired level of service. If the cost of an improved acre of park land is $100,000, the impact fee per unit would be $500 per new resident or $1,250 per new home. In some communities, this is precisely how impact fees are calculated and assessed for all new homes constructed regardless of size. Yet, census data show that the smaller the dwelling unit (regardless of type) the fewer the number of people who live in it on average. Detached homes of 1,000 square feet for example average about 2.19 persons per unit while homes of 3,500 square feet average about 3.02 persons (see Table 4-3). Thus, to be proportionate to differences in impact, impact fees should really range from $1,093 for the smaller home to $1,510 for the larger home.

[65] Figures from 2000 US Census 5% Public Use Micro Sample (PUMS) data; figures shown are public school students attending pre-school through 12th grade per total unit—students per occupied unit are 0.44 for single-family detached and 0.19 for apartments with 5 or more units and 0.35 for all units.

This leads to a related issue of proportionality – vertical equity. Conceptually, higher-income households are better able to afford things than lower-income households. Although impact fees are not based on income, there is an important albeit subtle relationship between house size, income, and the burden impact fees have on households based on house value and income. This distinction is raised here because one of the concerns about impact fees is their effect on housing affordability related to household income. A fixed fee will thus be higher proportionately on the smaller home with a lower value (and on average fewer people) than on the larger home with a higher value (and on average more people). Table 1 shows the relationship between house value and house size. Clearly, as house size increases so does its value.

Table 1. Relationship Between House Value and House Size (in Sq. Ft.)

House Value	Size	House Value	Size
Less than $10,000	900	$80,000 to $99,999	1,614
$10,000 to $19,999	1,044	$100,000 to $119,999	1,716
$20,000 to $29,999	1,188	$120,000 to $149,999	1,834
$30,000 to $39,999	1,314	$150,000 to $199,999	1,999
$40,000 to $49,999	1,378	$200,000 to $249,999	2,183
$50,000 to $59,999	1,451	$250,000 to $299,999	2,332
$60,000 to $69,999	1,478	$300,000+	2,500+
$70,000 to $79,999	1,513		

Source: Adapted from *American Housing Survey 2001.*

Table 2 goes one step further by showing the relationship between house size, household income, persons per unit, and lot size. Clearly, as house size increases so does household income, persons per unit, and lot size. The implications of this table on housing affordability should be clear. If calibrating impact fees to be sensitive to affordable housing concerns is desired, scaling them based on house size is necessary because as house size increases so do average occupancy levels and hence impact on facilities. Unfortunately, these simple relationships are usually <u>not</u> considered in impact fee methodologies with the result that impact fees are normally <u>regressive</u> as applied – that is, they fall disproportionately on smaller homes with lower values and fewer occupants with lower incomes than on larger homes. This is a fundamental violation of equity.

Table 2. Relationship Between House Size, Household Income, Persons Per Unit, and Lot Size

House Size	Income	Persons	Lot Size
Less than 500 square feet	$21,982	2.21	0.22
500 to 999 square feet	$27,370	2.27	0.25
1,000 to 1,499 square feet	$37,187	2.51	0.33
1,500 to 1,999 square feet	$52,134	2.69	0.37
2,000 to 2,499 square feet	$63,649	2.89	0.43
2,500+ square feet	$76,526	3.02	0.52

Source: Adapted from *American Housing Survey 2001.*

To address housing affordability concerns, DeKalb County, Georgia, is considering one of the nation's first comprehensive proportionate share impact fee, methodologies that recognizes differences in impact based on house size. Its methodology for parks and recreation, libraries, public safety facilities, and transportation results in impact fees totaling $1.66 per square foot. Not only was the county able to generate data and craft a methodology that converts facility impacts for a wide range of facilities – including transportation which heretofore has rarely been done – but it has also done so in a manner that is consistent with the

logical extension of proportionality. This is a breakthrough for national impact fee practice. As currently under consideration, Table 3 shows that for homes of 900 square feet (about the median size of a Habitat for Humanity house in metropolitan Atlanta) which average about 1.9 persons per home, the impact fee is $1,330 or 1.7% of the house value and 3.4% of the average annual income of the household. In contrast, for homes of 3,500 square feet that average 3.3 persons per unit, impact fees are $5,818 or 2.2% of the house value and 6.3% of the average household income.

Table 3. DeKalb County, Georgia, Progressive Impact Fee System

Size	Value	Persons	Fee	Percent of Home Value	Income	Percent of Income
900	$79,819	1.9	$1,330	1.7%	$39,127	3.4%
1,300	$115,295	2.2	$2,161	1.9%	$51,652	4.2%
1,800	$143,142	2.3	$2,992	2.1%	$63,346	4.7%
2,300	$189,197	2.7	$3,990	2.1%	$81,362	4.9%
3,500	$269,573	3.3	$5,818	2.2%	$92,143	6.3%

Source: Calculated from the *American Housing Survey* 1996 for Metropolitan Atlanta, GA, interpolated and adjusted to 2004 values.

It is important to note that the "progressive" nature of impact fee assessments contemplated by DeKalb is coincidental – the impact fees are based proportionately on different levels of impact generated by housing units of different sizes, not on incomes or values.

Density: It goes almost without saying that apartments are of higher density than single-family homes and for this reason there is the normal perception that they contribute more to highway congestion than lower-density, single-family detached homes. Yet, as will be seen below, higher-density areas result in fewer automobile trips at shorter distances per trip. Spreading out development requiring more and longer trips may exacerbate congestion. This is an important consideration because while impact fee programs give a break to apartments based on data from the Institute of Transportation Engineers (ITE) *Trip Generation* (now in its 7th edition) that show fewer trips per apartment unit than per single-family detached unit (including Volusia County), they do not consider lower trip distances between apartment and single-family detached units based on other federal travel data. Thus, while Volusia County's road impact fees for apartments are 30 percent less than for single-family homes based only on trips, there is no further adjustment for vehicle miles traveled (VMT). Why is this important? The higher the VMT the more road capacity is required to accommodate the traffic impacts. Volusia County's road impact fees may thus over-charge for residential development in higher-density areas for this reason.

Location: Location also matters. Thus far only one impact fee program has been identified that reduces impact fees based on proximity to rail transit stations and none with respect to bus lines. Atlanta recognizes the reduced impact on roads because of close proximity to public rail transit. The city reduces impact fees by 50 percent for all multifamily communities within one-quarter mile of rail transit stations and 25 percent for developments between one-quarter and one-half miles. This was instituted in 1993, but it is possible that Atlanta remains the lone pioneer. DeKalb County, Georgia, is considering reductions in road impact fees for new development located along bus corridors; the reductions may range from 10 percent to 30 percent.

Configuration: Mixed-use developments also reduce road impacts. For example, some studies of mixed-use projects show up to a 40 percent reduction in road impacts. When living-working-shopping-services are all nearby, fewer car trips are needed and certainly the distance traveled is reduced. New urbanism, new

towns, new communities, planned unit developments and the like probably all reduce their impact on facilities. Numerous examples exist but have not been codified into impact fee studies.

Impact Variations by Housing Type

This section presents information showing how impacts between different residential types and sizes vary in terms of type, size, location, density, and configuration. To help with this assessment, four housing prototypes are devised and compared with an average dwelling as shown in Table 4. Figures for house size (in heated/cooled square feet), lot size (or its equivalent in terms of attached units), density, occupants, and public school students are roughly comparable to national averages for each prototype although there will be regional variations. Note that we highlight "Average Dwelling" using figures that are intended to be reasonably typical of the average of all dwelling units.

Table 4. Five Housing Prototypes

Unit Type	Living Area in Square Feet	Lot Size in Square Feet	Acres Per Unit	Units Per Acre	Occupants Per Unit	Public School Students Per Unit
Detached Large Lot	3,000	20,000	0.500	2.0	2.75	0.65
Average Dwelling	***2,000***	***10,000***	***0.250***	***4.0***	***2.50***	***0.50***
Detached Cluster	1,500	5,000	0.125	8.0	2.25	0.25
Townhouse/Low-Rise Apartment	1,200	3,000	0.075	13.3	2.15	0.22
Apartment/Condo	900	1,000	0.025	40.0	2.00	0.20

Source: Adapted by authors from the *American Housing Survey 2001.*

Because many local governments charge impact fees for all residential units based on a single average, a comparison can be made between impact fees assessed for the average dwelling in relation to larger and smaller units, and attached and detached units. For instance, Table 5 shows results from a recent national survey, indicating that more than one-third of jurisdictions assessing impact fees charge a flat fee for all units without respect to type, size, or other characteristics for at least one facility. The survey also showed that an average of 17 percent of all jurisdictions surveyed have a flat rate for all residential development and 34 percent do so for at least one facility.

Table 5. Distribution of Jurisdictions Charging Flat Fee For Residential Development

Facility	Percent Charging One Fee
Roads	5.8 %
Water	11.4%
Wastewater	11.6%
Stormwater	8.5%
Parks	22.6%
Library	20.0%
Fire	21.6%
Police	29.2%
General Government	33.3%
Schools	9.3%
Average	17.3%
Any Facility	33.9%

Source: Duncan Associates, national survey, February 2005.

Table 6 shows the facilities for which impact fees are considered along with level of service standards and net impact costs.[66] The impact costs per unit of impact are rounded averages based on national surveys.

Table 6. Impact Fee-Financed Facilities, Net Impact Cost, Level of Service

Facility	*Impact Unit*	*Net Impact Cost Per Impact Unit*	*Level of Service*
Libraries	Persons	$100.00	2 books per capita @ $50 net cost per book including land and capital costs.
Parks	Persons	$250.00	5 acres of park per 1,000 residents @ $50,000 net cost per acre including land and capital costs.
Fire/EMS*	Dwelling	$60.00	$1,000,000 net cost to serve the average density including land and capital costs.
Police	Dwelling	$30.00	$500,000 net cost to serve the average density including land and capital costs.
Schools	Student	$3,000.00	Net cost per student station including land and capital costs.
Roads	Miles	$50.00	Net cost per average daily trip mile and 20 net daily miles per person including land and capital costs.
Drainage	Sq. Feet	$0.75	Net cost per impervious square foot including collection and storage network.
Water	Gallon	$5.00	Net cost per gallon of treatment and storage but not network costs; 100 gallons per person, average daily demand during peak month.
		$250,000	Net cost per mile of water main.
Wastewater	Gallon	$5.00	Net cost per gallon of treatment but not network costs; 80 gallons per person, average daily demand during peak month.
		$250,000	Net cost per mile of wastewater main.

Source: Adapted by authors from national survey of impact fee use by Duncan & Associates, February 2005. Net costs mean those after accounting for other revenues available to finance the same facilities for which impact fees are to be assessed. Fire/EMS and Police assumes 5-minute response time in an area serving a uniform density of 0.25 acres per unit, total of 17,920 units.

These costs are in line with typical communities based on level of service standards observed nationally.[67] Costs can vary based on level of service policies, land, local construction, and labor conditions.[68] Considered separately now are how costs vary based on type and size of unit, density, location, and configuration.

Variation Based on House Size and Type

Table 7 shows the variation in impact fees between the four prototypes based only on house size and type of unit. Communities that charge impact fees based on only the average unit will typically under-charge larger units on larger lots and over-charge smaller, often detached units on smaller lots or at higher density. In this example, the net impact cost to serve a large home on a large lot is $13,470 but the impact fees would be $10,350 or 23 percent less when based on average house size. On the other hand, smaller

66 "Net" impact costs 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.

67 See the briefing paper on extent and variation of impact fees.

68 For water and wastewater, we assume 100 gallons demand per capita per day for the average annual day and 115 gpcpd for peak month average daily demand. For wastewater we assume 90 gpcpd for both.

homes, townhouses, and apartments at higher densities cost less than the average yet would pay impact fees ranging from $1,710 to $3,945 or 20 percent to 62 percent more than their net impact cost.[69]

Table 7. Variation in Impact Fees Based on House Size and Type

Facility	***Average Dwelling***	***Detached Large Lot***	***Detached Cluster***	***Townhouse/ Low-Rise Apartment***	***Apartment/ Condominium***
Impact Measure	***Development Impacts By Unit Type***				
Persons Per Unit	***2.5***	3.00	2.25	2.15	2.00
Students Per Unit	***0.5***	0.650	0.250	0.220	0.200
1-Way Miles	***50***	60	45	43	40
Impervious Land Per Unit	***4,000***	6,000	3,500	2,250	1,500
Gallons Water	***250***	300	225	215	200
Gallons Wastewater	***200***	240	180	172	160
Facility	***Net Facility Impact Costs By Unit Type***				
Libraries	***$250***	$300	$225	$215	$200
Parks	***$625***	$750	$563	$538	$500
Fire	***$150***	$180	$135	$129	$120
Police	***$75***	$90	$68	$65	$60
Schools	***$1,500***	$1,950	$750	$660	$600
Roads	***$2,500***	$3,000	$2,250	$2,150	$2,000
Drainage	***$3,000***	$4,500	$2,625	$1,688	$1,125
Water	***$1,250***	$1,500	$1,125	$1,075	$1,000
Wastewater	***$1,000***	$1,200	$900	$860	$800
Total Net Impact Cost	***$10,350***	$13,470	$8,640	$7,379	$6,405
Over (Under) Charge Amount		***($3,120)***	***$1,710***	***$2,972***	***$3,945***
Over (Under) Charge Percent		***-23.2%***	***19.8%***	***40.3%***	***61.6%***

Source: Calculations by authors.

This example, based on reasonable estimates of national averages, shows that charging impact fees on the basis of only the average size of the dwelling unit results in larger homes at lower densities being subsidized by smaller, usually more affordable homes at higher density.

Impact Variation Based on Density

For some facilities, density probably is not a determinative factor in calculating impact fees. Libraries, government administration, and schools come to mind (aside from school bus costs that will vary by density). Other facilities range from being mildly to greatly influenced by density such as utilities, transportation, and public safety facilities – principally fire and emergency medical response.

Numerous studies have shown that density is a substantial influencing factor in extending wastewater and stormwater systems. Burchell's synthesis of literature suggests that higher-density development (more than 6 units per acre) is about 20% to 30% less costly to serve with wastewater and stormwater services

[69] Water and wastewater charges based on average daily demand.

than lower density.[70] Because the cost effects relating to stormwater facilities are incorporated in the figures above, they are not considered here.

Density of the geographic area within which development occurs (as opposed to density of the development itself – see below for "configuration" of individual development projects) has a strong influence on mode choice to destinations and distance to destinations. Higher-density areas may lend themselves to more walking and bicycling to some destinations than lower-density ones, and higher-density areas may have public transit options that lower-density ones do not. Also, higher-density areas may make the trips between destinations shorter. All this suggests that from the perspective of road impact fees – usually the highest of all impact fees assessed – density matters.

The effect of density on public safety, water and wastewater, and road facility impact is considered here. Public safety facilities need to be located to respond to emergencies usually within 5 to 10 minutes after a call. The more densely developed an area is usually the lower the capital cost (land, buildings, and equipment) per home. For a given number of homes, the size and associated cost of water and wastewater networks decline per home as density increases. Likewise, higher density is usually associated with fewer and shorter road trips. To begin this analysis, five density ranges are created that for convenience are based on the availability of travel data by density range, with an assumed average density within each range.

Table 8. Density-Range Categories and Average Density by Category

Residential Units Per Square Mile, Range	***Average Residential Units Per Square Mile***
26 – 700	500
701 - 2,000	1,200
2,001 - 4,000	3,000
4,001 - 6,000	5,000
>6,000	7,000

Source: Calculation by authors. Density ranges based on categories of residential unit development at the level of census tracts used by the National Household Travel Survey, 2001.

Consider first density and the cost of public safety facilities. Assume a 5-minute response time as the level of service for fire/EMS and police facilities. In a low-density area, one fire station may be able to serve 10 square miles of development around it but at higher densities perhaps only 4 square miles may be served. Table 9 illustrates the differences in costs associated with different densities per person. Note that costs per person are reduced by about half when density increases from 500 to 1,200 units per square mile, and by another half when density increases to 3,000 units per square mile.

[70] Robert Burchell, et al., *The Costs of Sprawl Revisited*, National Academy of Sciences (2000).

Table 9. Density-Based Public Safety Facility Net Impact Costs

Residential Units Per Square Mile, Range	Residential Units Per Square Mile, Average	Residents at Constant Occupancy	Square Miles Served by Station and Precinct	Persons Served Per Station and Precinct	Fire/EMS Cost Per Person	Police Cost Per Person	Total Cost Per Person
26 - 700	500	1,250	10	12,500	$80	$40	$120
701 - 2,000	1,200	3,000	8	24,000	$42	$21	$63
2,001 - 4,000	3,000	7,500	6	45,000	$22	$11	$33
4,001 - 6,000	5,000	12,500	5	62,500	$16	$8	$24
>6,000	7,000	17,500	4	70,000	$14	$7	$21

Source: Calculation by authors. Cost per person based on units per square mile times average unit density from Table 4 which is divided into cost per fire/EMS station and police precinct in Table 6.

It is observed 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 may be considered reflecting the differences in cost illustrated in Table 9.

Consider now variations in water and wastewater capital costs based on density. Two separate issues are considered. First, as density decreases the cost of providing the network of mains and other improvements outside subdivisions increases. Second, the costs of central water and wastewater facilities are roughly constant for average daily personal use but for water vary by time of year reflecting principally lawn irrigation and other outdoor water use.

For the network cost, consider a very simplistic set of assumptions: a) the same size of water and wastewater main can serve the same number of people whether they are concentrated in one square mile of development or 10 (that is, as land area increases density decreases proportionately); b) the main traverses through the center of a square mile and residential developments tap onto it and internalize costs of extending the network within them (that is, each connecting development serves an area a half mile wide); c) the terrain is unproblematic; and d) the cost to install a mile of water and wastewater mains is $250,000 each or $500,000 together. These simplistic assumptions allow us to calculate the variation in water and wastewater network costs by density which is done in Table 10.

Table 10. Water and Wastewater Network Costs Per Unit By Density

Residential Units Per Square Mile, Range	***Residential Units Per Square Mile, Average***	***Cost Per Unit***
26 – 700	500	$1,000
701 - 2,000	1,200	$417
2,001 - 4,000	3,000	$167
4,001 - 6,000	5,000	$100
>6,000	7,000	$71

Source: Calculated by authors. Network costs based on $250,000 per mile for water and wastewater mains from Table 6.

Central facility demand for normal daily use is roughly the same per person but variation in water demand in certain months occurs as density declines reflecting outdoor use such as for irrigation, swimming pools, and washing cars. For this part of the analysis, we keep persons per unit constant to assure consistent assessment of how costs vary only by density. Table 11 calculates the cost of central treatment demand for both normal average daily use and peak seasonal use.

Table 11. Central Water and Wastewater Treatment Costs Per Unit By Density with Constant Occupancy

	Units Per Square Mile				
Residential Units Per Square Mile, Range	***26 - 700***	***701 - 2,000***	***2,001 - 4,000***	***4,001 - 6,000***	***>6,000***
Units Per Acre	2.0	4.0	8.0	13.3	40.0
Persons Per Unit, Constant Occupancy	2.50	2.50	2.50	2.50	2.50
Average Daily Water Demand, Gallons	250	250	250	250	250
Average Daily Water Cost	$1,250	$1,250	$1,250	$1,250	$1,250
Average Daily Wastewater Demand, Gallons	200	200	200	200	200
Average Daily Wastewater Cost	$1,000	$1,000	$1,000	$1,000	$1,000
Equivalent Land Area, Square Feet	20,000	10,000	5,000	3,000	1,000
Additional Average Daily Water Demand During Peak, Gallons	4,000	2,000	800	500	300
Additional Peak Season Average Daily Demand, Gallons	$20,000	$10,000	$4,000	$2,500	$1,500
Total Cost Per Unit	$22,250	$12,250	$6,250	$4,750	$3,750

Source: Calculated by authors.

Table 12 combines information from Tables 10 and 11 to illustrate water and wastewater fees by density and assuming average household sizes by density as provided in Table 11. The variation is substantial. Costs to serve units at the lowest density (corresponding roughly to large-lot homes) are nearly twice those of the next density category (corresponding roughly to the average-size lots) and nearly four times the

middle density category (corresponding roughly to small and cluster lots). The difference is mostly associated with peak seasonal use which can be reduced through pricing or policy or both. In the absence of such policies, varying central treatment costs by density would appear to improve proportionality in impact fee assessments.

Table 12. Total Water and Wastewater Costs Per Unit By Density With Constant Occupancy

Residential Units Per Square Mile, Range	***Network Costs Per Unit***	***Central Treatment Costs Per Unit, Constant Occupancy***	***Total Costs***	***Total Costs Per Person***
26 - 700	$1,000	$22,250	$23,250	$9,300
701 - 2,000	$417	$12,250	$12,667	$5,067
2,001 - 4,000	$167	$6,250	$6,417	$2,567
4,001 - 6,000	$100	$4,750	$4,850	$1,940
>6,000	$71	$3,750	$3,821	$1,529

Source: Calculated by authors.

This section concludes with consideration of variation in road costs based on density. The principal concern here is whether road demand varies by density. Generally, higher density results in fewer trips and shorter distances traveled between land uses. Table 13 reports average vehicle miles traveled per driver for all residential units and by unit type for 2001 based on density at the census tract level.

Table 13. Average Daily Vehicle Miles Traveled Per Household Person by Unit Type, 2001

Units Per Square Mile	*Miles Per Person*	*Percent Change Between Categories*
151 - 700	29.5	
701 - 2,000	27.1	8.4%
2,001 – 4,000	24.0	11.3%
4,001 – 6,000	20.3	15.6%
6,000+	14.2	30.0%

Source: Nationwide Household Transportation Study 2001, calculated by authors based on annual average vehicle miles per drive times drivers per household person by density category divided by 365.

Vehicle miles traveled per person fall with respect to residential density. Between the lowest density (about one unit per four acres) and the highest density (about 10 units per acre – roughly townhouse density), vehicle miles traveled per driver fall by about half. Indeed, the rate of change in reduction in miles traveled per person increases among the two highest density categories, as noted on the table.

It is also suspected that as density increases so does the opportunity to use transit, bicycle, or walk to work. Table 14 shows mode choice for all trips with respect to density (measured at the level of census tracts). Expected patterns emerge. Although the private motorized vehicle mode (car, van, sport utility vehicle, pick-up truck, large truck) dominates in all categories, it falls considerably between the 4,000-6,000 and >6,000 unit-per-square-mile categories (essentially cluster home to townhouse density). Trips via bus nearly double between the same density categories, while rail trips increase nearly six-fold. Walking to work increases at about the same rate between the three most dense categories.

Table 14. Trip Distribution by Density, 2001

Housing Units Per Square Mile	Private Motor Vehicle	Bus	Rail	Bicycle	Walk	All Other Modes
26 – 750	97.0%	0.5%	0.3%	0.1%	1.7%	0.5%
751 - 2,000	95.4%	1.1%	1.2%	0.3%	1.4%	0.6%
2,001 - 4,000	92.4%	2.8%	1.6%	0.4%	2.4%	0.4%
4,001 - 6,000	82.4%	7.4%	3.2%	1.4%	5.0%	0.7%
6,000+	56.6%	13.7%	18.7%	1.4%	8.6%	0.9%
All	90.9%	2.90	2.5%	0.5%	2.8%	0.5%

Source: Nationwide Household Transportation Study 2001, calculated by authors based on mode journey to work by workers using only complete responses and grouping detailed mode categories into the ones reported here.

All these considerations are combined for road impact fee purposes in Table 15. Average daily vehicle miles traveled per person for each density category are reduced by 50% to assign trips half to the origin (the home) and half to the destination to avoid double counting. The adjusted figure is multiplied by the cost per mile of a one-way trip. Although there is little difference between the lowest and second lowest density categories, substantial differences are seen in others. The greatest rate of reduction in miles traveled is between the density categories of 751-2,000 and 2,001-4,000 units per square mile. At the higher density, regularly scheduled bus and light rail service becomes feasible, and land uses are sufficiently close that more non-vehicle trips are needed.

Table 15. Road Impact Fees Per Person by Density Category

Housing Units Per Square Mile	***Average Daily Vehicle Miles Per Person***	***One-Way Miles Per Person***	***Net Impact Cost @ $50 Per Mile***	***Percent Change from Lower Density***
26 - 750	26.3	13.1	$656	
751 - 2,000	24.9	12.4	$622	-5.3%
2,001 - 4,000	21.7	10.9	$543	-12.7%
4,001 - 6,000	19.9	9.9	$497	-8.5%
6,000+	18.6	9.3	$464	-6.5%

Source: Nationwide Household Transportation Study 2001, calculated by authors. Average daily vehicle miles per person calculated as annual person miles traveled divided by total household members divided by average vehicle occupancy. Cost per mile from Table 6.

Clearly, density matters, especially for facilities such as wastewater, public safety, and highways. Table 16 summarizes impact fees for all facilities except drainage. Density-related facilities include public safety, water and wastewater, and roads while non-density related facilities include libraries, park and recreation, and schools. (Of course these facilities are affected by density but not as much as others.) Seen here is that impact fees per person vary remarkably between the different density categories. Fees per person for the lowest density exceed $13,000 while for the middle-density category, where transit service becomes feasible, fees per person are less than half.

Table 16. Non-Density Related + Density-Related Net Impact Costs Per Person

	Residential Units Per Square Mile, Range				
Residential Units Per Square Mile, Range	***26 - 700***	***701 – 2,000***	***2,001 – 4,000***	***4,001 - 6,000***	***>6,000***
Public Safety Cost Per Person	$120	$63	$33	$24	$21
Water and Wastewater Cost Per Person	$9,300	$5,067	$2,567	$1,940	$1,529
Road Cost Per Person	$656	$622	$543	$497	$464
Libraries	$100	$100	$100	$100	$100
Parks and Recreation	$250	$250	$250	$250	$250
Schools	$3,000	$3,000	$3,000	$3,000	$3,000
Total Cost Per Person	$13,426	$9,101	$6,493	$5,811	$5,364
Percent Change from Lower Density		-32.2%	-28.7%	-10.5%	-7.7%

Source: Calculated by authors. Stormwater is excluded for brevity.

Table 17 applies these per-person figures to the residential prototypes by density category. (Stormwater is excluded to highlight differences without further complication) Some information presented is probably not realistic such as detached large lots in the highest density category and 40-unit per acre apartments in the lowest density category. However, it is reasonable to compare impact fee levels between the three lowest-density categories since they can apply to county-level situations where all five residential types and all three density categories may be present. Also, to be consistent between residential types, we will only consider the effect of density on each of them. For each residential type, fees are in the order of one-third less in the category of 751 to 2,000 units per mile than in the lowest density category, and they are about half in the category of 2,001 to 4,000 units per square mile. Interestingly, the rate of change beyond about 4,000 units per square mile is not as pronounced. Clearly, to assure proportionality and therefore equity in impact fee assessments, house type, size, and density need to be considered.

Table 17. Impact Fees By Unit Type by Density

	Residential Units Per Square Mile, Range				
Unit Type	***26 - 700***	***751 - 2,000***	***2,001 - 4,000***	***4,001 – 6,000***	***>6,000***
Detached Large Lot	$40,279	$27,302	$19,479	$17,432	$16,093
Average Dwelling	***$33,566***	***$22,752***	***$16,232***	***$14,526***	***$13,411***
Detached Cluster	$30,210	$20,477	$14,609	$13,074	$12,070
Townhouse/Low-Rise Apartment	$28,867	$19,567	$13,960	$12,493	$11,533
Apartment/Condominium	$26,853	$18,202	$12,986	$11,621	$10,728

Source: Calculated by authors. Stormwater is excluded for brevity.

Variation in Location

Location is considered in two respects: specific area and distance from service. Specific area means that in some portions of a jurisdiction it is simply more expensive to install infrastructure than in others; for example, a mesa composed of rock versus a talus slope within the same jurisdiction – as seen in Albuquerque, New Mexico. These are idiosyncratic and need to be addressed on a case-by-case basis. Needless to say, impact fees that blend high-cost and low-cost areas together into an average cost applied everywhere would have the effect of charging low-cost areas more and high-cost areas less than their proportionate share of many facility impacts.

Distance from service means that the farther away development is from a specific service, the less likely the service will be used or accessible in a timely manner. Two types of facilities are especially sensitive to this: public safety and public transit. Public safety facilities, such as fire, police, and emergency medical, are often designed to provide service within five minutes of a call. New development that results in service beyond this threshold may require new facilities. However, if no new facilities are provided, there is little penalty other than delay – except for fire service. Fire insurance rates are based in part on response times and if new development extends average response times for the jurisdiction beyond certain thresholds, the fire insurance rating for all property goes up – meaning that fire insurance premiums increase. In terms of impact fees, if more fire stations are needed to serve the same population but across a larger area, fire impact fees will need to be higher. If fees are the same across the jurisdiction – as most are – development in higher-density areas will be paying more than its proportionate share and development in lower-density areas will be paying less. Clearly, density could be a factor in calculating impact fees for fire protection and perhaps other public safety facilities. This is an area worthy of future research.

Accessibility to public transit has a measurable impact on road demand. For example, in Arlington County, Virginia, 47 percent of the workforce commutes via transit and 73 percent of them walk to transit stations – yet its density is only half that of Los Angeles (where transit ridership is less than that of Arlington's). National studies have shown that dwelling units within one-half mile of transit stations have about 60 percent fewer automobiles than their metropolitan area averages. Finally, numerous studies have shown that rail transit ridership ranges from 25 to 50 percent of workers living within ¼ mile of stations and half that between ¼ and ½ mile, and others indicate that use of bus transit ranges from 15 to 30% for workers living within ¼ mile of the bus line and about half that between ¼ and ½ mile. The reductions applicable to a given situation will need to be estimated based on local conditions; this need not be difficult, however, as data allowing for such analysis are provided in the Census Transportation Planning Package for all metropolitan areas.

One example application of this type of analysis is a road impact fee recently adopted by the City of Tucson, Arizona, which reduced residential road impact fees in the downtown core area of the city. The 2000 Census data on average travel time to work for workers over sixteen years of age using other modes than public transportation is summarized in Table 18. The data revealed a modest difference between the Central Core area (19.1 minutes) and the rest of the city (21.6 minutes). Additional analysis revealed little differences between other sections of the city. Not only do Central Core residents travel somewhat quicker (and presumably shorter) routes to work when they use automobiles and other private forms of transportation, they are also more likely to use alternative modes of travel. Only 78.8 percent of Central Core residents take private motor vehicles to work compared to 90.8 percent of other city residents. Taking into account both the reduced tendency to use private motor vehicles and shorter trip lengths, residential

development in the Central Core can be expected to generate only about 77 percent of the vehicular travel demand generated by residential development in other parts of the city, as shown in Table 18.

Table 18. Road Reduction Factor for Core Residential Development

	Central Core	Rest of City	Ratio
Percent Driving Private Motor Vehicle to Work	78.8%	90.8%	0.87
Travel Time, Non-Public Transportation (minutes)	19.1	21.6	0.88
Reduction in Road Impact for Residential in Central Core			0.77

Source: Duncan Associates, *Road and Park Impact Fee Study for the City of Tucson*, June 2004, based on 2000 U.S. Census, SF-3 sample data (1 in 6 sample) of workers 16 years or older; Central Core area approximated by Pima County census tracts 1-19, 22, 24-25.01, 26-29.01, 38.01, 45.04-45.05.

Also, consider the potential effect of transit availability on road demand. Using data from the 2001 National Household Transportation Survey, we constructed comparisons shown in Table 19. Metropolitan areas over one million residents with a transit system that included rail have decidedly lower rates of private vehicle use than those without – about 20 percent less overall.

Table 19. Private Vehicle Trips in Metropolitan Areas 1+ Million Population With and Without Transit Systems That Include Rail

	Units Per Square Mile					
With Rail Transit	***26 - 700***	***701 - 2,000***	***2,001 - 4,000***	***4,001 - 6,000***	***>6,000***	***All***
Private Vehicle	95.6%	91.8%	87.0%	75.0%	49.4%	75.3%
Transit	2.3%	6.8%	9.0%	18.1%	40.1%	19.0%
Bicycle	0.1%	0.1%	0.4%	1.5%	0.9%	0.6%
Walk	2.1%	1.1%	3.1%	5.3%	8.7%	4.7%
Other	0.0%	0.2%	0.4%	0.1%	0.9%	0.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Without Rail Transit						
Private Vehicle	96.8%	95.9%	93.1%	87.2%	75.9%	92.8%
Transit	1.4%	2.2%	4.4%	7.8%	13.6%	4.3%
Bicycle	0.1%	0.3%	0.3%	0.9%	2.7%	0.4%
Walk	1.5%	1.2%	2.0%	3.9%	7.6%	2.2%
Other	0.2%	0.5%	0.2%	0.2%	0.3%	0.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Nationwide Household Transportation Study 2001, calculated by authors.

Variation in Configuration

Urban form and design heavily impact transportation demand. Mixed uses and, better still, master-planned mixed-use developments, can reduce automobile use substantially. For example, in a typical single-use office/business park, walking trips may account for 3 to 8 percent of all mid-day trips. That figure rises to 20 to 30 percent when other uses are accessible such as shopping, and personal and financial services.

Even greater gains are made when new community design combines compact development (even in the suburbs), mixed uses, connectivity, and networks of pedestrian and bicycle pathways. Modern neo-traditional or new urbanism designs reduce trip lengths and induce non-vehicular use for short trips, especially if also served by mass transit. Studies in California have shown that when compared to

conventional suburban subdivisions with single or few uses, curvilinear streets, and cul-de-sacs, modern new community design can reduce VMT by 50 percent. These adjustments would need to be made on a case-by-case basis.

On this point, it is useful to note that most road impact fee ordinances allow a developer to prepare an "individual fee calculation study" to demonstrate that their project will have less impact on the road system than indicated by the fee schedule. The developer of a mixed-use project could use this option to quantify the reduction in external trips that should be expected due to the nature of the project. For example, the current edition of ITE's *Trip Generation* shows an across-the-board reduction of about 10 percent in trips generated within planned unit developments. Loveland, Colorado, has a provision allowing for the road impact fees to be reduced 25 percent for mixed-use projects that meet certain criteria. As is shown in the Albuquerque case study, variations can range from about 10 to 50 percent depending on the configuration of new development.

Applications of Proportionate Share Impact Fee Variations in Practice

Impact fee enabling statutes and relevant case law require that impact fees be based proportionate to the impact new development has on facilities. Where residential impact varies by occupancy, unit size, density, location, and configuration, these considerations should be taken into account. When done properly, impact fees as presently practiced in many if not most places would be reduced for smaller units on smaller lots in locations where facilities currently exist including public transit and in configurations that economize especially on vehicular trips. In this section, we report the applications of many, albeit not all, of the concepts presented above.

While most impact fees do acknowledge the difference between housing types, such as single-family and multi-family units, few of them vary by unit size. This is beginning to change. For example, one-third of the 18 Florida counties that assessed school impact fees in 2002 based the fees on some measure of dwelling unit size. Three of the counties (Lake, Broward, and Hillsborough) base fees on the number of bedrooms in combination with housing type. Two counties (Martin and Palm Beach) have translated bedrooms into four or five size categories (e.g., a one-bedroom unit is on average less than 800 square feet, etc.). Finally, one county (Miami/Dade) charges school fees on a per square foot basis.

Table 20. Assessment Basis for Florida School Impact Fees

Assessment Basis	Counties
Flat Rate per Dwelling	Volusia
Housing Type	Citrus , Collier, Hernando, Lee, Manatee, Orange, Osceola, Pasco, St. Lucie, St. Johns, Seminole
Housing Type & Bedrooms	Broward, Hillsborough, Lake
Size Categories	Martin, Palm Beach
Square Footage	Miami/Dade

Source: Survey by Duncan Associates, July 2002.

There are several reasons for the continuing predominance of impact fees that do not vary by unit size. One obvious reason is that a flat fee per dwelling unit is easier to calculate and has fewer data requirements. While this is still the case, the data requirements are not insurmountable, and greater resources are now available. The other principal reason for the predominance of one-size-fits-all residential impact fees was legal in nature. In the early days of the development of impact fees in the late

1970s and early 1980s, there were no state impact fee enabling acts, and impact fees were based on the "police power" of local governments to regulate development in order to advance the health and welfare of the community. Great care had to be taken to ensure that impact fees would not be struck down as an illegal tax by the courts. Even today, there is a residual feel by some attorneys that a fee per square foot for residential development may appear more like a tax than a regulatory fee. However, this should no longer be a major concern. Impact fees are explicitly authorized by enabling legislation in 25 states, and are based on well-established case law in most others. In addition, impact fees for nonresidential uses have always been assessed on a square footage basis.

Data on which to base variable rate impact fees are now widely available, much of it on the internet. Data on the relationship between the size of the unit (measured in bedrooms or rooms) and the number of people or public school students living in the unit are available from U.S. census sample data for areas with a population of 100,000 or more. Data on the relationship between the number of bedrooms in a unit and the square footage of the unit are available from real estate and property appraiser data in most communities. These readily available data are sufficient to develop variable-rate impact fees for those types of facilities that are typically charged only on residential uses on a per capita or per student basis, such as park, school, and library impact fees.

To date, few road impact fees have been adopted that vary by the size of the dwelling unit. This is largely because road impact fees are generally based on national trip generation rate data, and the ITE manual[71] does not provide rates by dwelling unit size. However, the fact that trip generation rates for residential uses vary by the size (and even the income) of the household is actually well documented in the transportation planning literature. As shown in Table 21 below, the average number of vehicle trips generated per day is almost directly proportional to the number of people living in the dwelling unit, which as discussed earlier, is strongly related to the size of the dwelling unit.

Table 21. Vehicle Trips by Household Size

Household Size	Daily Trips	PM Peak Hr Trips	
		Single-Family	Multi-Family
One Person	3.5	0.369	0.323
Two Persons	6.7	0.707	0.618
Three Persons	8.8	0.928	0.812
Four Persons	10.6	1.118	0.978
Five Persons or More	12.5	1.319	1.154

Source: Daily trips from Transportation Research Board, NCHRP Report 365, "Travel Estimation Techniques for Urban Planning," Washington, D.C.: National Academy Press, Table 9 (for urban areas with populations of 500,000 to 1 million), 1998; PM peak hour trips based on 10.55% of daily trips in PM peak hour for single-family and 9.23% of daily trips in PM peak hour for apartment units from ITE, *Trip Generation*, 7th edition, 2003.

In order to develop trip rates by the size of the unit in square feet, one must first find the relationship between average household size and size characteristics reported by the Census Bureau. The most recent and reliable data on average household size by number of bedrooms or rooms are the five percent sample

[71] Institute of Transportation Engineers (ITE), *Trip Generation* 7th ed., 2003.

data from 2000 U.S. Census. The five percent sample data for the City of Tucson are combined with sample data for some other cities and unincorporated portions of Pima County. However, the City of Tucson makes up 73 percent of the total population sampled. The results obtained should therefore be representative of the City of Tucson. The average household size for all single-family units from the two samples is identical, and for multi-family is almost identical. Because of the nature of the data sources for unit size in square feet, the average household size was varied by rooms for single-family units and by bedrooms for multi-family, as shown in Table 22.

Table 22. Average Household Size by Rooms and Bedrooms

Housing Type	Sample Households	Weighted Population	Weighted Households	Avg. HH Size
Single-Family, 4 Rooms or Fewer	1,245	58,662	24,141	2.43
Single-Family, 5 Rooms	1,744	91,937	34,494	2.67
Single-Family, 6 Rooms	1,674	93,632	33,617	2.79
Single-Family, 7 Rooms	1,010	60,023	20,513	2.93
Single-Family, 8 Rooms or More	657	44646	13585	3.29
All Single-Family Detached Units	6,330	348,900	126,350	2.76
Multi-Family, Efficiency	433	15,132	10,140	1.49
Multi-Family, One Bedroom	1,409	53,483	32,345	1.65
Multi-Family, Two Bedrooms	1,533	78,925	34,582	2.28
Multi-Family, Three Bedrooms	353	23,902	7,885	3.03
Multi-Family, Four Bedrooms or More	72	6,014	1,533	3.92
All Multi-Family Units	3,800	177,456	86,485	2.05

Source: U.S. Census Bureau, 2000 Public Use Microdata Sample (PUMS), 5 percent weighted sample data for portions of Pima County including the City of Tucson (PUMAs 201, 202, 204, 206 and 207) for households occupying single-family detached and multi-family units.

The above information on household size by room/bedrooms is combined with the trip rate data by household size presented earlier to derive peak hour trip rates by the size of the unit, represented by rooms and bedrooms, as shown in Table 23.

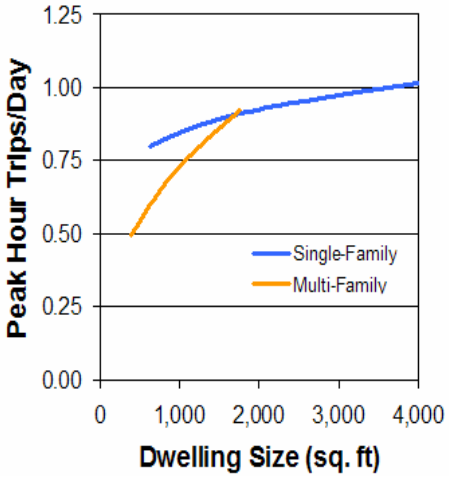
Table 23. Peak Hour Trips by Rooms and Bedrooms

Housing Type	Avg. HH Size	Peak Hr Trips
Single-Family, 4 Rooms or Fewer	2.43	0.806
Single-Family, 5 Rooms	2.67	0.860
Single-Family, 6 Rooms	2.79	0.884
Single-Family, 7 Rooms	2.93	0.917
Single-Family, 8 Rooms or More	3.29	0.983
All Single-Family Detached Units	2.76	0.872
Multi-Family, Efficiency	1.49	0.488
Multi-Family, One Bedroom	1.65	0.546
Multi-Family, Two Bedrooms	2.28	0.683
Multi-Family, Three Bedrooms	3.03	0.822
Multi-Family, Four Bedrooms or More	3.92	0.983
All Multi-Family Units	2.04	0.628

Source: Average household sizes from Table 22; peak hour trips derived from Table 21 using linear interpolation.

To determine a relationship between the unit square footage and peak hour trip rates, a data set was compiled with information on the square footage of dwelling units from single-family detached and multi-family units derived from two different data sources. For single-family detached units, the Pima County Tax Assessor data for the 2004 tax year was analyzed. Tax Assessor data give total living space in square feet and the total number of rooms for the majority of single-family homes in the City of Tucson. Data from the Arizona Multi-Family Housing Association provides information on all apartment complexes in the City of Tucson consisting of 20 or more units. This information includes the number of dwelling units by floor plan, and the floor plan information includes number of bedrooms and square footage. From these two data sources, a stratified random sample was taken that was distributed in the same proportion by housing type and size (rooms for single-family and bedrooms for multi-family) as households from the 2000 Census.

Figure 1. Relationship of Trips to Size



The combined data base consisted of information on 10,000 single-family detached and multi-family dwelling units. To this data base, a variable for peak hour trips was added, based on housing type and number of bedrooms or rooms shown in the preceding table. Regression analysis was then performed to determine the relationship between unit size in square feet and persons residing in the unit. Housing type turned out to be significant, with single-family and multi-family units displaying much different relationships.

Both linear and logarithmic regressions were performed for single-family detached and multi-family data sets. In both cases, logarithmic equations were determined to provide the best explanation of the data.[72] The curves described by the equations are shown in Figure 1.

While the equations for single-family detached and apartment units are very different, there is actually relatively little overlap and at 1,125 square feet, the midpoint of the 1,000 to 1,250 square feet category, the two equations produce the identical result. Only 2.2 percent of the apartment units in the sample are larger than 1,250 square feet, and while 21.6 percent of the single-family units in the sample are less than 1,000 square feet, it is unlikely that very many homes that size are being built in Tucson today. Consequently, the progressive residential rates were based on the multi-family equation for up to 1,000 square feet, and on the single-family equation for the larger size categories.

Using the regression equations, peak hour trip rates were derived for 12 square footage size categories. The two curves intersect in the 1,250 to 1,500 square foot range. Since the multi-family equation yields the lower trip rate estimates, and since relatively few single-family units are being built in the lower size range, the multi-family equation is used for unit sizes less than 1,500 square feet, and the single-family equation for larger units. The results are shown in Table 24.

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72 The equation for single-family detached units is Ln(y) = 0.1271 * Ln(x) - 1.0433, where y is peak hour trips per day and x is the floor area of the unit in square feet; the R^2 is 0.600 and the t-statistics are 94 for the x-coefficient and -108 for the y-intercept. The equation for multi-family units is Ln(y) = 0.4182 * Ln(x) - 3.2062; the R^2 is 0.763 and the t-statistics are 114 for the x-coefficient and -135 for the y-intercept.

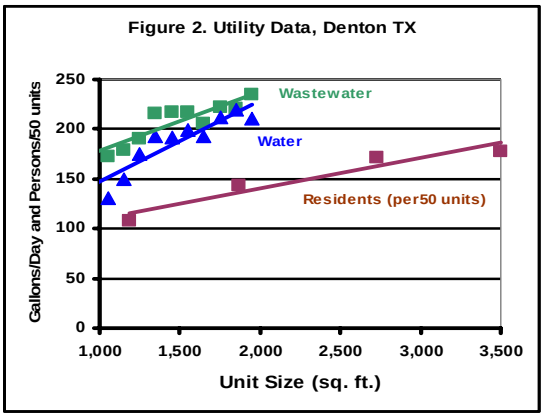
Table 24. Residential Road Impact Fees by Size Category

Housing Type/Size Category	Midpoint	Peak Hour Trips	Road Fee
Less than 500 sq. ft.	375	0.48	$2,186
500 - 749 sq. ft.	625	0.60	$2,743
750 - 999 sq. ft.	875	0.69	$3,198
1,000 - 1,249 sq. ft.	1,125	0.76	$3,462
1,250 - 1,499 sq. ft.	1,375	0.83	$3,829
1,500 - 1,999 sq. ft.	1,750	0.91	$4,196
2,000 - 2,999 sq. ft.	2,500	0.95	$4,386
3,000 - 3,999 sq. ft.	3,500	0.99	$4,562
4,000 sq. ft. or more	4,500	1.03	$4,738

Source: Duncan Associates and Dr. James C. Nicholas, *Road and Park Impact Fee Study for the City of Tucson*, June 2004.

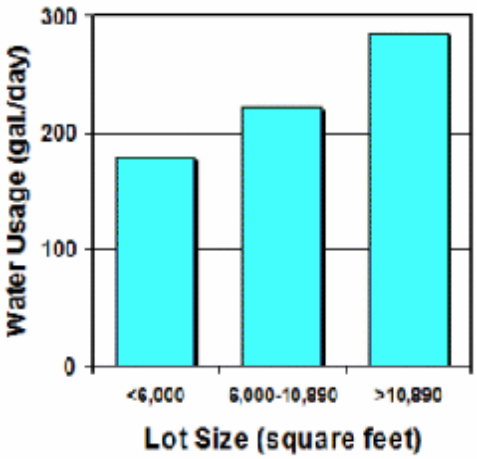
Like road impact fees, water and wastewater impact fees are seldom varied by unit size. In the vast majority of cases, fees are charged based on the size of the water meter, although a sizable minority are charged residential fees on a per dwelling unit basis. In a few communities, residential fees are charged on the basis of the number of water fixtures.

While the authors are unaware of any national statistics on the relationship between water consumption and wastewater generation by dwelling unit size, that there is a relationship certainly makes intuitive sense. Larger units tend to house more people, and water and wastewater demand forecasts are mostly a function of the projected increase in population. One would expect larger households, who tend to occupy larger homes, to have greater demand for water and wastewater services than smaller households. In fact, there is some limited data from Denton, Texas, which tends to support this conclusion.



The Denton Municipal Water Utility provided data on water and wastewater demand for single-family units between 1,000 and 2,000 square feet in 100-square-foot blocks for the years 1998 and 1999. Census data information was available for Denton County on the average household size for two-bedroom, three-bedroom, four-bedroom and five-bedroom or more single-family units for 1990. Finally, the average square footage of single-family units was determined for each bedroom category from realtor listings for January, 2003. All of these data are plotted in Figure 2.

Figure 3. Water Use by Lot Size, Santa Fe, NM

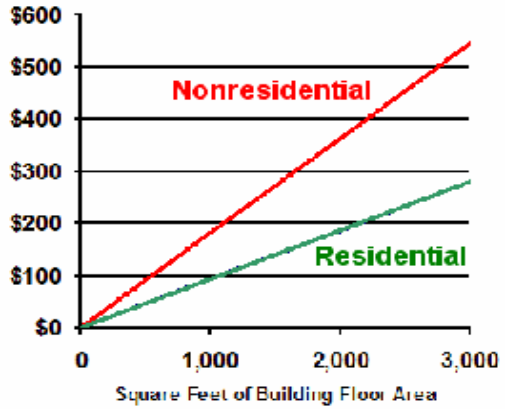


While the utility demand data are only available for smaller units (the average apartment in Denton used 203 gallons per day during this same period), they indicate that utility demand increases with dwelling size even more strongly than household size increases with dwelling size. These data support the reasonableness of using average household size as an indicator of water and wastewater demand. Several communities have used this relationship to base

utility fees on the square footage of the residential dwelling unit, including Orange County, North Carolina; and Collier County, Florida.

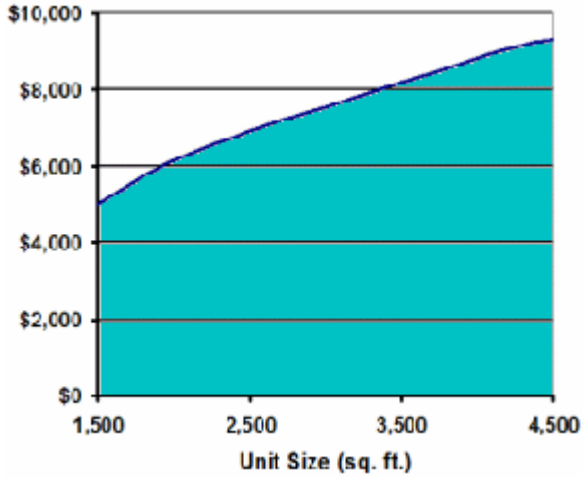
Some water impact fees are based, not on the size of the dwelling unit, but on the size of the lot, due to the fact that larger lots require more water for landscaping, which is the biggest use of water during the peak summer months. Santa Fe, New Mexico, recently adopted water impact fees that vary by lot size, based on a study of water use records that found water usage is strongly related to lot size, as shown in Figure 3. Other communities with water fees that vary by lot size include Basalt, Colorado; Fort Collins, Colorado; and Scottsdale, Arizona.

Figure 4. Calculated Fire Fees, Santa Fe, NM



Most fire and police impact fees are based on calls-for-service data. Unfortunately, emergency call data are seldom available by the size of the dwelling unit. Another drawback is that calls for individual land uses can fluctuate significantly from one year to the next. An alternative approach is to use call data only to determine a cost allocation between residential and nonresidential development. Based on the reasonable assumption that the cost to serve development will increase proportionately to the square footage of new development, the residential cost per square foot can be determined by dividing the cost to serve residential development by the amount of residential square footage (the same can be done for nonresidential). This was the approach used in developing fire impact fees for Santa Fe, shown in Figure 4.

Figure 5. Sum of Fees in Santa Fe, NM



While many communities have adopted variable-rate impact fees for individual facilities, few have implemented variable fees by dwelling unit size for a broad array of facilities. One community that has adopted such a set of impact fees is Santa Fe, New Mexico. The sum of that city's water, wastewater, road, park, police, and fire impact fees is illustrated in Figure 5.

Conclusion: Moving Toward Truly Proportionate Impact Fees

As seen in other briefing papers the concept of calculating impact fees based on “proportionate share” principles has long been established but the details have been lacking. The example of Volusia County, Florida was given because like many other communities the idea of proportionate share is reduced simply to facility needs per residential unit without respect to type, size, location, density or configuration. Strictly speaking, this may meet the minimum legal test justifying impact fees – after all in Dolan v. Tigard the US Supreme Court asserted that while a relationship needs to be established between the impact of development and the mitigation needed there is no need for a precise calculation – but this begs the question. If housing affordability is a concern, impact fee calculations need to truly embrace proportionate share principles. This briefing paper outlines how to address many of the details.

As seen in the examples reviewed in this briefing paper, impacts vary by residential unit type, size, density, location, and configuration. The differences in impact between large detached homes on large lots in low-density settings far away from commercial centers and the same-sized home on a small lot in higher-density settings closer-in may be considerable. Peak water demand may be more than double, road impacts can be higher and public safety costs three or four times more in lower-density settings than in higher-density ones. As shown above, total impacts per person between the lowest- and highest-density categories are about 2.5 times and are nearly double between the second-least and second-most dense categories across all unit types (see Table 16). These differences are attributable to density and indirectly by location. When considering variation on occupancy by type and size of unit, the differences become even more stark being about four times between large homes in the lowest-density settings and apartments in the highest-density settings and about 2.5 times between the second-least and second-most densely settled areas (see Table 17).

These examples of refined use of proportionate share impact fees can aid in lowering fees assessed on low- and moderate-income housing below the average cost, thereby aiding in the production of such housing. Census data, transportation data, utility data, and public safety response data show clearly that impact fees calculated on the basis of unit size, perhaps including consideration of unit type, are more proportionate than averaging costs across all dwelling units or even by type of unit. Case law so far does not require apportioning impact fees by unit type or size but given the weight of the statistical evidence this may only be a matter of time. Communities that calculate impact fees based on dwelling unit type, size, density, and location, and allow for fees to be tailored to account for configuration, will likely ensure that by themselves impact fees are not necessarily an impediment to the production of affordable housing.

There is a final consideration relating to courts and impact fee enabling statutes. At the moment, neither courts nor state enabling statutes have addressed impact variations based on these factors. It may be a matter of time before either one or both occur. However, waiting for this to happen is not necessary. The basic calculation methods and data are already available, as shown in this paper, to refine impact fees to substantially reduce any potentially adverse effect that they have on housing affordability. It may also be the case that generally available data could be used to challenge impact fee schedules not considered truly proportionate with respect to type, size, density, location, and perhaps, to configuration.

U.S. Department of Housing and Urban Development
Office of Policy Development and Research
Washington, DC 20410-6000

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