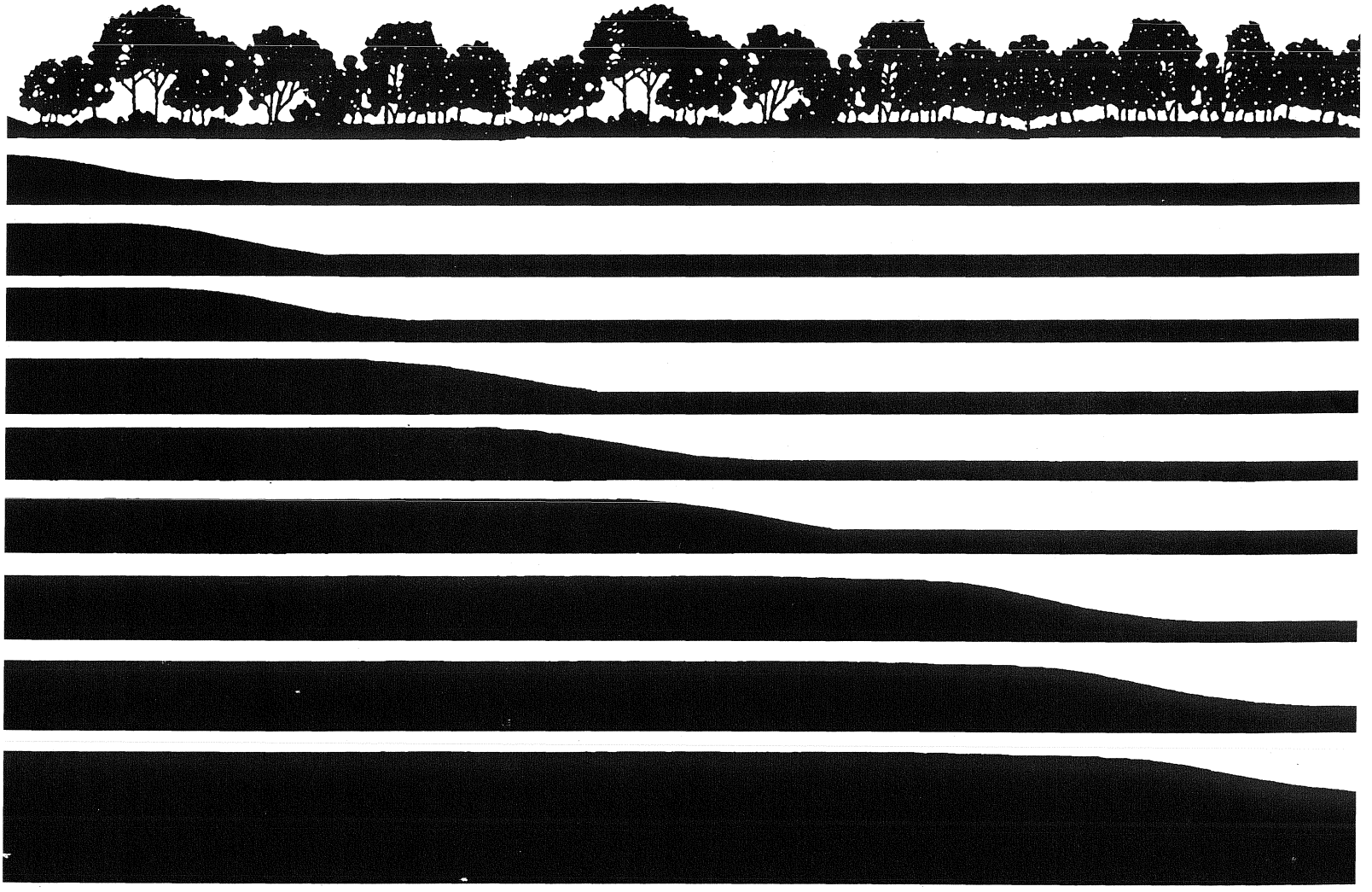
LINKING TRANSPORTATION AND LAND USE PLANNING IN THE DELAWARE VALLEY



THE DELAWARE VALLEY REGIONAL
PLANNING COMMISSION

JULY 1991

LINKING TRANSPORTATION

AND

LAND USE PLANNING

PREPARED BY:

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

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JULY 1991

The preparation of this report was funded through federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Urban Mass Transportation Administration (UMTA), as well as by DVRPC's member governments. The authors, however, are solely responsible for its findings and conclusions, which may not represent the official views or policies of the funding agencies.

Created in 1965, the Delaware Valley Regional Planning Commission (DVRPC) is an interstate, intercounty and intercity agency which provides continuing, comprehensive and coordinated planning for the orderly growth and development of the Delaware Valley region. The region includes Bucks, Chester, Delaware, and Montgomery counties as well as the City of Philadelphia in Pennsylvania and Burlington, Camden, Gloucester, and Mercer counties in New Jersey. The Commission is an advisory agency which divides its planning and service functions between the Office of the Executive Director, the Office of Public Affairs, and three line Divisions: Transportation Planning, Regional Information Services Center, which includes Regional Planning Office, and Finance and Administration. DVRPC's mission for the 1990s is to emphasize technical assistance and services and to conduct high priority studies for member state and local governments, while determining and meeting the needs of the private sector.

The DVRPC logo is adapted from the official seal of the Commission and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River flowing through it. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey. The logo combines these elements to depict the areas served by DVRPC.

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

Publication Abstract

TITLE	Date Published: July 1991
LINKING TRANSPORTATION AND LAND USE PLANNING	Publication No. **91024**

Geographic Area Covered:

The nine-county DVRPC region, including Philadelphia, Bucks, Chester, Delaware and Montgomery in Pennsylvania and Burlington, Camden, Gloucester and Mercer in New Jersey

Key Words:

Linkage, land use, transportation, planning tools, Master Plan, Zoning Ordinance, Site Design Standards, Official Map, Capital Facilities Plan, Impact Analysis, Impact Fees, Adequate Public Facilities Ordinance, Trip Reduction Ordinance, Highway Access Plan

ABSTRACT

Reviews development patterns in the region, including the decentralization of population and employment which has created new patterns of land use and new patterns of travel for work, shopping and recreation. Examines the existing governmental framework for land use and transportation decision-making. Provides details on ten planning tools to link land use and transportation considerations. Outlines a series of separate recommendations for county planning agencies, state agencies and legislatures, and regional transit and planning agencies.

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EXECUTIVE SUMMARY

The dramatic economic expansion of the Delaware Valley over the past 20 years has created new jobs, new development and new opportunities. While Philadelphia remains the economic and employment center of the region, much of the new growth has occurred in suburban areas lacking adequate highway, transit and other facilities. This decentralization of population and employment has created new patterns of land use and new patterns of travel for work, shopping and recreation. The challenge for planners and public officials is to link the land use and transportation planning process to address these issues in a coherent and coordinated manner.

The purpose of this report is to promote a close integration of land use and transportation planning at the municipal, county, regional and state levels in the Delaware Valley region. The report provides a series of tools for decision-makers, including techniques to link land use decisions with transportation system planning. Following a review of current land use and transportation planning authority in Pennsylvania and New Jersey, ten planning tools and 32 specific recommendations are presented for each level of government.

Land Use And Transportation Planning Authority

Both Pennsylvania and New Jersey have chosen to delegate most of the power to regulate land use to local government. In Pennsylvania, the Municipalities Planning Code provides the enabling authority for municipalities and counties to undertake actions, but generally does not require that they do so. New Jersey, in its Municipal Land Use Law, has also granted the primary authority for land use planning to local municipalities, but has retained additional powers for counties and the state.

While land use planning is primarily a "bottom-up" process focused at the municipal level, transportation planning has tended to be a "top-down" approach with authority at the state and regional levels, with input from the counties and municipalities. Planning for new or improved transportation systems often begins at the State Departments of Transportation or the transit agencies such as SEPTA and New Jersey Transit, where an annual and a long-term capital improvement plan is prepared in consultation with the counties who, in turn, represent the various municipal priorities. The state plans are incorporated into the Transportation Improvement Program of the DVRPC.

Despite the current separation of powers, there are procedures in place and opportunities available for close coordination among all levels of government in both the land use and transportation planning arena.

Planning Tools To Link Land Use And Transportation Planning

- **The Master Plan** or **Comprehensive Plan** is an opportunity to review existing conditions and decisions that have already been made in order to establish a blueprint for the future which defines the goals or directions for a community.

- **Zoning** is perhaps the single most important tool for local land use control. By carefully considering the transportation impacts of zoning designations, a community may actually be able to improve traffic flow or reduce congestion.

- **Site Design Standards** provide the specific guidance for the layout and construction of the transportation network associated with new development. Site design standards can influence the form of new development, and require features which encourage mass transit usage and improve mobility.

- **An Official Map** is an ordinance, in map form, adopted by a county or municipality, which can designate the proposed location of all public streets. Once adopted, the official map gives notice to property owners of the governing body's intentions to widen, extend, or create a new roadway.

- The **Capital Facilities** or **Capital Improvements Plan** can be used to translate the priorities and proposed transportation improvements from the Master Plan into a specific and achievable time frame.

- **A Traffic Impact Analayis** study will assist a community to understand the resulting changes in service or congestion which might be expected from a proposed development. The specific impacts attributable to that project may then be required to be mitigated.

- **Impact Fees** are a means for new development to pay for capital improvements to increase the transportation system's capacity to support that development.

- **Adequate Public Facilities Ordinances** are mechanisms which assure that new development can only occur in areas where the infrastructure necessary to support that development is, or soon will be, in place.

- **Trip Reduction Ordinances** are a method to reduce the demand on the transportation system by mandating that new developments reduce the number of cars on the road that would typically be associated with that project.

- **Highway Access Management** defines how new developments may interface with local roadways by regulating the spacing and number of access points and turning movements relative to the capacity and volume of the transportation network.

CHAPTER I: INTRODUCTION

PARTNERS IN PLANNING

The relationship between land use and transportation is fundamental. Early settlements located along rivers and waterways which served as travel routes, linking different villages for the purposes of commerce and exchange. Later, the extension of the railroads allowed development to spread out along these routes and, finally, the coming of the automobile and the highway system permitted the growth of modern suburbia. Today, the freedom of travel created by the automobile has also brought problems of congestion and delay to the Delaware Valley, as sprawling, auto-dependent development patterns require more cars, more trips and more traffic.

Just as new or expanded transportation systems create new access opportunities which attract new development, new development patterns create a need for additional transportation facilities. In fact, land use patterns and transportation patterns are linked in a continuing cycle, whereby transportation opportunities create a climate for development which in turn triggers additional transportation needs and facilities which again in turn attract additional development. This chicken-and-egg march has been the traditional route by which suburban areas have developed.

For professional planners, decision-makers, and concerned citizens working towards influencing the physical development of the Delaware Valley, this primary relationship between land use and transportation must be recognized, understood and utilized in order to create conditions where new growth and new transportation systems or improvements can proceed together, in a logical and planned manner. Linking land use and transportation planning can provide a number of important benefits for public officials, developers, employers and for the public which lives or works in a community.

- For **officials**, the efficiencies created by promoting land use patterns matched to the transportation system can help to relieve congestion and traffic on existing roads and can reduce the requirements and costs of building new roads. Incorporating land use considerations into transportation planning can both influence future development patterns and assure that future transportation facilities have adequate capacity to meet demand.

- For **developers**, a closer linkage between land use and transportation planning will yield a more predictable regulatory review process and lower development costs. Improved site design and incorporation of public transportation services will help to attract tenants or buyers.

- For area **employers**, the incorporation of transportation improvements or mass transportation will ease employee commuting, which means less lateness and more productivity.

- For the **public**, improving the link between land use and transportation will reduce congestion, improve mobility, and yield environmental benefits such as an improvement in air quality and preservation of additional open space. A closer integration of land use and transportation can also help to create more attractive and livable communities.

If the impacts and benefits of linking land use and transportation planning are clear, then why isn't this standard practice? The answer lies in the existing governmental framework in the region, and the separation of powers and authority among the different levels of government. While land use planning is primarily a municipal responsibility, transportation planning is focused at the state level. Between the two and interacting with both are counties and the regional organization (DVRPC). In addition, there may be a hesitancy, or lack of knowledge, to use the full range of planning tools and techniques which are available.

The purpose of this report is to promote a close integration of land use and transportation planning at the municipal, county, regional and state levels in the Delaware Valley region. The report provides a series of tools for decision-makers, techniques to link transportation concerns to land use decisions and ways to bring land use considerations into the forefront of transportation system planning. Land use and transportation planning should proceed concurrently rather than sequentially. Use of the tools provided in this report can provide a means to bridge the gap, bring the chicken-and-egg closer together, and help to create communities with a better quality of life for Delaware Valley citizens.

PATTERNS OF DEVELOPMENT

The historical development of the Delaware Valley is a reflection of the variety of economic, social and technological forces which have shaped many of the urban regions of the Northeast. The settlement of Philadelphia in the late 17th century, along the Delaware and Schuylkill rivers, capitalized on these waterways for travel by ferries and boats. Small villages and farms soon spread out surrounding the city center, following the terrain and natural features. Simple dirt roads for horse-drawn carriages and farm wagons connected the various farmsteads and villages.

In the 19th century, an expanding population coupled with the dawn of the industrial age led to increasing urbanization and infrastructure construction. Wider streets in Philadelphia served the movements of goods and people. New roads, bridges, canals and railroads were built to serve a rapidly expanding industrial base. In addition to the commercial core in Philadelphia, major towns and cities were established in

Pottstown, Trenton, Camden, Norristown and Chester. During this period, residential development was concentrated in these areas as industrial and employment centers, surrounded and linked by farmland and open space.

The early 20th century saw the development of low cost electricity and transmission lines and the extension of electrified commuter rail and trolley lines. These lines were constructed in a radial manner surrounding Philadelphia and served to encourage a dispersal of development, as housing, retail and service activities grew surrounding the train stations along each route. The notion of commuting was also born, for it was now possible to live in the "suburbs" and travel to work in the city by train.

As automobiles became increasingly popular, the era of road construction blossomed. The personal car, and the network of roads which was rapidly built to serve these cars, now enabled new development to be located almost anywhere within the region. The post-World War II boom furthered the pattern of decentralization by building suburban shopping malls, apartment complexes, large-scale housing developments and suburban office and manufacturing parks. Former farmland became residential subdivisions. The region grew by leaps and bounds, as new roads led to new development which again in turn led to still more roads and development. From 1930 to 1970, the region's population grew from three million to over five million people.

Since 1970, the trends of suburbanization and decentralization have both continued and accelerated, as population and employment growth in the suburbs have been matched with population and employment decline in the City of Philadelphia. While Center City Philadelphia still has the region's largest concentration of jobs, new suburban centers are competing successfully with older urban places for employment, housing and shopping.

This suburban growth has created new economic opportunities in the suburbs, but it has also increased the travel demand in areas lacking adequate highway, transit and other transportation services. The Delaware Valley's transportation network still reflects the radial manner in which the region developed, with the major roads and rail lines aligned like the spokes on a wheel, running from Center City Philadelphia out to the surrounding suburbs. The new patterns of land use, however, have created new patterns of travel with more suburb-to-suburb trips necessary and an inadequate transportation network to service these trips.

PLANNING THE FUTURE

Burgeoning growth in the suburbs, and the new patterns of travel demand created, are occurring at a time when the traditional cycle of new transportation improvements built to service new development is slowing down. There are several

forces at play in the region which may change the historical relationship between land development and transportation facilities and which call for new approaches and new tools.

Transportation planners now recognize four broad approaches to problems of traffic congestion and inadequate mobility. There is the traditional approach of increasing the system supply by expanding facilities or building new roads. There are also now emerging techniques to attempt to reduce transportation demand. Third are the techniques to link land use planning decisions to transportation planning, and fourth is the need to manage the institutional and funding framework for transportation services.

Historically, transportation planners followed the first approach of seeking to increase the supply or capacity of the transportation network in response to an increased demand for travel. However, the ability to address only the supply side of the equation is growing increasingly limited for the following reasons, and other approaches will be necessary:

- Many of the roads, bridges, and transit facilities in the region are at an age where they must be maintained, repaired, rehabilitated or even replaced. Funds which in the past were available for new construction must now be reserved for maintenance of existing facilities.

- Environmental factors limit the ability to construct new transportation facilities. Recognition of the important values of tidal and freshwater wetlands and the regulatory programs enacted to protect these resources limit new construction. Sprawling land use patterns limit the ability to map or acquire new routes without personal disruption and community opposition.

- Funding for new construction, which has traditionally relied heavily on state and federal financing, is severely limited. Revenue contributions have not kept pace with inflation and the high costs of construction and land acquisition have severely elevated construction costs.

A recent study by DVRPC estimated that the projected cost for transportation services in the region to the year 2015, including new facilities and maintenance of both highways and public transportation, is over $23 billion. The same analysis reviewed funding projections and concluded that funding may fall short by as much as 40 percent.

Therefore, if the ability to increase the supply of the transportation system is constrained, other approaches must be sought including those to reduce demand, manage the institutional and funding framework, and link land use planning to transportation. The Institute of Transportation Engineers, in a report published in

1989, recognized the direct and fundamental relationship between land use and traffic patterns:

> ... *Put simply, trip-making patterns, volumes, and modal distributions are largely a function of the spatial distribution and use of land. Over the long run, the spatial distribution of land use can greatly influence regional travel patterns, and in turn this land use distribution can be influenced by the level of accessibility provided by the transportation system. Avoiding future congestion therefore requires careful attention to zoning and land use plans, in coordination with the strategic provision of transportation services to influence where development occurs.*

CAN WE GET THERE FROM HERE?

Improving the linkage between land use and transportation planning is essential for the future of the Delaware Valley. Inappropriate land uses coupled with inadequate transportation services create congestion and traffic impacts on both highways and local roads, a worsening of air quality conditions, decreased highway safety and reduced community access. Inefficient transportation access and unplanned land use patterns are also a significant hindrance to economic growth and productivity and will reduce the overall quality of life in the region.

If present trends continue, we can predict further decentralization and dispersal of population and employment including more households, more cars, and more travel, all on a system which may not grow at a rate sufficient to keep up with the demand.

Planners and decision-makers at all levels of government have the ability to influence the future by taking a proactive stance towards integrating planning for land use and transportation facilities. Local land use planners must carefully consider the transportation implications of their decisions and transportation planners at the county, state or regional level must consider land use patterns and the economic impacts of their investments. Linking land use and transportation planning must become an ongoing process at each level of government, and those levels must work together to coordinate their actions.

Because the primary responsibility for land use planning now rests at the municipal level in both Pennsylvania and New Jersey, this report focuses on the tools and techniques available to local governments to integrate land use and transportation planning. In addition, recommendations to better coordinate the process of transportation planning with land use considerations are presented for the counties, states and regional planning organization. The following chapter first examines the existing governmental framework in the Delaware Valley, outlining the specific roles and responsibilities of each level of government.

CHAPTER II: GOVERNMENTAL FRAMEWORK

The current structure of governmental responsibility and decision-making in the Delaware Valley region does not necessarily foster a close integration of land use and transportation planning. Land use decisions and authority generally rest at the local municipal level of government while significant transportation projects are the responsibility of the states. Between the two are the counties and regional organization (the Delaware Valley Regional Planning Commission).

Nevertheless, despite this separation of powers, there are procedures in place and opportunities available for close coordination among all levels of government in both the land use and transportation planning arena. There are also forces of change underway in both Pennsylvania and New Jersey to improve this integration. In New Jersey, the State Development and Redevelopment Plan (discussed below) will require the various levels of government to work together to coordinate their planning activities. While no parallel State planning program is in place in Pennsylvania, a number of public and private interests have been examining the experiences of New Jersey and other State planning programs for their applicability in the Commonwealth.

This chapter will explore the current governmental decision-making framework for land use and transportation planning in the two-state, nine-county DVRPC region. By understanding the practices and procedures now in place, opportunities to better link land use and transportation planning will be presented.

LAND USE PLANNING

Government has the power to enact specific regulations designed to protect the health, safety, morals and general welfare of the public: these regulations are referred to as the government's "police power." The United States Constitution reserved certain powers to the federal government, such as the power to wage war and regulate interstate commerce, and delegated the remaining powers to the individual States. The States, in turn, may decide which powers are to remain at the state level and which powers may be delegated to local government.

In both Pennsylvania and New Jersey, the State legislatures have chosen to delegate most of the power to regulate land development and land use to local government. It is important to note that this delegation of authority to local governments is not required in any way by either state or federal law; it was a decision made by the States that since local land use matters are of great concern within a municipality, the power to regulate should rest at the municipal level. The States, however, retain

the rights to regulate those areas recognized as of Statewide importance, such as wetlands regulations or solid waste management standards, and reserve the authority to preempt or divest local governments of their current authority.

Pennsylvania

The Commonwealth of Pennsylvania has granted the authority for land use planning to cities, boroughs, towns, townships and counties through the Pennsylvania Municipalities Planning Code (Act 247 of 1968, as amended by Act 170 of 1988). The stated purpose of the Act is to:

> *"protect and promote safety, health and morals; to accomplish coordinated development; to provide for the general welfare by guiding and protecting amenity, convenience, future governmental, economic, practical, and social and cultural facilities, development and growth, as well as the improvement of governmental processes and functions; to guide uses of land and structures, type and location of streets, public grounds and other facilities; to promote the conservation of energy through the use of planning practices and to promote the effective utilization of renewable energy sources; and to permit municipalities to minimize such problems as may presently exist or which may be foreseen."*

The Planning Code does not mandate that local governments exercise this authority. There are no State requirements or incentives for local governments to plan in Pennsylvania. However, in the five-county southeastern DVRPC region, most local governments have undertaken some level of land use control, either through a comprehensive plan, zoning, subdivision regulations, or other measures as described in the next chapter.

Counties in Pennsylvania are now required to prepare and adopt a comprehensive land use management plan for the county. Local plans, if prepared, are required to be "generally consistent" with this county plan. The counties are also empowered to review land development plans, municipal land use ordinances and local planning documents, but any comments provided by the county to the municipalities on these items is advisory only. The county's ability to influence local land use decisions is dependent on their ability to effect voluntary cooperation and respect for the county. Counties may also take a direct role in local land use planning by serving as the planning staff, under contract, to local governments.

Philadelphia, as a county and a chartered city, is subject to separate rules which require a City Planning Commission responsible for the preparation of a comprehensive plan, the capital program and budget, zoning ordinances and regulations concerning the subdivision of land. The planning commission acts in an advisory capacity to the city council, mayor and the Zoning Board of Adjustment.

Pennsylvania has chosen not to take an active role in either setting policy or regulating land use at the State level. While a State Planning Board has nominally been re-established after several years of dormancy, this Board does not yet have a mandate, membership or agenda.

New Jersey

New Jersey has also granted the primary authority for land use planning and decision-making to local municipalities, but has retained additional powers for counties and the state government. The Municipal Land Use Law (Chapter 291, Laws of New Jersey 1975) establishes purposes very similar to those of Pennsylvania, including:

> *"...to encourage municipal action to guide the appropriate use or development of all lands in the State, in a manner which will promote the public health, safety, morals and general welfare;*
>
> *...to ensure that the development of individual municipalities does not conflict with the development and general welfare of neighboring municipalities, the county and the State as a whole;*
>
> *...to encourage the appropriate and efficient expenditure of public funds by the coordination of public development with land use policies;*
>
> *...to encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging location of such facilities and routes which result in congestion or blight..."*

Local municipalities may, but are not required to, undertake land use planning functions such as the preparation of master plans, official maps, subdivision control and site plan review, zoning ordinances and a capital improvement program. Almost all New Jersey municipalities in the DVRPC region utilize one or more of these planning tools.

As in Pennsylvania, the county's role in local land use planning is primarily advisory, utilizing technical assistance, contracted services and voluntary cooperation and coordination to influence local decision-making. Counties in New Jersey do, however, have the authority to review and approve any subdivisions that affect county road and drainage facilities, as well as any site plans for land development along county roads.

New Jersey differs primarily from Pennsylvania in its decision to create a role for State government in land use planning. The Pinelands Commission, established in 1979, monitors all development applications within New Jersey's designated Pinelands

area and requires that local governments adopt planning regulations in conformance with the Pinelands Comprehensive Management Plan. Within this region, the Pinelands includes parts of Gloucester, Camden and Burlington counties. More recently, the New Jersey State Planning Act of 1985 (NJSA 52:18A—16 et.al) created a 17-member State Planning Commission; established an Office of State Planning within the Department of Treasury to assist the Commission with its duties; and charged the Commission with preparing and adopting a State Development and Redevelopment Plan.

The preliminary state plan, issued in 1988, attempted to divide the state into seven separate classifications, or "tiers," based on an area's potential to support growth. The aim of the plan is to concentrate growth in areas where appropriate infrastructure is in place and to preserve certain areas for agriculture or to protect natural resources. While the actual tier designations and statewide plan are still subject to change and have not yet been finalized, it is the process of developing the plan which provides the opportunities for planning coordination.

The State Planning Commission has established a process of "cross-acceptance" whereby the counties and regional planning organizations play a major role as the intermediaries between local governments and the state. The process provides that the state will prepare the preliminary State Plan and then undergo four phases to resolve any differences between the state plan and regional, county and local plans. During the comparison phase, the municipalities, counties and regional agencies examine their plans and ordinances with reference to the preliminary state plan. Counties (or other designated entities) are required to coordinate this review and submit an aggregated report on findings and recommendations. During the negotiation phase, the State Planning Commission reviews these reports and negotiates changes to the State Plan with the counties or designated entities, who in turn coordinate those negotiations with local governments. This phase is now underway. During the Issue Resolution Phase the state will prepare and issue a revised state plan to be submitted to the legislature and for public hearings, followed by adoption of the plan. Thereafter the cross-acceptance process will be used "at least" every three years for plan review and revision.

TRANSPORTATION PLANNING

Despite the recent innovations of New Jersey to integrate the various levels of government, land use planning in both Pennsylvania and New Jersey remains essentially a "bottom-up" process, with local municipalities retaining primary control for land use decision-making through zoning and development application approvals. In contrast, transportation planning is closer to a "top-down" approach in that the state agencies and the regional organization (DVRPC) have the primary decision-making authority, with input from the counties and municipal governments. Municipalities in both states have the responsibility for the development and

maintenance of local roads, which are the minor roadways which only carry a small volume of traffic. Even for these roads, though, the municipalities are dependent in part on the states for funding.

The states have chosen to retain the police power for transportation planning as primarily a state responsibility, with procedures for coordination with local governments and regional planning agencies. As with land use planning, though, there are certain differences in approach and practice between the two states.

Pennsylvania

The Pennsylvania Department of Transportation has established a Transportation Planning *Program designed to be "the product of a cooperative process between state and local governments leading to an integrated plan and program for improving both state and local transportation systems within the Commonwealth." (MPS #501 dated August 1, 1989).* The program includes annual, financial, six-year and 12-year elements, as well as ongoing updates and amendments.

Each year, PennDOT submits a list of priority projects for funding to the Delaware Valley Regional Planning Commission for inclusion in the annual Transportation Improvement Program (TIP) administered by DVRPC. Projects must be included in the TIP endorsed by the Metropolitan Planning Organization designated for that area, which is DVRPC for the Delaware Valley region, to be eligible for federal funding. Projects included on this list reflect the priorities of PennDOT balanced with the list of priority projects submitted by each individual county. Municipal priorities must be submitted through, and are represented and balanced by in turn, their respective counties. While municipalities may submit priority requests directly to PennDOT for consideration, the primary coordination is between the State and the counties.

Each even-numbered year, PennDOT is required to submit to the State Transportation Commission a program it recommends to be undertaken by the Department during the next 12 fiscal years. This 12-year program reflects the projects identified on the six-year TIP of DVRPC plus additional projects to be undertaken in subsequent years. The priorities of both these 12-year and six-year programs are defined by the State, reflecting priority requests of the counties, who in turn represent the priority requests of individual municipalities.

Mass Transit projects are coordinated in much the same way. Each year the transit agencies (SEPTA, NJ Transit, DRPA and the City of Philadelphia) will prepare a list of priority projects for inclusion in the TIP. The transit agencies also submit projects biannually for the 12-year PennDOT program which is incorporated into the six-year DVRPC TIP.

This entire program is coordinated by DVRPC, as the regional organization, whose membership includes the states, counties, and primary cities (Philadelphia, Camden, Chester and Trenton) of the region. DVRPC maintains a long-range transportation plan for the region, currently projected to the year 2000, which reflects a balanced regional view of transportation infrastructure needs. In the coming year, DVRPC will begin the process of updating the long-range plan to a new target year of 2015.

New Jersey

The New Jersey Department of Transportation (NJDOT) is also a participant in the DVRPC TIP process for the projects involving federal funding. The primary difference is that while NJDOT prepares an annual list of projects for consideration in the TIP, it prepares a five-year capital improvement program rather than the six-year TIP or the 12-year PennDOT program. NJDOT also prioritizes its projects based on the review of county priority requests, who in turn coordinate the priority requests of the municipalities. New Jersey Transit and the Delaware River Port Authority represent the transit priorities for New Jersey.

Beside the five- versus six- or twelve-year capital improvement program, New Jersey differs from Pennsylvania in that counties in New Jersey have the responsibility for maintaining a county road system. Thus, in their review of land development applications along county roads, the counties may require reservations of right-of-way for future widenings or mitigation improvements. The counties are also responsible for planning and budgeting for the maintenance of the county road system.

CONCLUSION

Within the existing governmental framework of practices and policies, there exist a number of opportunities to better link the decision-making processes of land use and transportation planning. Chapter III describes in detail ten specific planning tools for local governments to use which integrate transportation considerations into the land use planning process. These tools are designed to accommodate the degree of growth necessary for a healthy community, but provide a way to manage that growth to avoid transportation problems by better matching the demand to the supply (capacity) of the system and foreseeing and mitigating problems before they arise.

Chapter IV provides a series of recommendations for the counties, states and the DVRPC, as the regional planning agency, to better consider existing and projected land use patterns in their deliberations and decisions regarding transportation facilities and to recognize the ultimate land use impacts of their investment decisions.

CHAPTER III: LAND USE AND TRANSPORTATION PLANNING TOOLS

In the Delaware Valley region, municipalities are now and will likely continue to be at the front line of land use review and decision-making. While there is an increasing role for the counties and the state, particularly through the New Jersey State Planning process, and opportunities for better coordination among levels of government, the practice of "home rule" can be expected to remain essentially in place.

This chapter will focus on the tools that local governments have available and can now use to integrate transportation planning considerations into the local land use planning process. While certain of the tools may be applied at the county or even the state levels, their primary applicability is with municipalities.

The ten approaches highlighted in this chapter include:

- Master or Comprehensive Plans
- Zoning Ordinances
- Site Design and Performance Standards
- Official Maps
- Capital Facilities Plans
- Impact Analysis and Mitigation
- Impact Fees
- Adequate Public Facilities Ordinances
- Trip Reduction Ordinances
- Highway Access Management

For each tool that follows, an introduction to the concept is followed by an analysis of the enabling authority and standards to utilize the tool in each state, entitled How Does It Work? This is followed by a listing of the specific steps and actions necessary to adopt or implement the tool, entitled How Do We Do It?

Finally, while each of these ten planning tools is presented and analyzed separately, it is essential to recognize that these approaches work best in combination, when integrated into a comprehensive planning program that utilizes three, six, or even all ten of the approaches. As a municipality grows more confident and sophisticated in their ability to link land use and transportation planning, they may add or revise these tools to meet their particular needs. Municipalities should also look to form joint planning arrangements with adjacent municipalities, to plan and manage growth more effectively and efficiently over a larger area.

THE MASTER OR COMPREHENSIVE PLAN

WHY A MASTER PLAN?

The Master Plan is the fundamental starting point for those communities looking to link the land use and transportation planning functions. The Master Plan is an opportunity — both as a process and as a product — to examine the existing conditions in a community and to define a series of goals, or directions, for where the community wishes to go. The Master Planning process should proceed the other planning approaches which follow in this chapter because it is the Master Plan which can help to define where a community is headed; the other approaches are the implementing tools used to achieve that direction.

The Master Plan, or Comprehensive Plan (either term may be used interchangeably), is also of increasing importance in both Pennsylvania and New Jersey as a legally-required prerequisite for the use of many of these other approaches. The legislatures have recognized the value of the Master Planning process and the benefits which that process can bring, as well as the importance of the Master Plan as a necessary foundation for the use of certain other planning tools.

On paper, the Master Plan is a "blueprint for the future" which specifies the amount, density and distribution of different land uses; infrastructure such as utilities and community facilities; parks and open spaces; the transportation and circulation systems; and the other physical, social and economic elements which comprise a community. However, the Master Plan — and the process to prepare that plan — is a more complex and a more rewarding undertaking.

It is rarely the case, particularly in the Delaware Valley, when the Master Plan is begun as a "tabula rosa" or clean slate. Master Plans are more likely undertaken by communities which have existed for some time and where a variety of land use and transportation decisions have already been made. In some cases, those decisions reflected long-term strategic goals and in other cases actions were taken to expedite short-term objectives. The net result though, is a series of existing conditions which present both problems to address and opportunities to capitalize on. By reviewing existing conditions, a community can examine both the positive and negative aspects of that community and begin to develop the policies and actions necessary to build on those positive aspects while attempting to eliminate or mitigate the negative.

The Master Plan is an opportunity to establish those policies which link transportation and land use, such as utilizing major transportation routes as a tool to help influence development patterns or planning for higher density land uses along public transportation corridors. A policy to promote a mixture of land uses at public transportation facilities such as bus stops, transit centers, rail stations or park-and-

ride lots will provide more efficient usage of the transportation network. A policy to develop land use patterns that facilitate multi-purpose trips by providing a mix of uses will help to minimize the number and length of vehicle trips.

The process of preparing a Master Plan is also important as an opportunity for citizen participation and empowerment and for intergovernmental cooperation and coordination. The goals and objectives defined in a Master Plan should reflect a collective vision of the future. The process of preparing the Master Plan should therefore include the active solicitation of the residents of that community through surveys, public hearings and town meetings. While differences of opinion and priorities will emerge, issues of consensus will also emerge and the public will be part of the process to define their future. The Master Planning process is also an opportunity to improve the linkages among levels of government. A municipality which coordinates its plan with county, regional and state plans will be in a better position to capitalize on the investments and programs of these different agencies.

HOW DOES IT WORK?

While there is no single approach for the preparation of a Master Plan, there are certain essential steps which must be part of the process. These are to:

1. Define the existing conditions;
2. Develop policies and goals for the future;
3. Prepare alternatives for review;
4. Choose a preferred alternative which best meets the community's goals; and
5. Identify implementation approaches to achieve the plan.

This generalized approach can apply to the various elements of the Master Plan. For transportation planning, the handbook *Managing Transportation In Your Community,* by the New Jersey Department of Transportation, suggests a more detailed eight-step approach:

1. Define the Study Area: This may be all or a portion of a municipality, or even a larger area study conducted in conjunction with an adjacent municipality or the county.

2. Define the Goals: Transportation goals should be integrated with the land use, social and economic goals of the community. Thus, if a land use goal is to provide more compact patterns of growth, a transportation goal to increase mass transit usage may be appropriate. If a land use goal is to manage growth and preserve existing character, transportation goals to reduce congestion and manage traffic flow would be paramount.

3. Analyze Existing Conditions: A detailed traffic analysis will define existing levels of service and identify areas with capacity and potential problem areas.

4. Coordinate with Regional Planning Efforts: Even if a community is conducting its study alone, it still must understand the planning decisions of all other levels of government which may affect the future conditions in that municipality.

5. Consider the Use of Public Transportation: In reviewing the future goals for the community, mass transit such as bus systems may be increasingly feasible, even if they are not now used.

6. Estimate Future Demands: The future land use plan and projections of growth should be the basis to forecast the number and distribution of future transportation movements. By reviewing the type of trip expected, the likely mode of travel can be assigned.

7. Develop Alternative Plans: There are many different ways to move people and goods. Examine the many different options available to find those most consistent with the overall goals of the community.

8. Select the Plan: The final transportation plan should be selected based on its ability to improve traffic flow, reduce congestion, achieve community goals and present a reasonable cost.

New Jersey

The Municipal Land Use Law does not require municipalities to prepare or adopt a Master Plan per se, but an adopted Master Plan is a required prerequisite for many other planning tools, including zoning. At a minimum, Master Plans in New Jersey must include a statement of "objectives, principles, assumptions, policies and standards" upon which the elements of the Master Plan are based; a land use plan showing the existing and proposed location, extent and intensity of development; and a statement of the standards of population density and development intensity recommended for the municipality (Section C.40:55D-28[b] [1 and 2]).

A transportation (or circulation) element is now an optional element of the Master Plan. As defined in the law, the circulation element would show the location and types of all transportation facilities required for the efficient movement of goods and people and the conditions and availability of existing and proposed facilities, including air, water, road and rail (Section C.40:55D-28[b] [4]).

Pennsylvania

The Pennsylvania Municipalities Planning Code also authorizes, but does not require municipalities to prepare a Comprehensive Plan. Pennsylvania counties, however, are required to prepare such plans by February 21, 1992. For the counties and those municipalities which choose to prepare a comprehensive plan, there are eight required elements, including:

1. A statement of objectives concerning future development.

2. A plan for land use, including the amount, intensity, character and timing of development.

3. A housing plan for households of all income levels.

4. A plan for the movement of people and goods.

5. A plan for community facilities and utilities.

6. A statement of the interrelationship among plan elements, including impacts on the municipality.

7. A discussion of short- and long-range implementation plans.

8. An analysis and comparison to adjacent municipalities, the county, and regional trends (Section 301).

The transportation plan element, as defined, includes expressways, highways, local street systems, parking facilities, pedestrian and bikeway systems, public transit routes, terminals, airfields, port facilities, railroad facilities and others (Section 301 [3]).

HOW DO WE DO IT?

The preparation of a Master Plan can be a complex and time-consuming undertaking. For those municipalities without a professional planning staff, it is recommended that they seek assistance from county or regional planning agencies, or from a qualified planning consultant. Whether a Master Plan is prepared internally or with outside assistance, it is recommended that a steering committee representing a diverse range of community interests be formed to oversee the project and assure that all concerns are incorporated.

New Jersey

The Municipal Land Use Law requires that the preparation of municipal Master Plans be closely coordinated both horizontally and vertically among levels of government, including contiguous municipalities, the county in which the municipality is located, and the State. State planning goals are reflected in the preliminary State Development and Redevelopment Plan, which is currently undergoing review and revision. The process of review and coordination with the county and the State is referred to as the "Cross-Acceptance" process.

To adopt a municipal Master Plan, a public hearing must first be held, with public notice appearing in a local newspaper at least 10 days beforehand and notice given to adjacent municipalities and the county planning board at least 10 days prior to the hearing.

The New Jersey Municipal Land Use Law also authorizes two or more municipalities or counties to enter into a joint agreement whereby a Master Plan can be prepared together for a larger, multi-municipal area (Article 10).

Pennsylvania

The draft Comprehensive Plan must be forwarded to the local school district, adjacent municipalities and the county planning agency for a 45-day review period. Municipal comprehensive plans are required to be "generally consistent" with adopted county plans. Following public notice and public hearing, the municipal governing body may adopt the Comprehensive Plan. This adopted plan must be forwarded to the county planning agency within 30 days for continuing coordination.

Upon adopting a Comprehensive Plan, the planning agencies of the municipality, and the county may use the plan to review any proposed changes to the local transportation network and the adoption or change to a capital improvements program.

Two or more municipalities in Pennsylvania may also join together to form a joint municipal planning commission for the purpose of preparing and adopting a joint municipal comprehensive plan (Article XI).

ZONING

WHY ZONING?

Zoning is perhaps the single most important tool for local land use control. Originally conceived as a way to segregate the location of noxious industrial uses from the residential areas where people live, zoning has grown into a sophisticated and complex means to regulate the physical character of a community. Through zoning controls, municipalities are able to regulate not only the specific use to which land is devoted, but the size, bulk and density of buildings, the mix of different uses, the amount of open space preserved, and controls on off-street loading and off-street parking. The establishment of zoning regulations will also have a direct relation to the transportation network of a community, because it is the distribution and density of land uses which generates the travel demands on the transportation system. By carefully considering the transportation impacts of the zoning designations, a community may actually be able to improve traffic flow, reduce congestion and save the costs associated with new road construction.

The basis of zoning is to develop a hierarchy of uses, typically ranging from the lowest density residential form through high density residential, lower to higher density commercial uses and one or more industrial districts. These uses are each assigned to one or more "zones" or districts where they may be located, as illustrated on a municipal zoning map. The accompanying zoning ordinance defines the specific regulations for development in each district, including, but not necessarily limited to:

- the size, height, bulk and maximum coverage of a building on a site;
- the required side and rear yards and open space to be retained on a site;
- the required minimum and/or maximum number and location of parking spaces;
- landscaping and buffering requirements; and
- rules on the size and placement of business and advertising signs.

In recent years, innovations in zoning techniques have been used, and successfully defended from legal challenges, in many areas of the country. These innovations have allowed municipalities to develop strict performance standards for uses in manufacturing or industrial zones, including limits on noise, dust, light and glare, and fencing or buffering requirements. Zoning may also be used to protect sensitive environmental characteristics, including floodplains, steep slopes, streams or significant habitat areas. Zoning may even be used to protect historic structures or to preserve unique neighborhood character.

Zoning innovations for linking transportation to land use include the use of bonus or incentive zoning, whereby density bonuses may be granted for developer

improvements such as a transit center, operating an employee shuttle service, or locating adjacent to a regional rail station. An overlay zone or a special district may be created at an intersection or around a rail station, to allow more intense and efficient use of land, a unique mix of uses, or to require the provision of certain amenities. Planned unit development zoning is used to encourage coordinated development of larger tracts of land while permitting more creativity and flexibility.

HOW DOES IT WORK?

The various categories of zoning districts, and uses permitted within each district, are grouped based upon similar characteristics and impacts upon the land and the infrastructure systems. Thus, even though many different uses may be permitted in a given commercial district, all uses will share similar characteristics in terms of the land coverage of the building, the typical amounts of water they will need and sewage they produce, and the amount of pedestrian and vehicular traffic they will generate. It is this last issue which serves as the link for land use and transportation planning through zoning.

The zoning ordinance should grow from the Master Plan, where existing land use and transportation conditions have been assessed and goals for future development defined. By recognizing that different land uses at different densities and in different combinations of uses will each generate different transportation demands, then the appropriate zoning designation can be assigned to areas based upon the transportation system capacity. Thus, higher density office and commercial uses are assigned to areas surrounding a mass transit rail station or at highway interchanges, while low density residential is assigned along narrow country lanes. The assignment of uses and zoning districts must relate to the transportation network and any plans for changes to the transportation network must consider the underlying zoning in order to predict future conditions.

New Jersey

Municipal zoning in New Jersey must be preceded by an adopted Master Plan which includes the land use plan and a housing plan element: the zoning ordinance should be consistent with those plans. The Municipal Land Use law states that the

> "Zoning ordinance shall be drawn with reasonable consideration to the character of each district and its peculiar suitability for particular uses and to encourage the most appropriate use of land." (Section C.40:55D-62[a])

The specific regulations for buildings or structures shall be consistent within each zoning district, but can vary across districts.

New Jersey provides several opportunities to link transportation planning considerations to zoning regulations. The Department of Transportation is currently in the process of developing regulations to implement the State Highway Access Management Act of 1989 (discussed separately in this chapter). These regulations will be a guide for municipalities to use to regulate access to state, county and local roads through the zoning ordinance. The Municipal Land Use law also provides authorization to plan and zone for "planned developments," which may include a mix of residential, commercial, or industrial uses. Mixed use or planned developments are often a very effective way to reduce overall traffic demands by providing opportunities to live, work and shop in close proximity.

The law also authorizes municipalities to establish standards for the provision of adequate physical improvements, including off-street parking and loading areas, and marginal roads and roadways (Section C.40:55D-65). The law even authorizes two or more municipalities to join together to form a joint regional zoning ordinance, which can coordinate and rationalize the zoning over a larger area (Section C.40:55D-77). New Jersey has also authorized a transfer of development rights (TDR) program in Burlington County and is examining the possibility of a statewide TDR program. This program (Article 15) permits one or more municipality to identify "sending zones" to be preserved and "receiving zones" which may be developed at a higher density. The sending zone is preserved, while its development potential is shifted — or transferred — to the receiving zone.

Pennsylvania

Among the purposes of zoning, as outlined in the Pennsylvania Municipalities Planning Code, are to "promote, protect and facilitate ... vehicle parking and loading space, transportation; and to prevent danger and congestion in travel and transportation." The Pennsylvania code provides a number of specific authorizations for municipalities (or counties for those areas without municipal zoning) to use to integrate transportation concerns into their zoning ordinances.

For example, in addition to the standard zoning approach of dividing the municipality into zones for assigned uses, the code also allows for "provisions to encourage innovation and to promote flexibility, economy and ingenuity in development, including subdivisions and land developments" (Section 603.[c] [5]). Specific innovative techniques identified which can relate transportation to land use planning include transfer of development rights (Section 619.1); planned residential development (Section 701); performance zoning (Section 603[c] [b]); special districts along roadways (Section 605[2] [i]); and joint regional zoning (Section 801-A).

Transfer of development rights (TDR) programs may be used only within a single municipality. TDR programs work by permitting the sale of development rights from an area which a community does not want developed (to preserve farmland or open

space or because of lack of infrastructure such as water, sewers and transportation facilities) and allowing these development rights to be transferred and used to create a higher density development in a receiving zone where such higher density would be more appropriate and encouraged.

Planned residential development is an approach which allows flexibility in the design of a larger site (perhaps 5 acres or more) with a mix of uses and buildings which might not meet all the use, bulk or open space requirements of a standard district. A planned residential development may include a mix of single family and townhouses designed to be clustered to preserve open space and may also include non-residential uses, such as community shopping, office space, schools, or even light manufacturing if it is compatible with residential areas. Planned developments are a tool which can be used to distribute density across a site with consideration of its access to the transportation network of roads or bus routes, and is a way to reduce travel and traffic by grouping homes with employment and shopping opportunities.

Performance zoning has been used most widely as a means to establish controls for noise, odors, vibrations or glare for noxious uses in industrial or manufacturing zones. More recently, performance standards have been established to protect environmental characteristics such as steep slopes, vegetation, streams or wetlands. Performance zoning can also be applied to transportation concerns. For example, in certain zones a higher density of development could be permitted if a project is able to reduce its traffic volume, through shuttle buses, ridesharing or other means. The Planning Code also permits "additional classifications for the regulation, restriction or prohibition of uses or structures at, along or near major thoroughfares, their intersections and interchanges, transportation arteries and rail or transit terminals." (Section 605[2] [i]). This provision could allow the use of a corridor or overlay district, with more restrictive controls and/or bonuses for right-of-way dedications or mass transit provisions, in areas subject to existing or projected traffic congestion.

Finally, Pennsylvania also authorizes two or more municipalities to join together for a joint zoning ordinance, provided that a joint municipal comprehensive plan has been prepared.

HOW DO WE DO IT?

New Jersey

The governing body may adopt the zoning ordinance, following:

1. Adoption of the land use plan and housing plan element of the Master Plan;

2. A 35-day review by the planning board;

3. Ten days notice to adjacent municipalities and the county planning board;

4. A public hearing; and

5. An affirmative vote. If any part of the adopted zoning ordinance is inconsistent with the Master Plan, the reasons for so acting must be described in the minutes. For those proposed areas where property owners have filed a formal protest, a two-thirds vote is necessary.

Upon adopting the zoning ordinance, a zoning board of adjustment must be created to hear and decide appeals regarding interpretation of the ordinance, or to grant variances to the provisions of the ordinance in cases of "exceptional and undue hardship" or in those cases where "the benefits of the variance would outweigh any detriment."

Pennsylvania

At least one public meeting (with public notice) must be held during the preparation phase of the zoning ordinance. When the proposed ordinance is ready for review and adoption by the governing body, the municipality must:

1. Provide for a 45-day review by the county planning agency;

2. Hold a public hearing, pursuant to public notice between 60 and seven days prior to the vote;

3. Vote on the ordinance within 90 days of the last public hearing; and

4. Forward a copy of the approved zoning ordinance to the county planning agency within 30 days after enactment.

Additional procedures are in place for subsequent amendments to the ordinance (see Section 609). Pennsylvania also requires the creation of a zoning hearing board to review appeals, variances or special exceptions (see Article IX and Section 609.1 for detailed procedures).

SITE DESIGN STANDARDS

WHY SITE DESIGN STANDARDS?

Municipal planning authority allows local governments to define not only the permitted use and density of new development, but to also set standards that regulate the general design and layout of that development. By preparing and adopting site design standards within a subdivision ordinance, a community is able to build further on the general vision of the master plan, the permitted uses of the zoning ordinance, and the desired streets identified on the official map. Site design standards provide the specific guidance for the layout and construction of new developments in accordance with these other policies. They may be considered the mortar that holds the bricks together.

Site design standards may apply to both residential and non-residential developments. For those communities seeking to integrate transportation considerations into the land use planning process, site design standards can provide guidance for:

- The layout and arrangement of streets within the development.
- The design and capacity of streets, including the ability to accommodate mass transit vehicles.
- The placement of buildings within a development and in relation to the streets, for pedestrian, vehicular, and transit access.
- The amount and location of parking within a development.
- Pedestrian circulation, bikeways, and transit facilities such as bus stops or shelters.

HOW DO THEY WORK?

Site design standards are yet another tool to implement the vision and goals of the Master or Comprehensive Plans. Both New Jersey (in Section C.40:55D-38 of the Municipal Land Use Law) and Pennsylvania (in Section 503[2] of the Municipalities Planning Code) recognize that site design standards and subdivision ordinances should be consistent with these plans. But site design standards and the subdivision ordinances they are contained within go further than these plans by setting measureable standards. Both states also recognize the subdivision ordinance as an enforcement tool, by providing the authority to levy a performance guarantee equal

to or greater than the cost of the improvements required by the standards. This refundable deposit or bond is held by the municipality until all improvements are satisfactorily completed.

Subdivision ordinances are a means to insure that new proposals for development are reviewed by the planning board or governing body prior to the issuance of building permits. Within the subdivision ordinance are the site design standards used as the basis for the review. As with many planning tools, site design standards may be either reactive or proactive: reactive in merely assuring that the new streets and circulation system are adequate to handle the typical traffic projected from that development, or proactive in attempting to influence the form and layout of that development and in turn influencing the impact on traffic circulation and mobility.

For example, requirements related to parking can significantly influence not only the circulation of automobiles within a development, but the transportation modal choice as well. If there is unlimited, free, and convenient parking at employment centers, commuters may be more likely to drive individual cars. However, if preferential parking for carpools and vanpools is provided adjacent to the major entrances of buildings, these options may become more attractive. When bus service is available adjacent to a development, the design standards could require that the building and main entrances are oriented towards and close to the street, reducing large setbacks and shifting the location of parking to the rear and sides of the buildings. If a development is in proximity to a rail station, the amount of required parking could be reduced, and developers given incentives or bonuses to operate connecting shuttle services.

Design standards should also address the layout and arrangement of streets within the development. Street design must not only consider traffic volumes, widths, grades and curves, but should also consider how street layout influences travel patterns. Arterial roads adjacent to developments may now provide bus service. By providing walkways, lighting, benches, shelters and bus turn-off facilities, the use of mass transit may be increased. For larger developments, it may even be practicable to provide the facilities for bus service along the collector roads within the development. Municipalities should work closely with their local transit agency at the time of development application to assure compatible designs.

The location of buildings within a development also affects the transportation network. Where multiple buildings are to be constructed, these buildings should be clustered where possible, to reduce the walking distance between each of the buildings and the nearest bus stop or transit facility. Providing a mix of uses within a development can reduce the need to use private automobiles for many trips. Convenience shopping, schools and recreation centers should be in close proximity to residences, and services such as restaurants, banks, daycare and convenience stores should be provided at employment centers.

Finally, site design standards should address pedestrian circulation and mobility, both on foot and on bicycle, particularly where bicycle paths can be connected with an existing network. Thus, design pedestrian walkways to be direct and provide shortcuts, if possible, apart from the roadway network. Walkways should provide direct access to bus stops. People will also tend to walk farther and use the walkways if a quality pedestrian environment is provided. Separating walkways from roads by landscaping or grade both minimizes the chance of conflict between automobiles and pedestrians and provides a more pleasant walking experience. Bikeways should avoid conflicts with both automobiles and pedestrians.

HOW DO WE DO IT?

Pennsylvania

Municipalities in Pennsylvania may adopt their own subdivision and land development ordinance, or may adopt by reference the ordinance of the county, or may even designate the county as its official administrative agency for review and approval of subdivisions. Unless so designated, the county planning agency remains advisory, with a mandatory 30-day review period.

The ordinances may define the review procedures, administrative fees, and exclusion of certain activities such as the addition of accessory buildings or the conversion of an existing single-family dwelling into three or less residential units. Site design standards within a subdivision ordinance may contain provisions for insuring that:

.... *the layout or arrangement of the subdivision or land development should conform to the comprehensive plan...*

.... *streets in and bordering a subdivision or land development shall be coordinated, and be of such widths and grades and in such locations as deemed necessary to accommodate prospective traffic...*

.... *streets be improved to such a condition that the streets are passable for vehicles which are intended to use that street...(and) that no municipality shall be required to accept such streets for public dedication until the streets meet such additional standards and specifications as the municipality may require for public dedication (Section 503 [2 and 3]).*

In order to enforce the last provision, the Planning Code authorizes municipalities to collect a financial security in an amount sufficient to cover the costs of the improvements, plus a 10% contingency (Section 509). This security assures that the improvements will be completed by the developer in accordance with the standards, or will be undertaken by the municipality using the developer's security deposit.

Subdivision ordinances in Pennsylvania may also include site design standards and:

> *"Provisions for encouraging and promoting flexibility, economy and ingenuity in the layout and design of subdivisions and land developments, including provisions authorizing alterations in site requirements and for encouraging other practices which are in accordance with modern and evolving principles of site planning and development:" (Section 503[5]).*

This provision would appear to encourage innovative design standards in Pennsylvania, including those which encourage mass transit to reduce automotive traffic.

New Jersey

The authority to adopt subdivision ordinances and site design standards in New Jersey is found in Article 6 of the Municipal Land Use Law. Municipalities may adopt such ordinances but must also provide any applications for subdivision approval to their respective counties for review or approval. As noted, counties retain approval authority for subdivisions along or that affect county roads, and have advisory review authority for the remainder.

Ordinances may contain provisions ensuring:

.... *streets in the subdivision or land development of sufficient width and suitable grade and suitably located to accommodate prospective traffic ... and coordinated so as to compose a convenient system consistent with the official map and the circulation element of the master plan...*

.... *standards for grading, improvement and construction of streets or drives and for any required walkways, curbs, gutters, street lights, shade trees and other improvements as shall be found necessary...*

.... *provisions for standards encouraging and promoting flexibility and economy in layout and design... (Section C.40:55D-38).*

New Jersey also authorizes municipalities to collect performance guarantees to insure that improvements are completed, equal to 120% of the cost of the improvements, plus a maintenance guarantee for two years after final acceptance of the improvement, equal to 15% of the improvement's cost.

OFFICIAL MAP

WHY AN OFFICIAL MAP?

The Official Map is an important mechanism which can be used to begin to turn the vision and goals of the Master Plan into reality. An "Official Map" is not just any map adopted by a local government. It is not a zoning map, a street map or a map from the comprehensive plan. Instead, the Official Map has a very specific meaning and function which relates to all of these other planning documents.

An official map can be used as a tool to implement the transportation network and circulation systems as identified in the Master Plan. It follows logically in a community's approach to creating a planning function to manage growth and to link transportation needs with land use planning. The official map adds more specificity to the broader outline of the Master Plan and, perhaps more importantly, provides a recognized legal basis to implement the goals of the Master Plan in a specific, concrete way.

Essentially, an official map is an ordinance, in map form, adopted by a county or municipality, which can designate the existing and proposed location for public streets, watercourses, flood control areas or other public areas for that county or municipality. The official map can include all, or only part, of the county or municipality's area. By identifying proposed streets and other public areas on an official map, the governing body announces its intention to use these areas for public purposes. The map is "official" in that it is adopted by ordinance following prescribed public notice and review procedures. Once adopted, the official map gives notice to property owners of the governing body's intentions. It does not, in and of itself, serve to acquire the land for public purposes nor does it constitute the opening or establishment of any street.

An official map can be as comprehensive or as site-specific as the needs of a community at that time. The official map could identify and designate the entire existing and proposed roadway network, including widenings, narrowings, extensions, diminutions, or closing. Alternatively, the official map could designate a single intersection, reserve a right-of-way along a single road for future widening, or identify the route for a new roadway to link already existing roads. An official map can follow from a Master Plan which comprehensively assesses the entire transportation, open space and natural resource network of a community, or it can follow from a local area study which examines only a single issue or problem. However it is used, the official map is an important, relatively simple and flexible planning implementation tool.

HOW DOES IT WORK?

The Planning Codes of both Pennsylvania and New Jersey provide specific enabling authority and guidelines for the preparation and adoption of official maps. For the counties or municipalities which are seeking to establish an official map for all or part of their boundaries, the scope and procedures are clear.

Pennsylvania

Article IV of the Municipalities Planning Code provides the authority for a municipality or county to adopt an official map for all or a portion of the area. In Pennsylvania, the official map may include, but is not necessarily limited to:

1. Existing and proposed public streets, watercourses and public grounds, including widening, narrowings, extensions, diminutions, openings or closings.

2. Existing and proposed public parks, playgrounds and open space reservations.

3. Pedestrian ways and easements.

4. Railroad and transit rights-of-way and easements.

5. Flood control basins, floodings and flood plains, storm water management areas and drainage easements.

6. Support facilities, easements and other properties held by public bodies undertaking the elements as described in the comprehensive plan. (Section 401 [a])

The official map may be based on property records, aerial photographs or photogrammetric mapping. Actual property boundary descriptions by metes and bounds as prepared by a licensed surveyor is not necessary for the purposes of the official map, but is required at the time of property acquisition (Section 401 [b]).

Any element adopted on the official map does not constitute the opening or establishment of any street nor the taking or acceptance of any land, nor does it obligate the municipality or county to improve or maintain such street or land. Instead, the official map provides municipalities with two interrelated authorities. In accordance with Section 405, municipalities may deny building permits for structures proposed within the lines of any street, watercourse or public ground identified on the official map. However, if the permit denial would prevent a reasonable return to the property owner, the property must either be acquired by the governing body or a special encroachment permit must be issued to the property owner to construct within the affected area.

The second authority, Section 406, permits the governing body to fix a period of time to acquire the property after a property owner submits written intention to build, subdivide or otherwise develop the property. The acquisition of public grounds must begin within one year after the property owner's written notice to intend building. Land reserved on the official map for streets may be reserved for a period of time beyond one year, but that time must be defined by the governing body.

The official map procedure does not compel landowners to dedicate land to the municipality for public purposes, but it also does not require a municipality to pay the highest requested price. Instead, the public acquisition of property as identified on the official map may be through hostile or friendly condemnation proceedings, through fee simple purchase or easement purchase, or even as a dedication as negotiated through the subdivision and land development process. Identification of property on an official map provides an important leveraging tool for negotiations in the development review process.

For counties in Pennsylvania, county official maps may cover county streets and public grounds, facilities and improvements only. County official maps may also be prepared for other land and watercourses in those municipalities which have no municipal official map, but this county map is repealed at the time a municipal map is prepared.

New Jersey

The New Jersey Municipal Land Use Law provides a description and authorization for the preparation and adoption of an official map in Article 5. Section C.40:55D-32 provides that a municipality only may adopt or amend an official map for all or a portion of that municipality. The official map may include, but is not limited to, the location and width of streets and public drainage ways and the location and extent of flood control basins and public areas, whether or not such streets, ways, basins or areas are improved or unimproved, or are in actual physical existence.

While an official map should ideally follow from and reflect the appropriate provisions of the municipal master plan, a municipality may adopt an official map or amendment which is inconsistent with the master plan, but only by the affirmative vote of a majority of the governing body's full authorized membership with the reasons for doing so recorded in the minutes of the action.

As in Pennsylvania, the enabling legislation for official maps in New Jersey provides that no permits shall be issued for any building or structure in the bed of any street or public drainage way, flood control basin or public area identified and reserved on the official map. However, if the permit denial would prevent a reasonable return to the property owner, the municipality may issue a permit which will cause the smallest practicable increase in the cost of opening that street or cause the minimum

change in the official map. A municipality may also attach reasonable requirements to the approval to protect the health, morals, safety and general welfare of the public (Section C.40:55D-34).

Once a municipality has adopted an official map, the designated streets, public drainage ways, flood control basins or public areas must be recorded on the final plat map at the time of subdivision or site plan approval (Section C.40:55D-44). The municipality then has a period of one year, after the approval of the final plat, to negotiate a purchase or institute condemnation proceedings to acquire the property. While a municipality can negotiate a property donation, dedication, or less than full market acquisition, the law states specifically that unless a lesser amount has been mutually agreed upon, the property owner is entitled to just compensation for the actual loss by the temporary reservation and deprivation of use. This just compensation is defined as the fair market value of an option to purchase the land, including a consideration of the real property taxes apportioned to the land during the period of reservation on the official map. In addition, the property owner may be compensated for the increased cost of legal, engineering or other professional services caused by the reservation of land on the official map.

HOW CAN WE DO IT?

Pennsylvania

The proposed official map, with an accompanying ordinance describing the official map, must be submitted to the planning agency of the municipality for a period of 45 days for review and comments. The county planning agency or governing body and adjacent municipalities must also be given an opportunity to review and comment on the proposed official map. This review may take place concurrently during the 45-day period. Local authorities, park boards, environmental boards and other public bodies may also offer comments and recommendations during this 45-day review period.

Before voting on the enactment of the official map, a public hearing must be held with sufficient public notice. Following adoption, the map and the ordinance, verified by the governing body, must be submitted within 60 days to the recorder of deeds of the county in which the municipality is located for recording. The adopted map and ordinance must also be forwarded to the county planning agency within 30 days after adoption. Also, if the map shows streets or public lands which would lead into or affect an adjacent municipality, a certified copy of the official map must be provided to that municipality.

New Jersey

The proposed official map must be referred to the municipal planning board for a 35-day review period. The planning board may prepare comments including an analysis of the proposal's consistency or inconsistency with the master plan or any other matters which the board deems appropriate. If the board does not provide any comments within the 35-day period, the governing body may proceed.

A public hearing, with sufficient public notice, must also be held prior to action by the governing body. The governing body must consider the report of the planning board, if available, and record the reasons if it does not follow those recommendations.

CAPITAL FACILITIES PLAN

WHY A CAPITAL FACILITIES PLAN?

As described in Chapter II, the process of moving from a conceptual idea for a transportation improvement to the actual physical construction will often take several years and may involve decisions and actions by local, county, regional, state and federal agencies. Those communities which have clearly analyzed and identified their needs and priorities will fare better in this decision-making process than those which have not. While the Master Planning process is the preferred way to define priorities and proposed improvements, the Capital Facilities Plan, or Capital Improvements Plan (or Program) is the method to translate those goals into a specific and achievable timeframe.

The Capital Facilities Plan is a plan for capital improvements to be incurred each year over a fixed period of years. It sets forth the specific projects and other contemplated expenditures in which the local government is to have a part and specifies the resources available to finance the projected expenditures on an annual and total basis.

The time period for the Capital Facilities Plan may vary from one to 20 years, but most are prepared for a five or six-year period. The projects and budget commitment for the next fiscal year is called the capital budget, which will become a part of the legally-adopted annual operating budget. The projects and proposed budgets for subsequent years are reviewed and adjusted annually, depending on priority needs and financial conditions, to be incorporated into the operating budgets of subsequent years.

The Plan is thus both firm enough to provide a realistic framework for fiscal planning, yet flexible enough to respond to changing conditions or to incorporate essential projects which could not be predicted in advance.

A carefully considered Capital Facilities Plan can provide a number of important benefits for a community:

1. Ensures that plans for capital projects and improvements are implemented.

2. Allows proposed improvements to be tested against funding and land use policies.

3. Improves the scheduling of multi-year projects.

4. Provides an opportunity to predict needs and acquire land before costs rise.

5. Establishes a system for long-range financial planning and management.

6. Tax rates may be stabilized by predicting debt needs.

7. Avoids miscommunication and misscheduling of projects among agencies.

8. Offers an opportunity for public participation.

9. Contributes to better management and coordination among levels of government.

HOW DOES IT WORK?

The process of preparing the Capital Facilities Plan should be a collaborative effort among the chief executive, legislative body, manager, planning board and finance officer, in that the Plan will reflect a balance among short and long term planning goals, political considerations, physical priorities and available funding. Given the many diverse and sometimes competing interests in the capital facilities planning process, no simple recipe will adequately describe the complexities involved in preparing the plan, but a generalized description of the necessary steps will be applicable for most localities seeking to develop a Capital Facilities Plan.

The Plan elements should grow directly from the broad land use and transportation policies and the specific projects as identified in the Master or Comprehensive Plan. The policies should indicate the areas within the municipality or county where growth is appropriate and desirable, as well as the specific capital projects necessary to support that growth such as new roads, road widenings, intersection improvements or transit access. The Master Plan should also identify the particular problem areas where capital improvements are necessary to correct or mitigate existing conditions, such as bottlenecks, inadequate capacity, or poor designs. Long-term goals and projects from the Master Plan should also be reflected in the Capital Facilities Plan, such as the incremental establishment of transit bus service or a light-rail line. Finally, emerging projects and new priorities not foreseen in the Master Plan should be identified and added to the list of potential projects for the Capital Facilities Plan.

When the list of potential projects has been assembled, the cost components of each project must be defined, including costs for:

- design, engineering and administration
- land acquisition
- site improvements

- construction equipment, materials and labor
- other costs

Projects may involve one or more years of costs; these costs should be apportioned over the full term of the Plan. Although the Capital Facilities Plan will generally not include ongoing operation and maintenance costs, these must also be identified for eventual inclusion in the operating budget.

Once estimated costs are known, the funding source for each project must be identified. Funding options include the use of current revenue, such as taxes, special assessment districts, impact fees, reserve funds or grants from the state or federal governments; or the borrowing of money through state or federal programs, issuing of general obligation bonds or project-specific revenue bonds. For certain projects, such as roadway improvements adjacent to a large development site, private contributions may pay for all or part of the project.

The most difficult part of the process is to then assign a priority ordering to each project, to place that project either in the current year or outlying years of the Plan. The number of projects on the list will almost certainly exceed the amount of current revenue or desirable limit of debt financing a community has in place; therefore, certain projects must be deferred to later years or left as an option only if funding permits. Prioritization may take place through a formal scoring system which assigns "points" based on the project's compliance with a set of criteria; through a more informal consensus decision among the chief executive and agency heads; through a series of public hearings to determine citizen's priorities; or through review and negotiation by the legislative or governing body. Typically, priorities are set through a combination of all of these approaches to develop a list of projects, costs and funding sources to be funded in the coming year's annual capital budget and a list of projects to be funded in subsequent years. The Plan is then reexamined, updated and readopted in subsequent years, with a reassessment of needs and priorities to add, delete, or revise capital projects as needed.

HOW DO WE DO IT?

<u>New Jersey</u>

The Municipal Land Use Law authorizes the planning board, under direction from the governing body, to prepare a program of municipal capital improvements projects for a period of at least six years. The Plan must define the priority sequencing of projects, the estimated capital costs and operating/maintenance costs, as well as the funding source to implement the project. The first year of the plan represents projects to be adopted in the annual capital budget.

In preparing the Plan, the planning board must confer with the mayor, chief fiscal officer, school boards, and other municipal officials and officers to determine the proposed needs of each. The law directs that preparation of the plan "take into account public facility needs indicated by the prospective development shown in the master plan" (Section C.40:55D-29).

Pennsylvania

Article II of the Municipalities Planning Code authorizes, but does not require the governing body to request planning agencies to prepare a plan of recommended capital improvements. The contents of this capital improvements program are not defined in the MPC.

Pennsylvania does require the preparation of a Transportation Capital Improvements Plan prior to the enactment of an impact fee ordinance (Act 209 of 1990, Section 504-A). This law provides specific guidance in the preparation of the Plan.

Following an analysis of future land use and roadway suffiency, the capital improvement plan would include all transportation improvements needed to correct existing deficiencies and to accommodate future proposed traffic volumes, with estimated costs, anticipated sources of funding and timetables for implementation. Specific projects must be delineated as follows:

- Improvements needed to meet the preferred level of service, or stricter safety, efficiency, environmental or regulatory standards, but not attributable to new development;

- Improvements needed to maintain the preferred level of service attributable to forecasted pass-through traffic; and

- Improvements needed to accommodate future development within the service area.

The proposed capital improvement plan must be the subject of a public hearing for review at least ten days prior to its adoption by the governing body. The plan should be updated periodically afterward, based on changes in land use, cost estimates, funding sources, and need.

TRAFFIC IMPACT ANALYSIS

WHY TRAFFIC IMPACT ANALYSIS?

A traffic impact analysis study undertaken during the subdivision or site plan review stage of a development application will assist a community to understand the demands that a proposed development will place on the area's transportation network and the resulting changes in level of service or congestion which might be expected. A well-considered traffic impact study includes sufficient information to enable a staff reviewer or a planning board member to understand the traffic impact of a proposed development and to determine what must be done to accommodate that proposal. These studies are essential elements and necessary prerequisites for the use of such other tools as an Adequate Public Facilities Ordinance, Trip Reduction Ordinances, or Impact Fees.

At a minimum, a traffic impact analysis study predicts the future volume of traffic a proposed project design will place on the existing transportation network. With this information, the planning board, municipality, or county may choose to approve or deny the project application. However, the methodology available for traffic impact analysis enables these studies to do much more. Alternative future transportation system scenarios can be explored to reflect the uncertainty of future investments and capital improvements. The study can examine the potential impacts of a project using a different land use mix or site design assumptions. And, perhaps most importantly, the impact analysis can test the results of undertaking a variety of different mitigation measures to reduce or eliminate the projected impacts.

Because a traffic impact analysis study can range from the relatively simple to the highly complex (and expensive), it is important for a community to develop guidelines to establish when and what type of traffic analysis is appropriate. For example, a project of three or four residential units will create a traffic impact too negligible to be measured, but one of three or four hundred will be a very different story. A commercial or industrial project can be expected to present different traffic patterns from a residential project. Impacts will also vary depending on where a project is located, whether it is in an area of excess capacity or existing congestion. Therefore, guidelines should define what type of study to do based on the traffic characteristics (e.g., such as 100 new trips generated during the peak hour traffic), the size of the project (e.g., 50 residential units or 50,000 square feet of commercial space), the location relative to the road network (e.g., adjacent to a major arterial, minor arterial or subcollector), or some combination of the three factors.

Also, while a well-considered study can serve to generate useful and accurate information for decision-making, a study which utilizes a different methodology or different assumptions will certainly generate very different results. It is therefore

equally critical for a community to adopt and understand a single approved methodology and assumptions for traffic impact analyses within that community. The use of a professional traffic engineer can assist in the review of the studies.

HOW DOES IT WORK?

A traffic impact study begins with a description of the project proposal, including the location of the site and surrounding land uses. The projected mix of buildings and different uses should be described, together with a site plan that indicates access points and relation to surrounding roadways, on-site circulation routes, and parking areas. Each of these factors can have an influence on traffic volumes and the final impact.

The study should next review in detail the existing transportation network which surrounds and serves the project site. Depending on the size of the project and the existing roadway network, it is necessary to define a study area where existing and future conditions will be analyzed. This study area may include at a minimum the roadways and intersections immediately surrounding the project site, or may extend for several intersections away from the project. Existing transportation facilities within the study area are inventoried, including roadways, lanes, traffic signals and any unusual conditions which affect traffic flow. Transit routes in the area are also identified, including both public and private bus service and rail stations. Current traffic patterns are identified and current traffic volumes are counted during the morning, afternoon, and evening peak traffic periods and adjusted for seasonal variations, if necessary, to determine the peak hour period for the highest traffic volume. Peak hours are used as a basis to review the worst-case scenario for planning. Traffic volume counts along individual stretches of roadway and at each intersection may be translated into an analysis of volume to capacity, or the widely used *"Level of Service"* standard.

The existing conditions analysis establishes conditions at the time of the study, but the project will not be in place until some point in the future. It is therefore necessary to identify the likely year that the project will be built, both in phases and completed, to act as the future base year for continuing the project analysis. For phased projects, a stepped study approach will be necessary while single phase projects may examine a single *"build year."* Future traffic conditions to this future build year are projected by adding an annual growth factor to current traffic volumes based on the municipal, county, state, or regional agencies' projections of growth. Adjustments must also be made for known changes to the transportation network, including road system improvements, temporary or long-term construction projects, and changes to the transit system. Known future development projects must also be added to the future conditions, based on projects already identified and/or approved.

The next step is to identify the projected number and type of trips which will either be generated by or attracted to the project site. Travel characteristics from a residential site will differ from a commercial or industrial site, and each will differ based on the project size and individual mix of land uses. The generally-accepted standard for trip generation rates is the Institute of Transportation Engineer's (ITE) Trip Generation Manual. If other travel modes are available and used in a project's vicinity, trips can also be assigned to different travel modes such as bus or transit. Based upon existing roadway volumes, population patterns, land use characteristics and project type, the projected site-generated traffic is assigned to different routes and directions within the study area for both incoming and outgoing trips. This assignment of projected traffic volume and distribution on the transportation network now paints a picture of future conditions with the project proposal.

Impacts caused by the project may now be viewed by comparing the conditions in the future build year without the project to conditions in the same year with the project. Changes in congestion or level of service along certain roadways or at specific intersections may be related directly to the increase in traffic volume caused by the project. It is very important to differentiate between the minor changes in volume which do not affect conditions and those major changes which can be viewed as *"significant"* impacts.

For those impacts felt to be significant, the study should next identify specific measures to reduce the increase in volume and *"mitigate"* the negative impacts.

Typical traffic mitigation measures could include:

- widening all or a section of a roadway
- adding a left or right hand turning lane
- providing a new traffic signal, stop sign or other directional signs
- building a traffic island or other channeling device
- changing the access points to a project
- adjusting the timing or synchronization of traffic signals to improve traffic flow

Other mitigation measures could include providing a shuttle bus service to increase mass transit usage or even modifying the project size or land use mix to reduce the site-generated traffic. Project-specific mitigation measures are generally negotiated depending on the identified impacts and tested against future conditions to assure that conditions with the project are no worse than without the project.

HOW DO WE DO IT?

Pennsylvania

While there are no legal standards for traffic impact analyses by municipalities or counties in Pennsylvania, there are a large number of good examples which together present a generally-accepted standard. The authority to require a traffic impact analysis study can be found in the Municipalities Planning Code, where the subdivision and land development section (Article V) allows the establishment of *"provisions for insuring that streets in and bordering a subdivision or land development shall be coordinated, and be of such widths and grades and in such locations as deemed necessary to accommodate prospective traffic."* Utilizing traffic impact analysis studies is a means to insure that the street system can accommodate the prospective traffic.

Methodologies for studies will be essentially similar to that described herein. Most traffic planners or engineers will utilize this standard methodology and capacity criteria as developed by the Transportation Research Board and the Institute of Transportation Engineers. It is still important, though, for the municipality or county to review all assumptions and methodologies used in any impact study.

New Jersey

New Jersey also does not require or set standards for traffic impact analysis studies, but provides the authority to do so through the subdivision and site plan review section (Article VI) of the Municipal Land Use Law. While the essential methodology for studies in New Jersey should remain the same as Pennsylvania, certain assumptions about the use of mass transit may differ to reflect the difference in service areas and routing in New Jersey communities.

Traffic impact analyses undertaken in conjunction with subdivision or development application review by municipalities should be reviewed with the county planning staff during the initial project scoping, to review assumptions used and to gather information on adjacent area development proposals, and again when the draft study is completed for county planning review. Certain large-scale projects which may have a regional impact would be appropriate for advisory review by DVRPC as the regional planning organization.

IMPACT FEES

WHY IMPACT FEES?

Planning and designing the transportation improvements and other infrastructure necessary to serve new development in a community is accomplished through many of the approaches already discussed, including the Master Plan, Capital Facilities Plan and Impact Analysis procedures. Impact fees are an important tool used throughout the country, and available for Delaware Valley communities in New Jersey and Pennsylvania, to help pay for these transportation improvements.

Through the subdivision and site plan review process, it is typical for a developer to provide the necessary infrastructure on the site which is needed to serve that development. For undeveloped areas, this may include a street system, curbs and sidewalks, water supply and sewage disposal systems, utilities and storm water management provisions. In certain areas utility lines or water and sewer lines may already be in place, but whatever is needed on site will generally be provided by the developer.

Many developments, however, place demands on the services and physical infrastructure of a community beyond the boundary of that development. For example, although sewer lines may be provided on-site, the development's flow affects the capacity of the municipal sewage treatment plant. The development creates additional demands for police and fire services, and school seats. And, although an internal road network may be provided, a large project will generate additional traffic on the surrounding road network or place additional demands on the mass transit system.

It was these concerns about off-site impacts and the costs associated with providing the additional services or increasing the capacity of infrastructure systems which have led many communities to adopt impact fee requirements, whereby new developments pay a fee, calculated based on the size of the development, specifically for providing the off-site improvements generated by that project. While communities elsewhere in the country have developed impact fee programs to pay for such elements as affordable housing, parks and recreation facilities, day care services and libraries, in this region impact fees are used primarily for off-site transportation and water and sewer improvements. For the purposes of this report, the focus will be on transportation-related impact fees.

HOW DOES IT WORK?

Impact fees have been used, sometimes abused, and the subject of a number of legal challenges in the Delaware Valley region. As a result of recent judicial decisions and

laws recently enacted in both Pennsylvania and New Jersey, there is now better guidance than before for communities seeking to adopt an impact fee program which is legally defensible.

Impact fees have generally been defined by the courts as single payments required of developers as a condition of approval, to be used by localities to pay the development's proportionate share of the cost of off-site public services or facilities necessitated by new development. These fees are differentiated from taxes, which are collected and spent as part of the general fund; impact fees are collected into a separate account and used only for the previously identified improvements. Impact fees also differ from taxes in that impact fees are calculated based on the proportionate cost to mitigate the identified impacts, rather than the assessed value of the property or improvements. Impact fees are based on the estimated cost of the necessary improvements, and proposed developments should be required to pay no more than their "fair share" of the cost.

In order for an impact fee program to be constitutionally valid, it must meet certain defined criteria:

1. The fee should be reasonably related to the benefits provided to the development by the off-site improvements.

2. The fee cannot exceed the development's proportionate share of the cost of the improvements necessitated by new development.

3. There must be a reasonable relationship, or "nexus," between the impacts of the development and the required improvements.

New Jersey

The New Jersey Municipal Land Use Law specifically authorizes a municipality to require a developer to pay for off-site improvements, including water, sewer, drainage facilities and street improvements (C.40:55D-42), but only with certain conditions. First, the municipality may only charge fees if an ordinance has been adopted which establishes the regulations. In a series of New Jersey court cases dating back to 1967, both the Superior Court and Supreme Court have ruled that any conditions imposed on development be defined within a local ordinance and must be limited to those permitted by the authorizing statute.

The second condition is that the fee charged to a developer may only represent the pro-rata share of the cost of the reasonable and necessary street improvements off-site which are necessitated or required by the construction of the project. Thus, a municipality may not charge a fee to be used towards a long-term road improvement program, but may only charge a developer for the specific off-site impacts associated

with that project. In New Jersey Builder's Association v. Bernards Township (528 N.J. 2d 55. 1987) the court invalidated a municipal impact fee program which required new developments to pay a proportionate share of the cost of a 20-year road improvement program. As noted above, impact fees must show a "reasonable nexus," or relationship, between the impacts of the development and the required improvements.

The third condition for establishing a defensible impact fee program is that the regulations must be based on the circulation plan element of an adopted Master Plan. This once again reinforces the importance of the Master Plan in any municipal planning effort, particularly for the goal of linking transportation and land use planning.

New Jersey has also authorized counties to participate in using impact fees through the Transportation Development District (TDD) Act. Under this program, counties may apply to the New Jersey Department of Transportation for designation of a TDD within all or a portion of a county. Boundaries must be based on evidence of high growth and a description of area transportation needs resulting from that growth.

If the area is approved and designated as a TDD, the county must work with state, local and private representatives to define the goals and priorities of the district with a listing of the necessary transportation improvements; and a financial plan with estimated costs and anticipated funding sources to pay for the improvements. The financial plan must also include the formula for determining the impact fees charged.

Once established, fees must be collected either at the time of municipal approval or at the start of construction. Collected fees are earmarked in a special fund and may only be used for the identified improvements.

Pennsylvania

Pennsylvania's impact fee legislation was signed into law on December 19, 1990, following almost three years of conflict and negotiation. The Pennsylvania legislation goes to far greater detail than New Jersey's enabling legislation in defining where and how impact fees can be used.

In adopting the impact fee law (Act 209 of 1990), the legislature recognized that in an era of increasing development and corresponding demand for municipal capital improvements this act responds to the increasing difficulty which municipalities are experiencing in finding revenue to fund new capital infrastructure by insuring that the cost of necessary capital improvements is applied equitably to new developments and property owners (Section 501-A).

Under the law, municipalities are authorized to collect impact fees for only those improvements designated in the township's transportation capital improvement program attributable to new development, including the acquisition of land and rights-of-way; engineering, legal and planning costs; and all other costs which are directly related to land improvements within a defined service area, including debt service (Section 503-A[d]).

Impact fees may not be used for any transportation improvements not identified in the capital improvements plan; the repair or replacement of existing facilities to remedy existing deficiencies or to increase capacities not required by new development; or for the costs of preparing the land use or capital improvements plan. Impact fees may include the proportionate cost of professional consultants to prepare specific roadway sufficiency analyses.

Specific impact fee rates are calculated based on the total costs of the road improvements included in the adopted capital improvements plan within a given transportation service area (up to seven square miles) which are attributable and necessitated by new development. This total cost is then divided by the total number of anticipated peak hour trips, based on the current standards of the Institute of Transportation Engineers, for all anticipated new development within that service area. This "per-trip" cost is then applied to any specific development proposal based on the estimated number of trips generated by that development. (Section 505-A[a] [1 and 2]).

In order to adopt an impact fee program, a municipality must meet a certain number of conditions and have completed a number of steps. In addition to the adoption of a transportation capital improvement program and an identified transportation service area, a municipality must have adopted either a municipal or county comprehensive plan, subdivision and land development ordinance, and a zoning ordinance. The municipality must then:

1. Appoint an impact fee advisory committee of seven to 15 members, including not less than 40% representation of the real estate and building industries.

2. Define a service area and prepare land use assumptions for growth over at least the next five years.

3. Conduct a roadway sufficiency analysis which examines existing deficiencies and defines preferred levels of future service for all roads subject to impact fees. This analysis must include projected traffic volumes separated into pass-through trips and those trips generated by new development, and the required road improvements needed to bring the existing level of service up to the preferred levels.

4. Develop the capital improvements plan, based on the land use assumptions and roadway sufficiency analysis, including the costs, timetable, budget and funding source for each transportation improvement:

    - not attributable to new development
    - attributable to new development
    - attributable to pass-through trips

Only those improvements attributable to new development may be subject to the impact fee ordinance.

Pennsylvania provides an alternate means to collect funding for the planning and financing of transportation improvements through the establishment of Transportation Development Districts. Act 47 of 1985, as amended by Act 75 of 1986, authorizes one or more municipalities or a municipal authority to establish such districts following completion of a comprehensive transportation study that assesses conditions and identifies necessary improvements and the preparation of a Transportation Improvement Program (TIP) which specifies the scheduling, budget, and funding source of each project. A Transportation Development District, once established, permits the assessment or taxation of all properties within that District to pay for the expansion of existing transportation facilities or services within that District. Funding formulas may be based on real property assessments, trip generation or taxation, but must reflect a "fair and reasonable" cost based on the projected usage of each property of the transportation facilities or services to be financed. Transportation Development Districts can be established for a multi-municipal area, thus spreading both the costs and the benefits of this program across several jurisdictions.

HOW CAN WE DO IT?

<u>New Jersey</u>

Provided that a municipality has an adopted circulation and transportation element within an adopted Master Plan, it may adopt an impact fee ordinance. The ordinance must establish "fair and reasonable" standards to determine the proportionate amount of the cost of the improvements to be borne by each developer. The municipality must conduct a public hearing on the proposed ordinance and give notice to the county planning board and to adjacent municipalities, if the improvements identified are within 200 feet of that adjoining municipality. Following adoption of the ordinance it must be filed with the county planning board.

For county Transportation Development Districts, the county must hold a public hearing on the draft TDD plan before submittal to the Department of Transportation

for designation. The application to the Department of Transportation must define the district boundaries, indicate projected growth rates and need for the district, and demonstrate conformity with the county master plan and the State Development and Redevelopment Plan. Following Department of Transportation review and approval, the county must adopt an ordinance or resolution which provides for the assessment, collection and distribution of fees collected on new developments in that district.

Pennsylvania

Following all of the steps outlined under the Pennsylvania impact fee law (Act 209 of 1990), municipalities may adopt an impact fee ordinance, provided that the intent to adopt the ordinance has been published twice in a local newspaper and that the ordinance is available for public review at least 10 days before a public meeting at which the ordinance is to be adopted (Section 505-A[b and c]).

An impact fee ordinance may be retroactive for up to 18 months before the advisory committee was created, provided that the fee charged to retroactive projects is not more than $1,000 per anticipated peak hour trip. Funds collected under an impact fee program must be held in a separate account and may be used only within the defined transportation service area and for those projects previously defined. This account must be audited annually.

Developers may receive credits against the impact fee for dedication of land or the actual cost of roadway improvements at the developers expense (Section 505-A[f]). Developers are entitled to refunds of previously paid impact fees in the event that there are excess municipal funds available at the time of completion or termination of the capital improvements program; if the township does not initiate the improvement project within three years of the scheduled date in the capital improvements plan; if the actual construction expenses were less than 95% of the costs for which the fee was paid; and if construction of the development does not commence before the expiration of the building permit (Section 505-A[g]). Developers may also appeal the impact fee by contesting any analysis or assumption of the process (Section 506-A).

ADEQUATE PUBLIC FACILITIES ORDINANCES

WHY AN ADEQUATE PUBLIC FACILITIES ORDINANCE?

It is a well-accepted tenet among planners at all levels of government that new development should only proceed in those areas where the infrastructure necessary to support that development is, or soon will be, in place. This notion is often referred to by planners as "concurrency." Such basic elements as roadway access, utility lines, water supply and a means of sewage disposal are necessary prerequisites for almost any form of commercial or industrial development. In addition, residential projects will likely require such elements as parks and public schools. This infrastructure or services should be in place at the time of development or be established "concurrent" with the new development.

As self-evident as this principle may appear, however, it is sometimes the case where new development occurs or is approved in areas without the necessary public infrastructure to support that development over time. Or, as may be more likely in the Delaware Valley region, new development may take place in areas where the existing infrastructure is already at or near its capacity limit, and is thus unable to support the additional demands created by the new development.

In areas where the rate of growth has exceeded the ability of local government to provide the necessary infrastructure, problems of congestion and overcrowding have resulted. To address these problems and provide a closer match between growth and infrastructure, governments in certain areas of the country have devised and adopted an *Adequate Public Facilities Ordinance.*

The ordinance is yet another tool in the workbox of methods to better integrate transportation and land use planning concerns. The ordinance builds on the methods and approach of the Master Plan, Capital Facilities Plan and Impact Analysis methodology by providing an enforceable legal requirement that the necessary infrastructure is provided for and in place at the time of development. The ordinances are typically tied in with the existing development review authority of local governments, and may at first appear to be deceptively simple.

For example, the Calvert County, Maryland zoning ordinance states that:

> *Before the Planning Commission can approve a development (or subdivision) of land subject to these regulations, it must find that all identified roads and schools are currently adequate or are programmed to be adequate within one year ... Otherwise, the development shall be denied.*

HOW DOES IT WORK?

Adequate Public Facilities Ordinances have been applied most frequently in the State of Maryland, where the county level of government has the primary authority for local land use planning and development review and approval. The ordinances are generally adopted as amendments to the zoning ordinance, the subdivision ordinance, the master plan, or all three. Details of implementation may vary across counties, but the basic format is the same in each.

These ordinances have been used in Maryland to address a wide range of physical infrastructure and social services, including roads, schools, water, sewer, solid waste, storm water drainage, fire, police, health, and parks and recreation. For the purposes of this report only those elements which relate to transportation will be examined.

The regulations typically grant the authority to the County Planning Board to withhold development or subdivision approval if existing roads and transit facilities, plus new roads, roadway improvements and transit improvements, are not "adequate" to handle the additional traffic from the new development plus development from existing and previously approved development. New roads, roadway improvements and transit improvements are only recognized if they are included in the Capital Facilities Plan with approved 100% funding and will be constructed and operational within one year after final approval of the development.

Each program defines their own method to measure and predict future traffic volumes and each defines their own acceptable level of adequacy. Depending on the area and existing traffic volumes, adequacy may range from a Level of Service "C" along local roads, Level of Service "D" at major intersections, or even Level of Service "E" in certain urbanized areas. Predicting traffic volumes is conducted through a traffic engineering study which reviews existing volumes, approved developments, recognized roadway improvements and expected trip generation rates. Peak hour definitions may also vary by area depending on local conditions.

If a proposed project fails the test of "adequacy," the Planning Board is required to deny the application. However, there are still several alternatives available to the developer to proceed with the project. They may:

- Build the needed roadway links or improvements themselves as mitigation;
- Reduce the size of the project or redesign to reduce the traffic impacts;
- Delay the project until the Capital Facilities Plan "catches up" and builds the improvements;

- Implement a "trip reduction program" (see next section) to reduce traffic volume; or

- Shift the project to an area where roadways are not over capacity.

Exceptions are also made in certain cases for minor subdivisions, schools, elderly housing, or approved affordable housing.

Adequate Public Facilities Ordinances can only work in those areas where a predictable and reliable Capital Facilities planning process is in place, because the Adequate Public Facilities Ordinance is often a partnership between the public and private sectors. If a new roadway, improvement or transit service expansion is identified in the public Capital Facilities Plan, a developer must have some level of assurance that that facility will be built and operational on-time, in order to schedule the phasing of a project. To ensure that government upholds its part of the process, certain municipalities in Florida actually provide a guarantee of the road improvement schedule at the time of project approval. If funding is not forthcoming, the requirements of the ordinance do not apply.

HOW DO WE DO IT?

Adequate Public Facilities Ordinances may be applied at either the municipal or county levels of government. Although no such ordinances now exist as such in either New Jersey or Pennsylvania, it may be possible to use this approach in the Delaware Valley region. An adequate public facilities approach is not now specifically authorized in either state, and additional state enabling legislation may be required for its use. As in Maryland or Florida, the use of Adequate Public Facilities Ordinances in New Jersey or Pennsylvania would work best when integrated with existing procedures such as the Subdivision or Site Plan Review Ordinance or Transportation Development Districts.

<u>New Jersey</u>

Article 6 of the New Jersey Municipal Land Use Law provides the enabling authority for municipalities to prepare and adopt an ordinance with standards for the review of subdivision plats and site plans as a condition for the issuance of a development permit. Any adopted subdivision or site plan ordinance must include, among others, provisions for:

.... Adequate water supply, drainage, shade trees, sewerage facilities and other utilities necessary for essential services to residents and occupants;

.... Streets in the subdivision or land development of sufficient width and suitable grade and suitably located to accommodate prospective traffic...;

.... Conformity with the state, county, or municipal access management code.

In addition, the ordinance may include provisions for:

.... Off-tract water, sewer, drainage, and street improvements which are necessitated by a subdivision or land development, based on circulation and comprehensive utility service plans of the Master Plan, with fair and reasonable standards to determine the proportionate or pro-rata amount of the cost of such facilities that shall be borne by each developer...

Most municipalities with subdivision and site plan review ordinances require some form of traffic impact study for large-scale developments. Those that have developed impact fee ordinances (see section on Impact Fees) have adopted even more rigorous review standards. The Adequate Public Facilities Ordinance would allow these municipalities to adopt a clear and objective standard for review, with improved predictability for developers, planners, and local officials.

Counties may also be able to use the Adequate Public Facilities Ordinance approach in New Jersey, in connection with their existing review authority for subdivisions that affect county roads as well as any site plans for land development along county roads. The Ordinance approach would establish clear standards and an acceptable level of service.

Pennsylvania

The Pennsylvania Municipalities Planning Code (Article V) also provides standards for subdivision or land development ordinances, which may include, among others, provisions for:

.... insuring that streets in and bordering a subdivision or land development shall be coordinated, and be of such widths and grades in such locations as deemed necessary to accommodate prospective traffic ...

.... standards by which streets shall be designed, graded and improved to such a condition that the streets are passable for vehicles which are intended to use that street ...

Municipalities in Pennsylvania may thus also be able to incorporate an Adequate Public Facilities Ordinance into their subdivision regulations as a means to provide standards for site plan or subdivision review.

There may even be a role for State government, in that subdivisions which require access to a State highway are required to apply to the Pennsylvania Department of Transportation for a highway occupancy permit under the State Highway Law. The State could use the Adequate Public Facilities approach as a means to review, modify, or even deny permit applications.

TRIP REDUCTION ORDINANCES

WHY A TRIP REDUCTION ORDINANCE?

Methods to reduce the use of the road network by reducing the number of cars on the road can be equally effective at increasing traffic flow and improving congested conditions as roadway widenings or other methods which increase capacity. These methods operate by enticing people out of their cars through voluntary, incentive, or mandatory programs which in turn may encourage ridesharing, vanpools or increased usage of mass transit. These transportation demand strategies should be an integral component of a comprehensive program to link transportation and land use planning.

Simply, transportation demand strategies seek to reduce the demand on the system by changing people's behavior. Demand management strategies typically include a set of incentives intended to induce people, particularly commuters, out of their cars and into an alternative transportation mode or service. By reducing the number of cars on the road (the demand), traffic conditions have a better chance at operating within the capacity of the roadway system (the supply).

Transportation demand management (TDM), also known as transportation system management (TSM), was borne of the recognition that the funding and land available for capital improvements programs were not limitless and that it could be possible to improve roadway conditions by maximizing the use of existing facilities. Beginning as voluntary programs by large employers or developers, the concept of transportation demand management has been expanded through Transportation Management Associations, which aggregate the employers and developers of an area to pool their resources and programs. As municipalities — faced with traffic and congestion problems — negotiated with developers for ways to reduce the traffic generated by projects, incentives began to appear. For example, the amount of required parking could be reduced if the project provided a program to reduce automobile use. More recently, a number of municipalities throughout the country have adopted local ordinances which mandate transportation demand programs.

HOW DOES IT WORK?

These local ordinances, known as Trip Reduction Ordinances, have been used most frequently in California, but there is at least one example in place in New Jersey. The advantages of a trip reduction ordinance over voluntary Transportation Management Associations or negotiated project-by-project agreements are several:

1. The ordinance will typically cover the entire municipality, rather than a given project or smaller area, and thus achieve more results;

2. The burden is spread more equitably among existing and future developments and the ordinance provides clear goals and uniformity for all parties; and

3. The ordinance may be less vulnerable to legal challenges than conditions imposed on individual development approvals.

A trip reduction ordinance can apply in only part of a municipality such as the central business district or commercial area, over the entire municipal area, or even as a multi-jurisdictional program, such as the six-city joint powers authority recently formed to oversee the implementation of ordinances in San Mateo County, near San Francisco.

Ordinances may apply only to new and existing employers; to new and existing employers and new developments; or to new developments and substantial expansions of existing structures. Existing residential developments are generally not subject to the trip reduction ordinances, although some ordinances apply to new residential projects over a minimum number of units. The scope of coverage of the ordinances will generally depend on the objectives of the program. For example, if the objective is to reduce the traffic impact of new development, only those would be subject to the ordinance. However, if the goal is to improve overall traffic conditions, the ordinance should apply to both new and existing employers. There should also be thresholds or different requirements for small versus large developments.

The goal of trip reduction ordinances are to reduce the number of cars on the road, as determined by a variety of measures, ie:

- *Vehicle Trip Reduction:* establish a standard (ranging from 5-50 percent) for the reduction in vehicle trips as compared to a baseline of single occupancy trips or existing trips over a period of time.

- *Participation Rate:* establish a standard (ranging from 20-55 percent) for non-single occupancy vehicle travel, with time periods for achievement.

- *Peak Hour Vehicle Trip Reduction:* if the primary problem is peak hour travel, an ordinance may only require a reduction in trips during these periods by commuters (ranging from 25-45 percent) through alternative modes of travel or staggered work hours.

- *Level of Service:* similar to Maryland's Adequate Public Facilities ordinances, these trip reduction ordinances use the maintenance of a given level of service on the roadways as their standard of measurement.

Alternative measurement standards might include the average number of employees per vehicle, specific trip rates for different land uses, or even defined goals for different travel alternatives, such as carpools, buses, trains, walking/bicycling, and cars.

The specific requirements of a trip reduction ordinance can be very specific, identifying the actions which each employer or new development must take, or can be flexible, allowing any mix from a menu of options to achieve the program goals. Most ordinances will require employers to collect and submit annual reports to the jurisdiction regarding employee commuting characteristics, to determine baseline conditions and monitor changes. The ordinances will also require that employers provide information to employees on alternative commuting options, through written information and also often via a designated transportation coordinator.

For existing developments, the mandatory requirements or menu of options which can be used to achieve the program goals include the following:

- instituting flextime or compressed work weeks, or allowing employees to telecommute
- establishing shuttle services
- developing ridesharing programs
- subsidizing transit or ridesharing
- providing preferential parking for rideshare vehicles
- providing loading and unloading areas for transit or shuttle vehicles
- providing amenities for bicycles or commuters who walk to work

For new developments, each of these options may be included plus, in at least one case, a requirement for new developments to pay an impact fee towards the construction and operation of a municipal transit system (Sacramento, California).

HOW DO WE DO IT?

Many of the trip reduction ordinances now in place grew out of a partnership between the public and private sectors, where the need for the program and the ground rules for implementation can be defined. In particular, the major developers and employers should be involved in developing the program. The programs will generally maintain a task force to oversee the operation of the ordinance and suggest changes or improvements and hire or appoint a staff member as the principal coordinator. Enforcement measures may include fines, in-lieu fees, denial of permits or even revoking of use permits if goals are not met.

Finally, multi-municipal or regional arrangements are preferable, where possible, as a means to improve coordination and avoid spillover effects across municipal boundaries.

Pennsylvania

Pennsylvania does not have experience with mandatory trip reduction ordinances, but does have a number of voluntary Transportation Management Associations in effect. Some of these programs are voluntary private sector associations which attempt to share information and pool resources while others have a formal public participation which can work jointly with the private sector to establish municipal programs. While specific state enabling legislation to use trip reduction ordinances at the local level is not now found in Pennsylvania, provisions of the 1990 Clean Air Act may ultimately require mandatory programs to increase vehicle occupancy for employers in the region.

New Jersey

North Brunswick, New Jersey has a trip reduction ordinance, adopted in 1987. The ordinance applies throughout the township to all planned developments, new residential developments of 20 or more units, new non-residential developments of 15,000 or more square feet, and existing businesses with 50 or more employees (excluding certain businesses). The goal of the program is to reduce peak-hour traffic movements, so that for existing businesses the total peak period trips are less than 60 percent of the work force, and for new developments the number of peak hour trips is no more than 70 percent of the anticipated number if all trips were in single-occupant vehicles.

The ordinance requires the preparation of traffic reduction plans to meet the program goals, establishment of an information program and transportation coordinator, and annual monitoring to review program achievement. Requirements vary by use and scale from a menu of options which an employer can use, to specific improvements they must provide. For example, new non-residential developments may choose from among the following options to achieve their peak hour reduction:

- designation of preferred parking for car and vanpools
- construction of shelters and loading areas
- provision of shuttle bus service to and from the train station in the morning and afternoon
- establishing an in-house or third-party ridesharing or vanpooling program
- establishing an information center to coordinate ridesharing and vanpooling among smaller businesses in a complex

New residential projects, however, are required to provide vanpool parking spaces or a park-and-ride facility, with the number of spaces dependent on the number of units.

HIGHWAY ACCESS MANAGEMENT

WHY HIGHWAY ACCESS MANAGEMENT?

Intensive growth and development within the Delaware Valley region has led to severe traffic congestion along many segments of the regional highway system. In addition to the time delays motorists experience, the traffic congestion hinders the region's economy and increases air pollution. Limited financial resources, a lack of land and environmental constraints prohibit the expansion of the regional highway network in many areas. Even if the highway network is expanded, the congestion problem may not be abated since increased development is attracted to the easily accessible locations brought about by new or improved highways.

Part of the solution to the traffic congestion problem in this region must be to better utilize the existing highway network and to change motorists driving habits. Techniques associated with Trip Reduction Ordinances are one means to influence travel demand. Another approach is the use of highway access management.

Through access management, the existing highway network can be more efficiently and safely utilized. Access management is a simple, but effective tool which regulates the number and type of access points allowed on a roadway resulting in an improved level of service for motorists. Careful access planning can prevent or eliminate many of the major points of traffic congestion within the region.

Traditional land use planning has given little attention to the impact that the development of abutting properties has on the roadway. However, rapid development has already resulted in the deterioration of the level of service on most major roadways. The states, counties and municipalities can no longer segregate land use planning from access planning.

Although Pennsylvania and New Jersey require access permits onto roads under their jurisdiction, little attention has been paid to the overall impact numerous access points have on the roadway. While local and state regulations may dictate spacing requirements and engineering standards for driveways, intersecting roads and traffic signals, the permit applications are generally reviewed on a case-by-case basis with little consideration given to the overall impact the new access point will have on the flow of traffic or safety. Additionally, the current review process rarely considers the use of alternative roads for access.

HOW DOES IT WORK?

A sound highway access management strategy is one that is incorporated into the entire land use planning process. All levels of government should have an access

management plan which applies to the roads within their jurisdiction. The access management plan should carefully consider the functional design and purpose of the roadway. For example, state highways are designed primarily to carry high-speed, through traffic. Therefore, access to abutting properties should be subordinate to the free flow of traffic in the access management plan.

At the local level, the access management plan should be adopted through ordinance by the municipality and incorporated into the site plan and subdivision review process. All traffic impact studies should address the access management plan in detail, and the findings should be compared to the goals and objectives of the municipal Master Plan or Comprehensive Plan.

At the county level, the county access management plan should consider sub-regional or intra-county travel. That is, the plan should examine an access point's impact on travel from one county road to another. County roads should provide access to major land uses along abutting properties, however reverse frontage, service roads and shared-driveways should be required for minor land uses and most adjacent land uses, where feasible. To make this work, the county, the municipality and the developers must be willing to cooperate with one another. Counties need to establish an access review process to discuss access alternatives before local approvals are granted. By incorporating the goals and objectives of the county access management plan into the early stages of the local development review process, sound access management can be incorporated into plans prior to the expenditure of a significant amount of time and money by the developer.

HOW DO WE DO IT?

During the land development review process that all development proposals must undergo, the applicant must receive an access permit from the governing body with jurisdiction over the road onto which the development's traffic will access. Each governmental jurisdiction has its own set of regulations governing access. However, most access regulations include the following elements:

- Classification of driveway by use or traffic volume
- Allowable turning movements for each type of driveway
- Spacing standards between driveways and intersections
- Minimum design standards for all driveway types
- Number of permissible driveways based on lot frontage

Many of the standards governing access points are based on standards adopted by the American Association of State Highway and Transportation Officials.

New Jersey

In New Jersey, 72% of all roads are under municipal jurisdiction. During the municipal site plan and subdivision review process access issues are examined. Municipalities may have separate ordinances governing access or they may incorporate access management into their zoning ordinances and site plan and subdivision review ordinances.

If a development proposal fronts a county road, the municipality may not grant a building permit until the county has approved the proposal and issued a county access permit. Approximately 20% of New Jersey's roads are within county jurisdiction. Like New Jersey municipalities, New Jersey counties have their own standards and regulations governing access. These standards are usually enforced through the county's Land Development Standards or the county's Site Plan Resolution.

The NJDOT regulates access on all state highways which account for approximately 8% of the state's road network. In general the NJDOT issues two types of access permits: minor permits and major permits. A minor permit is issued for most residential and commercial uses which will generate less than 500 trips per day. Major permits are issued for uses generating 500 or more trips per day. Additionally, these large-scale projects may be subject to a level of service analysis. If this analysis finds the proposed development will have an adverse impact on traffic flow and/or safety, the developer will be required to provide mitigation techniques, such as acceleration/deceleration lanes, prior to the issuance of an access permit.

The New Jersey Department of Transportation has developed draft regulations to implement the State Highway Access Management Act of 1989. This Act requires the NJDOT to regulate access onto state highways to improve highway efficiency and safety. The proposed rules which implement the Act may become effective in January 1992.

The proposed State Highway Access Code divides the state's highway segments into six access levels. The access level determines the type of access allowed on each segment of the highway from abutting properties. Allowable access can range from access at interchanges only to unlimited access and depends upon the highway segment's location and function.

The proposed Access Code also divides lots abutting state highways into two types: conforming and non-conforming. Lot conformance is based on minimum driveway spacing standards that are determined by lot frontage and highway speed limit. A

non-conforming lot is subject to a maximum vehicular use limitation formula. This formula determines the number of vehicles allowed access to the state highway that can be generated by the subject lot. The results of this formula may limit the uses allowed on non-conforming lots. If the use allowed under the zoning ordinance on a non-conforming lot generates more vehicular trips than allowed under the proposed Access Code's maximum vehicular use formula, that use will not be granted an access permit by NJDOT.

The proposed Access Code strongly encourages access onto alternative roads, the use of shared access and service roads. All development proposals seeking access onto a state highway must be in conformance with the proposed Access Code before an access permit will be issued. Counties and municipalities are also encouraged to develop access management codes that are at least as strict as the state's access code. Counties and municipalities are also encouraged to establish specific access management plans for all or part of their roadway network, including along state highways in cooperation with Department of Transportation, which translate the generic standards of the access code into a specific plan for the roads. To increase compliance, access management plans should be created through a joint planning process in cooperation with land owners.

Pennsylvania

Like New Jersey, the majority of Pennsylvania's roads are controlled by municipalities (58%). However, less than 4% of the road system is under county jurisdiction, while 38% of the state's road network is controlled by the Commonwealth through PennDOT.

PennDOT requires all developers to obtain a highway occupancy permit before constructing on properties abutting a state highway. Title 67, Chapter 441 of the Pennsylvania Code, *"Access To And Occupancy Of Highways By Driveways And Local Roads,"* grants PennDOT the power to "regulate the location, design, construction, maintenance, and drainage of access driveways, local roads, and other property within State highway right-of-way for the purpose of security, economy of maintenance, preservation of proper drainage, and safe and reasonable access."

The access regulations group driveways into four classifications, which are based on the amount of traffic they are expected to serve. The regulations establish minimum design standards for each classification. The driveway classifications are as follows:

1. Minimum use - less than 25 vehicles per day; usually residential uses

2. Low volume - 25 to 750 vehicles per day; office buildings, schools

3. Medium volume - 750-1,150 vehicles per day; motels, fast food restaurants, service stations, small shopping centers

4. High volume - 1,500+ vehicles per day; large shopping centers, multi-building apartment or office complexes

The design standards include minimum specifications for such elements as sight distance, curbing, and grade. The standards usually vary with each driveway type, highway speed limit and number of lanes.

At the municipal level, access drives are reviewed by the municipality through the development review process. During this process, the municipality will review the development proposal and recommend changes or modifications which could include access driveways. Through this process, the municipality may negotiate with the developer to provide roadway improvements necessitated by the increased traffic generated by the proposal. As in New Jersey, municipal access regulations may be incorporated into the zoning or site plan and subdivision ordinances.

CHAPTER IV: COUNTY, STATE AND REGIONAL ACTIONS

The ten planning tools presented in this report are methods that municipalities in the Delaware Valley region can use now to better integrate transportation considerations into their local land use planning process. These tools range from the widely known and applied approaches such as zoning ordinances to the little known techniques which are now emerging, such as trip reduction ordinances or highway access plans. But each of these methods are currently available to municipalities in the region and, when utilized as part of a comprehensive planning approach, can yield positive benefits.

While municipalities are encouraged to apply as many of these techniques as applicable in their communities, it is absolutely essential to incorporate at least several of these tools at a minimum. A well-considered Master or Comprehensive Plan with a transportation and circulation element is the essential first step. From there, the zoning ordinance can be updated or revised to be consistent with the plan and used, together with site design standards, to implement the specific land use goals of the plan. Another essential element to implement the transportation goals of the plan is the use of a capital improvement or capital facilities plan to identify a specific timetable and funding source for the recommended transportation improvements. From this basis, a municipality would be ready to use such other tools as an official map, impact fees, or adequate public facilities ordinances.

In addition to the recommendation to encourage municipalities to apply these tools, there are three specific recommendations for municipalities to improve the land use and transportation link and provide better coordination among levels of government:

1. Participate in regional transportation planning: Municipalities are strongly affected by the work of county, regional and state transportation planning and should participate in the TIP (Transportation Improvement Program), Long-Range Plan, and Capital Improvement Plans of these agencies. Municipal priorities should be identified and transmitted through the counties for consideration in these plans.

2. Review adjacent municipal plans and proposals: Municipalities should be aware of the policies of their neighbors as reflected in municipal master plans, zoning ordinances or capital facilities plans. In addition, municipalities should review, or ask county or regional planners to review, significant development proposals in one locality which can create traffic impacts in an adjacent community.

3. Form multi-municipal planning approaches: A cooperative approach to planning is the best way to avoid the conflicts and overlapping problems faced by many municipalities. A multi-municipal planning approach can establish goals over a larger area and better integrate land use and transportation planning.

COUNTY PLANNING AGENCIES

County planning agencies in the region are now faced with a frustrating paradox, in that the county agencies generally have a well-trained professional staff but do not have the authority to implement their plans or to approve or deny the development applications which they review. Individual municipalities, in contrast, may only have a single staff planner or operate only a voluntary Planning Commission, but have the full power of home rule.

While the practice of local authority should continue, there are also a series of recommendations to strengthen the role of the counties as the link between land use and transportation planning:

1. Mandate New Jersey County Master Plan: Pennsylvania counties are now required to prepare and adopt a comprehensive county plan, including land use and transportation elements, but no parallel requirement is in place in New Jersey. Since New Jersey counties have an opportunity to participate in the State planning process, they should also be required to prepare and adopt a county Master Plan.

2. Mandate County Capital Facilities Plans: In both Pennsylvania and New Jersey, counties should prepare an annual capital plan and a five or six-year capital facilities plan, including the transportation improvements incorporated into the regional TIP. The counties should solicit active participation by their respective municipalities in the preparation of these plans.

3. Invite municipal participation in county planning: An active county planning function should not be at the expense of municipal plans. Municipalities should be integrated directly into the preparation of the county plans through a cooperative planning process.

4. County review and certification of municipal plans: To assure consistency and compatibility among municipalities in a county, the county planning agencies in both states should have the authority not only to review municipal plans, but to certify their consistency with the county plan as well.

5. County approval authority of development applications: Pennsylvania counties now have advisory review of subdivision and development applications and New Jersey counties have approval authority on those applications which are along or affect county roads. For those proposals over a threshold size which may have impacts beyond a single municipality, the counties in both states should have the authority to review and approve or deny the development application. For these projects, municipalities could not approve the proposal without county approval.

6. Monitor growth and development: Counties in both states should monitor proposals and completed construction projects throughout the counties to identify emerging growth areas and to plan for infrastructure needs.

7. Provide technical assistance to municipalities: With a larger staff and greater resources than any single municipality, the counties in both states should continue to provide technical planning assistance to their municipalities, on either a contract or voluntary basis.

STATE AGENCIES AND LEGISLATURES

The State agencies responsible for state highways and the region's transportation network must also recognize the critical link between their transportation projects and the land use patterns of the region. Traffic and congestion problems now in place are largely a function of the existing land use patterns. Future land use trends and development patterns will determine where future transportation infrastructure will be needed. State transportation planners must therefore not only respond to existing land use conditions, but must understand future land use trends which will guide their future transportation investment decisions.

There is also an important role for the Governors and General Assembly of both states to take the lead in improving the planning function and in linking land use planning to transportation planning through State mandates. Specific recommendations for state agencies and the state legislatures are as follows:

1. Mandate county and municipal plans: Pennsylvania now mandates county comprehensive plans and New Jersey has an active State planning program, but neither state requires municipalities to prepare and adopt master plans with a comprehensive transportation and circulation element. Although now authorized for municipalities in both states, the legislatures should require municipal master plans including a land use and transportation element.

2. Establish Pennsylvania state planning process: The Pennsylvania governor or legislature should take the lead in promoting planning in the

Commonwealth, particularly the linkage between land use and transportation planning. If a detailed state plan such as New Jersey's is not possible in Pennsylvania, the state should at a minimum establish the goals, policies and guidelines to foster better planning in the state.

3. Provide funding for mass transit: Although there is continuing funding for the highway program, there is still insufficient funding for the region's primary mass transit system, SEPTA. The existing mass transit network is the framework for development in the region and can serve in the future as the primary land use and transportation linkage. Expanded support for mass transit in the region is essential in the form of predictable and stable funding.

4. Link State funding to local planning: The state agencies or legislatures have the ability to directly influence local planning efforts by establishing a requirement that would link the provision of state funding for a transportation project to the successful completion of a municipal or county master plan and a capital facilities plan which identifies the need for the project. The states should provide planning grants to municipalities as an incentive to plan or consider withholding state funding as a penalty for inaction.

5. Continue the New Jersey State Plan: The New Jersey State Development and Redevelopment Plan and the accompanying cross-acceptance process offers the best opportunity to coordinate land use and transportation planning both horizontally and vertically among the different levels of government. Although behind the original schedule for plan preparation and adoption, the Office of State Planning and the State Planning Commission should continue all efforts to establish a state plan.

6. Implement the policies of the State Plan: State agencies, particularly the New Jersey Department of Transportation (NJDOT) will have a key role in implementing the policies of the State Plan. NJDOT has taken initiatives towards linking land use with transportation by publishing a municipal handbook, entitled *Managing Transportation In Your Community*, and in the report *The Decision-Making Framework For Transportation In The 1990's*. Both NJDOT and PennDOT need to take the lead in recognizing the critical role that land use planning has for transportation planning. For state transportation planners this also would include incorporating alternatives to the automobile in their roadway designs, such as bicycles, pedestrian access, bus turn-outs and other transit facilities.

7. Support local planning with state funding: State agencies can support local planning, particularly encouraging the linkage between land use and transportation planning, through assistance or incentive grants. For example,

the Departments of Community Affairs in both Pennsylvania and New Jersey provide small grants to municipalities for planning activities; these grants should be increased. In addition, state Departments of Transportation should provide assistance to municipalities for actions which reduce traffic demand, and can result in savings by avoiding construction projects.

8. Use transportation investments as planning tool: State highway and mass transportation investments must not only respond to existing conditions, but can serve to influence future conditions and land use patterns. Transportation investments should be viewed as an economic development tool, and focused to strengthen city centers and capitalize on mass transit systems instead of fostering inefficient land use patterns.

9. Recognize land use link of Clean Air Act. Provisions of the Clean Air Act will require increases in vehicle occupancy by 25% above the regional average for employers over 100 people. The Departments of Transportation in both Pennsylvania and New Jersey should look to the linkage techniques described in the report as a means to achieve this reduction. In addition, air quality planning should carefully consider the causative relationship of land use patterns to air quality by modeling the air quality impacts of different land use patterns.

10. Authorize use of all planning tools: All of the land use and transportation planning tools described in this report are authorized for use and have been applied in the two states, with the possible exception of the Adequate Public Facilities ordinance and the Trip Reduction ordinance. The legislatures in Pennsylvania and New Jersey should provide the authorization for counties or municipalities to utilize Adequate Public Facilities ordinances or Trip Reduction ordinances and should also require state agencies such as the Departments of Community Affairs or the Departments of Transportation to provide more detailed standards and guidance on the use of other tools such as Traffic Impact Analyses, Capital Facilities Plans or (in Pennsylvania) Highway Access Plans.

REGIONAL AGENCIES

Regional planning and transportation agencies are in the unique position to work closely with both state agencies and the individual counties and municipalities within the Delaware Valley region. With these relationships, regional agencies are able to improve the coordination among the different levels of government and increase the degree of cooperation among different agencies. Regional agencies are also in a position to view and present a more comprehensive vision of land use patterns and infrastructure investment than the individual counties or municipalities, but avoid the broad-brush approach sometimes necessary at the state level.

Specific recommendations to improve the land use and transportation linkage at the regional level include the following:

REGIONAL TRANSIT AGENCIES

1. Consider emerging land use patterns: The decentralization of the region over the past 20 years has greatly increased the number of suburb-to-suburb trips and resulted in a decreased usage of the radially-oriented mass transit system. In order to be responsive to future demand, transit agencies must recognize and respond to emerging land use patterns of population and employment. SEPTA's planning for the Cross-County Metro in Pennsylvania is a very positive step in this direction.

2. Be accessible and responsive to municipalities: Regional transit agencies must maintain a close relationship with the municipalities in order to be aware not only of development proposals and new transit opportunities, but to help influence municipal land use planners to plan for the types of density and center designs which are most compatible with transit service. Transit agencies should also remain abreast of municipal plans as a factor in the capital planning process of the agencies and should have the ability to review major development proposals which could include the potential for transit-friendly design.

3. Consider joint development projects with municipalities: The regional transit agencies are in a unique position to not only provide guidance or technical assistance to municipalities on development patterns, but to actually help create the densities or uses compatible with transit through development projects on land owned by the transit agencies. In many cases, the transit agencies own land surrounding rail stations, where higher density development may not only increase ridership on the transit line, but provide an economic revitalization to the older towns or boroughs along the rail lines.

4. Provide incentives for use of mass transit: Transit agencies in the region have joined with DVRPC to support the use of TransitChek, a new program to encourage mass transit usage. TransitChek allows employers to provide a tax-deductible amenity to their employees, in the form of a $15-$21 credit towards monthly transit usage. In this way, transit usage is supported similar to the support given to the use of automobiles through the provision of free parking.

5. Educate the public: Regional transit agencies also have a responsibility to provide information and to educate the public about their mass transportation options and the implications of public investments in highways versus mass transit. By understanding all of the relative costs, benefits and

impacts of different investments, citizens will be more likely to support public investment decisions.

REGIONAL PLANNING AGENCIES

1. Prepare regional plan: The Delaware Valley Regional Planning Commission (DVRPC) should continue its efforts to prepare and update a regional comprehensive plan which examines patterns of land use, farmland and open space preservation, and infrastructure needs and investments, particularly transportation infrastructure. DVRPC's vision for the region recognizes the vital link between land use and transportation. DVRPC must work closely with the member counties and encourage the counties to invite municipal participation, such as by testifying at DVRPC hearings on the long-range transportation plan.

2. Maintain capital improvement plan: DVRPC is also responsible for maintaining the regional Transportation Improvement Program (TIP), a federal requirement whereby all transportation projects in the region must be included in the TIP in order to be eligible for federal funding. Maintaining the TIP provides DVRPC with a comprehensive overview of all transportation needs in the region and a picture of the regional transportation priorities. DVRPC will continue to work with the states, regional transit agencies, counties and municipalities in the preparation of the TIP.

3. Provide forecasts of population and employment: Planning for future land use patterns, travel demand and transportation infrastructure investment requires a judgment about future population and employment levels at the regional, county and municipal level. DVRPC has undertaken and maintained a process to forecast population and employment levels for a 20-25 year time horizon for the region. Currently, forecasts are available for the Year 2010. In the coming year, DVRPC will begin to prepare forecasts for the year 2015.

4. Monitor growth and development: Regional planning agencies are also the appropriate source to collect, analyze and disseminate information on the type, scale and location of development activity in the Delaware Valley. Monitoring development applications provides an opportunity to identify growth corridors and areas and to assure better forecasts of future growth patterns.

5. Review major development applications: The current system of development review in the region is appropriate for minor projects with only local impacts which should be reviewed primarily at the municipal level. However, for

larger projects with potentially broader impacts, the counties now have only an advisory review authority and the regional planning agency does not review these development proposals at all. For all projects over a certain threshold size, county planning agencies should have review authority and approval authority and the regional planning agency should have an advisory review authority to examine potential regional impacts.

6. Provide technical assistance to counties and municipalities: DVRPC undertakes a variety of services and technical land use and transportation studies for the counties and municipalities of the region. In addition, reports such as this provide a technical resource for the counties and municipalities to use to establish a better linkage between their land use and transportation planning activities. DVRPC will remain responsive to the needs of the region and is available to provide services as needed. DVRPC is also available to assist counties and municipalities to better coordinate their activities with the two states, and can serve to mediate conflicts and disputes by providing a regional perspective to issues.

7. Use computer modeling for land use/transportation linkage: DVRPC's computer modeling process is a sophisticated technique now used primarily to predict travel demand on area roadways given a predicted land use pattern and trip generation standards. However, this model could also be used as a powerful tool to indicate the linkage between land use and transportation, by modeling different land use and development patterns to indicate their differing impacts on the transportation network. In this way, the model could be an important predictive tool to not only illustrate transportation needs, but to influence land use patterns.

CONCLUSION

Sound planning for the future of the Delaware Valley region must include a close integration of land use planning and development with the provision of adequate transportation facilities, including a fully-functioning mass transit system and programs to limit or manage traffic demands on area roadways. The ten planning tools presented in Chapter III and the 32 recommendations presented in this chapter provide a broad array of approaches for municipalities, counties, regional entities and the states to undertake. Successful planning recognizes the interrelatedness of various factors such as growth and congestion and takes action to predict and address the consequences. Successful planning must also recognize the interrelatedness of governmental authorities and seek to build coalitions among all levels of government.

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