Provisions for Transportation Infrastructure

A community's infrastructure includes those public facilities which support many of the community's daily needs, including roads, sanitary sewers, storm sewers, and water lines. The presence or absence of these facilities has a significant impact on the development pattern of a community. Often, pressures for new infrastructure precede a community's ability to provide such infrastructure improvements, resulting in undue hardship on the financial well-being of the community.

Planning for infrastructure improvements is a key component of managing development. In planning for such improvements, communities are not just responding to where development should go or how to maintain desired community character, but how such improvements are going to be financed. Because expanded infrastructure is necessary to support growth in population, improved efforts are needed to coordinate the timing of new development with provisions for infrastructure. A concurrence-based approach to infrastructure and land development planning means that infrastructure needs created by new development should be in place at the time the new land uses become functional. At the same time, it is argued that a community should not have to extend or improve public facilities before the time they have been programmed in the capital improvements plan (CIP). The rezoning of property for more intense uses should be tied to the availability of infrastructure.

When used in conjunction with the community's comprehensive plan, zoning ordinances, and land division regulations, the tools and techniques described here provide a basis for phasing development with provisions for infrastructure. Although the CIP is rarely used as effectively as it could be, the management of infrastructure can be significantly improved with the development of a CIP that is based on a clear understanding of the community's growth and land-use objectives. When coordinated with the comprehensive plan, zoning ordinances, and land division regulations, the capital improvements program can be effective in determining the extent and timing of infrastructure improvements.

An official infrastructure map of a community can be used to support land use plans by creating assurances that infrastructure can be constructed as proposed. Designation of urban service areas can provide added support by directing development to areas where infrastructure already exists or can be provided. The use of special assessment mechanisms to finance infrastructure improvements is also presented as an approach to ease the burden on the community as a whole and as a way to have those benefitting from such improvements also pay for them.

Renovating the transportation system.

Keeping It Connected

Providing for transportation infrastructure involves a comprehensive look at community land use, economic development, and capital improvement financing. It is important to create these plans in conjunction with environmental and community development issues relevant to the community.

Planning and Regulatory Considerations

The Transportation Improvement Program (TIP) is a capital improvement program which is required by the U.S. Department of Transportation for federal aid or regionally significant projects. A TIP prioritizes federal, state, and local funding which will be used to implement the Regional Transportation Plan (RTP). Like the RTP, the TIP must be based upon reasonably available funds, analyzed for impacts on air quality, and reviewed to ensure that it serves all segments of the region's population including environmental justice populations. SEMCOG works with the state, counties, cities, villages, and other public transportation agencies to produce the document. For more information about the process, please see SEMCOG's publication, *A Citizens' Guide to Transportation Planning in Southeast Michigan.*

Official maps can be effective tools but are rarely used. Reasons cited include: the uncertainty regarding the le-

gal authority to adopt official maps under Michigan law; concern about a taking without just compensation; the cost of preparing such maps; and the use of the master plan or right-of-way plan to accomplish the same objective. However, the Certification of City and Village Plats, P.A. 222 of 1943 (MCLA 125.51), sometimes referred to as the Map Street Act, allows official maps for cities and villages if the community has an adopted master plan. In the act, Certified Plat is the term used for an official map.

Provisions of the Certification of City and Village Plats, P.A. 222 of 1943 (MCLA 125.51).

- Any proposed right-of-way location must also appear in the adopted master plan.
- All property owners whose property is within or abutting the proposed right-of-way must be notified by mail when and where the certified plat will be considered for adoption.
- Subsequent changes to the certified plat require the approval of the planning commission (disapproval by the planning commission requires a two-thirds vote of the entire membership of the legislative body).
- Once a certified plat has been adopted, the planning commission must estimate the time period for acquisition of the property identified.
- Cities and villages are authorized to restrict, by ordinance, the issuance of building permits within the proposed future rights-of-way.
- Variances may be granted by the zoning board of appeals under certain conditions related to property owner hardship.

Source: "Reserving Right-of-Way with Official Maps." *Planning and Zoning News.*

Tools for Providing Transportation Infrastructure

There are many tools available for providing transportation infrastructure:

- Use a Capital Improvements Plan.
- Create official maps.
- Finance infrastructure improvements through special assessment districts.
- Create urban services areas.

Source: Reserving Right-Of-Way with Official Maps. Planning and Zoning News.

Use a Capital Improvements Plan

The CIP is a document prepared by the planning commission to ensure consistency of proposed new public improvements with the adopted master plan. The primary tool used in a CIP is a capital improvements document that lists all new major public facilities such as sewer, water and roads, to be built, substantially remodeled or purchased in a community within the foreseeable future. Capital improvements (sometimes called public improvements) are all major physical facility projects over and above annual operating expenses. These facilities can include: sanitary and storm sewers, water lines and roads. The CIP establishes a schedule or program for each capital improvement project according to its priority in the community. The program also includes cost estimates and identifies sources of financing for each project. A six-year programming period is most commonly used, although the CIP must be updated annually to reflect changing priorities and financial resources in the community. Therefore, it is both a budgetary policy and a planning document. For a CIP to be effective it must be based on a clear understanding of the community's growth and land use objectives. This is best achieved when the CIP is developed in conjunction with the local comprehensive plan, zoning ordinance, and land division regulations.

Ideally, a CIP takes into account the areas of the community where development is both desired and likely to occur when developing project priorities. Unfortunately, many communities neglect to develop the CIP in conjunction with long-range plans and end up making land use decisions based on outside funding opportunities. The result is that capital funds are spent in areas of the community where growth is not taking place.

Under state enabling legislation, the planning commission of cities, villages, townships, and counties have the primary responsibility for reviewing a CIP so that it is consistent with the goals, objectives, and policies of the community's master plan. Often, a special CIP committee, with representation from the planning commission and legislative body as well as the finance and budget departments, is formed to oversee the process. Planning or budget staff generally coordinate the process, reviewing project requests from individual operating departments and preparing the final document.

A formal set of criteria developed by the CIP committee is used to include projects in the document and to set their priorities. After the planning commission formally adopts the completed program, it is forwarded to the legislative body for adoption and inclusion in the municipal budgetary process.

Steps in preparing a CIP

- Define what constitutes a capital improvement project, and projects that are major, infrequent, and nonrecurring.
- Solicit project proposals and appropriate documentation (facility condition, repair/replacement or new

facility, schedule, relative priority) through interviews with various departments.

- Review each project in light of the community's comprehensive plan, development policies, goals and objectives.
- Investigate the financial resources of the community for capital expenditures during the programming period (typically six years).
- Develop a project schedule based on project priorities and available financial resources.
- Select projects for the capital budget year (first year) and those for the multi-year, long-term capital improvements program.
- Conduct public hearing on recommended CIP document and make necessary changes.
- Based on public input, the planning commission and the city council/township board consider action to adopt the CIP.

Source: "Capital Improvements Program." Community Planning Handbook, V-5 –V-8.

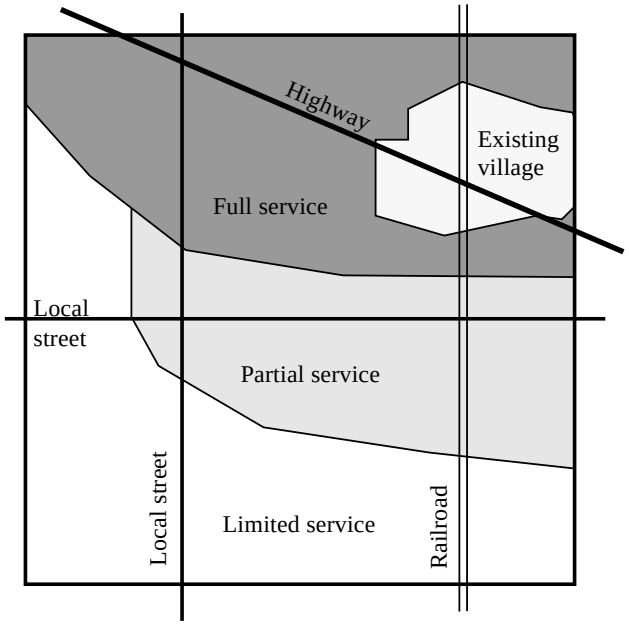
Create official maps

Official maps identify and designate land for future location of public facilities within a community. An official map depicts the locations and right-of-way widths of proposed streets and storm drains and the locations of future parks, fire stations and other proposed public facilities. After its adoption, the issuance of building permits within the proposed future rights-of-way and in locations targeted for future acquisition is usually restricted. The official map is often used to establish setback lines for future street widening. The map serves to guide subdivision design, ensuring that new plats tie into the existing and planned road system.

- Official maps must be coordinated with all planning efforts in the community, including the adopted master plan and public facilities plan.
- An official map should be directly tied to the capital improvements program.
- Official maps are often implemented through adoption of a separate regulatory ordinance which restricts building within designated future rights-of-way.
- Always consult with a professional planner and a municipal attorney before developing an official map.

Source: "Official Maps." Community Planning Handbook, V-9 –V-11.

Figure 36
Urban Service Areas



Source: SEMCOG.

Finance infrastructure improvements through special assessment districts

Special assessments can be an effective tool for financing the cost of infrastructure improvements needed to construct new residential, commercial, and industrial development as well as refurbishing aging infrastructure in older urban areas to promote infill development. It provides a mechanism to finance infrastructure improvements while assuring that the property owners who benefit from the improvements bear the cost of the improvements. Examples of infrastructure improvements financed by special assessment districts are drains, sidewalks, curbs and gutters, road improvements, sanitary and storm sewer improvements, and the like.

Special assessments are an effective approach to addressing the difficulties in financing new infrastructure development during a time of diminishing fund availability. The steps to establish such a special assessment district are the same as those for any other special assessment district. For further details on these steps, see chapter on Enhancing Older Residential Areas.

Create urban service areas

Urban service areas are geographic areas within a community that are designated to have public infrastructure and services sufficient to support development at urban densities. Generally, public infrastructure includes: sanitary sewer, water, drainage and roads. However, it may also include such services as garbage collection, fire and police protection, and parks and recreation. This technique can be an effective tool in managing the location, timing, and extent of development in a community. Through the use of comprehensive planning and regulatory measures, communities can manage growth and development by coordinating land use decision making with provisions for adequate infrastructure.

Table 29
Federal Resources for Capital Improvements

Program	Eligible Projects, Programs and Activities	Available Funds FY 2002 (millions)	Eligible Recipients	How Funds Are Distributed
Congestion Mitigation Air Quality	Signal systems, ITS, intersection improvements, non-motorized facilities, transportation demand management, transport-ation control measures	$39.6 (Statewide) $23.7 (Southeast Michigan)	Cities, villages, county road commissions, MDOT, public/ private partnerships	Funds awarded based on cost-effectiveness and geographic equity
National Highway System	Construction, reconstruction, resurfacing, restoration and rehabili-tation of the National Highway System, ITS, other operational improve-ments, safety improvements	$196.2 (Statewide)	MDOT	Not distributed to other agencies
High-Priority Projects	All improvements to the roadways and transit systems	Determined by Congress	Cities, villages, county road commissions, MDOT, transit agencies	Funds awarded based on need and merit
Interstate Maintenance	Reconstruction, resurfacing, restoration and rehabilitation	$162.5	MDOT	Not distributed to other agencies
Surface Transportation Program - Enhancement	Landscaping, streetscaping, historic preservation, historic bridges, environmental mitigation	$27.5 (Statewide) Amount varies based on complex variables (Southeast Michigan)	Cities, villages, county road commissions, MDOT, transit agencies	Funds distributed twice annually statewide based on merit by project category
Surface Transportation Program - Flexible	Reconstruction, resurfacing, rehabilitation, operational improvements	$82.6	MDOT	Not distributed to other agencies
Surface Transportation Program - Safety	Safety improvements on roadways; at rail-highway grade crossings; other hazard elimination activities	$1.1 (Annual average award to Southeast Michigan)	Cities, villages, county road commissions, MDOT, transit agencies	Funds awarded based on need. Maximum of $200,000 award per project.
Surface Transportation Program - Rural	Reconstruction, resurfacing, rehabilitation, operational improvements on roads outside urban areas	$3.1 (Southeast Michigan)	County road commissions	Funds distributed to each county based on formula

Table 29
Federal Resources for Capital Improvements (continued)

Program	Eligible Projects, Programs and Activities	Available Funds FY 2002 (millions)	Eligible Recipients	How Funds Are Distributed
Surface Transportation Program - Urban	Reconstruction, resurfacing, rehabilitation and operational improvements on roads inside urban areas	$56.1 (Urban areas in Southeast Michigan)	Cities, villages, county road commissions	Funds distributed to each urban area based on formula
Transportation Economic Development Fund- Category C	Widening of roads to address congestion in developed areas, also some operational improvements	$20.7 (Macomb, Oakland and Wayne counties)	Cities, villages, county road commissions	Funds distributed based on formula
Transportation Economic Development Fund- Category D	Resurfacing and reconstruction of rural roads to all-season standards	$2.3 (Livingston, Monroe, St. Clair and Washtenaw counties)	County road commissions	Funds distributed based on formula

Communities can direct new development to areas where facilities and services already exist or are planned to be phased in and only permit development when public services are sufficient to support it. For example, it is important that on-site water and sewage disposal improvements, water and sewer lines, or soils that can support a septic system and potable water, are adequate before a development plan is approved. Such an approach not only results in the most efficient use of infrastructure, but also discourages premature development in areas not having adequate services. The use of this technique means that services could be provided in a more timely and cost effective manner while at the same time protecting natural resource areas and preserving community character.

The key to implementing this technique is to base it on the community comprehensive plan. It is beneficial for the land use plan element to contain policies calling for the phasing of development with provisions for infrastructure. The plan map directs higher density development in areas with existing infrastructure or designated to receive infrastructure improvements in the short-term. In areas not having adequate infrastructure and not scheduled for such service in the short-term, development could be permitted but only at low densities (i.e., development that does not require substantial infrastructure). To avoid possible legal challenges it is important to ensure that the service area is large enough to provide a reasonable amount of developable land. Figure 36 illustrates the concept of urban service areas. The map shows a hypothetical community with full service, partial service and limited service areas depicted.

- The zoning ordinance, land division regulations, and capital improvement plan are key regulatory measures in implementing this technique. They need to be modified as follows: The zoning map should reflect the phased development policy in the comprehensive plan by zoning areas with existing facilities for more intensive uses and areas not having infrastructure in place for lower intensity uses.
- Subdivision regulations should tie plat approvals to provisions requiring adequate infrastructure.
- A land division ordinance that deals with lot splits not covered by the State Plat Act should include provisions to ensure that adequate access (roads) is provided before approving lot splits.
- The capital improvements plan (CIP) specifies when, where, and how services will be provided and can be used to phase infrastructure and service development over a predetermined period of time. Priority infrastructure improvements contained in the CIP should coincide with those areas in the community targeted for immediate or near-term development.
- Adopt an “adequate public facility ordinance.” This is a separate ordinance that conditions development approval upon a finding that adequate public facilities are available to serve the proposed development. This ordinance includes quantitative standards for re-

Table 30
State Resources for Capital Improvements

Program	Eligible Projects, Programs and Activities	Available Funds FY 2002 (millions)	Eligible Recipients	How Funds Are Distributed
Michigan Transportation Funds	Operations, maintenance, construction reconstruction, resurfacing of the road and street system	$1,643.2 (Based on CY 2000 revenues)	Cities, villages, county road commissions, MDOT	Based on formula including population, road and street mileage, road classification and tax collections
Transportation Economic Development Fund-Category A (See: http://www.michigan.gov/minewswire/)	Construction and reconstruction of the system to support tourism, forestry, high technology research and mining industries and office centers over	$18.1 (Distribution to program for FY 2002)	Cities, villages, county road commissions, MDOT	Based on jobs and taxes created and/or retained by related economic development
Transportation Economic Development Fund-Category F	Construction and reconstruction of roads and streets	$2.5 (Statewide)	County road commissions, cities and villages of 5,000 or greater in population in rural counties	Based on merit
State Infrastructure Bank (See: http://www.michigan.gov/mdot)	All types of improvements	Varies depending upon available capital	Cities, villages, county road commissions, MDOT, port authorities, and non-profit organizations developing public facilities.	Funds distributed via loan program based on merit

quired public service levels and links development approval to the ability of public services that serve the proposed development to comply with these standards. The findings are based on a set of Level of Service standards for each facility type set forth in the ordinance. There have been opposing views regarding the legal authority to adopt such an ordinance. Therefore, community officials should consult with their municipal attorney.

- Overlay zoning can be used in developing an urban service area. Development proposals in areas with overlay zones would be required to include specified public facilities improvements. These required improvements should be spelled out in the zoning ordinance.
- Coordinate the urban service area program with neighboring communities through voluntary joint planning efforts. The joint use of this technique would be particularly effective between villages, small cities, and adjoining rural townships to direct future development in areas contiguous to existing development and to prioritize areas to guide the rate and direction of future development. The extension of services and the cost of doing so could be accomplished more efficiently.
- Include flexibility in providing infrastructure. Development may be approved in an area currently without adequate infrastructure if the developer agrees to pay for the necessary infrastructure improvements and service extensions.

Case Example

Huron Woods Special Assessment Districts

Community: Flat Rock

Contact: Dennis Mowbry, (734) 782-2455

The city used special assessments to finance $1 million worth of infrastructure (utilities and roads) and streetscape construction in the Huron Woods residential development. The 46-acre parcel contains 74 lots and a 13-acre condominium PUD (planned unit development). The PUD allowed for varied lot sizes and clustering to preserve woodlands and wetlands. The special assessment bond will be paid back on a lot-by-lot basis. Because there are 74 lots, the infrastructure improvement cost will be equal to $13,513 per lot. When a lot is purchased, this amount goes towards retiring the bond.

Urban Growth Staging Plan

Community: Dewitt Township, Clinton County

Contact: Ray St. Pierre or Doug Riley, (517) 668-0270

The township's Urban Growth Staging Plan, an element of the comprehensive plan, is intended to promote an orderly and concentrated development pattern by directing development to those areas of the township that can best be supported by urban services. Conversely, it also delineates those areas that are not suitable for major development within a specified planning period. Development priority areas are established through an urban growth boundary. This boundary represents the approximate extent to which urban types of services and development should occur within the 20-year long-range planning period. Within the urban growth boundary, there are three development stages:

1. Existing/Committed Urban Areas.

   Includes areas of existing urban development and areas of vacant land that are essentially committed to development. Sanitary sewers exist along with some public water. Infill and redevelopment are encouraged. Emphasis is placed on maintaining and upgrading the physical condition of existing residential areas and housing stock through enforcement. High-priority projects in the capital improvements program are recommended to maintain and upgrade existing infrastructure.

2. Primary Stage Urban Growth Areas.

   These areas are intended to accommodate the vast majority of new growth and development over the next ten years. These areas can be served by extension of the existing sanitary sewers and water system. Rezoning must be done incrementally based on the availability of sanitary sewer and public water. New development that will not be served by public sewer or water is limited to low density. The plan recommends that the cost of extension of public water, sanitary sewer, and stormwater lines be paid by the developer, with the township funding any over sizing of such lines. The financing of road improvements should be shared by developers. New development should not result in an excessive expenditure of public funds to provide infrastructure improvements and urban services.

3. Secondary Stage Urban Growth Areas.

   These are areas within the 20-year urban growth boundary that are not intended to support new development until such time that the majority of the primary stage areas are developed or it is determined that a proposed development will not adversely impact the townships ability to provide services. The plan recommends that infrastructure improvements and provisions for public services be programmed as low priority. Development should be low density.

Beyond the urban growth boundary are rural transition/agricultural preservation areas. These areas are intended primarily for agricultural production and rural estate residential development. Urban type development and the extension of services are not recommended until the primary and secondary stages can no longer satisfy projected needs for future development.

The plan recommends the adoption of a land subdivision and utility extension ordinance to tie all division of land to the availability of public water and sewer. The plan also recommends the use of a point system to objectively evaluate the impact of development proposals on the township.

Public Service Districts, Comprehensive Plan

Community: Tyrone Township

Contact: David Kuzner, (810) 629-8631

The township recently adopted a revised master plan which includes a Public Services Strategy. This strategy works hand-in-hand with the future land use strategy and identifies the manner and degree to which public infrastructure and services are provided in the township to support the planned future land use pattern to the year 2010. Public services and related infrastructure include sewage disposal, potable water, roads and highways, police and fire protection, recreation and general government services. The strategy is based on the principle that new developments should occur concurrent with or after the public services necessary to serve an area are in place. It attempts to minimize the opportunities for ur-

ban sprawl and leapfrogging of more intensive urban development into the area of the township planned for short-term agricultural use and long-term rural residential use.

The two public service established districts, rural and partial, prescribe particular levels of public services available to land uses within the district. The Rural Service District includes areas in the township characterized by the lowest existing development densities, limited existing public infrastructure and services, and planned for very low density development. These areas have mostly unpaved roads, no public water and sewer, and limited police and fire services. Land in this district does not require extensive public services and is not likely to require them in the future.

The Partial Services District includes those areas of the township with higher existing development densities, more existing public infrastructure, higher public service levels, and greater potential for a higher density development pattern than the Rural Services District. The level of services intended in this district will be able to accommodate a small degree of urban growth, but not capable of accommodating extensive commercial and industrial uses or high density residential development.

It is recognized that an Urban Services District may ultimately be established in the township. This district would provide a level of public services to accommodate extensive urban development. The regulatory measures to implement the Public Services Strategy are now being developed.

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