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Growth Management and Environmental Quality

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ABSTRACT

As Doug Porter, President of the Growth Management Institute, asserts, "In virtually every metropolitan area in the country, one or more communities is undergoing rapid change." These changes are occurring in response to many different economic trends that have dramatic effect on the patterns of new development. Communities should recognize the need to plan ahead and establish appropriate ways to guide growth. Growth which is unplanned and poorly managed creates major problems for the built environment such as inefficient transportation patterns, excessive infrastructure costs, and reduced productivity in the workplace (for which new communications tools are a stopgap, not a solution). Directing growth can avoid the problems of uncoordinated development, as well as capitalize on the positive opportunities of growth.

Typically, the goal of growth management programs is to improve the overall development process while also fulfilling public objectives for community growth and change. Failing to adequately address these forces of growth and change in an area will have devastating impacts on its environmental quality and the quality of life residents have come to enjoy and expect. Businesses and public institutions need to establish their built environments in stable, socially balanced, cost effective communities. Future professionals will have to understand these challenges and be prepared to seek solutions as part of larger teams.

Many communities in southeastern Wisconsin are at a critical juncture as growth continues and the negative consequences of sprawl become more evident. Communities in Kenosha County are especially experiencing such pressures driven in large part from rapid growth in Northern Illinois. These communitites are grappling with an array of decisions regarding the type and amount of development to allow, coping with the impacts of new development and preservation of prime agricultural lands.

In the Spring of 1994, the Institute worked with graduate students in the Master of Urban Planning program at the School of Architecture and Urban Planning to assist Kenosha County in their growth management efforts. The Applied Planning Workshop is a final semester course undertaken by Master's Degree candidates. Its aim is to provide a capstone experience to the curriculum. The workshop demands teamwork to addess a real community planning project and, at the same time, provides a forum for students to make a contribution

to the community. This applied workshop instructional format is the foundation of the Institute's approach to professional education.

Students were asked to research existing growth management techniques, define basic principles of growth management, provide examples of effective solutions and assess their applicability to different community settings in Kenosha County. This document is an interim report of their work and is organized around four primary substantive areas:

- County-wide Coordination and Planning
- Local Intergovernmental Coordination
- Impact Analyses and Fees
- Regulating Plans for New Development

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COUNTY-WIDE COORDINATION AND PLANNING

Essential to any successful growth management strategy is county-wide coordination and planning. To ensure the success of growth management, the county should be a conduit for navigation through the hierarchy of governments. Without a common link between various levels of government, one community's growth can become another community's urban sprawl. In general, growth management at the county level can be most effective when there is regional and/or statewide public commitment for their efforts.

Research on coordinated county-wide planning indicates the following factors are necessary to consider in managing growth. These factors are: environmental quality, social and economic considerations, political feasibility, public education, public participation, legal constraints, and team-based management.

Often, a combination of one or more of these factors surfaced in the researched techniques. It is recommended that all these factors be assessed before any county-wide growth management strategy can be implemented and enforced.

COUNTY-WIDE COORDINATION

When governing powers are used to restrict or channel new development, as in growth management, questions arise concerning the rationale, authority, and implementation of those powers. Counties have the unique capacity to serve as an arena to address these questions in a process that involves local officials, legislators, judges, interest groups, and citizens who seek agreement and resolution. As a political unit encompassing diverse populations, land uses, and visions of the future, the county is well suited to coordinate the divergent interests and local efforts necessary to implement effective growth management plans.

The transition from general community concern over unconsolidated development to program implementation is difficult under even the best circumstances. However, successful growth management at the local level requires political commitment, concrete decisions, consistent program design, and strong leadership. A county may assume leadership to accomplish the goals of growth management. Thus the first two principles we discuss pertain to the county's roles in coordinating growth management within its borders. These roles include 1) the facilitator and 2) the director of coordinated local planning efforts. The following techniques warrant examination for any county wanting to foster successful governmental coordination in order to arrest costly sprawl. (Carter, 1977, p. 253.)

The County as Facilitator

Since the county government is the only area-wide government considered to remain at the local level, it has the ability to exercise initiative in developing a growth management plan at the sub-state level. Counties also should recognize the planning needs of larger, multi-county regions and encourage all governmental units within such regions to participate in cooperative regional growth planning. County governments, through their elected officials, can take a leadership role in organizing the institutions and administering the mechanisms that can result in voluntary solutions to regional problems.

To this end, county-facilitated communication between state and local governments aims to establish consistency in planning among various jurisdictions. As facilitator, the county should endorse the idea that land, money, and environmental resources should not be expended at a rate faster than the costs of development can be absorbed and also distribute

growth and its benefits among all segments of the population. This role may arguably be the most important role a county plays in successful growth management plans.

As counties place themselves on the firing line by recommending innovative, progressive growth management techniques, they need to be aware of successful coordination strategies applied in other regions or states to ensure their efforts are sustainable. (Hillenbrand, 1975, pp. 149-151.)

Regional-Local Cooperative Model

In this technique, a county assists in the preparation of growth management plans at the local level, particularly if such planning is voluntary for all communities. A regional body is delegated the responsibility for plan review and approval and is comprised of top elected official of the county–or each county if done at a regional scale–and municipality. This body is also responsible for preparing the regional plan with consideration of local plans. (Innes, 1993, p. 34.)

This method of resolving conflicting jurisdictional issues is used in Georgia and is an element of the state's "bottom-up" planning process. Here, regional plans are drawn up by the Regional Development Centers (RDCs) and take local plans into account. A state Board of Community Affairs (BCA), which is made up of local elected officials and interested citizens, defines regional boundaries and helps the governor develop a state plan that considers regional and local plans. The over-seeing body is the Department of Community Affairs and is responsible for developing broad, state-wide strategies, certifying local governments as qualified to plan, reviewing and commenting on local plans, and mediating conflicts between local governments and their respective RDCs. There is no defined plan or concrete goal in the state's legislation, and this strategy "allows for more variation in local plans among regions according to growth conditions, customs, political trends, environmental constraints, and other circumstances." (Gale, 1992, p. 434.)

Cross-acceptance

In the state of New Jersey, the state-wide growth management legislation designates counties as mediating bodies for the process of cross-acceptance between state and municipalities. (Innes, 1993, p. 37.) As described by Gale,

> "Cross-acceptance allows for negotiation between the commission and the local governments over terms and conditions each agree to endorse. Municipalities and counties prepare local plans and regulations consistent with and responding to the state plan. If they choose, however, they could propose alternative terms and conditions and seek to reach accommodation with the commission through cross-acceptance." (1992, p. 434.)

Under cross-acceptance, New Jersey aims to achieve collaboration by insisting localities work together with the county to prepare a report that identifies the localities' own plans, conditions, and projections. This report helps the county identify discrepancies between regional or local plans and the state's plan. The next step is to resolve these discrepancies through give-and-take negotiation among the localities. In using cross-acceptance techniques, members can understand each other's positions and come to care about finding solutions that are acceptable to everyone . "They [the localities] put creative energy into the invention of new strategies that may run counter to their original assumptions." (Innes, 1992, p. 447-450.)

County-Local Planning Requirements

The Washington State Growth Management Plan incorporates a model for planning at the local and county levels, thus removing state responsibility for plan coordination at the local level. In this way, new growth is anticipated and planned for within a county-local context.

In this technique, "county governments, not regional bodies, play a central role, working out differences between county and local plans and among local plans." (Gale, 1992, p. 436.) This model supports the state's overall growth management plan by mandating the local and county plan preparation in rapidly growing jurisdictions. Other communities retain authority for discretion in opting to plan or not.

When a community plans under the county-local model, the state may review and comment on the plan, but the responsibility of negotiation and adoption falls on the county government. This responsibility gives much room to the counties to gain consensus among their communities concerning growth management plans. (Gale, 1992, pp. 425-439.)

Information, Education, Monitoring, and Technical Assistance

Development can be guided by educating the public and improving the market with better information and better communication. This process may include dispersing information on local and regional land values, available public support services, and natural resource problems and opportunities. Development decisions can be improved by communicating the consequences or impacts of a project prior to final approval.

Also, the importance of monitoring developments after their construction is growing due to an inability to accurately predict the consequences of many projects. Monitoring can make use of predetermined standards and criteria to ensure that a development approved under a new growth management system will meet the basic social and fiscal objectives of the area.

The availability of technical assistance from the county can be an important consideration in many small jurisdictions. Development decisions that are made with unsophisticated or out-of-date information could be overcome when support staff could be brought in to handle some of the newer, more complex information management systems, such as Geographic Information Systems. (Einsweiler, 1975, pp. 298-299).

In Wisconsin, the University of Wisconsin operates a community educational service through the counties. The University of Wisconsin-Extension Office provides educational and informational opportunities covering a wide variety of subjects, including resource policy and land-use planning. They have initiated programs to help individuals and organizations (public and private) address urgent questions on land resources.

The County as Director

Coordination is the principal issue the county should address in the process of resolution, implementation, and/or enforcement of a growth management plan. The county's duty stems

from the necessity to encourage programs that will benefit the area as a whole, yet also maintain each community's desired quality of life. To fulfill this duty, however, the county needs to do more than facilitate communication among its municipalities. The county also can actively direct the coordination of intergovernmental efforts. Examples of counties having fulfilled the role of director are discussed in the following section and will assist in understanding this role.

Directing growth management involves participation at all levels–the community as a whole, the citizens, and the governmental bodies. The challenge is to preserve reasonable environmental quality, yet also make provisions for commerce and industry. The county typically has the necessary scope or vision to include these diverse needs and wants within a regional context. Although the potential is present for greater county involvement, a county, in reality, is often not empowered to control anything except select services or to conduct mediation.

A full understanding of the county's authority and control is needed. Depending on the political environment of the county, the lack of formal or legal control can render advisory decisions ineffective if communities value strong political independence. When directed from an advisory position, an effective system of coordinated planning can emerge and address the land speculation game now driving development and inhibiting efforts to facilitate responsible growth. (Harman, 1975, p. 154-155.)

County Comprehensive Plan

Development of a comprehensive plan at the county level must address issues ranging from broad policy to detailed implementation. Included in such plans are housing provisions, appropriate land uses, transportation to accommodate current and projected population, and those facilities or services that promote the general welfare. Coordinated planning with surrounding jurisdictions intends to accommodate regional consistency and is required in Washington, Maine, Florida, and Vermont. Time frames for the planning process and plan updates vary in each state.

Walworth County, Wisconsin adheres to the Southeastern Wisconsin Regional Planning Commission Comprehensive Plan through a process of municipal acceptance and compliance.

In 1990/1991 the State of Washington's House adopted Bill 2929, Growth Management Act, and House Bill 1025 with Amendments. These programs address the growth management needs of the thirty-nine counties within the State, while maintaining inter-county compatibility and consistency. Updates for Washington's urban districts are reviewed every 10 years. (Blaesser, 1992, pp. 427-430.) Other states that use county comprehensive planning include Florida, Georgia, and Oregon. (Einsweiler, 1992.)

Implementation of ISTEA Requirements

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 necessitates county and regional cooperation as a basis for the dispersal of federal funds to local jurisdictions. This cooperation must produce a regionally consistent plan to qualify for local, matching-share funds. (SEWRPC, 1992, p. 71.) The idea of improving management planning addresses the long-term goals of ISTEA and the programs needed to carry out all related transportation work. (US Department of Transportation, 1991.) Also of note is the ability of ISTEA to flex with the growth and change occurring in urban areas. (SEWRPC, 23.)

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) has been designated as the metropolitan planning organization, or MPO, for Southeastern Wisconsin, since the 1960s. This MPO status now requires SEWRPC to carry out the regional planning process legislated by ISTEA and involve all appropriate parties, including operators of mass transit to state agencies. (SEWRPC, 1992, p. 25.) This coordination assists the implementation of proactive metropolitan planning in addressing transportation concerns.

Land Acquisition

Government ownership of land provides the greatest potential for direct control or management of land. In this technique, land is acquired only after determining the site's current land use and evaluating the need or value of preserving that use or the site, in general. If it is determined that the land should be preserved, the cost and political feasibility of that

acquisition are then assessed. For example, acquisition of purchase or development rights can be used to preserve a county's prime farmland. Buying development rights on farmland also could lower farm taxes, thus enabling farmland to remain agriculturally productive and preserving open space. (Goode, 1975, p. 293.)

Broward County, Florida and Lancaster County, Pennsylvania are two counties that use land acquisition as a technique for growth management. With the outmigration of farm families from Lancaster County, there arose the need to control the rate at which agricultural land turned over to housing developments. Land acquisition was one of the policies adopted by Lancaster County. The estimated cost of preserving one acre of Pennsylvania land, through development rights acquisition, is approximately $100 million. (Einsweiler, 1992, p. 13.)

In Marin County, California, maintenance of tight controls over open space and farmland have resulted in eighty-eight percent of the county remaining undeveloped (Einsweiler, 1992, p. 55.)

Finally, Suffolk County, New York, utilizes development rights acquisition for the preservation of farmland and open space. The main impetus behind this program is the location of this county on the very populated and urbanized Long Island in New York. (Hillenbrand, 1975, p. 150.)

Land Banking

Land banking, though similar to land acquisition, occurs where public acquisition is required as a condition for urban expansion. The land acquired is often held for public or private use at a later time, when other areas of the urban environment have either reached higher, more urban densities. If the land is utilized by a private developer, it is to be leased from public ownership or sold with deed restrictions in place.

Boulder County, Colorado secures the acquisition funds for land banking of recreation and greenbelt areas through sales tax. Sarasota County, Florida issues bonds for the purchasing of scenic easements and recreation areas. Montgomery County, Maryland acquires land through a long-standing revolving funds program–a pseudo-land banking approach. (Goode, 1975, p. 293.)

COUNTY-WIDE PLANNING

The final, physical product of county-wide coordinated planning is frequently a plan approved by each municipal government within the county, as was discussed under the comprehensive plan technique above. The process involved in county-wide planning is now discussed according to three final principles. These principles of county-wide planning are: 1) land use control, 2) compatible and consistent uses of land across municipal boundaries, and 3) public facilities provision as a physical guide to growth. This section provides an overview of the specific techniques used to achieve these principles. These growth management techniques can be classified according to one of the three principle: 1) geographic techniques, 2) negotiation techniques, and 3) infrastructure techniques. The techniques are discussed within the context of county-wide growth management.

Land Use Controls: Geographic Techniques for County-wide Plans

Geographic techniques are designed to control the location of development. Examples of these techniques range from legislated boundaries that designate the extent of future development to seemingly unobtrusive zoning used to preserve agricultural lands. Regardless of the specifics, all geographic techniques attempt to guide growth to land that is best suited for proposed uses.

For geographic techniques to effectively determine the physical location of growth, three important issues should be considered. First, planners should project future land use demands in the local market. Second, municipalities and planners are legally bound to ensure land holders a reasonable use of their property. Finally, as the specific uses allowed in distinct zoning categories evolve, planners should realize that consequences or side effects likely will vary over time. (Einsweiler, 1975, p. 47.) With these considerations in mind, the following geographic techniques are presented with their definitions and examples of municipalities where they are employed.

Urban Growth Boundaries or Urban Service Limits

Many growth management efforts include setting specific geographic boundaries within which the local government plans to provide public services and facilities. Urban

development beyond this service limit either is discouraged or prohibited. Boundaries usually are based on growth projections over ten to twenty years and require periodic reviews and updates. The limits are intended to provide more efficient services to new and existing developments, to preserve undeveloped land, and to protect natural resources. Urban growth boundaries are used extensively in Oregon, Florida, Colorado, Maryland, and California, and usually are accompanied by state legislation.

In Lancaster County, Pennsylvania urban growth boundaries were set to accommodate population growth over twenty years in an area including the City of Lancaster, eighteen county boroughs, and the developed portions of adjacent townships. Future growth was projected based on past trends and an assessment of the communities' ability to, and responsibility in, accepting growth. Rural areas of the county are required to designate specific acreage for non-urban land uses. Other growth management techniques are used in conjunction with urban growth boundaries to manage development in Lancaster County. (Einsweiler, 1992, p. 14.) Other localities where urban growth boundaries are in place include: the City of Cannon Beach and the City of Portland, Oregon; Lexington-Fayette County, Kentucky; and Montgomery County, Maryland.

Designated Development Area or Development Districts

Miles has stated that "[designated development areas are] similar to urban growth boundaries in that certain areas within a community are designated as urbanized, urbanizing, future urban, and/or rural, within which different policies for future development apply. [This strategy is]used to encourage development in an urbanizing area or redevelopment in an urbanized area." (1991, p. 220.)

Similarly, development districts create a public authority with the powers to tax for the development of land, as well as to develop it. This method spreads the costs of development over properties that will benefit from growth. Montgomery County, Maryland is one of many communities that uses this strategy of managing growth in centers of high-activity, such as transit stations and office or shopping complexes. (Einsweiler, 1975, p. 283.) Many other counties and cities designate such development areas, principally in the form of Business Improvement Districts and Tax Incremental Financing Districts.

Farmland Preservation via Exclusive Agriculture Zoning

Single-use zones are one technique used to exclude uses other than agriculture, thus directly limiting new, non-farm development and growing populations. Single-use zones are most effective when communities first determine if the goal is to preserve farmland or to preserve the visual character of open space, as the specific techniques differ between the two goals. Of course, the profitability and future of local farming is an important consideration when setting priorities in zoning restrictions.

In Wisconsin, an existing farmland preservation program provides property-tax relief to owners of farmlands and encourages local governments to develop additional agricultural preservation policies. In this program, tax relief is provided in the form of a credit used to reduce income-tax liability and is based on household income, personal property taxes, and the specific land-use provisions that protect farmland–whether a preservation agreement or exclusive agricultural zoning. Seventy of the State's seventy-two counties have farmland preservation plans. Additionally, most states in the U.S. have some type of farmland preservation program.

Differential Assessment or Preferential Tax Policies

Local property taxes traditionally are based on a property's urban market value. Yet, some states have introduced alternative assessment methods as a strategy for managing growth. Such alternative methods typically are based on current use rather than on urban market value–often believed to be the "highest and best use" for the property. This technique indirectly manages the use of land by strategic tax-rate structuring, thus rewarding particular uses. In such alternative tax policies, a "recapture" provision can be levied if and when a property's use changes, thereby offsetting the difference between the previous preferential rate and the standard market rate. Caution is needed in adopting preferential taxation; "[p]referential taxation can provide a haven for speculators if not carefully tied to a plan, the permanent provision of the use being preferentially treated, or an unearned increment tax." (Einsweiler, 1992, p. 297.)

Typically, differential assessments fall in one of three categories, two of which employ the concept of abatement, or the exemption of tax liability. These categories include a) pure

preferential assessment with full abatement, b) deferred taxation with partial or with no abatement, and 3) restrictive agreements, under which a farm owner contracts to maintain land in farm uses in return for a lower assessment.

One currently used case of strategic taxing is used in Montgomery County, Maryland and intends to preserve rural character. The County created a new zoning category in which five-acre minimum lots are considered to have a rural visual character and are required for residential development. These so-called "rural zones" use preferential assessment for existing farms to preserve existing agricultural land. Counties that currently employ differential assessment taxation include: Dade County, Florida; Loudoun County, Virginia; and Sacramento and Stanislaus Counties, California.

Cluster Zoning and Planned Unit Developments (PUD)

Another direct method of controlling the character and type of future development requires that approved subdivision plats or plans be recorded prior to the sale of available lots. This method regulates the width, depth, density, and size of lots, thereby setting the parameters for allowable development type. Similarly, the recorded plans provide the standards for both the design and construction of utilities, streets, drainage, water and sewer lines, and, in many instances, community recreational facilities. Such plans also may restrict development in sensitive environmental areas or corridors, while some innovative ordinances require open space in all new developments.

Planned Unit Developments combine select qualities of subdivision regulations and zoning into one development ordinance, identifying lot division and permissible mixed land uses. The deliberative planning process of creating Planned Unit Developments can serve as an incentive for better development by allowing complete plans to be negotiated and approved prior to construction. (Einsweiler, 1975, p. 295.) Although used extensively throughout the United States, counties that make use of PUDs include: Boulder County, Colorado; Montgomery and Prince George's Counties, Maryland; and Sacramento County, California.

Compatible and Consistent Uses of Land Across Municipal Boundaries: Negotiation Techniques for County-wide Plans

This section considers the various techniques used to negotiate or mediate conflicting issues that may arise when planning at the county-wide level. The principal aim of negotiating techniques is to facilitate compatible and consistent land uses. The strategies are usually market-oriented, intending not to restrain development but guide development to evolve consistently with surrounding environments and infrastructure. Negotiation techniques are typically based on the processes of mediation, or conflict resolution. (Butler and Myers, 1984, pp. 447-448.) This give-and-take process, if administered correctly, promotes harmonious development decisions between planners and developers.

Point System

A rather direct technique used to control the character and type of development is to rate the quality of proposed developments on a "point system." This system awards points to proposed developments according to the degree to which projects will meet predetermined standards and criteria. Typically, various rating factors are weighted to reflect public policies and local development priorities and are applied to the points for specific elements of the development.

Point systems also can be used in conjunction with flexible zoning, a system in which a range of mixed uses are permissible, to better manage the type of growth. More recently, point systems have been used to encourage the development of low- and moderate-income housing. While point systems may deter certain developments, the developer has the option to alter the extent of benefits to offer to a community; the more benefits a development will create, the more points the development is awarded.

Monroe County, Florida has adopted a point system to manage development by linking point rewards to building permit applications. Applications for development are given positive and/or negative points, depending on the suitability–as defined prior to evaluation–of a site for the proposed development. For example, developments that would be served by existing infrastructure, such as water, electricity, and paved roadways, automatically receive a positive 10 points. Positive points are also given to proposals if a developer voluntarily

changes the density of a development to preferential levels, provides affordable housing, or donates undeveloped land in their possession to the county. Two other county-wide point systems in use are in Dade County, Florida and Montgomery County, Maryland.

Performance System

Another technique used to negotiate desired benefits with developers is a performance system. This system requires development applicants to demonstrate that current facilities and infrastructure of the proposed site can and will be maintained or improved after construction. A typical performance system enables property owners to select from a range of approved land uses–determined according to suitability for a specific location. The developer also is bound to contain the development's externalities within specified acceptable limits. Performance systems have been applied to meet demands of future traffic, sewage, utility, and public service levels and use. Also, performance systems have been used to address environmental concerns by specifying the maximum levels of stress that can be imposed on a site's natural resources by a proposed development. Loudoun County, Virginia has adopted a performance system to manage the type and character of new development.

Transfer or Purchase of Development Rights

The Transfer of Development Rights (TDR) and the Purchase of Development Rights (PDR) are two techniques of private-land acquisition in order to preserve the public good. These procedures allow owners of property that is restricted from development to recoup some of the potential income they could receive if the land were developed. Such property owners capture the lost value by selling, or transferring, their development "rights" to developers of alternative locations where increased densities are allowed. A county-wide application of TDR and PDR would be in the preservation of open-space and farmland. Three counties that have made use of the transfer or purchase of development rights are: Fairfax County, Maryland; Marin County, California; and Suffolk County, New York. (Daniels, 1992, pp. 421-431.)

User Fees or Charges

In an effort to have developers realize the true costs of development, many municipalities have opted to directly charge them for certain expenses. Such fees or charges are used to cover the full operating expenses of a facility, including infrastructure maintenance and expansion and services such as municipal garbage collection. These fees also are often used to retire public revenue bonds that may have financed construction of a new facility or needed infrastructure. County services impacted by development would be funded via county-wide user fees or charges. (So, 1988, p. 440.)

Land Transfer Tax

Another direct method of preserving certain land uses and preventing certain new uses, is to levy a local tax on the transfer of land. The tax is intended to deter owners from selling rural land to speculative investors and dissuade developers through higher land costs. The amount of such land-transfer taxes is highest when land is held for a short time after a previous transaction and lowest when held for longer periods of time. Revenues raised from a land-transfer tax can also be used to acquire open space or development rights to counteract the sale of land and legislated preferred uses. The State of Vermont uses land-transfer taxes widely in its comprehensive planning and growth management. (Bunnell, 1993, p. 5.)

Covenants and Development Agreements

Covenants and development agreements incorporate deed restrictions, easements, and other negotiated agreements in land title documents. These private agreements are made between developers and land owners and are transferred with ownership. Restrictive covenants are frequently used to tailor the zoning of a specific site or subdivision by prohibiting certain activities or requiring more stringent design elements than those of standard land titles. Such techniques could be used at a county level to preserve undeveloped or agricultural land by preventing the continued redivision of land. Such development agreements could also substitute Planned Unit Development zoning and its associated negotiations to define the character of development over time. (Scott, 1975, p. 294.) Two counties that rely on covenants to manage growth include Marion County, Oregon and Dade County, Florida. (Scott, 1975, p. 294.)

Legislated Environmental Controls

In an effort to enforce compliance with minimum environmental standards, stricter provisions and limits can be imposed on developments that are proposed for environmentally-sensitive areas or in areas of substantial existing development. These controls typically are imposed on facilities and activities that threaten local and/or regional air and water quality or to enforce development that is harmonious with local environments. Counties that have recognized the need for strict enforcement of environmental standards enforcement in controlling growth are Dade County, Florida and Marion County, Oregon.

Required Fair-Share Housing Allocations

Often county or state governments will require local jurisdictions to meet a specified goal of low- to low-to-moderate income housing needs and to be implemented through the use of a county-wide comprehensive plan. These plans encourage local governments to develop a feasible housing plan that meets their "fair-share" allocation for affordable housing, as designated in the county's plan. Such requirements exist in New Jersey, California, and Florida. Florida, however, is the only state that uses counties to mandate local allocations. (Connery, 1993, pp. 185-199; Gerkens, 1988, pp. 51-53.) Many Florida counties allocate fair-share requirements, including Dade , Brevard, Collier, and Citrus. Fairfax County, Maryland has incorporated fair-share allocations in its efforts to combat the lack of affordable housing created by unmanaged growth .

Pubic Facilities Provision as a Means to Guide Development: Infrastructure Techniques for County-wide Plans

The ability to guide development through the management of infrastructure is an important strategy in county-wide growth management planning. Infrastructure techniques are based on the notion that many of the "adverse effects of rapid growth can be mitigated if it can be phased in terms of time and location" (Cater, 1975, p. 347.) This section examines ways in which infrastructure management has been used to manage the timing and siting of growth at the county level.

Moratoria

The withholding of new building permits in an area of rapid growth is often used to allow a community to "catch up with an infrastructure deficit." (Smith, 1993, p. 49.) This technique prohibits development temporarily and is based on an immediate need to forestall a threat to the public health, safety, or welfare–such as a lack of sewage treatment capacity or extreme traffic congestion. Typically in effect for one to three years, a moratorium allows time for the threat to be eliminated, but it can last for many years if the problem persists.

In Fairfax County, Maryland, the County Board adopted both a short-term planning moratorium and a sewer moratorium during the 1970s. These development restrictions would affect identified areas of the county until treatment facilities could be improved to accommodate new growth. No new applications for rezoning, subdivision, or site plans were accepted during the moratoria and work on approved projects had to start within 180 days. Only approved projects, including public facilities and single-family units that did not require special permits and had an acceptable sewage system, could be built. These moratoria were in place until the comprehensive plan for the County was completed. (Einsweiler, et al, 1975, p. 307.) Four counties having employed development moratoria include: Dade County, Florida; Fairfax County, Virginia; and Montgomery and Prince George's Counties, Maryland.

Concurrency Ordinances or Adequate Public Facilities Ordinance

Concurrency ordinances are a "method of coordinating actions of many participants, not only over spatial areas, but also over time. The concurrency requirement states that development cannot be permitted unless there is funding of services for the development, including transportation, water systems, and parks." (DeGrove & Metzger, 1993, p. 16.)

Florida's requirements for concurrent land and infrastructural development is considered the most stringent. "No other state says flatly that, after a local government has adopted its comprehensive plan and land development regulations, no new development may be permitted unless the concurrency requirement has been met." (DeGrove & Metzger, 1993, p. 7.)

However, if a state is unwilling to finance new infrastructure, as Florida at times has been, the requirement for adequate facilities can encourage sprawl less developed, rural areas where underutilized infrastructure exists. (Innes, 1993, p. 28.) Outside of Florida, Montgomery County, Maryland has adopted adequate facilities requirements.

Urban and Rural Service Areas or Urban Growth Boundaries

The concept of "mapping" a limit to growth is based on "drawing a line around the areas where sewer, water, roads, police, fire, and schools already exist and the lands immediately adjacent to them, and mandating that capital facilities not be extended beyond the line. Thus directly addressing the location and extent of urbanization and the preservation of farmland, and it regulates the location and timing of building community infrastructure." (Einsweiler, 1992, p. 14.) When the specific limits are negotiated, the boundaries for urban growth should include sufficient land to accommodate an urban area's projected population growth for 10 to 20 years.

Urban growth boundaries are considered a technique used to impact the geography of development through limited capital facilities' provision. Therefore, the illustration of this technique is more fully described in the previous section discussing the first principle, land use controls. Examples of counties having set urban growth boundaries include Lexington-Fayette County, Kentucky; Lancaster County, Pennsylvania; and Montgomery County, Maryland.

Withholding of county highway funds

If a county has adopted an infrastructure concurrency agreement that is not met by local municipalities, the county has the option to withhold moneys for new projects and the routine maintenance of roads.

In Kenosha, the County has met with its local governments to develop achievable programs for local road improvement. This program is based primarily on the safety concerns of the County and is not imposed on localities by the County. Local governments submit a list of projects they have planned and that they consider eligible for county funding. After County review and approval, funds for the programs are disbursed.

Determining and limiting the location of new facilities

In an effort to determine the placement and rate of development, counties may strategically plan and limit the placement of roads, sewer, water, and other essential support facilities. (Einsweiler, 1975, p. 293.)

In Sacramento County, California, this technique was used to guide development to designated areas adjacent to existing development and to prevent development on prime-agricultural or natural-resource lands. To effectively achieve the restrictions on facilities, the County had to coordinate all existing authorities for their provision. This approach to coordinated growth management evolved from a county "horizon" plan that was done in conjunction with a regional plan and was approved by the County board. The technique was enforced by the adoption of an urban growth boundary, as previously described. (Einsweiler, 1975, pp. 323-325.) Two intergovernmental applications of facilities' provision restrictions were made in Boulder County, Colorado and Salem County, Oregon. Other applications are found in Dade County, Florida; Loudon County, Virginia; and Montgomery and Prince George's Counties, Maryland.

Limited access to existing facilities

This method takes the concept of limited-access highways and applies it to limited-access sewer and water systems. While such utilities may pass through areas considered unsuitable for immediate development, access can be, and frequently is, determined by the programmed capacity of local sewage treatment facilities. (Einsweiler, 1975, p. 293.)

In 1973, Montgomery County, Maryland banned all further permits for connections to existing sewer lines pending the establishment of a priority-ranking system for use of existing capacity. Ranking the priority to access would allow for the management of development type and character. If a county, such as Kenosha County, Wisconsin, were experiencing rapid suburban and rural growth and simultaneous central-city decline, priority could be given to needed developments, such as low- and moderate-income housing or commercial and industrial developments that will create mid- to high-wage, full-time jobs. (Einsweiler, 1975, p. 313.) A number of counties have made adopted limited-access facilities, including:

Dade County, Florida; Fairfax County, Virginia; Montgomery County, Maryland; and Salem, Oregon–via an intergovernmental project between city and county.

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INTERGOVERNMENTAL COORDINATION

This section of the Growth Management Framework presents both traditional and innovative strategies for intergovernmental coordination. The regional effects of rapid growth imply that locally-isolated planning no longer can meet all of the needs and desires of individual municipalities. Increasing traffic congestion, non-attainment of pollution standards, the conversion of prime agricultural land, and socio-economic crises all erode community character and quality of life. Such problems are of growing concern in Kenosha County, where the development pressures from bordering Illinois counties offer the potential for economic growth but only at significant costs–fiscal, environmental, and social.

Attempts to manage growth frequently are the focus of planners and politicians as the impacts of unplanned development–driven largely by the American dream and market forces–pose new and often unwieldy burdens on local governments. Yet, planning is the only way municipalities will comply with new federal environmental legislation, satisfy taxpayers' demands to improve the quality of life, and generate new sources of revenue to pay for the costs of compliance and new or improved public services. In a number of states, these tasks have been addressed through organized growth management planning at the state, regional, and local levels. These efforts rely on government powers and authority to attain a necessary balance of economic development and the protection of natural, human, social, and fiscal resources.

THE NEED FOR INTERGOVERNMENTAL COORDINATION

The realities and dynamics of economic, environmental, and social systems challenge the American governmental decision-making process. Local governments are limited in their ability to regulate or plan resources that extend beyond their municipal boundaries. Similarly, the "Yankee spirit," or a strong belief in personal property rights, remains deeply entrenched in America–a legacy of the revolution against Britain's system of broad municipal power and authority over land development. (So, 1988, p. 20). Strict land-use regulations, therefore, often are unpopular among tax-paying, voting constituents.

Thus, the dilemma facing local governments is limited governance–statutory and political–in a world where economic activity, natural ecosystems, hazardous pollutants, or the social needs that cross conceptual jurisdictional boundaries. Any effort to plan for growth management, therefore, requires neighboring governments to plan their resources and future development cooperatively. Coordinated planning also lends itself to providing public facilities and services to taxpayers more effectively and economically.

THE EVIDENCE IN SUPPORT OF COORDINATION

The nearly one dozen formal growth management systems that currently exist in the United States all specifically address coordination among state, regional, and local governments. When legislated, these systems set the parameters for the participation of all levels of government in managing growth. Typically, the implementation and enforcement of plans occurs at the local level but relies on previously set goals and policies for the region. While many local governments resist forfeiting their political autonomy, existing growth management programs indicate that home-rule authorities actually have been strengthened within a system of cooperation. Requirements for consistent goals, plans, and regulation can enhance home rule by protecting individual communities from the spillover impacts of activities in neighboring communities.

The key to effective coordination among municipal governments rests on two, mutually-supportive principles. The first principle is to establish an institutional structure within which municipalities discuss the goals and policies related to local and regional growth. The second principle–and the key to sustainable coordination–is the adoption of specific

"administrative" strategies that govern the proceedings of the selected institutional structure. Both principles rely strongly on the commitment of municipalities to address mutual and individual concerns. The willingness to participate rests, in part, on the knowledge local elected officials and volunteer planners have regarding the long-term and regional impacts of uncoordinated planning.

The following sections present the techniques for coordination related to the two principles identified above. The successful application of these techniques in other states or regions are provided to further explain their goals and technicalities. Finally, an index to the State of Wisconsin's Statutes regarding the authorities and functions of local governments that are relevant in matters of growth management and intergovernmental coordination is provided at the end of this section.

Institutional Structure

Council of Governments or Regional Planning Councils

This quasi-governmental structure is the most direct approach to multi-jurisdictional growth management. The underlying premise of a multi-governmental council is the recognition that growth and its subsequent impacts rarely are constrained by political boundaries. Thus, local land-use and development decisions should be made within a regional context. The level of power and authority vested in these councils determines, in part, their influence on development. Council authorities can range from non-binding advise to the implementation and enforcement of plans. (Wieffering, 1993, p. 31.)

Intergovernmental councils typically develop long-range plans for primary public facilities and services–sewers, parks, highways and mass transit. These plans serve to foster orderly growth, in general, or to steer development to designated areas, in particular. (Wieffering, 1993, p. 31.)

The Metropolitan Council of the Twin Cities is the most touted council of governments, its success attributed to its legislated and *effective* authority. Seven counties in the Minneapolis-St. Paul Metropolitan Area are represented in the Met Council and all contribute to its financing through property-tax revenue sharing. The fiscal disparities program, as the

cooperative financing mechanism is called, acknowledges the larger economic unit of the seven-county area and the interdependencies of municipalities. Three goals of the council and revenue-sharing program are to limit competition among communities for commercial and industrial development, to encourage more efficient land use, and to narrow fiscal disparities among local governments. (Wieffering, 1993, p. 31.)

A second example of regional government is the San Diego Association of Governments (SANDAG). This association actively pursues redirecting growth away from fringe areas, into the City of San Diego. Strategies to manage growth include projecting development trends, monitoring current issues of development, and coordinating the actions of local governments. (Porter, 1989, p. 21.)

Regional planning councils, or RPCs, are required by many states in their growth management acts. Yet, the RPC role tends to be more advisory and less governmental than in formal councils of governments. In Florida, the 1985 Local Government Comprehensive Planning and Land Development Regulation Act established Regional Planning Councils that are responsible for regional planning and ensuring that local plans are consistent with regional goals or plans. (Stein, 1993, p. 32.) This "review and comment" role of regional councils in local planning is strictly advisory and is an element of growth management legislation in Georgia, Maine, and New Jersey. (Stein, 1993, p. 36.)

Informal Local Government Cooperation

In many political contexts, state or regional mandates to coordinate planning among local governments would be unpopular among politicians and constituents. Some municipalities facing this constraint have formed informal organizations to discuss issues, concerns, and challenges, whether they be mutual or particular to one community. Frequently, these informal meetings reveal similar needs that can be addressed more effectively with cooperation. Voluntary or non-binding efforts to establish communication and support have advanced further more formal, intergovernmental cooperation. The success of initial cooperation efforts can encourage community managers, town chairs, and planning commissions to regular schedules and to adopt a formal organizational structure.

Montgomery County Consortium of Communities in Pennsylvania is a leading example of multiple local governments addressing and resolving problems of mutual concern. An informal intergovernmental association was formed early in 1976 after a successful effort to cooperatively research and shared a new information system. Over the next four years, the municipal association met regularly and established goals for intergovernmental projects, including cooperative purchasing of public services, improving municipal management, and sharing information. During this period, informality was preserved by allowing individual municipalities to opt in or out of any of the group's projects, generally a decision based on information provided by the County. In 1980, the association was formalized with the adoption of bylaws and articles of agreement by the municipalities. The stated mission of the Consortium of Communities was, and is, "to combine total resources to meet regional challenges that may transcend individual capabilities while retaining and strengthening local autonomy in all other governmental matters." (Winter, 1988, pp. 10-11.)

Administrative Strategies

Consistency Requirements

A rather indirect strategy of government coordination that links most existing growth management programs is the requirement for plan consistency. Consistency begins with the development of goals and policies to be adopted by the state legislature and to form the framework for the state's future. The mandate requires that regional and local plans be consistent with the goals and policies of the state. This requirement inherently implies the coordination of comprehensive planning among neighboring municipalities and neighboring regions. (Stein, 1993, p. 6.)

In Oregon, the state's Land Conservation and Development Commission is responsible for assessing the consistency of local and county plans with statewide planning goals and standards. (Stein, 1993, p. 6, 63.) If local and county plans comply with the statewide goals, collaborative reviews and revisions over time are likely as state goals or local needs change. (Stein, 1993, p. 63.)

A less formal consistency requirement exists in Vermont. Although local governments are not required to develop comprehensive plans–state funding is available if they opt to plan.

Communities, however, that do plan are required to set goals and policies consist with those of the State. Collaborative planning among state, regional, or local agencies is required and regional planning commissions act as cooperative liaisons between local governments that engage in planning. (Stein, 1993, p. 42).

Unlike Vermont, Rhode Island's consistency requirement establishes a penalty rather than incentive for coordinated planning. If a local plan fails to be consistent with both statewide goals and the plans of neighboring municipalities, the state prepares the plan for the locality. If local governments fail to comply with a state-drafted plan, the courts have the power to enforce consistency. (Stein, 1993, p. 40.)

Cross-Acceptance

In a strategy unique to the State of New Jersey, the consistency of local and state goals and plans is achieved through a county-administered negotiation process. This process is referred to as cross-acceptance and has the goal of establishing consistent goals and policies for growth that also accommodate local needs and statutory limitations. Cross-acceptance procedures compare and identify differences and agreements that exist among local governments and their plans. The process is designed to result in written statements regarding plan elements that require modification in order to be consistent with other plans. (Stein, 1993, pp. 100-106.)

Coordination between and among local governments occurs primarily through technical assistance or mediation services administered by counties. A process of mutual adjustment aims to achieve voluntary change and acceptance of plans among local governments. Cross-acceptance involves state agencies, counties, hundreds of municipalities, and the general public in an elaborate intergovernmental, consensus-building process. The goal of the entire process is to resolve growth issues cooperatively by involving all levels of government. (Stein, 1993, p. 97.)

Unified Codes

The concept of reviewing and re-drafting local codes for development has found support in individual municipalities and at larger, inter-jurisdictional levels. Inconsistencies between a municipality's zoning and subdivision codes, signage or design regulations, natural resource

preservation provisions, and administrative procedures–among others–are common. Codes, ordinances, and regulations are even more frequently inconsistent between neighboring municipalities. Discrepancies within one municipal government's codes complicate and delay the review, approval, and administrative procedures for development. Rewriting ordinances and procedures into one unified code can eliminate redundant or conflicting objectives and processes. At the regional level, consistent regulations and procedures can advance coordinated local development planning and compatible land-use decisions. Also, the process of drafting regionally unified codes requires the coordination and participation of many local governments. (Morris, 1993, p. 12-13.)

The benefits of unified codes include: updated terminology and procedures to match contemporary development trends, a common set of standards for government agencies to know and work with, one ordinance to regulate all development, and the elimination of redundant or conflicting provisions. (Morris, 1993, p. 16.)

The process of replacing inconsistent ordinances, procedures, and regulations with unified codes has been done by individual municipalities in North Carolina, Georgia, and California. A more regional effort was done in Washoe County, Nevada. The county eliminated its existing zoning code and developed a unified code to regulate land development. The unified code was part of a larger county effort to develop a required comprehensive plan that had to be consistent with the larger, Lake-Tahoe-Reno area. Within the County, individual community interests are handled through citizen advisory boards that relay issues to county planners; the citizen boards represent sub-county areas. (Morris, 1993, pp. 15-16).

The principle characteristics of unified codes include:

- A combination of zoning and subdivision regulations
- Flexible permit or zoning options for developers to request
- A limit on regulation
- Detailed and consistent administrative procedures that expedite the administrative process
- Design guidelines
- Equal authority and procedures among agencies for permitting development
- Provisions to minimize costs to developers
- Clear, concise language

(Morris, 1993, p. 12.)

Geographic Information Systems

Most growth management programs have incorporated some system of computerized information sharing. Geographic information systems (GIS) are very common tools used in growth management; many states or regional planning agencies already have implemented GIS and have made the system accessible to local governments. GIS networks merge computerized maps and data on both natural resources and human systems such as land use, demographics, and infrastructure. A data network such as GIS provides consistent, standardized information to local decision makers and lends itself to coordinated intergovernmental relations. Because each GIS is customized for the particular needs of its user; a participatory process for designing the data network could initiate coordinated decision making among localities. (Stein, 1993, p. 23.)

Growth management legislation frequently includes a requirement for an integrated, multi-task geographic information system (GIS) or comparable computerized data network. In Maine, the Department of Conservation maintains a statewide GIS to be used in conjunction with the state's Comprehensive Planning and Land Use Regulation Act (1988). Regional councils must collect and report data for input to the statewide system, as well as providing technical assistance to local governments when making local plans. (Stein, 1993, p. 36.)

In Georgia, an integrated network of data is maintained by the state Department of Community Affairs. Local governments, regional development centers (established in the growth management legislation), and state agencies are required to participate in the use and maintenance of the information system. An important element of Georgia's system is its availability to the private sector–as well as local, regional, and state governments–thus presenting the opportunity for coordinated governmental and public-private decisions regarding development. (Stein, 1993, p. 34.)

Innovations in GIS could dramatically change how development decisions are made at the local and regional levels. The Institute of Urban and Regional Development at the University of California-Berkeley has used GIS to model the future of the San Francisco Bay Area and the Sacramento-Stockton-Modesto urbanized area. The modeling program simulates the interaction of regulatory and investment decisions–both public and private–and consequent development; the influence of policy change on development can also be projected.

Alternative scenarios indicate the impacts of land-use and infrastructure decisions on the many communities they may affect. To date, the Institute's GIS team has helped coordinate planning in Sonoma and Solano Counties with the Association of Bay Area Governments. (Landis, 1994, pp. 22-25.)

Formal Dispute Resolution or Conflict Mediation

Typically, conflicts surrounding growth management occur when developments and/or their impacts cross jurisdictional boundaries or when governance and the authority to manage resources, land use, infrastructure overlap. Judicial resolution of intergovernmental disputes can be costly and result in only forced, short-term solutions to long-term issues. In place of litigation, alternative dispute resolution or mediation techniques are recommended, even legislated, in many growth management policies. (Godshalk, 1992, p. 368.)

To effectively resolve conflicts of interest, the political environment of each locality must be considered. The cycles of issue intensity, governmental powers, and representational change or stability all influence the resolution process. As stated by David R. Godschalk, "[t]o be effective, an intergovernmental conflict management approach must accommodate relatively stable stakeholders dealing with recurring conflicts within established institutions and authority grants." (1992, p. 369.)

Similarly, the degree to which governments disagree implies certain resolution strategies. Disagreements between or among local governments can vary from issues to disputes to impasses. Essentially, the intensity of disagreement is the balance–or imbalance–of a local government's assertiveness to achieve a goal and its willingness to enter a cooperative relationship. Issues imply the inability to agree on the technicalities of implementing plans but moderate agreement on goals. Informal negotiation is the most likely means of resolution of issues. Disputes arise when issues remain unresolved, often as a result of strong politicized disagreement. Impartial, third-party negotiations may be necessary to resolve disputes. An impasse is reached when the resolution process has stalemated and formal arbitration in the courts is needed. As situations change, the intensity of disagreement can also switch back and forth from issues to disputes to impasses. (Godschalk, 1992, p. 369.)

Formal conflict mediation systems are an element of growth management plans in Florida, Georgia, and Washington. In Florida, conflicts between local governments are to be

mediated by Regional Planning Councils–a responsibility they have rarely had to fulfill. (Stein, 1993, p. 32.) In Georgia, the state Department of Community Affairs will mediate disputes between regional development boards or local governments when requested or on their own discretion. Regional development boards provide a forum for local plans and concerns to be presented and the board will identify conflicts and suggest resolution strategies. (Stein, 1993, 34.) In Washington, the state Department of Community Development must provide mediation services to local governments when conflicts regarding the coordination of regional issues and local plans emerge. (Washington State, 1990/1991, p. 9.)

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IMPACT ANALYSIS AND IMPACT FEES

Economic growth any community can affect both positive and negative change. New business and industry produce new jobs and increase the tax base. New residences bring new taxes, as well as new employees and new customers for local business. But growth can have a downside.

While new business brings new employees, new families demand new housing opportunities and require expanded public services. New industry can compound environmental problems, both through their production activities and the increased traffic that distributes their goods. Often, the new taxes generated do not make up for the additional costs of accommodating growth.

The reason such imbalances occur can usually be traced back to decisions made by individual property owners or firms who are primarily interested in profits. Typically, social and fiscal consequences to the local community are secondary concerns. Thus, the indirect costs of individual decisions are borne by the community as a whole. Municipalities that choose not to manage and plan for growth are more vulnerable to problems later on. A city's growth increases public costs and the tax rate, particularly when state and federal funds diminish. For example, the *laissez-faire* attitude of Houston's city government has been credited with problems that range from sewage disposal to flooding to a lack of open space (Feagin, 1985, pp. 164-185.)

This dilemma of growth indicates that the overriding principle regarding development is that local governments should predict and respond to the social, physical, and fiscal impacts of growth. Two techniques to assist local governments address the dilemma are impact analyses and impact fees. An impact analysis attempts to predict the effects of growth, while impact fees are a tool to mitigate the costs of growth.

IMPACT ANALYSIS

An impact analysis can be of two types: fiscal or non-fiscal. A fiscal impact analysis serves as a projection of the direct public costs and revenues associated with growth, residential and non-residential, particular to a municipality. (Burchell, 1985, p. 3.) A non-fiscal analysis serves to estimate non-monetary social impacts, which are often difficult to quantify; nonfiscal impacts include changes in transportation, congestion, housing, and the quality of life. Non-fiscal impacts also include the effects new development may have on the physical environment.

Fiscal Techniques

Fiscal impact analyses treat the physical effects of growth in quantifiable terms. Proposed developments are evaluated based on their estimated impact on the costs of new or expanded services, new or larger schools, expanded infrastructure, and on the change in local tax revenues. Generally, coefficients are used to estimate these impacts and are based on typical local demands associated with growth for the area, development type, and development location.

For example, an analysis might estimate the number of new school children in a district based on the number and type of new housing units built. The additional cost of educating each new student can be calculated by multiplying the current cost per student by the estimated number of new students. Similarly, the number of new housing units could be multiplied by the current, average cost of garbage service to each unit to yield an estimate of the revenues needed to pay for expanded collection. In cases of commercial and industrial development, the number of new employees also can be used to estimate the need for additional city services.

The product of a fiscal impact analysis is usually a formal report indicating that a proposed development would result in either a net benefit or cost to a municipality.

Per Capita Multiplier Method

This analysis method uses estimated population change as the basis for forecasting a development's impact on municipal costs and revenues. Detailed demographic data is used

to determine the number of persons a development would add to the community, according to the number and type of new housing units proposed. These additional population figures are then multiplied by the per capita expenditures associated with each type of service. The additional expense required to maintain the current level of service is the product of this calculation. This method is most useful for determining the impact of various developments in communities that are experiencing overall growth and where local service limits have been reached or exceeded. (Burchell, 1985, pp. 9-14.)

Case Study Method

This method of analysis also uses estimated population change to forecast a development's costs and revenues to a municipality. The projected new costs and revenues, however, are adjusted if the capacity of each service category is currently over- or under-utilized. Consider, for instance, a new residential development in a community in which the school system is operating far enough under capacity that new teachers or facilities would not be required when new residential development occurs. The per capita multiplier approach discussed above would project the school cost based solely on the increased population. Using the case study method, on the other hand, these costs would not be considered, as the additional capacity would not increase facility or faculty demands enough to warrant expansion. If, however, a new fire station would be required for a new residential development, the full cost of the station and personnel would be assessed as a cost of the development.

The case study approach is especially useful in areas where facilities or services are either significantly under- or over-capacity. (Burchell, 1985, pp. 15-16.)

Service Standard Method

This method uses data from the U.S. Census of Governments to determine the total number of additional employees that can be expected with growth in different service categories. This census data contains the average number of employees per capita for service type, geographic area, and community size. Under this method, the number of additional residents a development is projected to add to a community is multiplied by the census' per capita average employees. This calculation results in an estimate of the number of new employees

needed to operate a new service development. The average capital-to-employment ratios are then used to calculate any new capital expenditures needed to accommodate increased local employment.

This method is best used for analysis in growing communities where services currently are at capacity and growth would increase demand for them. (Burchell, 1985, pp. 16-23.)

The Comparable City Method

This method of fiscal analysis is used to predict the marginal cost impacts of population change. Again, Census of Governments data is used to calculate a series of multipliers; these figures show municipal expenditure levels that different categories of services create. The multipliers then are separated into categories according to the size of the municipality and projected population growth or decline. Increases in the cost of providing services can be derived by multiplying the municipality's current per capita spending by the ratio of current population service cost to projected population service costs. If the municipality moved from one category to another–from growth to decline, for instance–costs will change. If a municipality is projected to stay in the same category, the ratio will equal one and costs do not change. This method is applicable in many situations in both urban and nonurban settings. (Burchell, 1985, pp. 23-29.)

Proportional Valuation Method

This method is used specifically to analyze the costs of commercial and industrial growth. The method is based on real property values and their relation to municipal expenses. To use proportional valuation, the real value of both the existing non-residential land uses and the proposed development must be known. Total municipal costs are divided according to the proportion of non-residential values to total values. The result then is multiplied by a refinement coefficient to compensate for either overstatement or understatement of costs that may result from using this method. The analyst then multiples the non-residential share of municipal expenses by the ratio of the proposed development's real value to total non-residential values. This result also is multiplied by a refinement coefficient to indicate the proportional share of municipal costs that can be attributed to the proposed development.

This total cost can be assessed by service categories that are based on case studies that show the breakdown of municipal cost for the appropriate service.

This method primarily is useful for development proposals in growing areas where service capacity currently is at its limit. (Burchell, 1985, pp. 29-34.)

Employment Anticipation Method

This method also seeks to predict the impacts of non-residential development on local revenues and expenditures, yet assumes a relationship between local employment levels and municipal costs. From this relationship, coefficients are derived to predict the increase in municipal expenditures generated by particular service categories per additional employee. When multiplied by the projected number of new employees, an increase in per capita costs results. The increase is multiplied by the projected population and gives the expected additional cost incurred to the municipality for each service category. This additional cost can then be compared to additional revenues the project is likely to bring in, thereby determining an overall fiscal impact.

This technique is useful in situations where the proportional valuation technique also might be applied.

Non-fiscal Techniques

Assessing the social impacts of development often requires an assessment of non-fiscal changes. Certain such analyses can be conducted in numerical terms, the number of trips driven on a road, for instance. If a new development will use an existing road for access, the analyst can determine the capacity limit of the road, the number of vehicles currently using it, and the number of new trips a development is expected to generate. From the projected outcome, the analyst can determine if the new development would place too great a strain on the local or regional highway system.

For other social impacts–the quality of life, for example–the results are less clear. For non-quantifiable, more subjective analyses, the analyst must rely on citizen opinion and various indicators of resource accessibility, such as unemployment rates, to design evaluation criteria.

Environmental impact assessments are of growing concern in many growing communities and the analysis process is neither strictly quantitative nor qualitative. Here, while the data assessed is not readily quantifiable, the procedures used to analyze a project are relatively standard. Changing environmental regulation and new technologies, however, force constant updates of analysis techniques.

Transportation Cost Analysis

The impact of development on transportation systems is both monetary and non-monetary. To assess the impacts on transportation, a non-monetary approach is most often used. The number of additional cars a new development likely will place on area roads is a standard unit in these analyses. Predetermined figures for the number of trips generated by each type of land use are used to determine the number of trips a proposed development would generate. Adding the expected number of new trips to an existing traffic load and comparing the results with the road's capacity limit determines whether the development would overburden the current system. An analysis also can be done on the change a proposed development would have on average trip length for drivers in the area. (Canter, 1985, pp. 157-176.)

Housing Demand Analysis

Non-residential growth impacts the demand for local housing and, in most areas, the construction of new commercial or industrial space leads to residential development. The effect of new housing construction on a particular municipality is determined primarily by the number and type of units to be constructed, as determined by the land available and its zoning. In general, the housing impacts of a particular commercial or industrial development, are determined by assessing the current housing stock by type of unit, accessibility to services, and overall quality. Not only the stock of current housing should be considered, but also residential trends over time should be analyzed.

Next, the future composition of local housing stock without a proposed development occurring should be predicted to serve as a status quo comparison. This projection is based on current and projected population, availability of vacant housing units, average household

size, and local and regional construction trends. Next, the estimated trend in the local housing market with the new development should be established. The trend should be based on the number of in-coming workers by employment category, whether family members will accompany new workers, and the preferences for housing among various employment categories. This process can predict the impact of a proposed development on local housing stock.

It should be noted that this calculation is highly speculative, as it is affected by future commuting patterns, zoning, and available land. The method does, however, allow comparative analysis of the impacts alternative proposals would have on local housing needs. (Canter, 1985, pp. 145-154.)

Quality of Life Analysis

Growth in a community has a direct effect on the area's quality of life. One frequent complaint of long-time residents in booming communities is that the very things that brought them to live in a community have disappeared. Yet, assessing growth's impacts is compounded by the fact that the perception of quality of life is highly subjective and it has no clear definition. Given the diversity of opinions regarding quality of life, no single method exists to determine the impacts of new development on this aspect of local character. Thus, individual communities interested in analyzing such impacts have to develop their own indicators.

In order to evaluate quality of life changes as objectively as possible, the following five criteria should be considered: 1) Face Validity: Are the analysis standards and process understandable to non-technical audiences–does the basis for evaluation make common sense? 2) Feasibility: How easily can the analysis be applied to a given project or situation? 3) Flexibility: Can the analysis be modified to fit different locations, situations, regions, and a variety of conditions? 4) Comprehensiveness: Does the analysis provide a broad perspective on the quality of life? Does it incorporate both objective and subjective indicators? Could it? 5) Replicability: Does the approach provide for the collection of information over time in order to compare conditions and analyze trends? (Canter, 1985, pp. 235-238.)

With these criteria in mind, the results of citizen surveys and economic and social indices can be combined to meaningfully describe the impact of new development on local or regional quality of life.

Additional Impacts

New development may also impact other important community traits, such as community image, land use, and homeownership patterns. To analyze the impacts on such local conditions requires custom-designed methods similar to that for assessing the quality of life.

IMPACT FEES

Once impact analyses indicate that certain developments are expected to have negative impacts on a particular community, the community will need to mitigate those impacts. The following section deals with two such methods: impact fees and non-fee mitigation.

Impact Fee Methods

Impact fees are monetary charges placed on new development. The fees collected are used to pay for public services, such as sewage and water treatment plants or access roads and schools not on the site of development. Unlike property taxes which are paid over time, an impact fee is a single, up-front payment levied to help cover the costs of one or several public facilities and services. In many communities, impact fees have managed to generate revenues and, in many instances, slow the pace of growth when so desired. (White, 1993.)

Typically, impact fees are calculated using complex formulas or computer models that incorporate population and employment projections, transportation data, and capital facilities cost estimates. In general, a correlation–in monetary terms–is made between a prospective development and the capital costs it will incur. The calculation of a fee requires a fiscal impact analysis of the development as previously discussed.

Impact fees most often are dedicated to cover the cost of specific services, such a roads or sewers. Fees placed on residential developments are assessed on the basis of either a flat fee

per unit or some measure of scale–such as the number of square feet, number of bedrooms, or the linear footage of the front property line.

Table 1 exhibits the continuum of fees a community may levy to pay for basic and /or extra infrastructure and services.

Table 1

• No impact fees	Property taxes; federal and state development funds
• Land dedication requirements	Create off-site schools and parks
• On-site impact fees	Provide on-site water, sewer, and roads
• Off-site impact fees for development services	Provide access roads; provide treatment or sewerage or utility plants
• Off-site impact fees for development and local services	Provide community pools, parks, police and fire
• School construction fees	Expand and construct schools to serve new populations

Source: White, 1993.

At their most basic level, impact fees are assessed to pay for infrastructure improvements that occur in the developing subdivision. The link between the beneficiaries of the services and the impact fees is very direct; persons buying new homes in a residential subdivision will use the roads and the utilities within the subdivision. This connection is so apparent that, in the United States, it generally is understood that the cost of on-site infrastructure will be paid for by the developers and passed on to the home buyer in the final sale price. (White, 1993, p. 5.)

Off-site facility fees are the most common form of impact fee currently used in the United States. Such fees are charged to the developer to help cover the cost of additional burdens placed on municipal services by a new development. The extra demand for certain services is seemingly linked between specific homes and specific services. For example, each household will add a minimum of use to the water filtration or the sewage treatment plants. A new subdivision's roads will need to connect to existing municipal roads that are large enough to accommodate the additional traffic generated by the area. (White, 1993, p. 5.)

The link between other off-site municipal services and new residential development is not as clear as in the examples above. In the first set of examples, the likely increase in demand an average new home will create for the sewer and water systems is relatively clear. Yet, the demands new units will create for swimming pools, police or fire stations, or even schools is not as clear. Only impact fees with a clearly evident link to an increased burden have been sanctioned by court decisions regarding impact fees. (White, 1993, p. 5.)

Legal Considerations of Impact Fees

Impact fees have been used for several decades. Furthermore, impact fees have been legitimized by courts and state legislatures across the country. What will be allowed or publicly acceptable in Wisconsin has not fully been determined. Wisconsin, unlike some other states, has never enacted a statute that deals specifically with impact fees. With no precedence, the legality of impact fees in Wisconsin is uncertain. (White, 1993, p. 5.)

The legal test for *rational nexus* is the basic standard used in most states to decide when and how impact fees can be used. The first of three major tenets of the test for rational nexus is a reasonable connection between the need for additional facilities and a new development's facilities needs. In other words, a community must show that a new development in some way creates the need for infrastructure or service improvements or expansion in order to charge a fee for this need. This requirement prevents communities from using impact fees as an arbitrary extortion placed on new development. (White, 1993, p. 6.)

The second criterion for rational nexus is that only a proportionate share of the cost incurred or to be incurred when accommodating a new development may be charged as a fee. This guideline essentially prevents a community from charging developments more than their share of the increased costs over time. Unfortunately, a rational nexus determination does not define what constitutes a "proportionate share" or improvement costs. One legal opinion states that if a community currently has excess capacity–such that a capital improvement could be postponed for the indefinite future–a serious question exists as to whether the development actually will create an impact. (Kassner, p. 9.)

The third criterion is that a reasonable connection exists between the expenditure of the fees collected and the benefits gained by fee-paying developments. This guideline requires impact fees to be earmarked for expenditures that benefit a new development in some way. This requirement intends to prohibit the practice of charging new development for the deterioration of infrastructure that is attributable to previous residents or for expenses not related to the specific infrastructure in question. (White, 1993, p. 7.) An impact fee is not considered legal if the funds collected are used to solve pre-existing problems not caused solely by a new development. (Kassner, p. 9.)

In general, impact fees also must be to cover only capital costs. The operation and maintenance costs of facilities or services is considered the responsibility of the entire community.

The following examples of local impact fees are placed on development in metropolitan Milwaukee. The examples illustrate the types of fees levied against new residential development; all fees are made on a per unit basis. (White, 1993, pp. 10-12.)

City/Town/Village	Type and Level of Fee (Year fee assessed)
The City of Brookfield	Park Fee–$670 (1992) Wetland Fee–$65 (1992) Bikeway Fee–$200 (1992) **Total Fees–$935**
The Town of Delafield	Park Fee–$400 (1988) School Fee–$1000 **Total Fees–$1400**
The City of Franklin	School Fee–$200 (1992) City Municipal Building Fee–$860 (1992) Park Fee–$320 (1992) Sewer Fee–$600 (1992) Water Fee–$800 (1992) Other Fees–$85 (1992) **Total Fees–$4665**

The City of Mequon	City Hall Fee–$290 (1993) Library Fee–$605 (1993) Public Works Vehicles Fee–$123 (1993) Other Fees–$382 (1993) **Total Fees–$1400**
The City of New Berlin	School Fee–$1164 (1993) Library, Police/Fire, Other Service Fee–$776 (1993) **Total Fees–$1905**
The City of Waukesha	School Fee–$413 (1987) Park Fee–$287 (1987) Storm Sewer Contribution–$1900/acre (1991) Sanitary Sewer Contribution–$400/acre (1991) **Total Fees–$1700** (assuming 1/2 acres lots)

Non-fee Mitigation

Some communities opt to avoid impact fees because of the negative stigma often associated with their assessment. Alternatives to monetary charges are sought to address the fiscal burden of new development.

• *Pull-Up-The-Drawbridge, or Development Moratoria:* This method of mitigating the costs of development relies on rejecting new development altogether. (Altshuler, 1993, p. 2.) This very direct approach to managing growth can be accomplished by legislating a moratorium on all development or using a less radical method of placing annual limits or caps on the extent of development to occur. Such methods have been implemented by communities throughout California. (Landis, 1992, pp. 489-508.)

• *Infrastructural Status Quo:* In another direct approach to managing the fiscal burdens of growth, a community may choose to disinvest in public infrastructure and services. In this case, no new expenditures are incurred to the municipality because the community makes do with what services and facilities it has. Maintenance of existing infrastructure is paid for through the existing property-tax system. Many communities respond to growth by choosing deferred maintenance or cutting maintenance and all expansion funds for a set amount of time. (Landis, 1992, pp. 489-508.)

• *Free Rider:* If a community chooses not to expend funds on public services and facilities as described above, it may look for external revenue sources. Possible sources include transfer payments from the state and federal governments or gifts, donations, and dedications from wealthy benefactors. (Downing, 1987, pp. 42-58.) One of the main recommendations of the National Council on Public Works Improvements in 1984 was that the federal government should reassume a major and growing responsibility for investing in public infrastructure. (Nicholas, 1992, pp. 518.)

• *Tax-Payer Funding, or Tax Increase:* This approach to covering the costs of development can be implemented by increasing the rate of taxation on an entire community to increase municipal revenues. (Meehan, 1990.) Residential property tax increases are rarely an acceptable option and taxes on purchased items are often an alternative for local governments. Alternative taxes include dedicated sales taxes, tax increment financing, and special business taxes. In Boulder, Colorado, a local sales tax is dedicated to local road improvements, as also is done in Seminole County, Florida. Raleigh, North Carolina uses referendum-approved bond issues to fund infrastructure and levies a motel/hotel tax to retire the issued bonds. (Einsweiler, 1992, p. 74.)

• *User Fees:* Services such as water and sewer often are metered so that the direct users of the services will bear the cost of their use and system maintenance, while non-users are exempt from payment. User-based systems may involve developing a special assessment district in which services are paid for by users in the districts. Each household in a district, for example, is charged a "membership fee" that is based on the average cost of the service in that district. (Lee, 1988, pp. 290-312.) For example, in Austin Texas, municipal utility districts (MUDs) are established to cover the costs of services in delineated geographical areas. In Fort Collins, Colorado and Pinellas County, Florida, similar user-fee arrangements also exist. (Einsweiler, 1992, p. 75.)

• *Privatization of Services, or the Free-Market Approach:* This method of non-fiscal mitigation involves returning traditionally municipal functions to the private sector. Cost-saving methods that are unavailable or unallowable by law to governments may be performed by the private sector at lower cost and still realize a profit. An example of privatized government service is trash collection. In cases of privatized services, municipalities

typically pay and negotiate services directly with the providing company. (Witt, 1990, p. 151.)

• *Concurrency Requirements:* This method of mitigating the costs of growth links the provision of services to development was created by Florida's state growth management act. The law requires that infrastructure be extended at the same time development occurs if services or facilities sufficient to accommodate the growth do not already exist. This mandate also requires communities to identify both anticipated levels and sources of funding needed to accommodate planned development. While the community, in the end, is still responsible for the expense of service and facilities' provision, the planned budgeting ensures that the full costs will be covered and not "burden" the municipal revenue stream. A similar approach is an adequate facilities ordinance (AFO) used in Ramapo, New York and Sacramento, California. The AFO requires that public facilities and services be available at a development site before permits for any development are granted. The AFO enables a municipality to have some influence over the timing and sequencing of development by linking their permitting authority and planned development decisions. (Einsweiler, 1992, p. 75.)

IMPACT ANALYSIS AND IMPACT FEES BIBLIOGRAPHY

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REGULATING PLANS

This section provides an overview of the issues, techniques, and successful applications of regulating plans for development within growth management planning. The following three principles broadly encompass the range of issues that regulating plans for development address:

- *Environmental Quality*: To maintain and improve the quality of the natural and built environments; protect the existing natural aesthetic and resources.
- *Visual Quality*: To preserve neighborhood and architectural character, as well as the natural environment, thereby maintaining a socially- and environmentally-acceptable standard of living.
- *Economic Equity*: Encourage both proper and controlled economic development that distributes the benefits of growth equitably among urban, suburban, and rural communities over the short- and long-term.

REGULATING PLANS: GOALS AND PROCEDURES

The following goals for the three principles of Environmental Quality, Visual Quality, and Economic Equity were identified as follows:

Goals for Environmental Quality

- Protect Open Spaces - Maintain a reasonable amount of open space to preserve the environment and the character of the area.
- Minimize Disturbance to Rural Lands - Accommodate the needs of expanding communities while maintaining and improving existing environmental quality.
- Protect Natural Resources - Maintain a high standard of environmental quality by preserving existing natural resources.

Goal of Visual Quality

- Protect Aesthetic Resources - Preserve architectural and neighborhood characteristics that are prevalent in or unique to an area and pertain to the locally-valued quality of life.

Goals of Economic Equity

- Encourage Infill Development - Maintain appropriate urban densities that both enhance and support development for the long-term.
- Redevelop Urban Areas - Support the rejuvenation of urban centers to sustain a regionally diverse and interdependent economy.

The following sections present various procedures and techniques for regulation of development related to the principles and goals identified above.

Comprehensive Plans

Comprehensive plans most often are defined to be a long-range plan that includes a community inventory and analysis and recommendations to guide the growth of a community or region. Comprehensive plan elements are often complete plans in themselves and typically encompass: economic development, housing, recreation areas and open space, transportation, community facilities, and land use. All recommendations relate specifically to a community's stated goals and objectives for each plan element.

By combining the information from the comprehensive plans regarding public facilities and projected growth, it is possible to integrate the phasing of new development into a simultaneous capital improvement planning process. (Hamill, 1989, p. 58.)

In Washington Valley, New Jersey, an open space plan was developed as an element of the community's comprehensive plan. The open space plan was done in response to encroaching suburbanization. The plan's goal was to protect the area's aesthetic resources. The planning process began by identifying ten publicly-owned parcels of land that could be connected with a second, 7.8 square-mile park plan.

The key to achieving connected open spaces was to create or reinforce linkages between all identified parcels. In addition to the open space network, environmentally-sensitive features were identified and a detailed plan was developed to show how each property should be developed to preserve these areas. Some of the design principles used to guide Washington Valley's development process and implement the open space plan included cluster residential zoning to protect forty percent of each property's open space, conservation easements to protect sensitive environmental areas, and a minor-road network to minimize traffic.

Developers favored the plan due to its well-defined expectations and because they could improve their plans by incorporating large open space areas. A typical new residential project in this area has fifty percent open space, with homes on half-acre lots. (Hamill, 1989, p. 90.)

Cluster Development

This approach to development design concentrates the layout of buildings on a designated portion of a site, while maintaining the remaining areas to be used for recreation, common open space, and the preservation of environmentally-sensitive features. This technique allows for the same number of lots as in conventional development, but open space is retained and maintenance and building costs are reduced by increasing the efficiency of infrastructure. Cluster developments are often implemented in conjunction with a system of nature trails, bike paths, or wildlife corridors to meet requirements for open space and natural-area preservation. A community early in the development process should first

identifying lands able to sustain cluster development and areas to preserve and include these designations in the community master plan.

Bridgewater Township, New Jersey makes use of cluster developments to achieve its goal to protect open space. Open space in this township have been retained in recent developments by clustering residential units around a common area or motor courts. Proposed sites are analyzed to determine which areas are suitable for cluster development and which areas should be retained as open space. Issues studied in this analysis include: natural features, surrounding neighborhoods, relationships with the community, and highway and sewer capabilities. Bridgewater Township protected 1,146 acres of open space through their planning and use of cluster developments. (Hamill, 1989)

Design Review

New development can be indirectly managed by use of mandatory design reviews. Such reviews require the submission of a site or building design to be reviewed by a special board designated for that purpose. The board's role usually is to comment, make recommendations, or grant approval of the proposed development's design. The review board should rely on regulation procedures to ensure a fair analysis of each project. Factors to consider when reviewing projects include: community objectives, environmental quality factors, infrastructure capacity, zoning and subdivision regulations, existing community and regional design, neighborhood and community values, and regional and intergovernmental relationships. The review board must observe legal implications of their decisions, while also balancing their decisions with local citizen interests and the community's master plan.

Tempe, Arizona, a rapidly growing neighbor of Phoenix, has established a design review board to ensure that development follows specific design, construction, and landscaping standards. Given the relative youth of cities in the Southwest, this technique is used to create–not preserve–an aesthetic *built* environment. (Einsweiler, 1992, p. 88.)

Fort Collins, Colorado attempts to protect its aesthetic resources by incorporating a point system and performance controls in an existing development review process. Instead of restricting the quantity of growth permitting, the City focused on the quality of growth. The definition of "quality" was determined by ninety-seven land-use policies that limit fringe

growth, encourage concentrated development, coordinate the juxtaposition of uses, and promote alternate transportation modes. The City also adopted a performance-zoning system called the Land Development Guidance System (LDGS). Under this system of quality "control," all development projects must be reviewed before approval is granted. The LDGS relies on two categories of review criteria: forty-six absolute, mandatory criteria for approval and a minimum number of points awarded to a development with regard to variable criteria . Developers can receive points for concentrating development, opting for mixed-use or infill development, achieving transportation objectives, and increasing densities in residential development. Thus, developers are rewarded for their contribution to a quality environment. (Hamill, 1989, pp. 92-93.)

Resource Conservation (Air, Water, Wildlife, Wetlands)

Clean Air Act Provisions

The Clean Air Act (CAA), initially passed over twenty years ago, is part of a large-scale federal effort to improve regional air qualities. The most recent changes, made in a series of amendments ratified by Congress in 1990, strengthen regulations and pollution reduction standards. Large urban centers and their surrounding metropolitan areas will be particularly affected by the amendments, as these are the areas of poorest air qualities and will, therefore have the most stringent requirements for emissions reductions.

The standards set by the 1990 Clean Air Act require tremendous change in our cities' transportation patterns and industrial activity. Many private sector enterprises and individuals resist the changes the Act mandates. Therefore, a dilemma faces planners as they prepare air quality improvement programs, namely how to balance economic growth and emissions reduction without depleting urban centers of economic vitality of the activities targeted for their destructive impacts.

At present, programs target both the public and private sectors, firms and individuals and recommend significant changes in transportation and industry. If deadlines for improved regional air qualities are not met, sanctions will be imposed. Penalties could be the withholding of government highway funds or significant fines.

The Gary-Chicago-Milwaukee region has been classified as a severe nonattainment zone under the 1990 Clean Air Act. This classification requires extraordinary changes in transportation patterns for the area to reduce its annual levels of harmful emissions. One private-sector response to the legislation is to trade emissions "credits" on the free market. This solution has been implemented with some criticism, but has effectively enabled companies to expand their activities despite more stringent emissions standards. Emissions trading essentially allows a firm to "sell" credits for emissions when it has lowered its emissions below minimum standards. Firms interested in expanding but restricted by their current emissions standards can "buy" the credits from the selling firm. While the trading of emissions standards does not reduce the overall emissions in a region, it allows firms that achieve lower emissions than are required to profit and other firms that are constrained by emissions requirements to grow.

Water Resource Conservation

Water conservation ordinances protect areas that contain vital sources of water. These ordinances can protect a specific water resource and areas immediately adjacent to it; they can pertain to small bodies of water within rural areas or to urban waterways or lakes that are polluted by industry or other dumping. Water resource management encompasses the research and prevention of stormwater and agricultural runoff, which often contributes to the pollution of water sources.

An important step in effective resource management is a local master plan, which can delineate those sites that are of significant value and essential to the public health and safety. Zoning can also protect particular natural resources, as well as increase the public's access to them. Finally, state Departments of Natural Resources (DNR) typically regulate development along water resources in an attempt to clean up or preserve areas of regional or state-wide concern.

Easement restrictions included in local zoning ordinances are a common mechanism to manage the character of development along water resources. Coastal management programs and floodplain development restrictions intend to preserve natural water resources, in particular, and the public's health and safety, in general. In state and national parks,

unintentional human destruction of water resources is controlled by the regulation of the consumption and use of river and stream water, particularly for bathing and cooking.

Wetlands Preservation

Wetlands preservation intends to protect lands vital to the cleansing and volume-control of local groundwater. These areas are generally identified by a state's Department of Natural resources or a regional planning commission. Lands in low-lying areas that may have navigable waters or ponding year-round or during flood periods are included in wetlands designations. While regulated locally, additional restrictions can be imposed on the use or destruction of wetlands by federal or state agencies. At the federal level, the Army Corps of Engineers reviews applications and must approve a 404-permit for any development to occur in designated wetland areas. Locally, a branch of the state's Department of Natural Resources must review, calculate interference, and inspect sites that have been proposed for development and have wetlands. Counties may also have some jurisdiction and may review applications for development and wetlands impacts. Wetland preservation often appears in local zoning ordinances through the establishment of either a principal wetland zone or conservancy areas that overlap with a principal use zone.

In New Berlin, Wisconsin, wetlands preservation is managed in standard fashion and serves as a useful example. In proposed sales of property with partial wetland designation, the offer to purchase is necessarily conditional. For approval of the sale, special treatment and preservation of the wetlands must be planned before approval is granted by the local divisions of the Army Corps of Engineers and Department of Natural Resources. This process usually takes four to six weeks to accomplish, as public notice is given and hearings are held by both the DNR and local municipality prior to approval.

Wildlife Preservation

Interventions in the approval process for proposed developments aim to preserve local ecological communities, or both the wildlife and their natural habitats.

Discussions about wetland preservation and growth management raise another broader topic, that of the natural habitats of near-endangered species. As sprawl occurs and more lands are

turned over to development, native species are threatened. The protection of these species relies on the careful identification of how severely an environment can be altered before it is destroyed to such a degree that species cannot maintain their life-sustaining networks. The difficulty in wildlife preservation comes in determining the appropriate size of natural habitats for the survival of species. Continued research in the impacts of development on landscape ecology and wildlife can only improve the methods available to governments and planners for balancing growth and environmental preservation.

Local zoning ordinances often include a conservancy zone either as a primary use zone or an overlay zone. These areas consist of sites within a municipality that are to be preserved for natural habitat or wildlife reasons. The zoning restricts developments that can occur within these conservancy areas. Additionally, the Endangered Species Act of 1973 and the Coastal Management Act of 1972 both specifically protect areas containing endangered species or coastlines from development. This Wildlife Management Plan is used to control development projects of 100 acres or more. Open space easements are required on proposed developments of this size in order to protect vital habitats. If a proposed site for development is found to have estuaries or other vital resources for certain wildlife, these areas are restricted in terms of the growth that can occur on the site, particularly adjacent to these areas.

Within Florida's mandated comprehensive planning process, county-wide growth management plans are required to include criteria to assess development's impacts on natural habitats. Lands identified to be natural habitats are also preserved through land dedication requirements and through purchases funded by a property-tax charge. (Einsweiler, 1992, p. 82.)

In Falmouth, Massachusetts, zoning overlay districts were adopted in an attempt to protect wildlife threatened by rapid growth. Districts included lands within 300 feet of existing animal migration corridors and were protected from development. (Einsweiler, 1992, p. 83.)

An urban service boundary, a coastal management program, and a comprehensive plan all contribute to the efforts of the City of Santa Cruz to save existing aquatic habitats from destruction. The City's efforts are largely a result of heavy residential construction close to the water's edge. (Einsweiler, 1992, p. 83.)

Conservation Easements

Conservation easements involve the granting of a property right with the stipulation that specified lands will remain in their natural state, thereby limiting future or additional development. This technique is often used to preserve open space, environmentally-sensitive areas, scenic views, or wetland buffers. Conservation easements can also be defined as a restriction against further development on a portion of a certain site. This sort of easement is used for critical areas located outside building envelopes, such as slopes in excess of thirty-five percent, flood plains, and water bodies.

Falmouth, Massachusetts has set the goal of preserving its rural character in its future growth. Due to rapid development and its consequences on wildlife and natural resources, the County implemented a zoning ordinance that requires a 300-foot set aside across properties. This area is subject to conservation easements for animal-migration corridors. This provision is applied to all sites greater than one-quarter acre in size and that are contiguous to existing corridors.

Lancaster County, Pennsylvania protects its open space through a county-commissioner developed Agricultural Land Preservation Conservation Easement Program in 1980. A special board was appointed to administer the program by following several regulations, including the definition, purchase, and use of land that is to be conserved. Areas to be purchased need to be a minimum of 500 acres and contain mostly prime agricultural soil. Landowners who voluntarily restrict their property deeds to agricultural uses may receive possible tax benefits.

The State of Maryland is currently seeking to protect its open spaces through the use of conservation easements. The Maryland Environmental Trust is working to create a permanent greenbelt around eight of the State's villages. The land would be a donation or an acquisition of easement on agricultural land, open space, or historic properties. This use of the technique is as an alternative to zoning as a control of land use. The Trust uses several techniques to acquire the land: voluntary donations of easements, purchase of development rights on farmland, and the creation of local land trusts in select villages. The Rural Historic

Village Protection Program helps fund the Trust and aids in educating the public about the importance and procedures of preserving the land. (Sutro, 1990, p. 29.)

Farmland and Open Land Development Bylaws

The purpose of development bylaws are to maintain the rural, natural, and scenic qualities of a given area. This goal is achieved by preserving farmland and significant open lands, but the bylaws do not detract from allowing land owners a reasonable return on a sale of their property and holdings. Within this bylaw, the county, town, or city will establish protection districts that overlay existing districts. The bylaw also will define use regulations, permitted uses, special permit uses, prohibited uses, special deadlines, design guidelines, approval criteria, and, finally, the procedural requirements for reviewing special permits. (Yaro, 1993, pp. 169-172.)

The farmland or open space development bylaws are a very important component in preserving rural and natural characteristics of an area, as they set the guidelines for developing topographical and environmentally-sensitive projects. Projects that conform to the bylaws' guidelines are likely to receive prompt approval. (Porter, 1993, p. 43.)

In the Connecticut River Valley, the State of Massachusetts uses two techniques to preserve its rural character through farmland preservation. The first strategy is the State's Agriculture Preservation Restriction (APR) program, and the second is the identification and protection of agricultural and open land districts. Agricultural districts are identified as areas in which farming is dominant, while open space districts include areas that are not farmed intensively but do have scenic or natural resources worth protecting. The identified districts are mapped and include a written explanation of the boundaries' selection and the reason neighboring lands were included or excluded. This process allows for a stronger implementation of the Farmland-Open Space Conservation and Development Bylaw. Section five of the bylaw incorporates an extensive list of design guidelines for development that does occur in the designated districts. (Yaro, 1993, pp. 169-172.)

Hadley, Connecticut has established agricultural and open space "zones" within which farmers or other large land owners can extract the maximum financial value from their land yet still comply with preservation requirements. The established bylaws mandate that new

residential developments must retain one-half of the land as open space. The remaining portion of land can be divided to produce a yield equal to that of the entire parcel. Residents or the developers are required to enter into a land contract that guarantees the preservation of current open space conditions. (Yaro, 1993)

Finally, the State of North Carolina has adopted special assessments in its Preferential Statute by classifying rural land into a number of different categories based on specific criteria for each. The land is then appraised at two separate values: the present use and the potential use. The difference between the two values is recorded and accumulated as a lien against the property. This cumulative differential is due upon development of the land or if the property becomes ineligible for a rural reclassification.

Site Renewal Programs

Site renewal programs deal with sites that have been exposed to a variety of pollutants and contaminants over time. These sites typically are in urban areas, but suburban and rural communities are not exempt from contamination and the clean up standards required for development. The underlying goal of site renewal is to create land that is viable for development in the future. Industrial sites are not the only areas targeted for renewal; many businesses, particularly gas stations, have leaking underground storage tanks (LUSTs) that are the source of site contamination.

Typically, local divisions of a state's Department of Natural Resources has an inventory of contaminated sites, identified either as LUSTs or Environmental Clean Up Sites, for other contamination.

Federal funding, often in the form of grants, may be available for the clean up of contaminated sites. Funding is also available at the state level and sometimes the local level. The federal Superfund program is the largest site renewal project, but currently is undergoing change to reestablish clean up standards.

The process of cleaning up a contaminated site requires tremendous funding and often discourages redevelopment of these sites. Sometimes funds are available directly to developers, thus providing them with an incentive to buy contaminated property and begin

clean up. Locally, tax credits are sometimes available to the purchaser of these lands as additional incentive to redevelop the site.

Growth Boundaries

Growth boundaries are a means to prevent development in existing areas of natural resources, agricultural land, or open spaces. Growth boundaries encourage higher density development, infill development, and redevelopment within developed areas. The boundary sets specified geographic limits within which future growth for set period of time will occur. These boundaries are established by an individual town, city, or village, but can be jointly established by several–usually adjacent–municipalities, thus resulting in consistent "regional" growth boundaries. The most strict growth boundary regulations exist at the state level.

Growth boundaries are often used to indicate where sewer and water will not be extended or where restrictions on septic or mound systems exist. The growth boundary can be established and maintained for an indefinite time or can be reviewed every one to five years if adjustments should be made.

Another similar method of physically limiting growth is to pass legislation or ordinances that restrict the square footage of development for the year. This approach can be applied to both residential and commercial activity. (Einsweiler, 1992, p. 68.)

In the Minneapolis-St. Paul Metropolitan Area, several communities established a coordinated growth boundary plan. The Metropolitan Council, a formal regional government, guides and regulates the growth boundary plan. Other responsibilities of the Council are to develop long-range metropolitan service plans for the area's highway and transit, sewers and water, solid waste management, parks, airport, housing, and health systems. (Lassar, 1990, p. 20.) This effort has preserved prime agricultural land, saved money on service extensions to outlying areas, and returned money to the participating communities. The Council operates and administers its programs through a system of shared revenues. As local tax-bases grow, communities contribute to the Council according to their growth. In this system of shared planning, all communities benefit from the entire region's services and growth, but pay according to their own circumstances. This aspect of the Council is referred to as the "fiscal disparities program." (Lassar, 1990, p. 21.)

To cope with rapid, uncontrolled growth, the City of San Diego implemented a "progress guide" for growth management. This plan contained three broad growth areas: the urbanized area, the planned urbanized area, and the future urbanizing area. Operating similar to both land banking and urban growth boundaries techniques, the guide seeks to restrict development on all city-owned lands, while gradually releasing land within the future urbanized area. (Coopersmith, 1993, pp. 116-124.)

In Cannon Beach, Oregon, growth regulations retain intensive uses to a single area to prevent further loss of threatened lands, community character, cultural resources, and the local economic base. The growth boundary has been successful in keeping the area's development compact, and state law now requires a boundary-setting process between cities and counties. (Einsweiler, 1992, p. 52.) The law establishes that the cooperatively established urban growth boundaries contain a twenty-year supply of land, zoned to accommodate urban growth requirements. These requirements include residential, commercial, and industrial developments. Outside of the growth boundary, municipalities must zone for prime agricultural, forest, and open land preservation.

The City of Salem, Oregon and its county determined their boundary for twenty-year growth and has established a minimum lot size of 4,000 square feet, excepting rural, non-farming residential areas that have two-acre minimum lots. These limitations are intended to preserve open space and the community's environmental quality. (Hamill, 1989, pp. 86-87.)

A less formal application of setting urban growth boundaries was done in Arlington County, Virginia. The County first prepared a growth management plan in order to preempt any undesirable growth patterns in the area. A district office was created and a rigorous site plan review process for new projects developed. The review process intends to be most rigorous for the urbanized area of the County, Rosslyn, thus simulating control of growth within a specific area. (Ward, 1991, pp. 2-5.)

Similarly, the City and County of San Francisco have made use of Proposition H, a voter-approved Waterfront Land Use Plan, to limit and set a pattern for growth along the waterfront. The proposition is applied to the San Francisco waterfront, including lands under the control of the Port of San Francisco, through the designation of three distinct land uses:

maritime uses, which covers uses related to the fishing and shipping industries; acceptable non-maritime uses, such as parks; and unacceptable non-maritime uses, such as hotels. This process of land designation is to stem unacceptable waterfront development from occurring while the Waterfront Plan is being created and after its completion. (Crocker, 1993, p. 145.)

Differential Property Taxation

Through alternative taxation, direct fiscal relief can be given to resource-based activities. These relief programs reduce the property taxes that farmers pay, thus allowing for the retention of open space by taxing these lands at a lower rate than if developed. The reduced taxes are based on the current use of land rather than on present market values. Such taxes clearly are an anti-speculation strategy. (Einsweiler, 1992, p. 69.)

A land-gains tax is a special form of a real-estate transfer tax on land. This tax diminishes with the length of holding but increases with the rate of capital gain. This combination favors investment in preservation and penalizes speculation.

An alternate method of this technique is often referred to as Density Transfer-Special Assessments. This method involves a special assessment for agricultural land in an effort to channel redevelopment to urban areas. The directing of growth is achieved by including fees into the land value if a proposed development is other than its designated preferential use. The special assessment is used to reverse development pressures put on rural land owners. The "highest-and-best-use" valuation scheme is altered to allow assessments to reflect the land's potential value at the current use. The possibility for land speculators to hold rural land at reduced rates and later sell at large profits is eliminated by clauses written into the ordinance. These clauses state that a change in land use will require adjusted tax payment–with increased accrued–from the reduced rates during the preferential assessment period. (Burrows, 1978)

The State of Vermont has instituted a system of preferential tax assessment to preserve its rural character and to provide its dairy farmers direct subsidies. In 1973, Vermont adopted the land-gains tax whereby the tax rates varied depending on the length of time the owner held the land and the amount of the sales gain. The legislature adopted the tax as part of a tax-reform package that included agricultural property-tax credits and a new assessment

process for agricultural property. Building and other improvements, as well as the site of a principal residence, are exempt from the preferential rate.

The State of North Carolina has also established a preferential-tax system in order to preserve rural character. The State's Preferential Statute classifies rural land in different categories with specific classification criteria for each. Land is then appraised at two values, the present use and the potential use. The difference between the two values is recorded and accumulated as lien against the property. In other words, this differential is due upon development or if the property becomes ineligible for reclassification. (Rogers, 1976)

Land Banking

Land banking refers to the government purchase of land in order to preserve those spaces for future development or retention as open space.

In Nantucket, Massachusetts, a $160 million land bank fund was developed and approved by the state legislature to preserve a minimum of fifteen percent of undeveloped areas on the island. The bill established a local land bank that pays for the acquisition of selected parcels through a real-estate transfer fee. A city-elected commission oversees the program, acquires land, and determines the use of land during holding.

Land Dedication

Land dedications involve the transfer of property by the owner to the local public sector. The dedication typically is for a specific use, such as roads, utilities, schools, parks, or scenic highway routes. When the cost of dedication is unreasonable and could be contested as a taking of private property, an easement should be considered. The most common land dedications required of developers are park dedications included in local subdivision regulations.

In Austin, Texas, the City enacted special regulations for roadside land within 200 feet of selected "scenic" roadways. No off-premise or flashing signage is allowed within the 200-foot zone. Site design for developments along the scenic roadways must preserve scenic

views, meet landscaping requirements, and provide limited-access points. (Einsweiler, 1992, p. 88.)

Charleston and Hilton Head Island, South Carolina have identified a scenic highway route for which an overlay district is applied in order to protect views from the roadway. A development and design review committee are responsible for selecting which highways and roads should be included in the system of scenic roads. The island also requires visual impact analyses for any new development; the analyses consider the changes in visual character a development would have on all near-by roads and highways. (Einsweiler, 1992, pp. 85-88.)

In Boulder, Colorado, land dedications are an element of their planned unit development (PUD) review, thus encouraging more flexible siting of development and retaining more open space on lots. (Einsweiler, 1992, pp. 85-87.)

Incentive Zoning/Bonus Zoning

This alternative to traditional zoning operates by granting additional development capacity to developers in exchange for the provision of a public amenity. In downtown areas, for example, incentive zoning is frequently used by granting developers additional floor area or height in exchange for a developer-built public open space or plaza adjacent to the building. Many cities rely on incentive zoning as a technique to provide public facilities that are in great need and to pursue a variety of other goals, including strengthening pedestrian networks in congested downtowns, improving building design, and limiting street-level shadows. This technique is often referred to as "sanctioned bribery" by cynics who believe that an injustice is being committed by tampering with zoning regulations.

Seattle, Washington made use of incentive zoning in its downtown when the Washington Mutual Tower was proposed. The developer was granted an additional 500,000 square feet beyond zoning code limits in exchange for the various public amenities included in the building, including a tunnel entrance for bus transit, a public atrium, retail space, and a daycare center. (Lassar, 1990, pp. 12-13.)

Similarly, Santa Cruz, California incorporated development incentives in its Urban Service Limits policy. The incentives were to facilitate the construction of greater-than-mandated levels of affordable housing. Technical assistance and transfer credits are offered as incentives to developers that exceed the fifteen-percent required affordable units in all new construction. The effects of Santa Cruz's incentive program have been a 700% increase in the level of affordable housing developments and a 140% increase in approved urban-area building permits. (Einsweiler, 1992, p. 57.)

Purchase of Development Rights (PDR)

In order to limit extensive use of select lands, local governments and nonprofit agencies working to direct the location of development have established the purchase of development rights (PDR) technique. PDRs can be used in conjunction with other development regulations–such as cluster developments–to manage the density of development in specific locations, particularly rural areas. Land acquired via PDR can protect rural character in a number of ways: greenbelts held by the public or nonprofit sector can contain urban sprawl, tracts of acquired lands can be dedicated to be scenic easements or passive recreation areas, and environmentally-sensitive or agricultural lands can be preserved.

In King County, Washington, a Purchase of Development Rights (PDR) program was approved with the passing of a $50 million property-tax bond issue. The PDR program is governed by an ordinance that classifies farmlands according to the extent that the lands are threatened by development. The County acquires development rights to lands through a series of purchasing rounds, initially targeting those lands considered to be most threatened. The value of the development right is equal to the difference between the land's value as farmland and its market value for the "highest and best use."

In the City of Boulder, Colorado, a portion of the sales tax collected is dedicated to a fund that finances the acquisition of a open space. The goal is to create a contiguous green space to surround the City. The City also funds the acquisition of lands for passive recreation use. (Einsweiler, 1992, p. 84.)

In Lincoln, Massachusetts, a local land trust purchases land to preserve town's character, environmentally-sensitive lands, agricultural land, and other natural resources. One approach

used to preserve the acquired lands is to apply easements over most of the land and resell the remaining portions for development. The funds received from these sales are then used to finance the next acquisition. (Einsweiler, 1992, p. 84.)

Marin County, California residents initiated a movement to purchase open space. The program intends to preserve the County's land and the quality of the local environment. Eighty-eight percent of the County's land is protected as open space, farmland, or recreation areas, but these restrictions have contributed to a shortage of housing and traffic congestion. The program's objective is to concentrate urban development within or adjacent to existing cities and preserve undeveloped lands for rural or recreational uses. Two policies are used to preserve the open spaces: 1) the County encourages annexation of land by cities in areas where existing services can support growth, and 2) the County works with a local, tax-supported public agency to obtain 8,000 acres of land to provide green spaces between developments in less urbanized areas. (Einsweiler, 1992, pp. 55-56.)

Transfer of Development Rights (TDR)

In areas where open space or farmlands are protected from future development, the owners of these properties are afforded the opportunity to profit from their land through the transfer of development rights (TDRs). TDR programs typically identify local transfer zones and preservation zones. The development rights for lands in preservation zones are made available to developers in transfer zones and can be used to increase the densities of proposed developments. Few successful examples of TDR programs exist, since the complexity of the program makes local-level application difficult. TDRs require careful analysis of regional market forces and the demand for varying lot sizes in order to establish a fair system of exchange. (Sutro, 1990)

Chesterfield Township, New Jersey is in the process of developing a pilot TDR program with the hopes of preserving agricultural lands and open space. The program would require the preservation of land by transfer of development rights to a 1,400-acre "receiving zone" in one corner of the township. New development in this designated area will be consistent with village patterns by creating a central "downtown district." (Sutro, 1990, p. 28.)

In the Pinelands Protection Act of 1979, the Pine Barrens in central New Jersey were preserved. The Pine Barrens consist of 1.1 million acres of pine forests and one of the state's largest natural water supplies. Land owners within the preservation area can sell the development rights of their property to landowners in lower-density transfer zones. (Hamill, 1989, p. 88.) Additionally, New Jersey imposes a real-estate transfer tax on the conversion of land from rural to urban use. This tax is added to the cost of land at varying rates: $1.50 per $500, up to $150,000, and $2.50 per $500 for land values over $150,000. (Hamill, 1989, p. 103.)

Montgomery County, Maryland developed a program to protect farmland by designating a "preferential agricultural zone" in which development was severely restricted; the area was substantially "downzoned" from five-acre minimum lot size to 25-acre minimum lots. The 89,000-acre district became a "rural density zone" from which development rights could be purchased for use in undeveloped sites within designated "growth centers." The Montgomery County TDR program has saved over 20,000 acres of agricultural land since 1985.

The San Francisco TDR program was established to preserve buildings with historic architectural value. The City is divided into floor area ratio (FAR) districts, each with maximum ratio allowances. In the low FAR districts, a mid- to high-FAR office development could not be built without the purchase of TDRs to increase the allowable floor area ratio. The transfer of development rights permanently reduces the buildable density on the site transferring its rights and does not exempt the receiving site from further zoning restrictions. (Coopersmith, 1993, p. 144.)

Transfer of Development Credits (TDC)

The development options available to landowners could expand beyond TDRs in the near future. With the transfer of development credits, a property owner can develop under current zoning ordinances with the stipulation that appropriate acreage has been allocated to open space. The purchase of development credits is necessary before any development activities can occur, however. (Hamill, 1989, p. 66.)

The legality of TDCs have yet to be determined in state supreme courts across the country. Examples of development controls similar to TDCs have been implemented in the New Jersey towns of Hillsborough, Chesterfield, East , and Lawrence. (Hamill, 1989, p. 67.)

Tax Increment Financing (TIF)

Tax increment financing is a redevelopment tool that enables cities to initiate redevelopment or industrial expansion. TIFs employ a cost-sharing scheme whereby all taxable enterprises within a specified district contribute a portion of their annual taxes for reinvestment in the district. (Owens, 1978, p. 123.)

A tax increment district is established by a municipality to fund local redevelopment. A base taxable value on all property within the tax district is established at the time of designation. This value is considered the tax increment base and remains the same for the life of the district. Taxes based on the increment base are general tax revenues to the municipality, while taxes on valuation above the increment base is the source of reinvestment funds that are earmarked for the TIF district. (Owens, 1978, p. 123.)

In the State of New Jersey, many cities created tax increment financing districts to finance the purchase of land for redevelopment and urban infrastructure development. Financing districts were established around rail stations and highways to promote higher levels of development adjacent to these areas. (Hamill, 1989, p. 103.)

In the City of Milwaukee, tax districts were established to pay for major urban development projects. The Grand Avenue Mall, the Milwaukee Center, and industrial development in Menomonee Valley are some of the largest TIF projects in the City of Milwaukee.

Impact Fees

Often a community will attempt to minimize the fiscal burden of development by charging a fee to the developer to help finance the cost of needed improvements or services. Impact fees are an extension of the "user pays" principle. In other words, developers are considered fiscally liable for the infrastructure and services their growth will require. These fees apply to improvements or impacts that are off- and on-site. Improvements typically covered by

impact fees include access roadways, utilities, and stormwater management facilities. All impact fees must be approved by state legislation and local ordinance, based on the legal tests of rational nexus and uniform application. Impact fees may be imposed on development for public facilities, such as roads, schools, parks, police and fire stations, as permitted by local law.

In Colorado Springs, Colorado, the development of infill sites is encouraged by shifting the burden of infrastructure provision entirely on the developer. The comprehensive system of impact fees and services charges intends to be a powerful incentive for developers to locate and plan their projects in ways that will limit their front-end facilities' and infrastructure costs. In this way, it is hoped the reuse of sites within urbanized areas will be more attractive, since many facilities already exist. (Einsweiler, 1992, pp. 60-61.)

The State of New Jersey also employs a system of impact fees. The state Municipal Land Use Law (MLUL) empowers local governments to adopt ordinances that require developers to pay a pro-rated share of the costs of reasonable and necessary off-site needs, including street improvements, water and sewer system expansions. (Hamill, 1989, p. 69.)

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