

Mobility and Community Form:

A Guide to Linking Transportation and Land Use
in the Municipal Master Plan

October 2006



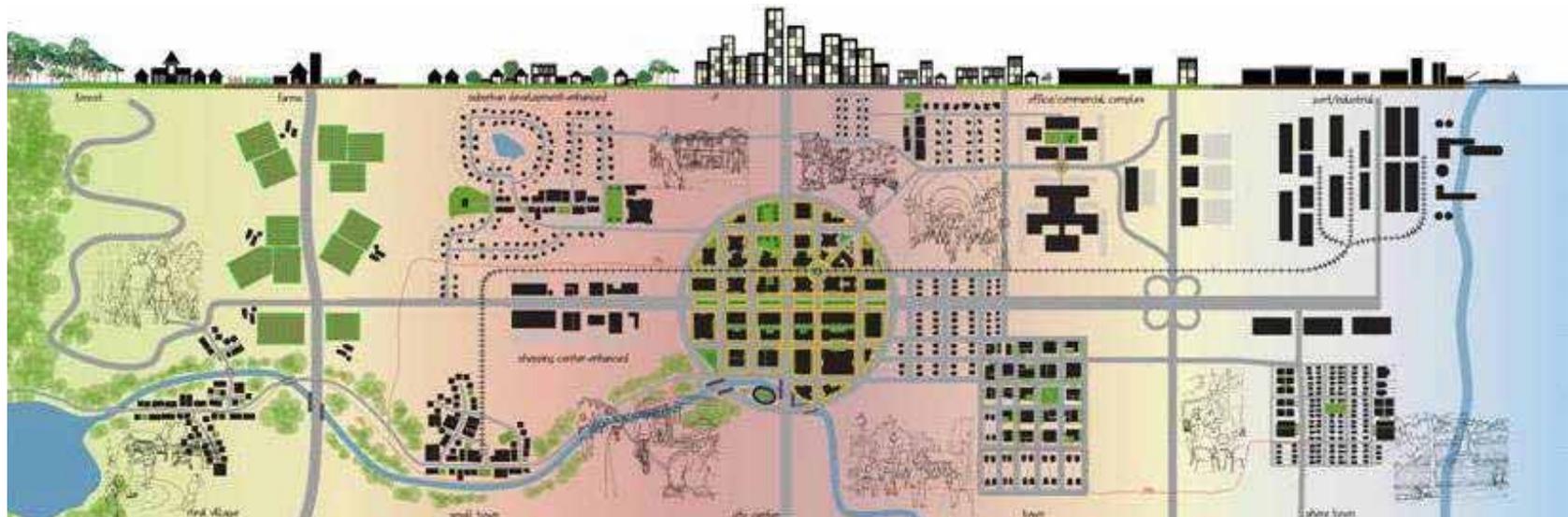
U.S. Department
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**Federal Highway
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Chapter 1

Mobility & Community Form: An Introduction



The pattern of roadways and land uses in a community can facilitate or discourage many kinds of activities. Source: Ian Lockwood

Transportation is intimately connected to the quality of life in New Jersey's cities and towns, villages and hamlets, and sprawling suburbs. Facilities such as streets and parking help knit places together, while others form barriers. Frequently, transportation occupies a large portion of the community's land. Some travel ways are easy to navigate, attractive, and safe; others are oppressive or confusing. Although we take it for granted – as an unchangeable fact of life – transportation is really a series of choices that shape many of the habits of daily life, often in subtle ways. It occupies significant amounts of people's time – time that could be enjoyable, but is often dull, frustrating or anxiety-producing instead.





This publication is about preparing a master plan that:

- Maximizes mobility for all people,
- Balances the amount, location and type of transportation facilities with the community's land development patterns,
- Specifically links transportation facilities with adjoining developments and the broader community,
- Helps make the travel experience enjoyable,
- Engages citizens in the planning process, and
- Meets the expectations for Plan Endorsement.

The MLUL gives little guidance on preparing the master plan circulation element. In fact, in many master plans, the circulation element is little more than a roadway inventory and some engineering designs. Frequently, there is little recognition of the different functions of roadways or of the land uses that adjoin them.

The most effective local transportation plans look beyond the street system and recognize the many linkages between transportation and community life in its varied forms. This means considering not only travel needs, but the specific ways in which transportation tends to structure activities and spaces throughout a municipality and the region beyond. It means considering how development decisions made today will affect community mobility and people's daily experiences for decades into the future.

The New Jersey Department of Transportation (NJDOT) seeks to promote a people-centered approach to local transportation planning, one that places community life and the quality of the human experience at the center of the planning process. Fundamental to this approach is the importance of recurring patterns of activity that promote personal interaction, walking, and civic life. This guide provides ideas for improving local mobility while working toward the municipality's broader vision for community life. The guide can be used during the development of the municipal Master Plan, or simply as a tool for visualizing and implementing desired changes.

“A building or town is given its character, essentially, by those events which keep on happening there most often.” –Christopher Alexander

Activities Make Places

What makes some of the places we encounter delightful and satisfying to spend time in, while others are discouraging to the senses, difficult to navigate on foot or by car, or simply forgettable? What do we remember when we think of the best places we have visited, lived, and worked in? Often, it is the presence of people gathered together. People, more than buildings or streetscapes, imbue communities with life. Planners have an opportunity to establish a more vibrant community life by encouraging those activity patterns and places that support interaction. And focusing on *activities of people* as the locus of discussion inherently links transportation and land use and shifts the discussion away from movement of vehicles.



A lively community is one in which people are encouraged to gather, linger, and talk as they go about their daily routines. Opportunities for chance meetings are balanced with the security of knowing how to move safely from place to place. A vibrant community—whether large or small—is also one in which people enjoy walking. Automobile and truck traffic are accommodated in ways that do not jeopardize pedestrian mobility. Public transit is a core ingredient in the transportation mix.

These considerations can be brought into the process of developing a Circulation Element, or used in evaluating development proposals. When considering local goals and mobility needs, citizens and local leaders should pay particular attention to the use of public space, the quality of civic life, and the degree of social interaction in the community. Where do people like to gather, and what places do they avoid? Do neighbors have easy opportunities to meet one another? Are shopping areas inviting? Can some daily needs be met by walking? Can residents bicycle to open spaces or waterfronts? Which routine activities contribute to the community’s desired way of life, and which detract from it? Local governments and citizens are encouraged to pose these types of questions during the assessment and visioning process for the Circulation Element (see Chapter 2).

Patterns of Form and Activity

Communities are given form and character not just by their buildings and public spaces, but also by the recurring events that take place there. Individual events are important, but so are the patterns of events and the context of patterns. Consider, for example, the event of walking. Walking is a much different experience on a footpath than it is in a busy shopping district or along a high speed highway. Where community design actively encourages walking events, a pattern of walking develops, which in turn shapes the community by accommodating related patterns of social interaction, economic activity, and a reduced need for automobile travel. The relationships between these patterns and the physical community form establish the context in which the community functions (or fails to function).



Clearly, the design of public spaces (streets, plazas, junctions, footpaths, resting spaces, etc.) and the intended functions of these spaces (high speed auto traffic, goods movement, walking and biking, shopping, resting) must be considered together to establish desirable community form. A network for goods movement, for example, would rarely mesh with a network intended for walking or sitting. Both are necessary to create a vibrant community, but neither can be pulled from a single design template.

Preparing the elements of a municipal Master Plan provides a chance to think anew about how well a community *works*: how recurring events create patterns and how these patterns influence the experiences of residents, workers, and visitors to a community. This document is intended to help local officials understand and apply this integrated approach to mobility and

community form. It describes basic principles, resources, and examples of successful plans and projects from New Jersey and elsewhere.

What is Community Form?

Community form refers to the physical shape and patterns of development that make up a built environment. The basic ingredients of community form are much like a set of building blocks arranged on a game board. Housing, offices, shops, schools, public buildings, parks, plazas, industry, warehouses, hospitals—all are located, or will need to be located, in spaces largely defined by the municipal street system. These building blocks, as well as other transportation features such as sidewalks and paths, intersections, parking areas, and transit facilities, can be arranged in strikingly different ways. Community form also includes details, such as street trees, building heights and setbacks, which help interpret larger spaces and structures.



In some communities, land uses are combined in distinctive, readily identified neighborhoods or nodes, and these focal points serve as gathering places for community life, recreation and commerce. In other towns, uses are strictly segregated, common public space is scarce or nonexistent, and few trips can be accomplished without driving. Many towns present a mix of these tendencies – with traditional walkable centers surrounded by auto-oriented environments that can jeopardize the character of the original community.



Of course in reality, most New Jersey communities are heavily settled—existing buildings are already “glued” to the game board. The planning process is necessarily an incremental one in which new land uses, new transportation features and new activity spaces need to be placed upon or carved out of the existing urban fabric. However, it is still helpful to think “from scratch” about community form. An effort to investigate the relationship of the street network to other public and private spaces, and their patterns of use, will help identify possibilities for positive change and make for a more meaningful master plan.

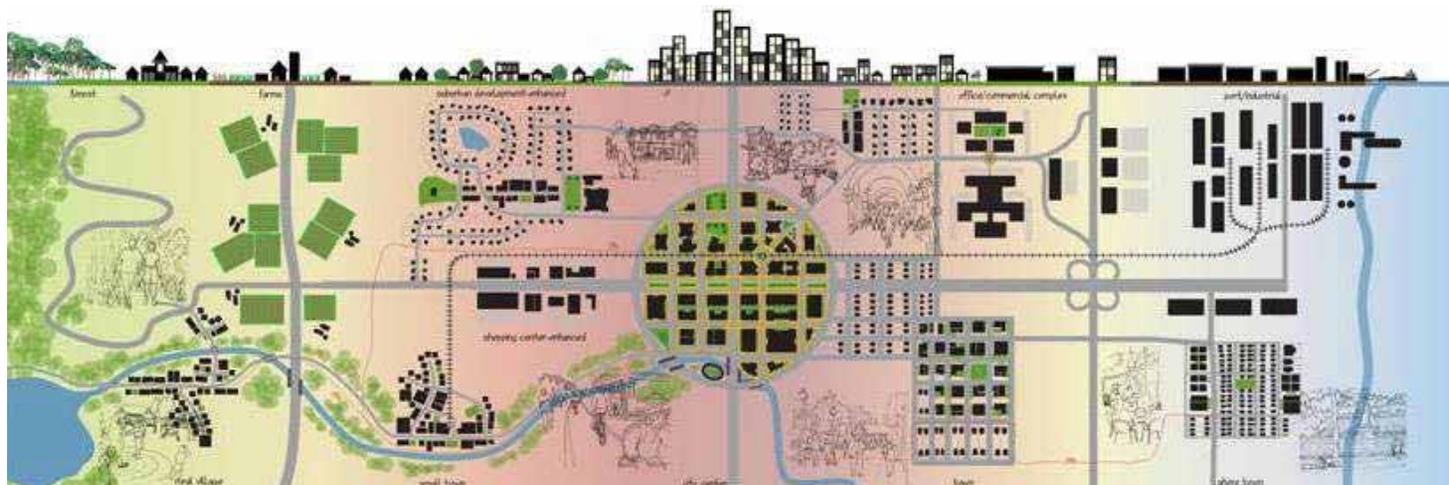
Thinking “from scratch” also makes us aware that communities evolve. Some elements, such as hastily erected strip malls, may become obsolete in just a few years. But other elements, such as a memorial plaza, can become beloved places that endure for

hundreds of years. As communities evolve, it is important to identify those elements of community character that we want to preserve and to ensure that their context – the community around them – remains supportive.

Using This Guide

This guide provides a framework for improving local mobility and creating more satisfying patterns of community life. It can be used during the development of the Circulation Element of the municipal Master Plan, as a tool for visualizing changes in a particular site or corridor, or as a basis for creating design guidelines for new development.

This chapter has outlined the concept of Mobility and Community Form and the benefits of this approach to local transportation planning. Chapter 2 presents methods for assessing current community forms and activity patterns and envisioning desired changes. Chapter 3 presents seven patterns for achieving a more balanced community form, along with principles, techniques, examples and resources for achieving them. Chapter 4 shows how to use the seven patterns to create and implement a community vision for linking mobility and community form. Chapter 5 steps back to consider the larger regional context and the opportunity for municipalities to work with their neighbors and with state agencies to solve transportation problems that transcend municipal borders. This final chapter also introduces several topics that a circulation element should address in order to meet NJDOT's expectations for the Plan Endorsement process of the State Development and Redevelopment Plan.





“Streets are more than public utilities...more than linear physical spaces that permit people to get from here to there...Streets moderate the form and comfort of urban communities.” –Allan Jacobs

Chapter 2

Pattern 1: Circulation

The Circulation pattern, as its name implies, is a cornerstone of mobility-friendly community planning. The pattern principles are designed to yield safe, comfortable personal mobility for people of all ages and abilities, as well as efficient transit and freight circulation. Streets and intersections designed according to this pattern knit together rather than dividing communities. Streets and sidewalks are designed for walking, and often serve as public gathering places in their own right.

Street systems have a pervasive influence on how a community functions. They tend to shape local land use patterns, the form of the various districts, the level of access that can be provided to destinations, and the design and function of individual places. The influence of street systems on urban form predates the automobile era; many New Jersey communities show the continuing influence of cartways and Native American trail systems.

To a large degree, a community's circulation system also determines the quality of people's daily experiences while driving, walking, bicycling, or taking the bus or train. Factors such as the width of streets, the condition of sidewalks, the spacing of intersections and the aesthetic character of surrounding areas may work together to create an environment that encourages walking and outdoor activity--or one that is cheerless and forbidding.

The design of streets, pavement markings, and signage can help to orient unfamiliar users of all travel modes, leading to safer, more predictable behavior and a more satisfying experience of place. Well designed roads, bridges, pathways, and trails are distinctive elements of a community's form in their own right, reflecting sensitivity to surroundings and enhancing the experience of those who use them.

Community Form and Mobility Principles

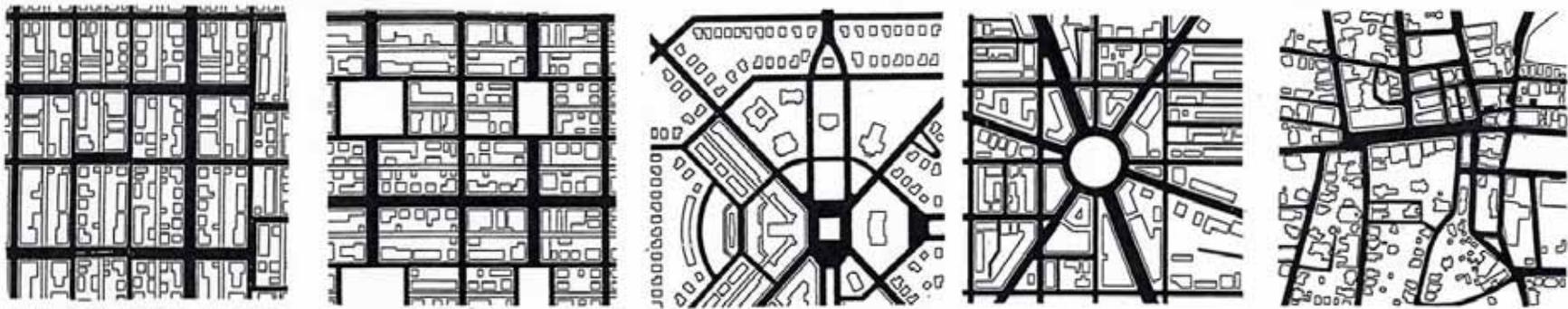
Five key principles define mobility-friendly circulation:

- Connectivity,
- Multi-use Streets,
- Legibility,
- Safety by Design, and
- Sensitivity to Surroundings.

Connectivity:

Create interconnected street networks with frequently spaced intersections, and interconnected pedestrian pathways and bicycle networks.

A cornerstone of the mobility-friendly circulation system is a well-connected network of streets and pathways. Networks can take many forms (next page). An interconnected network, whether organized as a grid or a more loosely formed spider web, helps to disperse traffic and allows for narrower, human-scaled streets. The key to connectivity is a high ratio of nodes (intersections) to links (travelway sections). Closely spaced intersections provide more direct and convenient routes to destinations, reducing travel distance.



There are many types of networks. The key to good mobility is a high ratio of nodes to links.

Source: Walter Kulash

The same principle applies to transit, bicycle, and pedestrian networks. Today, many short trips that could be made by other modes are made by car simply because of poor connectivity. Creating better connectivity for these modes can improve an area’s vitality and sense of place, reduce traffic congestion, and improve residents’ health. Having numerous pedestrian connections also multiplies the opportunities for the chance meetings and social interaction that are fundamental to a lively community. In

mixed use or commercial areas, networks also create access and visibility at each corner, helping to attract private investment to these ideal business locations.



Corner location on a street grid in Hoboken contributes to a successful neighborhood café.

The traditional grid-style street layout of older towns provides excellent connectivity. Streets are interlinked at numerous points, intersections are closely spaced, and there are few dead-ends. This not only provides a more direct route to any destination, but also helps to spread the traffic load over multiple streets and intersections. The presence of a grid pattern and parallel streets allows state and county highways to serve their main purpose—moving vehicles over longer distances—while shorter trips can take place on local streets.

Connectivity Index Variations

A Connectivity Index can be used to quantify how well a roadway network connects destinations. Indices can be measured separately for motorized and non-motorized travel, taking into account non-motorized shortcuts, such as paths that connect cul-de-sacs, and barriers such highways and roads that lack sidewalks. Several different methods can be used.

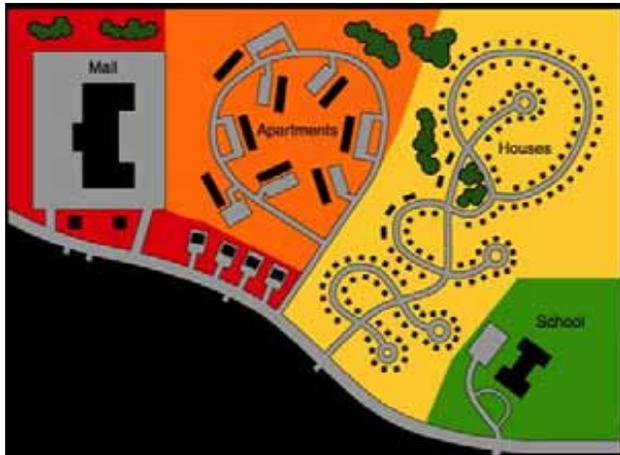
- *The number of roadway links divided by the number of roadway nodes (Ewing, 1996). Links are the segments between intersections, node the intersections themselves. Cul-de-sac heads count the same as any other link end point. A higher index means that travelers have increased route choice, allowing more direct connections for access between any two locations. According to this index, a simple box is scored a 1.0. A four-square grid scores a 1.33 while a nine-square scores a 1.5. Dead-end and cul-de-sac streets reduce the index value. This sort of connectivity is particularly important for non-motorized accessibility. A score of 1.4 is the minimum needed for a walkable community.*
- *The ratio of intersections divided by intersections and dead-ends, expressed on scale from zero to 1.0 (USEPA, 2002). An index over 0.75 is desirable.*
- *The number of surface street intersections within a given area, such as a square mile. The more intersections, the greater the degree of connectivity.*
- *An Accessibility Index can be calculated by dividing direct travel distances by actual travel distances. For example, if streets are connected, relatively small, and have good sidewalks, people can travel nearly directly to destinations, resulting in a low index. If the street network has many unconnected dead-ends and blocks are large, people much travel farther to reach destinations, resulting in a higher index. A WPDI of 1.0 is the best possible rating, indicating that pedestrians can walk directly to a destination. An average value of 1.5 is considered acceptable.*
- *Consider calculating connectivity separately for motorized vehicles, bicycles, and pedestrians. This will help focus attention on creating separate networks for each.*
- *Consider expanding the power of the connectivity index by linking it with land use intensity (i.e., the number and type of origins and destinations in a given area) to measure the balance between land development and the transportation system.*

These indices are affected by how each area is defined, such as whether parklands and industrial areas are included in analysis. It is therefore important to use professional judgment in addition to quantitative measurements when evaluating connectivity.

Adapted from: TDM Encyclopedia; Victoria Transport Policy Institute

The way that many communities have developed since the mid 20th century has been very different, however. Individual, isolated cul-de-sac developments often mean that almost every outing—even a short hop to school or to buy a newspaper—requires a separate car trip on the state highway. The hierarchical street systems typical of these newer developments create congestion by overloading the limited number of intersections provided.

A lack of connectivity is one reason for the serious congestion on so many of New Jersey's main arterials, such as Route 31 in Hunterdon County and Route 9 in Ocean County. As New Jersey's planners and communities have become more aware of the link between connectivity and traffic flow, some are questioning cul-de-sac development and once again considering traditional grid patterns.

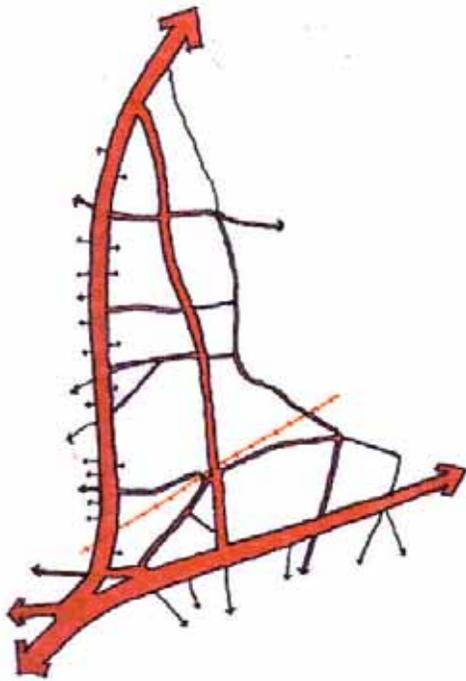


Typical suburban development consists of single use lands and lacks street connectivity.

Image source: Walter Kulash

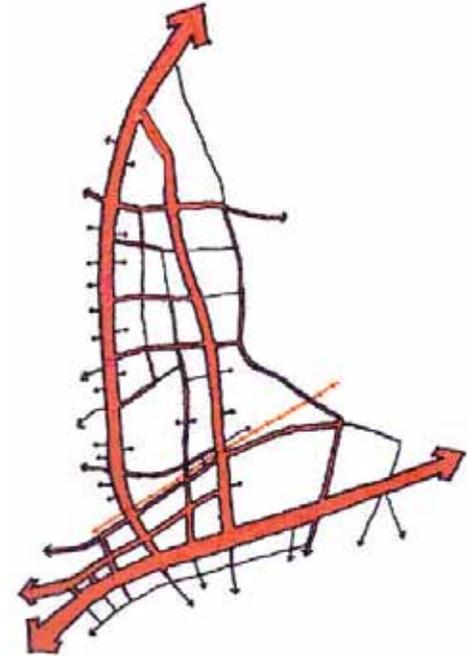
Thinking about transportation and land use issues during preparation of a master plan is an opportune time to review the structure of the local roadway network and consider the potential to enhance it through new connections that can serve shorter trips. Network enhancements can include connector streets, new streets parallel to arterial highways, or bike paths constructed to link residential developments to one another or to destinations such as schools.

As part of the subdivision process, a municipality can require that streets and paths be designed to connect to neighboring parcels, so that a system of connected roads and sidewalks evolves over time. A proactive approach to developing a network is to define street and block locations through a street regulating plan, and establish development standards for these areas so that the block pattern emerges with new development.



A new network is proposed to alleviate congestion near Flemington in Hunterdon County. On the left is the original limited access bypass proposal. In the current proposal, an at-grade highway with signalized intersections replaces the bypass.

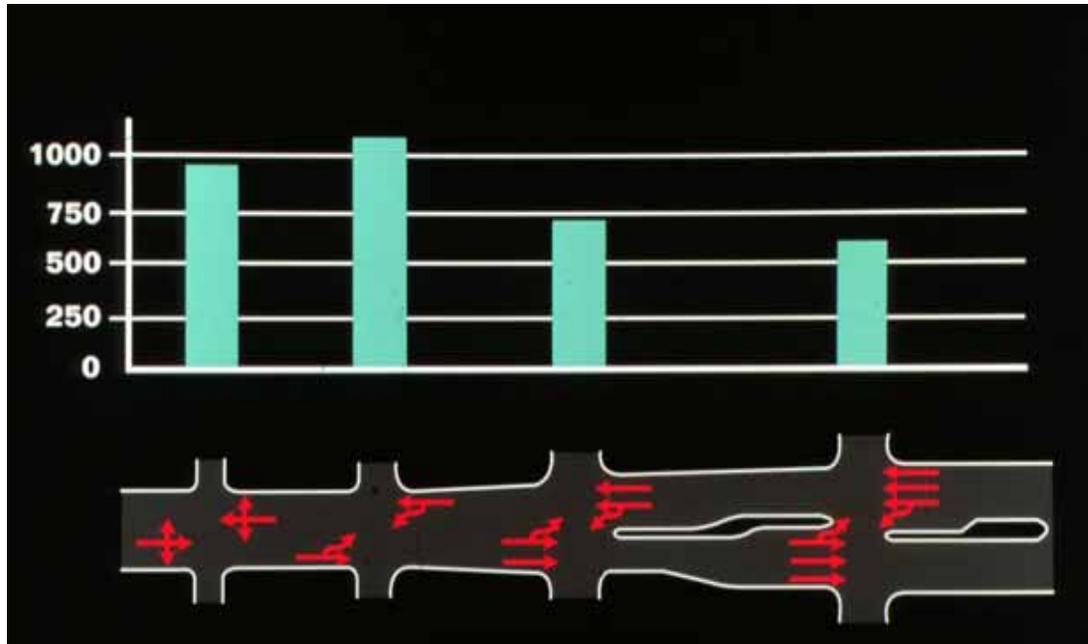
Image source: NJDOT/Glatting Jackson Kircher Anglin



Connectivity is important not only for motor vehicle traffic but for all travel modes. Pedestrian connectivity can be enhanced through public investment and through development regulations. For example, Bedminster Township recently identified the need for improved pedestrian connections between its two historic village centers and included a program of improvements for this purpose in its Circulation Element. Municipalities can set standards for internal bicycle and pedestrian circulation systems in commercial centers or office parks. Local governments also play a role in the formation of regional bicycle networks, by creating local links to regional trail facilities such as the Delaware & Raritan Canal or the East Coast Greenway. Cities and towns may also be called upon to help maintain truck connections through cooperative approaches to corridor management, working with state and county transportation agencies.

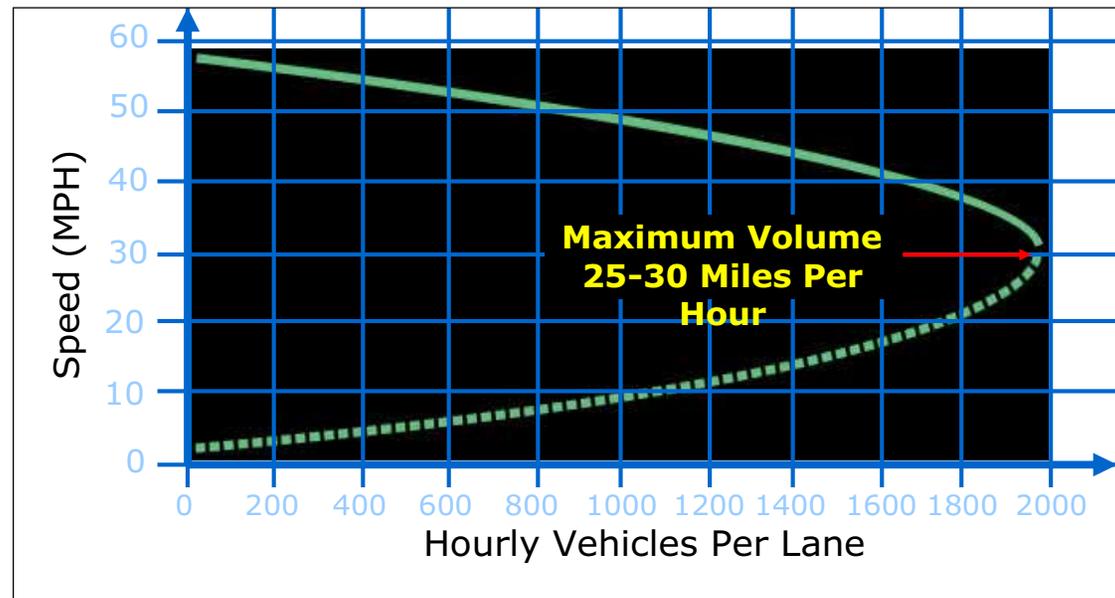
The principle of connectivity also applies to the transit system. Future extensions and transfer points on the state's transit network will require effective partnerships between NJ Transit and other transit providers and the communities located along planned facilities. Bus operations often require interconnecting routes or timed transfers from a central station. Though seldom operated by municipalities, these services may depend on effective local traffic management in the station vicinity.

Roadway Size, Design Speed and Efficiency



The Highway Capacity Manual tells us that wider roads and higher speeds may not be the most efficient means of moving vehicles.

Graphics: Walter Kulash



Multi-use Streets:

Design “complete streets” and intersections that serve pedestrians, persons with disabilities, bicyclists, transit vehicles, and trucks as well as motorists.

In a mobility-friendly community, streets are designed to serve all categories of users. They serve community members throughout the entire lifecycle, from the earliest jaunts in a stroller to an elderly person’s weekly grocery trip—and the trucks bringing strollers and groceries to local stores in the first place.

Serving all users effectively can be difficult. It requires balancing the needs of each category of users, and determining who should have priority in different situations. For example, some New Jersey highways are critical truck routes that support local industry. Their design must reflect the need to accommodate high volumes of truck traffic while providing at least minimal accommodation for other users. Other roads support frequent bus operations, and their characteristics should reflect transit priorities, with bus pull-off areas and signal preemption systems to cut down on transit travel time. Roads that serve as “Main Streets,” on the other hand, should discourage high speed travel and give priority to pedestrians.



Multi-use streets are not only transportation channels but public gathering places in their own right. In good weather, their ample sidewalks often serve as small parks and accommodate vendors, local performers, café tables and an occasional game of chess. From time to time, a street may be closed to traffic to accommodate a street festival, such as the Lambertville Shadfest or the Trenton Heritage Days. Requests for block parties, bicycle races and Halloween parades can usually be accommodated by diverting traffic to a parallel street. With furniture, shade trees and pedestrian-scale lighting, the street becomes a true “outdoor living room.”



Chess game on a Camden sidewalk.

A multi-use street must provide adequate space for each type of user and suitable provisions at intersections, including pedestrian crossing time that is sufficient for slower walkers and wheelchair users. Critical minimum dimensions for pedestrian and bicycle facilities are summarized in the table below.

Minimum Widths for Pedestrian and Bicycle Facilities

| | |
|-------------------------------------|--------------------------------------|
| Sidewalks: | 5 feet (more in downtowns) |
| Raised median refuge islands: | 6 feet (8 preferred) |
| Bike lanes: | 5 feet (more if high parking volume) |
| Bike-compatible road shoulders: | 5 feet |
| Shared motor vehicle/bicycle lanes: | 10-15 feet* |
| Multi-use paths (2-directional): | 8 feet (10-12 preferred) |

*Minimum varies depending on traffic volumes, speeds, presence of parking and rural/urban condition. On a 25 mph urban road with moderate traffic volumes and on-street parking, shared lanes should be at least 14 feet wide.

Sources: NJDOT Bicycle Facilities and Pedestrian Facilities guidelines; FHWA; AASHTO

“All too often...walkways are thought of only as insignificant adjuncts to the streets.” –Kevin Lynch

Sidewalks

Sidewalks are the foundation of a walkable community, and wide sidewalks are the basis for creating lively public spaces. As indicated in the table, sidewalks should be at least 5 feet wide, allowing people to pass comfortably and to walk side-by-side. Wider sidewalks are appropriate in urban centers, near schools, at transit stops, or anywhere where high pedestrian demand exists. Sidewalks should be continuous along both sides of a street and accessible to all users. A level surface is important, particularly for senior citizens at risk of falls.

A buffer zone of 4 to 6 feet is recommended between the sidewalk and the street in order to maximize pedestrian comfort levels. This buffer zone can take the form of parked cars or street furniture in urban areas, or a landscaped tree lawn can provide an acceptable buffer in residential or suburban areas.



Intersections

At intersections, the balancing act among motorists, cyclists, pedestrians and trucks becomes especially tricky. From a traffic management standpoint, signalized intersections are the choke points of congested corridors. Traffic engineers seeking to increase corridor through-put capacity for vehicles often limit the “green time” available to side streets and pedestrians. They may also use dedicated right-turn lanes to help address congestion, resulting in the loss of a shoulder bikeway at intersections.

Mobility-friendly intersections are designed to provide minimum standards of safety and comfort for all users, even if this results in some additional delay to motorists. While traffic congestion is recognized as an important concern, it is not the only factor dictating intersection design. Again, the critical point is determining which users should have priority in a given situation, as well as giving users clear behavioral cues.



For pedestrians, techniques to consider include lead pedestrian intervals, which give pedestrians a few seconds of “walk” time in advance of conflicting turning movements, and curb extensions or “bulbouts” that reduce walking distances. Curb extensions can be designed for compatibility with most classes of trucks, depending on the dimensions of the adjoining roadways. For bicyclists, features to consider include bike-sensitive loop detectors and pavement markings indicating where cyclists should position themselves.

Intersections should fully accommodate persons with disabilities. Walking surfaces should be smooth; separate curb ramps should lead to each crossing; a level landing should be provided at the top of each ramp, and a flush transition at the gutter. Pedestrian push buttons, if used, should be placed within reach of a wheelchair user and close to the crosswalk. Cues for pedestrians with

limited vision include tactile treatments to demarcate transitions from the sidewalk to the street and audible signals.

Attention should also be given to the needs of senior drivers and pedestrians. In designing signal timing, a walk rate of 3.0 feet per second will accommodate slower walkers. Placing benches at intersections frequented by senior pedestrians is also helpful. Senior drivers often benefit from the use of a protected left-turn phase, turning bays, and retroreflective curb markings. Signal visibility for seniors can be improved through the use of backplates to reduce glare.



This intersection includes raised “speed tables”

Crosswalks

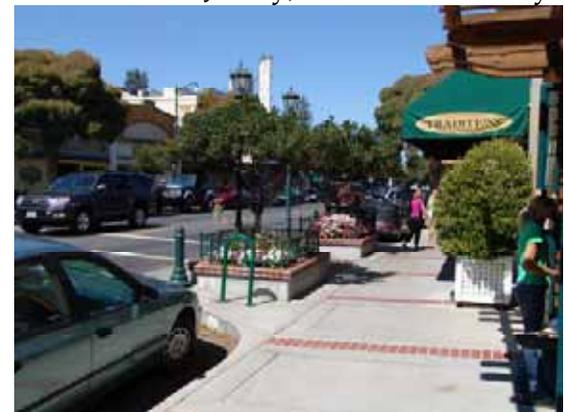
Two general types of crosswalks need to be considered: those placed at signalized or stop-controlled intersections, and those without traffic controls. In a mobility-friendly community, a population of walkers can be assumed, and marked crosswalks and pedestrian signal heads will be needed at most signalized intersections. Pedestrian signal phasing should accommodate walkers of various speeds and abilities. NJDOT recommends the use of countdown pedestrian timers that help pedestrians determine how much time they have to finish crossing. Where pushbutton actuation is used, pedestrian delays of over 30 seconds should be avoided.



Clearly marked stop bars in advance of the pedestrian crossing area are needed at both signalized and stop-controlled intersections. Crosswalks need not be marked on low-volume residential streets with low traffic speeds; in fact, this is counterproductive, as it diminishes motorist awareness of those in more critical locations.

The best practices for the placement and design of crosswalks at uncontrolled locations—either at midblocks or from stop-controlled side streets—is a subject of debate in the transportation community. There is a clear need for improved midblock crossing facilities in New Jersey, as evidenced by the state’s relatively high number of pedestrian fatalities, most of which occur away from intersections. However, national research suggests that simply marking a crosswalk, without any other action to slow traffic or make pedestrians more visible, may not increase pedestrian safety.

One of the most important concepts for improving crossing safety on wider, high speed roads is the use of raised median refuge islands that provide a safe place to wait, allowing a road to be crossed in two stages. Curb extensions that shorten the crossing distance are also helpful.



These bumpouts are adopted by businesses.

Features that may enhance motorist attention and compliance with crosswalks include:

- Traffic calming, including pavement markings and other visual cues that encourage reduced speeds;
- Pedestrian-oriented lighting that makes the pedestrian clearly visible to motorists at a distance;
- Fluorescent green-yellow pedestrian warning signs with an accompanying arrow placard;
- In-pavement “Yield to Pedestrian” signs;
- Lighted overhead warning signs;
- In-pavement crosswalk lighting, and
- Raised crosswalks.

Crosswalks should be free of visual obstructions, including parked cars: on-street parking should be restricted within 20 feet of a crosswalk. When communities ignore this guideline and permit parking right up to the crosswalk, they compromise pedestrian safety. In locations where jaywalking is a significant problem, sidewalk fencing can help to steer pedestrians to the appropriate spot to cross.



A lighted crosswalk in Metuchen.



A good crosswalk:

- Is located where pedestrians want to cross;
- Sends the message that pedestrians want to cross;
- Slows traffic down;
- Allows drivers to react and yield, and
- Enables pedestrians to cross safely.

Tactile warning (truncated domes)

for pedestrians with visual limitations.

Curb Ramps and Tactile Warnings

Curb ramps provide access between the sidewalk and roadway for people with special mobility needs, including wheelchair users and those pushing carriages or carrying large items. Federal law requires that all new roadway construction and rehabilitation include curb ramps. Municipalities should make efforts to ensure that existing facilities feature curb ramps as well. This can be done through sidewalk and curb ramp audits, beginning with priority locations for pedestrians.

The Americans with Disabilities Act specifies design guidelines for curb ramp design and placement, and these should be followed by municipalities.

ADA requirements (1973 Rehabilitation Act and ADA 1990) specify that curb ramps be installed at any location where pedestrian crossings might exist. Curb ramps must have a slope of no more than 1:12 or a maximum grade of 8.33 percent.

Separate perpendicular curb ramps should be placed leading to each crosswalk, rather than using a single diagonal curb ramp for two crosswalks. This can help prevent visually impaired individuals from accidentally entering the center of an intersection outside of a crosswalk. Tactile warnings, such as “truncated domes,” should be utilized to alert pedestrians when they are at the street edge.

Bicycle Facilities

Bicycling can be accommodated through the use of shoulders, wide outside travel lanes, signed shared roadways, dedicated bike lanes within the right-of-way, or off-street bike paths separated from the roadway. The choice of an appropriate facility type depends on roadway conditions, local origins and destinations, and projected users. Low volume, low-speed roadways require no special facilities for bicyclists, while higher speed, high volume roads typically require a separate bike lane. Bicycle-safe designs should be used for drainage grates and catch basins along all roadways.



Decorative iron fencing guides pedestrians to crosswalks, deterring jaywalking.





Striping to create wide outside lanes may be applicable in urban areas where shoulders are not normally provided; these facilities permit motorists to safely pass bicyclists within the existing roadway width. This treatment allows multiple users to use the same roadway, and is especially appropriate for skilled bicyclists.

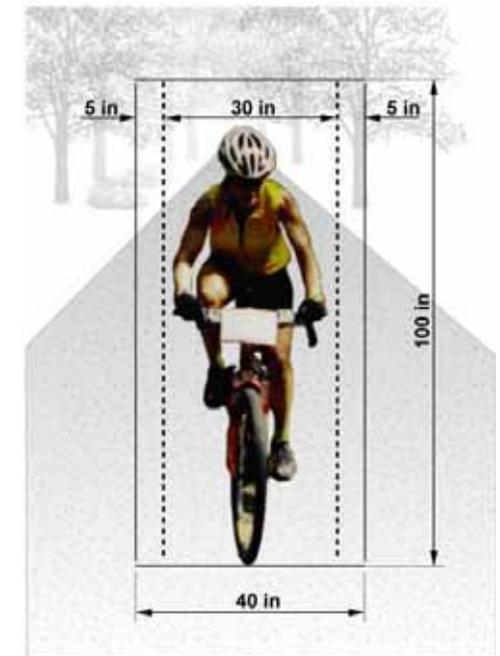
Bike lanes, commonly identified with bicycle stencil markings, are designed to be used exclusively by bicyclists. This can improve bicycle safety and result in more predictable behavior by both motorists and bicyclists. Bike lanes should be one-directional, carrying bicyclists in the same direction as the adjoining travel lane. They should be located on the right side of the roadway, and if applicable, between the parking lane and travel lane.

There are several approaches that can be used to add a bike lane to an arterial roadway, including reducing the width of existing travel lanes, reducing the number of travel lanes, or reducing or reconfiguring parking. A four-lane arterial can often be reconfigured to provide three motor vehicle lanes (two travel lanes and a center turn lane), freeing up space to add bicycle lanes.



Bicycle lane in University City, Philadelphia

Image courtesy of A. Nelesen Associates



Legibility:

Provide a legible environment that helps users orient themselves, navigate, and understand their surroundings.

A legible environment is one that makes sense to its users. People know where they are at any given moment, and how to move about comfortably. As visitors, they quickly form a mental map of the area from the logical arrangement of space and distinctive landmarks. As users of the transportation system, they know precisely what behavior is expected of them: which lane is for left turns only; where to cross the street safely; how to find the Turnpike or Garden State Parkway.

People make sense of their environment through the myriad cues it provides. Signs and pavement markings are only one part of a legible street system. The placement and design of buildings, the use of color and texture to demarcate transitions, and the provision of adequate lighting are all factors working to create legibility. The transportation system should be designed to work together with local landmarks and other features to provide these consistent cues.



A lack of legibility leads to confusion and unpredictable behavior. For example, exclusive turning lane markings that are posted too close to an intersection often lead to a scramble as motorists find themselves in the wrong lanes. Lost trucks tie up traffic as they try to turn around. Shoppers vie for a few on-street parking spaces despite ample capacity in poorly marked off-street lots. Besides the safety risks inherent in a confusing environment, such a place is less enjoyable to visitors and less likely to invite repeat business or new investment. Conversely, improving the legibility of an area can help increase the marketability of underutilized sites, allowing them to be effectively redeveloped.



This multi-use path in Hoboken gives cyclists and pedestrians clear behavioral cues with color, texture, and striping.

“Paths, the network of habitual or potential lines of movement through the urban complex, are the most potent means by which the whole can be ordered. The key lines should have some singular quality which marks them off from the surrounding channels: a concentration of some special use or activity along their margins...a special texture of floor or façade, a particular lighting pattern...a typical mode of planting.” – Kevin Lynch

Wayfinding programs have been implemented in a number of New Jersey municipalities, including Jersey City, to help visitors find local attractions such as commercial centers, waterfront areas, and parking facilities. Truck routing signs can be used to direct commercial through-traffic onto appropriate roadways away from potential conflicts and residential areas. They can also help to direct traffic away from hazardous obstacles, including narrow streets, low underpasses, or weight-restricted bridges.

Legibility is linked to safety: for example, the use of bright white edge lines helps users recognize the edge of a roadway and drive more consistently. Edge lines are especially important on rural roads with soft shoulders, as well as for senior drivers. Predictable, unambiguous signals and consistency in intersection design treatments are also factors in legibility, and hence, safety.

Many communities have used specially designed “gateways” to enhance awareness of their local identity and to signal to motorists visitors that they are entering a town center and should slow down. NJDOT is currently working with five historic villages along Route 57 in Warren County to develop consistent gateway treatments and traffic calming. The treatment includes a slight narrowing of the travel lane, the use of a colorized shoulder, and village entrance signs.

Safety by Design:

Encourage safe and predictable behavior by all road users. Road features should enforce desired speeds, accommodate safe use by senior drivers and encourage shared use by motorists, bicyclists, and pedestrians.

Transportation safety, once considered an operational issue, is increasingly viewed as an integral part of the transportation planning process. At each level of government, safety data such as crash history is becoming a more important factor in prioritizing transportation improvement projects. There is also a greater emphasis on “self-enforcing” roadway design and the effects of design speeds on pedestrian mobility and the surrounding environment.



Gateway concept for Bordentown City. Source: Clarke Caton Hintz

Self-enforcing roads make it *more difficult to speed*, and *more natural to slow down* when approaching a town center or other pedestrian environment. Through careful design, the multi-use streets described earlier in this chapter can convey to each user the behavior that is appropriate at that location, encouraging safe, shared use by motorists, bicyclists, and pedestrians. This concept is also related to the notion of legibility described above.

Safety-oriented design principles can help to reduce both the number of crashes and the severity of those that occur. They provide a sense of security and comfort in using the transportation system, encourage walking and bicycling, and improve mobility and safety for senior citizens, school children, and other residents.

“Speed in locomotion should be a function of human purpose. If one wants to meet and chat with people on an urban promenade, three miles an hour will be too fast; if a surgeon is being rushed to a patient a thousand miles away, 300 miles an hour may be too slow.” --Lewis Mumford



This overly wide residential street encourages speeds far above the 25 mph limit.

Pavement width is among the most important factors affecting travel speeds. In general, the wider and straighter a roadway is, and the farther motorists can see ahead, the faster people will tend to drive, regardless of posted speed limits. Overly wide streets in residential areas compromise pedestrian safety and tend to diminish the quality of neighborhood life by encouraging speeding. This problem can often be addressed through traffic calming. Municipalities can also regulate street width in new residential or mixed use developments to prevent speeding problems in the first place.

Traffic calming involves changes in roadway alignment or the installation of physical devices and design features that encourage lower speeds, discourage cut-through traffic, and improve safety for all modes. It relies on physical rather than regulatory measures to encourage desired behaviors.

Traffic calming techniques include both speed-control and volume-control measures. Speed control measures fall into two basic categories: vertical deflection and horizontal deflection. Examples of vertical deflection methods include speed humps, speed tables, raised crosswalks, and raised intersections. Vertical deflection introduces a change in the height of an otherwise level roadway, encouraging vehicles to slow down. Horizontal deflection creates a curve in an otherwise straight roadway segment, or narrows a section of roadway. Horizontal deflection measures include traffic circles, roundabouts, bulb-outs, chokers, realigned intersections, chicanes, and center islands. If speed control measures are well designed and properly placed, they are generally well-accepted, effective, and cause minimum inconvenience for local drivers and residents

A raised crosswalk acts to slow traffic, as well as increasing pedestrian visibility.



Curb extension in Jamesburg helps slow traffic and shortens the crossing distance for pedestrians.



Roundabout in Rutherford slows and channels traffic.

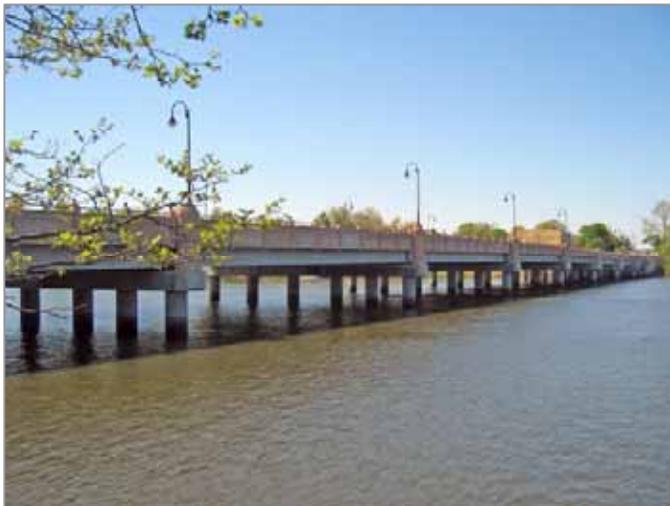
Image Source: NJ Transit

Sensitivity to Surroundings:

Design roads and bridges in context, with respect for the surrounding environment.

The first four principles of the Circulation pattern focused on providing a mobility-friendly transportation system by planning for multiple users, connectivity, legibility, and traffic calming. The final principle, Sensitivity to Surroundings, is related to each of the others, but turns the focus outward to the roadway environment.

New Jersey is part of a growing national movement to design roads, bridges and other facilities for greater harmony with their surrounding contexts, both natural and human. This approach, part of an overall philosophy known as Context-Sensitive Solutions (CSS) or Context-Sensitive Design (CSD), seeks to develop transportation projects in a manner that enhances rather than disrupts communities and ecosystems. Projects are often designed to help stimulate local economies, by creating attractive streetscapes that support private investment and revitalization. Context-sensitive projects also help preserve a community's historic landmarks, helping to foster collective memories and an enduring sense of place.



When NJDOT replaced the deficient 1925 Cooper's Bridge with a new structure, great care was taken to design a bridge that would both meet the transportation needs and fit in with the historical environment of the nearby communities. The bridge over the Navesink River opened in 2000 and now provides a safe, aesthetically pleasing link between Red Bank Borough and Middletown Township.

Achieving sensitivity to surroundings requires an understanding of how to manage transitions between the place types of the Transect and match the needs of each. For example, a road's cross section may need to change as it moves from serving highway-oriented commercial zones to traversing a town's Main Street.

A utilitarian bridge design appropriate in one location may not work well in an historic district. Lighting suitable for a rural area may be inadequate for an urban location. Contextual design requires identifying these areas, working with citizens and stakeholders to understand their distinct needs, and creating strategies for enhancing community character and managing traffic speeds, as discussed above. For local projects, these concepts can be included in the visioning process for the Circulation Element and reflected in municipal design guidelines. Where state highways are concerned, municipalities may enter into partnerships with NJDOT to investigate CSS opportunities.

Sensitivity to surroundings is important across the Transect. In agricultural areas, it may mean providing occasional pull off areas along a road for tractors or farm stands. In one NJDOT project, a truck weigh station was designed to resemble a farm silo in order to avoid disrupting the local landscape.



Rear alleys, such as this one in Washington Town Center, can enhance the character of local streets by removing residential parking and trash collection to the rear of homes.



Alexandria Township in Hunterdon County uses conservation zoning to protect scenic roadside views.

Transportation projects in the urban core should be designed to support a secure environment for a project's neighbors. Adequate lighting of transit stations and pedestrian environments is critical. In urban areas, boulevard-style roadway treatments can be effective in providing traffic capacity while buffering adjacent land uses from traffic impacts through the use of local service lanes and parking areas. Landscaped medians add visual interest and if wide enough, may serve as linear parks.

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Pattern 2: Shopping Streets



“Encourage the gradual formation of a promenade at the heart of every community, linking the main activity nodes...Put main points of attraction at the two ends, to keep a constant movement up and down.”

– Christopher Alexander

Shopping Streets are a special part of a mobility-friendly town or city. Whether a lone Main Street or part of a more extensive central business district, a shopping street is often the liveliest public space to be found in a community. The pedestrian-oriented shopping street is an ancient, worldwide community form that maintains its relevance for New Jersey municipalities today. Often serving as the heart of a community, it is more than a travel way or collection of stores – it is a place where people are drawn to walk, shop, linger and meet friends and neighbors. Residents come often; visitors are drawn to return. People who come to shop stay to talk, and vice versa. Such streets are also ideal locations for festivals and parades.

Shopping streets are best able to fulfill these community functions when traffic moves slowly, parking is plentiful but visually unobtrusive, pedestrians can cross and recross the street easily, and the overall environment is appealing and secure. When these conditions are attained, the street becomes a place that people of all ages can enjoy and find useful, as well as a source of local revenue. Shopping streets work well when the quality of the public environment receives higher priority than traffic flow on the street itself. However, many of New Jersey's "Main Streets" are also important arterial roads, so traffic flow cannot be ignored.

A successful shopping street is more than the sum of its parts. It may contain many of the semi-public retail and restaurant spaces that form the identity of a community, along with important services such as barber shops, laundromats, libraries, and banks. In some New Jersey communities, the local diner or fast-food restaurant is an important gathering spot for senior citizens; the pizza shop may be the main hangout for youth sports teams. In larger towns and cities, cafés, theaters, and night-clubs transform shopping streets by night and draw revenue from tourists and other visitors as well as local residents. The functions these semi-public places serve are no less important when they occur in auto-oriented shopping centers. However, grouping most of these activities on interconnected pedestrian-oriented streets provides a synergy and sense of community that is difficult to achieve in any other way.



Mobility and Community Form Principles

Four key principles define mobility-friendly planning for shopping streets:

- Placemaking,
- Anchoring,
- Multi-use Parking, and
- Safe Connections.



“Encourage local cafes to spring up in each neighborhood...where people can sit with coffee or a drink and watch the world go by.”

–Christopher Alexander

Placemaking:

Provide wide sidewalks with good lighting, shade, shelter, enclosure, transparency, places to sit and visual interest.

With wide sidewalks and ample places to sit, a successful shopping street accommodates groups of friends, persons with mobility limitations and anyone who simply wants an occasional rest while shopping. Parents with infants can pace their activities with an occasional break. Heavy shopping bags, the ultimate measure of a successful shopping experience, should not be a deterrent to further strolling. Wide sidewalks provide ample space for outdoor displays of merchandise, enticing casual shoppers; they also accommodate café tables outside of restaurants. Enclosure of the sidewalk by buildings with windowed facades softens the line between public and private space, provides a sense of comfort and security, and helps deter crime. With a mix of uses and “microenvironments”, the street continues to function well in the evening, in hot weather, and in rain or snow.



**“A street without windows is blind and frightening.”
Christopher Alexander**

In cities and town centers, encouraging or requiring buildings to front on the street with limited setbacks helps to create a unified streetscape and a sheltered pedestrian environment. In rural areas, the shopping street pattern may be realized with a handful of stores well placed at a crossroads. Even a single old-style general store can serve the function of a shopping street in the smallest hamlets.

Regardless of size, having a town green or “market square” adjacent to the major shopping street extends its benefits and creates opportunities to accommodate larger community events, such as outdoor concerts. Shade trees, greens, public gardens and landscaped pocket parks provide visual relief from concrete pavement as well as environmental benefits. Well-maintained and interesting storefronts make shopping streets more attractive to shoppers and more secure for pedestrians. Blank walls are intimidating and should be avoided.

Placemaking also includes the concept of “branding”. Consider the community context of the shopping street when creating an iconic image (an historic tree, covered bridge, or element from the municipal seal), a palette of colors and materials for sidewalk pavers and street furniture, and even uniform signage. The art of placemaking has been elevated to high levels by mall developers. Traditional shopping streets can learn from those lessons, not replicating the mall experience, but adapting themes and strategies to enhance the unique and wonderful environment of the traditional downtown.

Merchants’ organizations often play a key role in creating and maintaining successful shopping streets. They may organize sidewalk sales, encourage street performers, and arrange for a level of maintenance that would be difficult for the local government to provide on its own, sometimes by forming a Business Improvement District.



Even the smallest of main streets can beckon passersby. In rural Asbury, porch chairs and a “Muddy Boots Welcome” sign encourage farmers and other residents to make themselves at home on this small shopping street.

Anchoring:

Foster strolling by creating places of interest at the ends of shopping streets.

Along with placemaking, anchoring is another ingredient of successful shopping streets. An anchor can be visual (such as a striking building, clock tower, sculpture, water feature, a gateway, or even a vista) or a particularly “magnetic” destination place (a unique shop or restaurant). Shopping malls are typically “anchored” by large national retailers, a technique that can be adapted to virtually any scale of commercial center. Anchors typically denote a functional change or the end of something, so plan for portions of a shopping street beyond the anchor to be of a different scale or character. The street itself may terminate (perhaps at a crossing street) or there may be a gateway, jog or some other “closing” feature that marks the change in street function. A shopping street should not simply “peter out” with a few scattered businesses or converted homes serving as the gateway.

A street may be attractive, safe, and well maintained, but if there is nothing very interesting at its ends, people will be less inclined to walk any distance along it, and the stores in the middle (or those at a distance from parking areas) may suffer. Conversely, using anchors to create a “promenade” effect multiplies the opportunities for social interaction as well as the commercial effectiveness of the shopping street. The street is more memorable and the anchors aid in navigation. Activity on a successful shopping street spills over into other public places, reinforcing the civic quality of a community. Examples of



Monuments and statuary make excellent anchors and can be scaled and designed to match any theme.

shopping streets with a good anchoring quality include Ferry Street in Newark's Ironbound neighborhood and George Street in New Brunswick. Nassau Street in Princeton, for all of its other admirable qualities, is not particularly well anchored.

Reconciling Chain Stores with Mobility-Friendly Streets

While many people enjoy shopping at so-called "big box" stores and appreciate their potential to aid economic development and provide jobs, they give rise to concerns about traffic. Others are concerned that the cookie-cutter look of most chain stores will detract from the distinctive sense of place in their community. Communities across the country have successfully combined the benefits of chain stores with community-oriented design.

In order to act as anchors for shopping streets, big box stores must be built using the same form of development as the rest of the street. That is:

- The building wall should face and respect the street frontage (i.e., zero setback or a street level arcade with food).
- To the extent feasible, building materials and fenestration should reflect those used elsewhere on the shopping street.
- Surface parking should be behind the buildings and served by a well connected system of alleys, driveways or service roads.
- Parking garages should be enclosed within a "wrapper" of street level commercial space (at least) and upper level office or residential space.
- Short term parking should be available on the street frontage, as well as building entrances in close proximity.
- There should be street level windows on all frontages, even if they open into enclosed display cases.
- Signage should be oriented to pedestrian traffic as much as to vehicular traffic.

While traditional shopping streets are a proven element of community form, it may not be possible or practical to create them in every municipality. In particular, low-density suburbs whose commercial centers are entirely automobile oriented may find the creation of an authentic local "Main Street" an unrealistic goal, at least in the short term. Fortunately, it is often possible to redesign highway-oriented shopping centers so that some of the civic functions of a shopping street can still be realized. For instance, a large shopping center may be subdivided to create a block pattern served with footpaths. "Shopping highways" can be narrowed and pedestrian facilities added so that they function more as shopping streets. A more elaborate plan would be to create a median park with restaurants, music venues, informal seating areas and other activities as a focal point for a narrowed and calmed "shopping highway."



Above, a CVS pharmacy in Plainsboro, New Jersey was designed to fit the scale and character of the new downtown .

At the right, in San Jose, California, a Best Buy anchors a main street shopping district.





Street Trees

Street trees in Jersey City provide a visual transition between the pedestrian space of the street and the 4-5 story buildings that enclose it.

Street trees have both aesthetic and functional uses. Aesthetically, they provide much needed color, vertical height, and an edge. Functionally, street trees provide shade, shelter during rain or snow, and a logical buffer between moving traffic and pedestrians. The placement of street trees requires careful attention to safety. They should be placed so as not to obstruct the visibility of pedestrians to turning vehicles; nor should street trees interfere with overhead utilities, the opening of car doors, or roadside furniture. As a general rule, trees branches should be trimmed so that they fall no less than 7 feet above the sidewalk.

Street trees should be appropriately scaled to the street type and surrounding built environment. Urban boulevards with median pedestrian malls may warrant trees with larger trunks. Trees with small trunks are more appropriately used on busy retail streets with curbside parking (as parked vehicles themselves provide a buffer between pedestrians and the traffic stream). When choosing tree types, a landscape architect or arborist should be consulted. Tree types with root patterns that could eventually cause the sidewalk to shift and bulge, or could damage the foundations of adjacent buildings, should be avoided.

On heavily traveled pedestrian routes, street trees and tree wells should always be placed out of the pedestrian travel way. In locations with high pedestrian volumes, tree grates may be utilized to maximize sidewalk capacity. Drainage gaps within the grate should be small enough for strollers, wheelchairs, scooters, canes, and high-heeled shoes to pass over without difficulty.



Anchoring encourages more pedestrian traffic, thus enhancing nighttime security.



Shopping streets are ideal locations for community festivals.

Abandoned shopping centers, known as “greyfields,” offer opportunities for redevelopment and the creation of pedestrian-oriented retail environments. Vacant, abandoned commercial buildings may meet the statutory conditions for an area “in need of redevelopment” under the Local Redevelopment and Housing Law, providing a mechanism for local governments to implement improvements, including transformation into mixed-use districts and the creation of new shopping streets. In fact, large, single ownership parcels such as these provide excellent opportunities to create off-highway “grid” systems that help contain local trips, thereby relieving highway congestion.



The Borough of South Bound Brook created design guidelines to help revitalize the Borough Center. Awnings, shade trees and pedestrian-scale lighting improve the walking environment. (Image courtesy of Borough of South Bound Brook/HNTB.)

Several New Jersey communities are currently investigating the potential for redevelopment of their highway commercial districts to better serve pedestrian and bicycle traffic, by selecting focal points for pedestrian oriented retrofit designs. Examples include communities along Route 130 in Burlington County and along Route 9 in Ocean County.

Multi-user Parking:

Provide convenient, well-marked parking suitable for varied users: behind shops, on-street, or structured where appropriate; always include parking for bicycles, sufficient handicapped spaces, and areas for truck deliveries.

Shopping streets, while predominantly pedestrian environments, should serve those who arrive by car or by bicycle with convenient parking. Plentiful, convenient parking helps shopping streets to compete effectively with strip malls. It encourages motorists to stop on impulse, and helps to discourage the double parking and weaving maneuvers that can lessen pedestrian safety on a shopping street. With plentiful parking, crowds can be accommodated on busy days or for special events, supporting special uses of the street for festivals, markets, and parades. Ample handicapped spaces encourage persons with disabilities to make use of the street. At the same time, planners should be aware of the potential to share parking among uses that peak at different times of day and avoid building too much parking. In sharing parking, analyze the building space by functional type (residential, office, retail, specialty, etc.) rather than specific proposed occupants, because occupancies will change over time.



On-street parallel parking (left) and surface parking lots located behind stores (right) make shopping streets friendly for drivers and pedestrians.

On-street automobile parking is characteristic of most of New Jersey's successful shopping streets, regardless of size. Surface parking lots and parking structures are often needed to supplement available on-street spaces. Bicycle parking is often overlooked, and those bicyclists who use the shopping street are forced to chain bikes to street signs and utility poles, which tends to create visual clutter and obstacles for pedestrians. Secure bike parking should be included at strategic locations near stores and in surface lots and structures. Bike parking requirements can be added to local parking ordinances. Some municipalities have established a ratio of bike spaces to automobile spaces that must be provided with new development, adding this provision to their zoning ordinance.



A parking garage wrapped with ground floor retail and upper story residential. Santana Row, San Jose, Ca. Clear signage reminds drivers to share streets and directs them to parking behind businesses.

Surface parking for shopping streets should be designed with care. To maintain the sense of enclosure and the visual quality of the streetscape, parking should be visually unobtrusive to street users. Pedestrians should not be required to walk across large parking lots to access stores. This generally requires placing parking behind shops or to the side, where landscaping may be used as a visual screen. However, for off-street parking to work, its presence needs to be obvious to drivers via signage. Visual screening should also not be so complete as to reduce the security of shoppers as they leave and return to their vehicles.

Truck deliveries must also be carefully accommodated. The more commercially successful the street is, the more deliveries will occur. Designated loading zones away from the main pedestrian crossings will help deter truck encroachment onto crosswalks and enhance driver and pedestrian visibility.



Kiosks enhance the sense of the street as a community gathering place. They can be used to post flyers and promote civic engagement and can sometimes be used by tourism agencies and ticket vendors. (Image courtesy of A. Nelessen Associates).

Safe Connections:

Provide safe pedestrian connections for shoppers from parking areas, transit stops and adjacent neighborhoods; provide effective, regularly spaced crossings of the shopping street itself.

Echoing the principles of the Circulation pattern, a Shopping Street also requires safe pedestrian connections, both to the street from adjacent neighborhoods, transit stops and parking areas, but also across the street itself. Shoppers need convenient and secure access to the shopping street, regardless of their arrival mode of travel. Their sense of security while on the shopping street is affected by lighting and the placement of connecting pathways. Traffic speeds on a shopping street should be low – a target speed of not more than 25 mph – but pedestrians with shopping bags, strollers or disabilities may move slowly and need safe refuges such as bump outs or protected center medians to reduce crossing distances. Signage, push buttons, and crossing signals for pedestrians themselves should be logically placed and convenient to all users.



"Great streets are where pedestrians and drivers get along together."

– Allan Jacobs

Easy, frequent opportunities to cross the street are critical. Ease of crossing increases the promenade effect described earlier and helps businesses on both sides of the street to thrive. The ability to cross and recross without much thought or effort helps to create a strong pedestrian presence for the street, enhancing social interaction and adding to the civic character of the place.

Traffic speeds and the width of the street are again significant, as in the Circulation pattern. The ideal is two travel lanes with target speeds of no more than 25 mph. Higher speeds will compromise the pedestrian quality of the environment. More lanes may be accommodated, however, with medians or refuge islands and suitable pedestrian facilities at intersections. Curb bulb-outs are often desirable to shorten the crossing distance at crosswalks.

Other traffic calming devices, such as raised crosswalks (speed humps) or intersections (speed tables) may be considered in some circumstances. But care must be taken to avoid impeding transit, truck and emergency vehicle traffic. For specific guidance, see NJDOT's Roadway Design Manual.

Undivided four-lane arterials can often be successfully converted to three lanes (including a center two-way turning lane), freeing up space for new on-street parking areas, wider sidewalks, curb extensions and landscaping, as well as improved bus waiting areas. Bicycle lanes can also be considered as part of a four-to-three lane conversion.



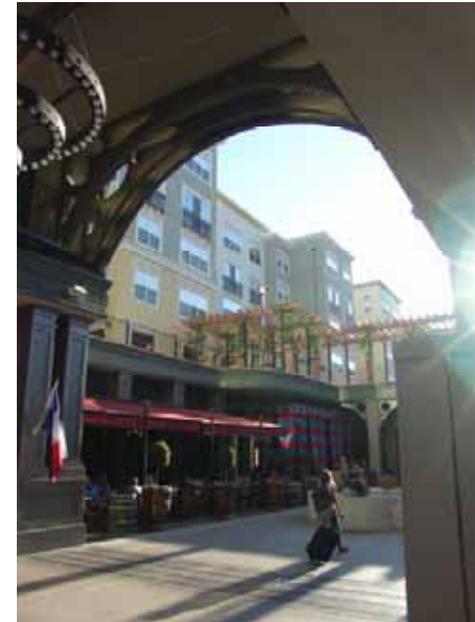
Undivided multi-lane arterials make shopping streets difficult for pedestrians; medians and curb extensions can help improve crossability.



Well-marked crosswalks and downtowns filled with shops and services in Red Bank Borough (left) and Upper Montclair (right) make it convenient for pedestrians to safely run errands downtown and contribute to economic development.

Retail Arcades

Retail arcades can be very effective in creating movement on a shopping street. A retail arcade is an arched covered passageway or avenue with shops and/or restaurants. It is similar to a shopping mall, but open to the street on one side. It is most appropriately used in urban settings with significant pedestrian activity and a high concentration of retail shops. Typically, an arcade is embedded in the ground level of a building. As such, the responsibility of building and maintaining arcades usually lies with private developers. However, jurisdictions can control the placement and/or presence of arcades through the use of form-based zoning codes.



Resources for Shopping Streets

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Pattern 3: Parking



“Parking in great amounts is not a characteristic of great streets.” – Allan Jacobs

Parking is an integral part of the municipal circulation system and is often as important as roads in shaping local activity patterns. The location, capacity, and design of parking facilities have enormous consequences for community form and mobility, as well as for the visual quality of neighborhoods. By providing designated places to park and prohibiting parking elsewhere, a municipality shapes much of the allowable use of public space within its borders.

Community Form and Mobility Principles

Four key principles define mobility-friendly parking:

- Scale,
- Contextual Design,
- Efficiency, and
- Loading and Delivery.

Scale:

Provide a realistic and not excessive amount of parking for a given location; routinely include bicycle parking at trip destinations.

Managing the quantity and location of parking is a common concern in New Jersey's municipalities. Parking issues in communities with strong centers differ from those in low density suburban areas. In the former, there is usually a need to maximize parking availability in the center, enhance public awareness of parking locations, and encourage compliance with parking regulations to squeeze the most benefit out of existing parking capacity. Providing a sufficient number of conveniently placed handicapped parking spaces and enforcing use restrictions can also be challenging.

In suburban areas, residential and commercial parking are generally plentiful, but these parking areas tend to consume large amounts of land, contribute to the deterioration of water quality, and often detract from personal mobility. The prevalence of vast parking areas along commercial corridors tends to create an oppressive environment for drivers and an inhospitable one for pedestrians. Where this problem exists, steps can be taken to retrofit parking areas with internal landscaping and to visually screen parking from the roadway. Opportunities to redevelop underutilized parking for new uses can also be considered.



Separate parking for individual establishments, as along Route 9 in Ocean County, consumes excess land and forces shoppers back onto the arterial for each individual errand.

Excessive construction of parking can be prevented by reducing the amount of parking required in local ordinances. One way to do this is to establish a reduced parking option for those developments that are located near transit services. Some communities have adopted parking *maximums* in place of the minimums typical of local ordinances. Provisions for shared parking may be adopted, along with requirements for bicycle parking in new developments.

The availability of safe and convenient parking is as critical to bicyclists as it is for motorists, and yet frequently overlooked. Many jurisdictions have adopted a systematic approach and specific requirements for bicycle parking design, location, and installation. A comprehensive program for municipal bike parking would consider location and use, type of racks or lockers, protection from the elements, and signage and markings. Sheltered, illuminated bicycle parking is especially helpful at all-day parking locations such as workplaces, transit stations, and schools, providing a dry bicycle and a secure, comfortable place to stand while unlocking a bike in inclement weather. Bicycle parking areas should be visible to passersby to increase the level of security.



Secure, lighted & free bicycle parking and lockers at a university. A key is required to enter the compound.



Sheltered bicycle parking at Westfield Station.



Bicycles should be inside a fenced area, not on a fenced area!

Contextual Design:

Design parking areas (whether structured, surface, or on-street) for pedestrian navigation and security; integrate them with surrounding uses; screen structures and lots through design features or landscaping or placement behind buildings.

The design quality of community parking facilities has evolved in recent years. Though parking structures are often controversial, exemplary designs are available that integrate these facilities into the surrounding streetscape or use color, texture, and landscaping to create attractive facades. Improved designs for surface lots and on-street parking areas are also available. Basic principles of mobility-friendly parking design include the use of screening techniques, rear or side placement of surface lots, and designs that avoid the need for pedestrians (including transit users) to walk through large expanses of parking en route to their destinations. Form-based codes may be used to specify many of these features. Conventional zoning ordinances can also be modified to require landscaping in parking lots.



Structured parking is less obtrusive when it is incorporated into the streetscape design. The parking structure at the right is completely wrapped with ground floor retail and upper story residential uses. To the left, the bank drive thru is serviced from the rear parking lot and does not enter or exit onto Metuchen's Main Street.



High quality designs avoid a “sea of asphalt” by breaking lots up into smaller sections with landscaping and internal walkways. Both surface lots and parking structures should be visually screened from adjacent streets and sidewalks, through design features and/or landscaping. However, security for parking lot users is a paramount concern; screening should not render

access areas or surface lots completely invisible. The internal layout of lots and garages, pedestrian access areas, garage stairwells, elevators and lighting are all factors in creating a sense of security.



As part of an effort to redesign the Route 29 freeway through downtown Trenton into an urban boulevard, NJDOT is working with the City of Trenton to reinvent this employee parking lot, which is vacant on nights and weekends. The proposal involves building a parking garage that is covered by mixed use development that caters to the needs of the area, including shops and restaurants. Source: Glatting Jackson

The design of residential parking can also affect community life in subtle ways. Attached garages, the norm in suburban developments, provide convenience but can reduce opportunities for interaction with neighbors, if people come and go solely in their cars. House designs that place garages nearest the street and obscure the front doors can give a neighborhood an inhospitable quality. Conversely, designs that reduce the prominence of garages may make a street more welcoming to pedestrians and encourage social interaction.



If garages face onto an alley, front porches can face the street.



Parking lots can be designed to minimize conflicts between pedestrians and drivers.

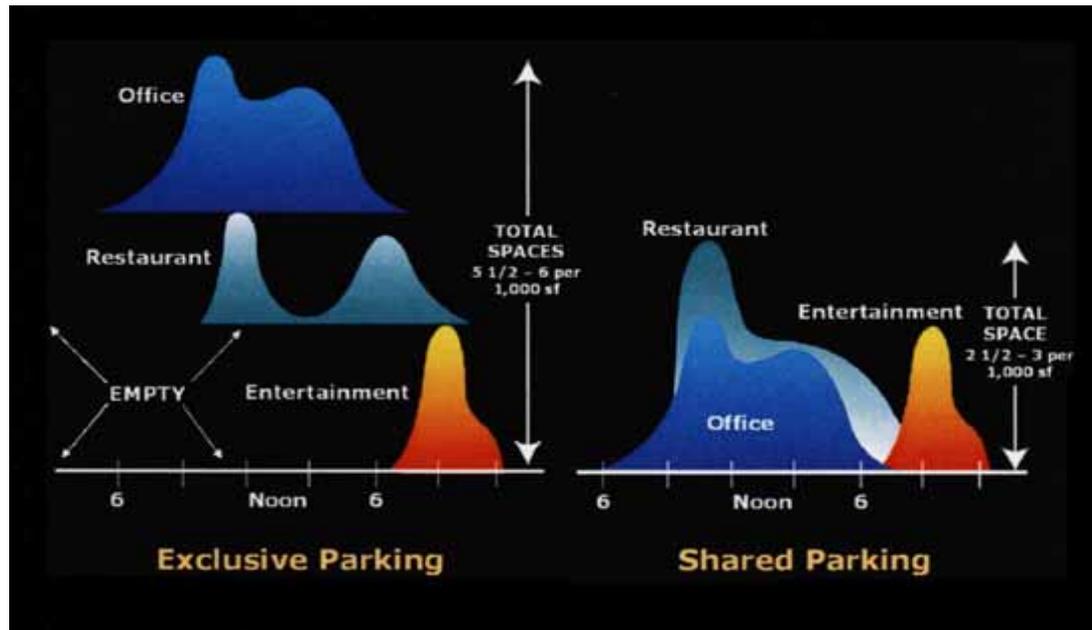
Surface parking facilities can be designed to be environmentally friendly by including stormwater treatment features for runoff. Bioretention is an efficient method that uses natural materials to remove pollutants from runoff. Placing bioretention areas—consisting of sand and soil mixed with native plants—adjacent to impervious surfaces, including parking areas and internal access ways, helps filter runoff and improve drainage. Alternatively, permeable pavement can be used to reduce runoff. Materials such as porous asphalt pavement and permeable pavers allow water to soak through into the soil below. These options provide sustainable solutions for managing parking.



Permeable interlocking pavers and biofiltration swales can reduce environmental impacts. Source: Sikich and Kelsey (left), Wendi Goldsmith (right).

Efficiency:

Encourage shared parking and shared driveways.



Parking shared among different users at various times of day may mean that as little as half of what a zoning ordinance requires would actually be sufficient. Since each parking space requires about 300 square feet of land, savings add up quickly. Source: Glatting Jackson

Several communities have experimented with solutions that include opening up vehicular access between formerly isolated parking areas or bridging adjacent lots with pedestrian pathways. A better approach is to define internal roadways that connect many of the multiple parking areas along a corridor. This allows some of the individual driveways to be consolidated for shared use. Excess driveways can then be closed. Driveway consolidation can provide significant improvements in local traffic flow, while also greatly improving conditions for bicycling and walking.

Parking areas can also be shared for different uses over the course of the day or week. For example, a movie theater may make some of its parking available for carpoolers or express bus users during the day. Zoning ordinances may need to be changed in

The construction of individual parking lots for each commercial or office use along a roadway is the norm in many suburban areas of New Jersey. This practice often results in obstacles to mobility and unnecessarily consuming land for parking. Visitors may find that they cannot use two adjacent stores or services without a trip back out to the highway. Pedestrian pathways connecting neighboring stores may be nonexistent as well. A further problem with multiple individual parking lots is the number of traffic conflict points introduced by having so many driveways along a roadway. This is called “friction”: the constant movement of vehicles in and out of multiple driveways reduces traffic performance, disrupts bicycling, and creates hazards for pedestrians attempting to use a sidewalk.



order to implement shared parking of this type. Excess commercial spaces may also be leased out for park-and-ride use. Park-and-ride lots and other areas primarily devoted to commuter parking can also be used for other purposes on weekends.

Mixed use town centers also lend themselves to a shared parking approach, in which well-placed public or privately operated surface lots can serve many nearby destinations. In higher density town centers and cities, structured parking often provides still greater efficiency.

Regulations governing the duration and price of municipal parking should take into account the desired parking turnover for each parking district. Should a given lot or set of on-street meters accommodate leisurely shopping and dining, all-day shopping by transit users or area employees, or quick errands only? A combination of time limits, while potentially confusing, may help ensure that spaces regularly become available for those using a drug store or Post Office, while other spaces can be occupied by longer term visitors.



Shared parking at a Clifton shopping center accommodates transit users on weekdays.

***Loading and Delivery:
Provide access and loading areas for truck deliveries.***



Planning for truck access and loading zones can improve local traffic flow.

While truck traffic is often a concern to municipalities, goods movement is an essential part of both regional and local economies. Consideration should be given to the need for designated loading areas for deliveries. Loading zones should be accessible from primary truck routes, close to the delivery destinations they serve and well marked. Shared loading areas should be considered. Zones may be regulated at all times, or for certain days or hours only, so that other vehicles may use the space at non-delivery times.

Loading zones should be situated away from crosswalks to avoid hazards to pedestrians from truck backing movements and from the reduction in pedestrian visibility that parked trucks may cause.

Small trucks making local deliveries of parcels, groceries and the like are becoming more prevalent, so loading and very short term parking spaces should be made available for them in both commercial and residential developments.

Due to New Jersey's position within the Northeast freight corridor, and the anticipated long-term growth in port-related traffic, some municipalities may also be affected by regional needs for dedicated freight parking facilities, such as truck terminals and rest areas.

Resources for Parking

Context Sensitive Solutions Resource Center. <http://www.contextsensitivesolutions.org>

Designing New Jersey. NJ Office of State Planning, 2000.

The Dimensions of Parking, 4th edition. Urban Land Institute, 2000.

Guide for the Development of Bicycle Facilities. AASHTO, 1999.

The High Cost of Free Parking. Shoup, Donald. APA Planners Press, 2005.

New Jersey Statewide Bicycle and Pedestrian Master Plan. NJDOT and RBA Group.
<http://www.state.nj.us/transportation/commuter/bike/resources.shtm>

New Jersey Bicycle and Pedestrian Resource Center. <http://policy.rutgers.edu/njbikeped/>

Parking Requirements for Shopping Centers, 2nd edition. Urban Land Institute, 1999.

Shared Parking, 2nd edition. Urban Land Institute, 2005.

Pattern 4: Transit Stops

“Build bus stops so that they form tiny centers of public life. Build them as part of the gateways into neighborhoods...Locate them so that they work together with several other activities, at least a newsstand, maps, outdoor shelter, seats...”

–Christopher Alexander



Public transit is a vital part of the circulation system in New Jersey. Every day, millions of people depend on transit for access to jobs, shopping, recreation, and school. Commuter railroads, subways, light rail, express buses, local buses, shuttles, and jitneys are all part of the mix. While, in general, municipalities are not direct providers of transit service, they have a crucial role in making sure that it works well locally. Local decisions greatly influence success in attracting riders – indeed, the viability of transit at all – and the quality of passenger access to rail stations, bus stations, and bus stops. Local land use planning in the vicinity of transit stations determines in significant measure how many riders are likely to use each station and, therefore, the contribution of that station to overall system efficiency. Municipal

investment in transit stops and surrounding areas can help ensure that these facilities are safe and comfortable, that they meet passenger needs, and that they contribute to the overall vision for the community. Large transit stations and interchange points can become centers of civic life. Even individual bus stops can become tiny community centers, as Christopher Alexander noted. For these reasons, each municipal Circulation Element should include a community-based vision for transit.

Community Form and Mobility Principles

Four key principles define mobility-friendly planning for transit stations and stops:

- Access,
- Identity,
- Comfort, and
- Supportive Density.

Access:

Provide for safe and convenient pedestrian and bicycle access to transit stops and stations.

One of local government's most critical functions in relation to transit is to help facilitate safe passenger access to and egress from transit stops and stations. As a general rule, passengers will walk up to one-quarter mile (5 minutes) to bus transit and up

to one-half mile to rail transit (10 minutes). In New Jersey, rail passengers often walk farther than these national averages, but a lack of sidewalks and curb ramps, poor street lighting or other basic amenities can significantly reduce the pedestrian-shed. Municipalities should pay attention to every detail of pedestrian amenities within these service areas, seeking to make the walk not just safe, but enjoyable.



Planned pedestrian crossings at a transit station (left) and well-used bicycle racks at the South Orange rail station (right) make transit convenient for all.

before boarding and after departing the bus or train. For passengers arriving and leaving on foot, providing and effectively maintaining a complete network of sidewalks and safe pedestrian crossings in the station area is key. Crosswalks should be

Every transit passenger is a pedestrian, for at least a short distance

placed as close to bus stops or station entrances as possible, for pedestrian convenience and to discourage passengers from jaywalking. These pedestrian access routes and crosswalks should be well lit at night, as many passengers will need to traverse these areas in complete darkness.



This rail station in Camden County is ½ mile from the nearest public street and hidden behind a shopping center. Parking for the station is in an unused corner of the shopping center lot, approximately 100 yards away from the platform. Pedestrians must traverse the loading and trash area while competing with big rigs and delivery trucks for roadway space as there are no sidewalks leading to the station.

Bike-access passengers need safe cycling conditions on local access roads or suitable off-road alternatives. They also need secure bike parking facilities, as discussed in the previous section. Bicycle and pedestrian safety should be considered in determining the location and design of station area parking and passenger drop-off and pick-up areas. Passengers arriving on foot should not have to walk through a vast parking area or dodge vehicles to reach the station.

Bike access to transit is greatly facilitated by the bike-on-bus service available in some parts of New Jersey. Since a cyclist using bike-on-bus service can handle a longer access trip at either end of the bus journey, this service greatly expands the market area from which a bus route can draw riders. Local governments can support bike-on-bus service by ensuring safe bicycle access on local streets leading to and from bus routes, or providing alternative off-road paths between primary bus stop locations and key passenger origins and destinations.



Bike-on-bus service provided in Burlington County.

By providing excellent pedestrian and bicycle access to transit stations, the number of auto-access passengers and the corresponding parking impacts in the station area can often be reduced. New riders may also be attracted to use the system. Improving pedestrian connections in a station area also helps to integrate transit stops with surrounding neighborhoods and public places and can help to create a livelier environment. Well-designed streetscapes have

helped to increase transit usage in several New Jersey communities. Municipalities such as Riverside, Red Bank, Metuchen, Westfield, Rahway, South Orange, and Summit have leveraged state and federal funds to create interesting streetscapes that encourage walk-on transit usage, which in turn reduces dependence on park-and-ride. On the RiverLine, the Boroughs of Riverton and Palmyra worked with Burlington County to reduce speeds on Broad Street which makes it easier for transit passengers to cross to their respective stations.



The areas surrounding the Rahway rail station (left) and Palmyra RiverLine station (right) have undergone pedestrian improvements.

Municipalities are largely responsible for the upkeep of local bus stops and the amenities provided. A paved sidewalk is a must at all bus stops. Bus pullout areas, often combined with curb extensions, may be helpful in sheltering passenger boarding operations from adjacent traffic.

Summit: A Classic Example of Transit Compatible Design in New Jersey

Located on NJ TRANSIT's busy Morris & Essex Line, Summit has many components of transit compatible design: a high-quality pedestrian environment, a wide variety of retail shops and services near the station, and an unobtrusive park-and-ride deck.



All stops should meet Americans with Disabilities Act (ADA) regulations. A wide sidewalk, if possible running the full length of the bus, is advisable so that the driver can conveniently lower the lift from any position. Sidewalks at a bus stop should be wide enough to provide space for waiting, boarding, and passing. Shelters should be placed so that they do not interfere with wheelchair and pedestrian access along the sidewalk.



In addition to improving pedestrian access to existing transit services, municipalities can adopt regulations that “build in” transit access to future developments. For example, site plan and subdivision ordinances can specify standards for bus access and internal circulation that will enable a transit provider to operate effectively in all future commercial and residential developments. This can prevent the unfortunate situation in which a shopping center owner, for example, allows the bus to operate only at a remote corner of the parking lot rather than dropping passengers at the mall entrance.

This crosswalk in Metuchen has user activated lights that increase visibility under poor conditions.

Local Transit Services

Local transit services operated by counties, municipalities or nonprofit organizations play an important role in providing local mobility, particularly for passengers with special needs and those in lower density suburban and rural areas of the state without regular NJ Transit service. Specialized transit service needs should be discussed in the local Master Plan.

Shuttle services, usually run by municipalities or county Transportation Management Authorities (TMAs) with a small fleet of buses or vans, are particularly useful at connecting isolated rail stations with nearby residential, retail, office, and industrial locations. Edison, Metuchen and Maplewood are among the New Jersey communities with local shuttle programs. Shuttle service frequency should be determined by primary trip purpose. If the nature of the service is to connect a major bus and rail facility with a large employment center (e.g., an office or industrial park), then peak-period service will usually suffice. In residential neighborhoods that lack traditional fixed-route transit but demonstrate a need for connections to shopping, medical centers, and other services, midday as well as peak-period service will be necessary.

All New Jersey counties provide specialized transit services for aging and disabled persons—known as paratransit service—with support from NJ Transit. Paratransit services use smaller vehicles and operate on flexible schedules tailored to individual service needs. To complement these services, several communities are investigating the formation of Independent Transportation Networks (ITNs), in which volunteers are organized to provide rides for senior citizens. Several car-sharing services are also operating in New Jersey. These services allow members to use cars from a common fleet on a short-term basis, allowing households with an infrequent need for a second (or primary) vehicle to avoid the cost of owning one. Programs are also available to help low-income households purchase and maintain vehicles needed for work or medical transportation. Transportation Management Associations (TMAs) operating throughout the state are a resource for ridesharing and car-sharing programs.

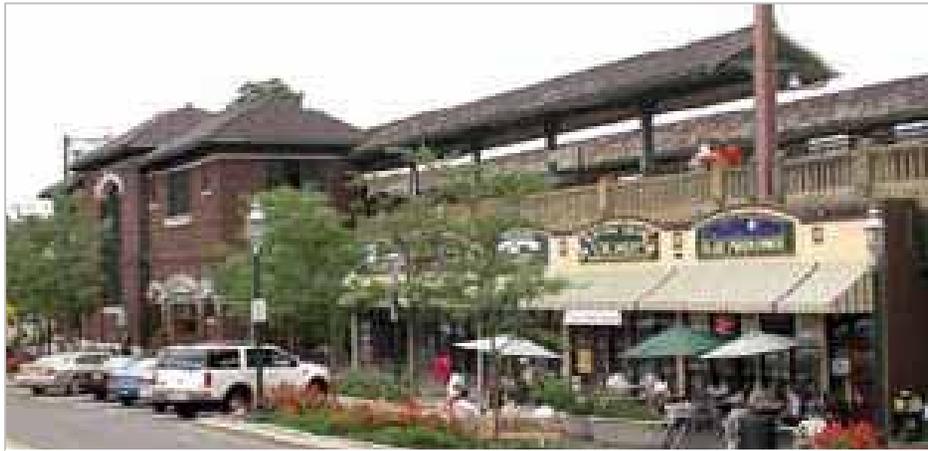


Identity:

Make transit stops distinctive and recognizable from a distance.

In addition to helping to ensure safe passenger access to transit, local governments can help to create a distinctive identity for the transit stops within their borders, enhancing the image of the transit stop and surrounding area, providing a sense of security to passengers, and orienting visitors who are using the stop for the first time. Distinctive transit stops also help to advertise the availability of transit service, thus promoting new ridership. Readily identifiable bus stops are more visible to motorists, who are less likely to park illegally in the stop zone.

**“Bus stops must be easy to recognize, and pleasant, with enough activity around them to make people comfortable and safe.”
– Christopher Alexander**



South Orange station, with its canopied platform above the station shops, is recognizable from a distance and welcoming to passengers.



Stops and stations should also be recognizable at a glance from within the transit vehicle, to aid passengers in knowing where to get off. Iconic station signs and public art on station walls provide for station recognition, and also add to the visual quality of these facilities. Community murals and other station art can help promote an identity for the overall destination area.



Station art and signage, clockwise from top left: Newark Penn Station, Newark Warren Street Station, Delanco RiverLine Station, Hudson-Bergen Light Rail 22nd Street Station, HBLR 34th Street Station.

Orienting information near station exits, such as trail blazing signs and a wayfinding map showing local destinations, is also important to guide alighting passengers. Surrounding streets should also have clearly marked street signs to aid visitors in finding their destinations.



Comfort:

Make each transit stop or station a comfortable, attractive and inviting place to wait for the bus or train; encourage provision of supportive activities and services.



Edison rail station offers seating and refreshments in an attractive environment.

A transit stop is much more accommodating to passengers, more likely to be used, and more likely to become a center of civic activity, when it is comfortable, attractive, and inviting. Attention to the quality of the passenger's experience while waiting for the bus or train helps passengers to feel included and valued rather than neglected; it validates their choice of the transit mode and helps to promote transit use.

Comfortable environments with shelter and seating also tend to promote social interaction among passengers and may lead to regular commuters forming their own small social networks. On a city bus route, passengers often come to know the drivers and one another and look out for each other.

On-board communities spring up on NJ Transit trains and on express buses, with daily card games taking place on certain routes. In this way, the experience of using transit contributes to collective life.

Areas around transit stations become focal points for civic life and local commerce, helping to strengthen local economies. Amenities such as information kiosks, newsstands, and food vendors improve the quality of transit stops as public places in their own right, while on-site services, such as dry cleaning, allow for trip chaining. Several communities have experimented with a "concierge" service to provide local goods and services to commuters at the station. Lighting and trash receptacles are also important amenities for transit stops.

NJ Transit's Transit-Friendly Communities program has helped several municipalities improve their station areas and thereby strengthen their downtowns. In addition to becoming a focal point for redevelopment, these stations and surrounding public spaces have been used for concerts, craft fairs and other community events.



This bus shelter in Metuchen is simple, yet elegant, with a light, airy open design, side openings so seated patrons can watch for the bus, a curbside tactile strip to help prevent falls, adjacent lighting and a trash receptacle.



Neglect of bus stop environments reflects poorly on municipalities.
(Image courtesy of Michael Ronkin, Oregon DOT)

The cleanliness and attractiveness of transit stations and stops has a direct impact on the passenger's experience and ultimately on transit ridership. In many cases, the upkeep of stations and stops is the responsibility of the municipality rather than the transit provider. (In New Brunswick, for example, day-to-day maintenance of the NJ Transit rail station is performed by the New Brunswick Parking Authority.) Local business and civic organizations can be instrumental in maintaining station areas.

At bus stops, the responsibility of installing shelters, seating, and lighting is almost always left to municipalities. Shelters should be kept tidy and free of graffiti; benches should be comfortable and freshly painted, and lighting should be bright enough to ensure passengers' sense of security at the stop. Municipalities may elect to provide higher quality, context-sensitive shelter designs in lieu of standard NJ Transit shelters by assuming the cost of purchase and maintenance.

Supportive Density:

Encourage density of housing and employment around transit stations.

The “D-word” can be the third rail of community development, but it need not raise the ire of local citizens. In fact, low density is the enemy of community development, favoring no mode of transport except the auto, consuming large swaths of land, growing sterile bedroom ‘burbs and creating city-less highways.

NJ Transit’s “Transit Score” index, used by transportation planners to determine what public transportation services would be appropriate for a community, considers four different density indicators: housing density, population density, employment density, and zero and one-car household density. Increasing the density of any or all of these factors increases the range of transit options available to a community. Clearly, working to increase more than one of the factors will lead to much greater increases in transit viability.

But focusing on density when considering community development is like buying a car based solely on the size of the engine: it only tells part of the story because it misses all of the other attributes that make up the package. Once threshold densities have been identified, considering the *form* of development around transit facilities is probably more appropriate for the broad community development discussion. In chapter 4, *Putting It All Together*, we show some tools for thinking about the form of development.

In fact, just creating density is not enough. There is a significant difference between “transit adjacent development,” which may be dense and well sited but ignores the potential of transit, and the more supportive land use known as Transit-Oriented Development (TOD). TOD refers to a development node that is focused on a rail, bus, or ferry station; it is compact, mixed-use, and pedestrian friendly. TOD nodes can be of any size, as is appropriate to the community context and the local transit system. TOD attracts users to new or strengthened activity centers around transit stations and encourages shifts from auto to transit or from auto-access to walk-access transit use. Over time, as the number of TOD centers in the state increases, so does the likelihood that any particular commute trip can be served by transit at both ends, tending to promote increased ridership.



New townhomes in Metuchen



Burlington's compact core surrounds the RiverLine light rail service.

Redevelopment of the area around a train station can be an important aspect of a city or town's overall downtown redevelopment strategy. For instance, in Hackensack, station area redevelopment is part of a major redevelopment plan that includes a medical district, industry, and housing. In Rutherford, new development around the rail station includes housing, offices, retail, and day-care facilities. In Camden, a strategic plan for downtown development is guiding several projects around the RiverLine light rail station.



Transit-supportive housing along Hudson-Bergen Light Rail line in Jersey City. Over 7,000 residential units have been built within walking distance of the route.



New housing in South Orange (Gaslight Commons) is designed

Local governments can facilitate transit-supportive development either by revising development regulations to allow higher densities, encourage mixed uses, or support different forms of development around stations or along light rail and bus lines, or by creating Station Area Plans for transit stations, with associated development regulations. A Station Area Zone overlay, a Planned Development District for a station area, or a redevelopment plan that focuses on infill and rehabilitation may specify a mix of uses appropriate to the zone and provide standards for building massing, sidewalks, parking, signage, and lighting. Consider use of a “form based code” to achieve very specific community design goals (see Chapter 4).



Transit-supportive housing under construction in South Amboy (left) and mixed use development at the station (right).



Transit Village Initiative

NJDOT and NJ Transit have developed the Transit Village Initiative to encourage Transit-Oriented Development (TOD). Under this program, the State recognizes as Transit Villages certain municipalities that have taken aggressive steps to revitalize the quarter-mile to half-mile radius around a transit station. The Transit Village designation provides eligibility for various types of grants.

A potential Transit Village must meet 13 criteria. Among the most crucial are: (1) a strong residential component with a wide variety of housing choices within walking distance of Transit, (2) a commitment to implement regulatory measures, such as a redevelopment plan, zoning ordinance, master plan, overlay zone, or land use strategy, that support compact, transit-supportive, mixed-use development, (3) an understanding that the transit station is a focal point of the community and can be used as a gathering place for community activities, such as festivals, concerts, public ceremonies, and farmers markets, and (4) a desire to emphasize amenities that minimize automobile use by maximizing the appeal of transit.

The most important benefit of becoming a Transit Village is that a town receives special treatment from a variety of state agencies. This may come in the form of funding priorities, technical assistance, support for creating shuttle services, and aid in rehabilitating historic train stations. Another benefit of Transit Village designation is the achievement of a high level of certainty and security. Since these communities have already made provisions for revised zoning and have shown that they are willing to grow – and are backed by the State – they are very attractive places for developers to plan investments. Since 1999, the following 17 communities have been designated as Transit Villages: Pleasantville, Morristown, Rutherford, South Amboy, South Orange, Riverside, Rahway, Metuchen, Belmar, Bloomfield, Bound Brook, Collingswood, Cranford, Matawan, New Brunswick, Jersey City, and Netcong.

Resources for Transit Stops

Building a Transit Friendly Community. NJ TRANSIT, NJOSG, Downtown New Jersey, Inc., New Jersey Future, Project for Public Spaces, Regional Plan Association, Rutgers Voorhees Transportation Policy Institute.

Guidelines for the Location and Design of Bus Stops. National Research Council, Transportation Research Board, Transit Cooperative Research Program, Report 19, 1996.

Increasing Intermodal Access to Transit. Delaware Valley Regional Planning Commission, August 2004.

NJDOT and NJTRANSIT Transit Village Initiative. www.state.nj.us/transportation/community/village

Pedestrian- and Transit-Friendly Design: A Primer for Smart Growth. International City/County Management Association, EPA, and Smart Growth Network, 1998.

Planning for Transit Friendly Land Use: A Handbook for New Jersey Communities. NJ TRANSIT, June 1994.

The Redevelopment Handbook: A Guide to Rebuilding New Jersey's Communities. NJ Department of Community Affairs and NJAPA, 2003.

Ten Principles for Successful Development Around Transit. Robert Dunphy, Deborah Myerson, and Michael Pawlukiewicz. Washington, D.C.: ULI—the Urban Land Institute, 2003.

Transit-Friendly Streets: Design and Traffic Management Strategies to Support Livable Communities. TCRP Report 33, TRB, 1998.

Transportation Management Associations (TMAs). Information on the eight TMAs in New Jersey. <http://www.state.nj.us/transportation/commuter/smartmoves/tmaprograms.shtm>

Waiting for the Bus. Project for Public Spaces, 1986. Videocassette.

Pattern 5: Neighborhoods

“Lowly, unpurposeful and random as they may appear, sidewalk contacts are the small change from which a city’s wealth of public life may grow.” –Jane Jacobs



The neighborhood is a uniquely important element in a community’s form. As the place that links the community’s most private spaces with the world outside, neighborhoods shape personal experiences, relationships, and community life in profound ways. Seemingly small details, from parks to porches, may make the difference between neighbors who know each other well and those who are neighbors in name only.

The physical form of a neighborhood is especially influential in determining tripmaking patterns. It sets the origin for numerous daily household trips and often determines whether they can be made on foot, by bike, or by transit. It can provide an array of nearby destinations—or hardly any. High speeds on local streets, as well as security concerns, can diminish pedestrian mobility

as well as the enjoyment a house or yard provides its inhabitants. These problems may result in children being kept indoors, reducing their opportunities for neighborhood play and exercise. Conversely, well designed neighborhood streets, with sidewalks or pathways connecting homes and nearby schools, encourage children and families to do more walking.

Community Form and Mobility Principles

Four key principles define mobility-friendly neighborhood planning:

- Mixed Use and Housing Diversity,
- Neighborhood Schools,
- Pedestrian Access, and
- Street Scale.



Mixed Use and Housing Diversity:

Create compact neighborhoods that combine homes of varied sizes with other uses (such as shops, workplaces, public buildings, and green spaces) close by.

The principle of mixing land uses in compact clusters is central to mobility planning and is a key policy of the New Jersey State Development and Redevelopment Plan. By placing stores and services near housing instead of in separate developments, mixed use communities encourage walking for many daily needs, increasing health and reducing the need for automobile ownership. As residents walk, bike, or take short driving trips to nearby destinations in the course of the day, they have many more opportunities to interact with their neighbors than in auto-oriented residential developments. This can help to foster neighborliness, sociability, and a sense of belonging.

In addition to promoting a shared civic culture building upon neighborhood life, mixed use neighborhoods encourage independent mobility for children and non-drivers. They provide senior citizens with life-long mobility, putting basic services

and shopping within easy reach. Mixed use neighborhoods also tend to provide more variety and visual interest in their surroundings, and they help to provide natural surveillance through the presence of people throughout the day, deterring crime.



Homes, shops and parks are within easy walking distance in Spring Lake.

Compact residential clusters in mixed use neighborhoods help to support efficient transit service. They provide local workers with access to lunch places and other services nearby, reducing midday congestion on major roads. Compact residential clusters may also allow for more public open space and conservation of natural areas and farmland, enhancing quality of life.

Similarly, where the long term use of retail and office space can be well controlled, consider building shared parking that can be used by businesses during the day and by residents over night. Reducing the amount of parking that is needed

allows land to be used for other purposes, such as recreation space or additional building area, and also reduces construction costs, which could then be used for other amenities.



Locally-owned businesses provide valued services and fit well in residential neighborhoods.

“People want to be close to shops and services, for excitement and convenience. And they want to be away from services, for quiet and green. The exact balance of these two desires varies from person to person...” – Christopher Alexander

Town Center Planning

Seeking a remedy for uncontrolled sprawl, several suburban New Jersey communities have developed area master plans to create focused “town centers.” Planned Town Centers, such as those in Washington Township (Mercer County) and Plainsboro Township (Middlesex County), may be designed as neo-traditional downtowns. A center that includes diverse housing options, retail, schools, sidewalks, and parks is attractive to many New Jersey families, as well as to municipal governments. The *New Urban News* noted, “Ironically, it may be the very desire for a better quality of life that is moving rates in a positive direction. By building a community that attracts residents from varying demographics, consists of several housing unit types and conserves open space, Washington Township has built a better tax base...” Other communities have taken a step toward mixed use simply by allowing small-scale retail uses in neighborhoods.



Washington Town Center (left) and Plainsboro Town Center (right) are both examples of new villages built on the traditional mixed use center model.

A closely related principle is that of housing diversity. A policy of providing for a mix of housing types and sizes allows young people, independent seniors, and moderate income professionals – such as schoolteachers and law enforcement officers – to move into or remain in the community, reducing the need for travel. Housing variety also allows people to remain in a community throughout the life cycle, rather than requiring them to move as their housing needs change. This may enable the generations of a family to live a short distance apart. The presence of seniors who have lived in a community for years provides for a rich sense of local history, allows them to remain as valuable members of the community and actually promotes longer lifespans. Housing diversity also encourages interaction across income divides. Diversity can often be achieved through infill development or the redevelopment of vacant or underutilized buildings to provide for smaller homes, apartments or condominiums.



Attractive designs help generate community support for multi-family infill projects, like these in Metuchen (left) and Jersey City (right).

Another critical reason to plan for a diverse range of housing types is to ensure that each municipality meets its fair share obligation under state Council on Affordable Housing (COAH) rules. The COAH methodology has changed and now requires one affordable unit for every 8 market-rate residential units plus one unit for every 25 jobs resulting from non-residential construction during the period 2004-2014. Communities that meet their affordable housing obligations are in a far better

position to implement their master plans, enforce their development regulations, and thus exercise control over the future of their communities than those that do not take this step.

Municipalities seeking to promote mixed-use development and housing variety may wish to consider updating housing goals and policies of their master plans in close coordination with land use and circulation goals and policies.

Disadvantages of Large-Lot Zoning

In many parts of New Jersey, a desire to limit overall development has led to the use of large-lot zoning that yields only one type of housing: large, single-family homes. The fiscal and environmental concerns leading to the limited variety of suburban housing are real, but these housing trends have serious long-term implications for the quality of community life as well as for the transportation system.

From a transportation standpoint, large-lot zoning promotes almost total reliance on the automobile and results in longer trips than would occur in more compact, center-based communities. Virtually no household needs can be met by walking, and it is impractical to provide even minimal public transit service to these low density settlements.

Concerns about the cost of educating school children have led to another type of uniformity as well: reliance on age-segregated housing as the chief, or even sole, form of new housing being developed in some communities.

In either case, what results is a detached one-dimensional pod development that is expensive and difficult to reach with infrastructure and services.

Neighborhood Schools:

Locate schools near neighborhoods where possible, and in all cases, create safe routes for children to travel to school.

In addition to mixed uses and diversity of housing, mobility-friendly community forms typically include neighborhood schools with safe pedestrian connections from surrounding streets. Neighborhood elementary and middle schools are especially important in establishing independent mobility for children. At the high school level, larger regional schools have become the norm in many areas of New Jersey. Through careful planning and multi-story designs, even these larger schools can be integrated with surrounding land uses, providing walking or bicycle access for a portion of the students.

“Construction of new schools in outlying areas can greatly alter a community’s future growth patterns. Often such schools establish beachheads for residential sprawl.” – National Trust for Historic Preservation



Elise Bremer-Nei

Walkable neighborhood schools give children and teenagers independent mobility, reducing the amount of chauffeuring parents need to do, as well as lessening the traffic congestion around school drop-off areas. By walking to school, children also have a chance to form a lifelong habit of walking. Parents who prefer to meet their young child at school in the afternoon can walk or bike to do so—and possibly enjoy a conversation with other parents as they wait for children to be dismissed. Those parents without access to cars can be more involved in their children’s school when it is a short distance away than when special arrangements must be made for rides. Neighborhood schools can further serve as gathering places for all ages, providing a convenient location for night classes, organizational meetings, sports activities, and community entertainment.

Planning for schools should address issues of traffic and parking and ensure that the neighborhood around a school is friendly to pedestrians, bicyclists, and citizens of all ages. Techniques for developing “safe routes to schools” are now widely available as part of the national movement by this name; NJDOT provides technical assistance and a program to encourage development of safe routes.

Safe Routes to Schools

SAFETEA-LU, the federal transportation re-authorization legislation signed in 2005, includes a national Safe Routes to School (SRTS) Program. SRTS is a community approach to encourage more people to walk and bicycle to school safely, improve road safety and reduce child casualties, improve children's health and development, and reduce traffic congestion and pollution. In New Jersey, the Department of Transportation is responsible for the SRTS program, in partnership with other state agencies including the Departments of Education, Health, and Community Affairs.

NJDOT has moved forward on a statewide initiative to foster Safe Routes to Schools, completing pilot programs in several communities. Community-based tools and resource materials have been developed to address the diverse urban, rural and suburban character of New Jersey's schools. More information is available on the NJDOT SRTS website.



Students in Wharton Borough are participating in a “Safe Routes to Schools” pilot program initiated by Morris County. The program includes route identification, safety improvements, and classroom activities.

Pedestrian Access:

Ensure that all destinations in a neighborhood can be conveniently reached on foot and all neighborhood streets can be crossed safely on foot and in wheelchairs.



Wide sidewalks (above) make access easier for a variety of users. But sidewalk construction must be coordinated with street construction (right).

An ideal neighborhood provides universal access for pedestrians, including wheelchair users, mobility impaired, and visually impaired pedestrians. While these conditions can be difficult to achieve in automobile-oriented communities, they are worth planning for over the long term, especially given the rising age of the state's population. Walkable environments are also important to many homebuyers.

The *Circulation* pattern discussed the features needed to create "complete streets" that serve pedestrians and other users. However, pedestrian access is not just a matter of providing sidewalks and well-designed crossings. Careful land use planning and site design are just as important. For example, local master plans should encourage careful siting of senior citizen communities, so that seniors can live within easy walking distance of town centers. Careful attention must be paid to the details of walkway design, such as curb heights, ramp locations, pedestrian signal hardware and so on, when designing to enhance senior mobility. Developers of age-restricted communities may also be required to provide sidewalks and paths that connect these developments to surrounding land uses. Otherwise, many of these seniors will lose basic mobility once they are no longer comfortable driving.

Pedestrian Pathways

In Lawrence Township, development ordinances allow the Planning Board to require pedestrian easements and sidewalk construction. This has resulted in construction of pedestrian pathways linking residential neighborhoods to various destinations. For example, a walkway was created between a senior citizen residence and a community shopping center, enabling seniors to cart their groceries home. Similar strategies can be used to create new linkages between neighborhoods and commercial centers that were originally built as isolated developments. Contrast this with the “game trail” that has developed along Route 18 in East Brunswick and the ramp to nowhere in Haddonfield.



Street Scale:

Street characteristics, including widths and design speeds, should be scaled to the type and placement of neighborhood buildings.



A pathway through a mixed-use building (retail on the ground floor and residences above) provides pedestrian connections and adds visual interest to this street in Princeton Borough.

The design of neighborhood streets is a critical consideration for establishing mobility-friendly communities. The width and speed of a neighborhood street should be scaled to the surrounding land uses. Residential streets lined with single family homes, town houses or low-rise apartments should be relatively narrow and slow-moving. Where boulevards adjoin larger scale apartment blocks, or are separated from buildings by slow-moving access roads, higher speeds may be appropriate. Providing for safe and comfortable pedestrian use of residential streets should be a priority in any community. Regional trips should be directed to highway facilities.

Where neighborhood traffic routinely exceeds 25 mph, it is especially important to provide a buffer zone between pedestrians and automobiles. A landscaped space or street trees can provide this buffer and add to the character of the street. Consideration should be given to engineering standards and traffic calming methods that bring driving speeds into harmony with the neighborhood scale.



On Valley Street in South Orange, a street realignment helps to slow traffic.

Road Diet

A “road diet,” as its name suggests, is a technique that reduces the number of or width of lanes on wide roads to bring them into better scale with their surroundings and make them safer for all modes. Typically, this is done by removing one or more lanes from a 4-lane road and using the space gained to provide turn lanes, medians and islands, bicycle lanes, shoulders, wider sidewalks, or street parking. While new amenities such as landscaped medians improve the road’s appearance, perhaps the greatest benefit of the road diet is that it greatly reduces traffic speeds. Transportation engineers have found that a road that feels narrower and is full of people causes drivers to drive slower and more carefully—regardless of the posted speed limit. As a result, on these “tamed” roads, traffic speeds are reduced, pedestrian crossings are facilitated, and traffic operations can often be improved as well. Road diets have been successfully implemented in New Jersey communities such as Avon-by-the-Sea, South Orange, and Lawrence Township.



Main Street (Route 71) in Avon by the Sea (Monmouth County) and Federal City Road in Lawrence Township (Mercer County) provide good examples of “road diets.”

Resources for Neighborhoods

Active Living by Design. The Robert Wood Johnson Foundation. <http://www.activelivingbydesign.org/>

“Children and Schools,” Smart Growth America. <http://www.smartgrowthamerica.org/children.html>

Creating Communities of Learning: Schools and Smart Growth. Ellen Shoshkes, NJ Office of State Planning, 2002. <http://newjersey.gov/dca/osg/docs/learning040104.pdf>

Creating Livable Streets: Street Design Guidelines for 2040. Metro (Portland, OR), 2002.

Four-Lane to Three-Lane Conversion. Center for Transportation Research and Education, Iowa State University. <http://www.ctre.iastate.edu/research/4laneto3lane.htm>

National Safe Routes to School Clearinghouse. <http://www.saferoutesinfo.org/>

Neighborhoods, Regions, and Smart Growth Toolkit: The Smart Growth, Better Neighborhoods Action Guide. Washington, D.C.: National Neighborhood Coalition.

“Old School Buildings: Prehistoric or Worth Preserving?” http://www.education-world.com/a_issues/issues172.shtml

Preserving Community Character in Hunterdon County: A Community Design Handbook. The Hunterdon County Planning Board, December 1999. <http://www.co.hunterdon.nj.us/pdf/hcpb/CommunityDesignBook.pdf>

Smart Future Planning Grants, Office of Smart Growth, New Jersey Department of Community Affairs. <http://www.state.nj.us/dca/osg/resources/grants/index.shtml>

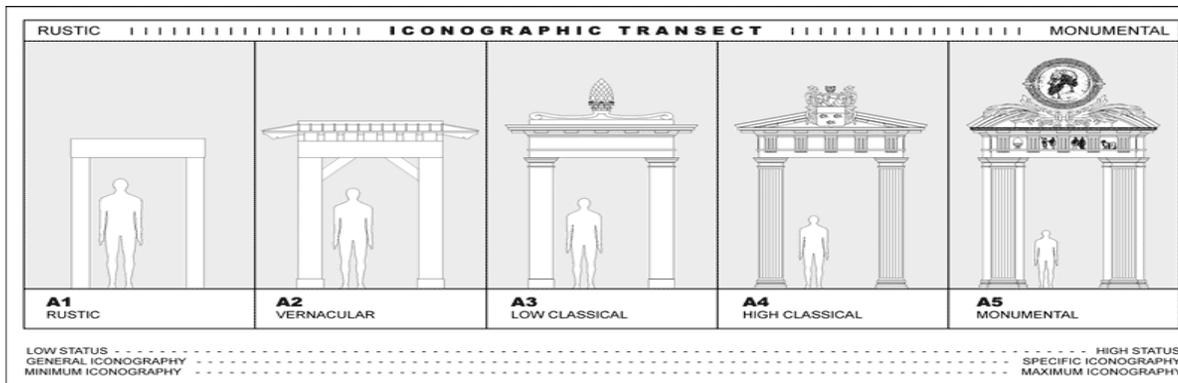
Walkable Communities, Inc. www.walkable.org

Safe Routes to School Program, Morris County (NJ) Division of Transportation. <http://www.mcdot.org/Accessories/Transportation-SaferoutestoSchool.asp>

Pattern 6: Public Places

"The cities that we love so much today – Rome, Venice, Prague, St. Petersburg, Charleston – also evince a coherence with respect to the appearance of buildings. What is needed is a tool that allows us to analyze and prescribe this coherence."

– Dino Marcantonio, Univ. of Notre Dame



From the Highlands to the Pinelands, every New Jersey community is unique, shaped by a distinct sense of history and purpose that has been cultivated over the decades by the people who call that place home. Yet in many places, recent building patterns have transformed a diverse architectural, natural, and cultural landscape into a bland pattern of suburban sprawl with no special character or sense of community. Creating distinctive public places, or reclaiming those that have been allowed to languish, can do much to strengthen community character and identity.

Mobility and Community Form Principles

Four key principles define mobility-friendly planning for public places:

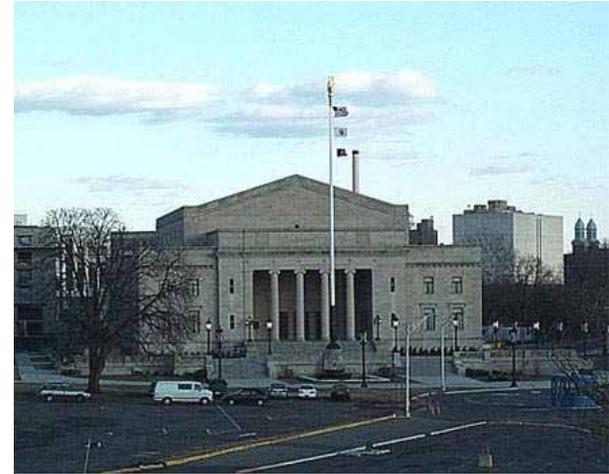
- Monumentality,
- Visibility and Framing,
- Civic Cluster, and
- Placemaking.

Monumentality:

Use a scale and formality appropriate to community context to determine design characteristics of streets, plazas and public buildings.

Central public places provide a location for a wide range of community political events, ceremonies and recreation. Public places can be grand and celebratory, such as the Capitol Mall in Washington D.C., or they can be simple, even rustic, such as a flagpole or a statue in a small plaza or patch of green. The type, size and architecture of public buildings, the size and formality of parks and plazas, the width of streets and height of street trees all contribute to the unique sense of a public place.

Dino Marcantonio, an architecture professor at Notre Dame, built on the idea of the transect (which takes a “plan” view of geography) to create the concept of an “iconographic transect”, which considers the “monumentality” or “built scale” of a place as an additional measure of context. Very simply, smaller or less formal places should present a design and scale message that is in keeping with that size or function. Larger, central or more important public places should “show off” with a grander scale and architectural language. Marcantonio illustrated this concept with the five-category “iconographic transect” shown at the top of



The War Memorial in Trenton was once the centerpiece of a large Olmsted designed park. It is now surrounded by roadways and parking, but could again become a centerpiece of downtown Trenton if Route 29 is reconstructed as a commercial boulevard.

this chapter. (The illustration, of doorway surrounds, is not about architectural styles, but about scale and formality or ornamentation.)



A clock and small plaza form the centerpiece of a small village center.

Thus, a main street in a town would likely be wider than surrounding local streets, framed with more massive and perhaps more highly ornamented buildings, and include the largest or most formal plaza or monument as a focal element. Similarly, the central place of a hamlet might consist of a fully improved intersection (curbs, sidewalk) with a four-way stop, framed by small commercial buildings set at or near the street property lines.



**Steps for the Foxtrot Weave
Enliven a sidewalk.**

Visibility and Framing:

Make parks, plazas and courtyards visible from adjacent streets.

Use transportation features to frame and connect public places.

Parks and plazas work best when they are clearly visible from surrounding streets or sidewalks. Visibility creates awareness and identity for public places, encouraging use. It also provides natural surveillance, helping to deter crime. Pathways or trails into a park should be designed to help orient users and to help them find their way out as well.



“A good plaza starts at the street corner. If it’s a busy corner, it has a brisk social life of its own. People will not just be waiting there for the light to change. Some will be fixed in conversation; others, in some phase of a prolonged goodbye.” --William H. Whyte



This plaza ties together the new Princeton Public Library with nearby shops, restaurants and housing. Both the interior and exterior spaces serve as popular community gathering places.

In communities of all types, successful public places tend to be heavily used. Sociologists have documented that when people are out in public places, they enjoy being around other people. The presence of crowds of people of all ages and backgrounds is a sign of life and of a successful place and should not be looked upon as a nuisance. In her 1961 book *The Life and Death of Great American Cities*, Jane Jacobs theorized that it is having “eyes on the street” – the stewardship and watchful eyes of neighbors looking out for places they love –which makes places safe. Ideally, a successful public space should be active for 18 or more hours per day, beginning with the passage of the earliest commuters and continuing with eating or entertainment until late at night.

Conversely, vehicles should be kept out of plazas, parks, and places that function as such. When cars occupy a space, they monopolize it.



This plaza is actually the median of a shopping street in a California mixed use community. In addition to being highly visible from the street, hundreds of residences overlook the plaza. It is so popular that residents sit on their upper story balconies to watch the street life.

“Cars are happiest when there are no other cars around. People are happiest when there are other people around.” – Dan Burden

In addition to choosing visible locations for parks and other public places, communities can use transportation features to “frame” and connect them. Framing means utilizing transportation elements to create a sense of place in a somewhat confined area, thereby generating a specific image for community identification. In dense areas, framing can be achieved with long boulevards that lead to a central building or monument. Philadelphia’s Benjamin Franklin Parkway, which stretches from the historic City Hall to the monumental Art Museum and is lined with trees and flags, is an example of a piece of infrastructure that



Street trees and benches elevate this plain sidewalk into a public place that encourages users to sit, linger, study, or socialize.

moves cars and also creates a strong sense of place. Several cities in New Jersey have created linear parks along major entryways. For example, in Camden, a new public park along the Admiral Wilson Boulevard helped to transform this roadway into a gateway to the city. A boulevard concept has also been proposed for Route 29 in Trenton.

Transit stations can also serve as focal points

for surrounding public spaces. The design of stations and surrounding areas should create a sense of arrival for passengers and an immediate connection to the life of the place. Bike paths, greenways and scenic pull-off areas can also complement and provide access to adjoining parks. All towns can make use of landscaping, pathways and trails, parking areas, sidewalks, and streets to create pedestrian linkages and enhance civic life.

“A successful space is easy to get to and get through; it is visible both from a distance and up close.”

--Project for Public Spaces



This small plaza in Red Bank creates a sense of enclosure, inviting pedestrians to linger.

Civic Cluster:

Group civic and institutional buildings with pedestrian plazas or parks to create access to shared civic space.

Another time-tested element of community form is the grouping of major civic buildings around a town square or village green. Clusters of public buildings (often mixed with shops, private offices, places of worship and hotels) provide for a stronger civic identity and enable several errands to be carried out with one short trip, whether on foot, by automobile or other modes. The design of a central public space may range from the formality of a public garden or courtyard, with fountains and ceremonial sculpture, to a casual lawn with a bandshell for summer performances. A civic cluster is a natural location for a transit stop, which should be well connected to the buildings by pedestrian pathways. In a rural village, the municipal building, post office, firehouse, and local school can be grouped with connecting areas of parkland or a community playground.

Throughout our history, civic buildings—such as city halls, libraries, court houses, schools, and post offices—have served an important function in expressing the character of a place. When civic buildings are grouped in a central location, the space becomes an area that promotes the exchange of information and civic awareness. It provides a space for formal and informal public events and fosters interaction of people of all ages. Semi-public facilities such as community theaters, social service organizations, YMCAs and recreational spaces can be included in these groupings.



Belvidere, a small town on the Delaware River, is the county seat of Warren County and home to this charming County Park designed in the 1820s. The County Court House and Public Library front the green, and children still use the trees as bases when they play baseball.

Some municipalities already have a distinct, historic downtown, complete with a town hall, public library, post office, high school, and other prominent civic buildings. In such cases, it is important that land use and transportation plans be conducted with these valuable resources in mind, preserving their place in the community rather than replacing them with new facilities sited in a more remote part of town that is only accessible by automobile. Those municipalities without an historic civic cluster can consider gradual steps to form one, as they choose locations for new facilities such as libraries, schools, or borough halls. As Belvidere and other colonial era examples show, a vision eloquently articulated can remain a community focal point for hundreds of years.



Red Bank Catholic High School, in Red Bank Borough, and the Post Office in Rocky Hill are good examples of educational and civic buildings serving as backdrops to street life. While it is not always possible to build new civic buildings like these, it is important that communities that are already home to downtown institutions ensure that they are preserved and remain vital parts of the community.

Placemaking:

Provide wide sidewalks or pedestrian paths with places to sit. Provide shade from the heat and warmth on cool days. Allow people to customize spaces in small ways, to give them “ownership.”

A number of features make for successful public spaces—those that are well used and enjoyed. In addition to convenient, accessible and secure locations and vigilant maintenance of the space, comfortable places to sit are very important. For easy access, benches or chairs can be located along pedestrian pathways. Be sure to consider the needs of elderly, disabled and wheelchair bound persons in designing seating areas. Interesting elements, such as fountains, sculptures, gardens, playgrounds, and overlooks, can become destinations that help to make a place distinctive. A park or plaza may also incorporate and frame an historic site, museum, natural area or wildlife preserve. Smaller “pocket parks” can enhance almost any type of building or streetscape, including workplaces, hospitals, and shopping districts.



Public outdoor rooms with tables for talking, reading, or eating lunch work well in cities and towns alike. At the left, all of the chairs and tables can be moved to suit the purposes of users. In the right photo, the seating is fixed, but benches line the enclosing walls, and the wall tops themselves provide prime seating – with a view!

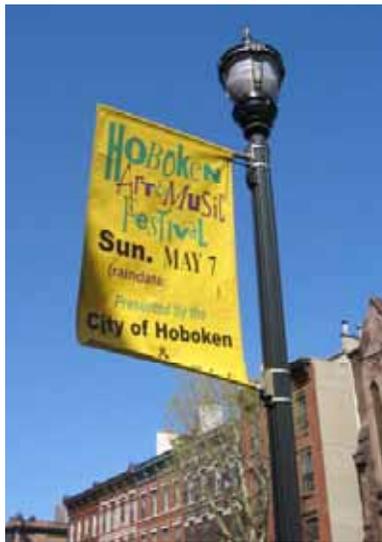


The orientation of buildings and spaces to the sun should be a primary consideration in designing public spaces. In addition to allowing solar access for heating and cooling, proper design will ensure that plazas receive sunlight for at least part of the day. If food service is available nearby, consider that many people can be attracted to plazas and parks for outdoor eating. Plan a variety of seating, tables, sun and shade spots, and accessories such as trash receptacles accordingly. Use deciduous trees, which provide shade during hot summer months, but allow sunlight to penetrate during the winter.

Studies conducted by William Whyte in the 1970s show that people love to “customize” space as a way of “taking ownership”, if even for a short while. One of the easiest ways to accommodate this is by providing moveable seats: chairs and light weight benches that are not fixed to the ground. Even if it is perfectly situated to take advantage of whatever sun or shade there is, most people will move a chair, at least a few inches, before sitting down. Moveable chairs can also be rearranged to accommodate groups of various sizes.

“The 20th Century was about getting around. The 21st Century will be about staying in a place worth staying in.”

– James Howard Kunstler



Flags and banners--such as these in Hoboken, Asbury Park, and Lambertville--help create a civic identity in public places.

Highlighting unique history and cultural traditions is another way towns can emphasize a sense of place. State Scenic Byways, such as the Delaware Valley Scenic Byway and Millstone Valley Byway, emphasize the scenic, cultural, and historic features of a corridor that are worthy of preservation and celebration. The proposed Crossroads of the American Revolution National Heritage Area seeks to draw attention to the significant role New Jersey’s communities—such as Trenton, Princeton, and Morristown—played in the Revolutionary War.

Resources for Public Places

American Planning Association. www.planning.org

Context Sensitive Solutions Resource Center. www.contextsensitivesolutions.org

Designing New Jersey. New Jersey Office of State Planning, 2000.

How to Turn a Place Around: A Handbook for Creating Successful Public Spaces. Project for Public Spaces, 2000.

Municipal Land Use Center. The College of New Jersey. www.tcnj.edu/~mluc/

New Jersey Future. www.njfuture.org

New Jersey Office of Smart Growth. www.nj.gov/dca/osg

New Jersey Smart Growth Gateway. www.smartgrowthgateway.org

Project for Public Spaces. www.pps.org

Smart Growth America. www.smartgrowthamerica.org

Smart Growth Network. www.smartgrowth.org

The Social Life of Small Urban Spaces, William H. Whyte, Conservation Foundation, 1980

Urban Land Institute. www.uli.org

Victoria Transport Policy Institute. British Columbia, Canada. www.vtppi.org

Pattern 7: Natural Environment

“The landscape features of the city: the vegetation or the water, were often noted with care and with pleasure...[People] were sharply aware of the few green oases in their surroundings.”

Kevin Lynch, *The Image of the City*



Achieving a sense of connection with nature is important to most individuals, and hence to communities. New Jersey residents are fortunate to have numerous forested areas, rivers and streams, and the Atlantic coastline close at hand, despite the intense development of much of the state. Local planning for natural resources, open space, and conservation is often done through Master Plan elements such as an Open Space, Conservation, or Recreation plan. However, the Land Use and Circulation Elements also play a role in defining and providing access to these destinations. Local planning can also help address the environmental impacts of transportation systems—which are often extensive—through sensitive design of facilities and consideration for wildlife habitats.

Mobility and Community Form Principles

Three principles for environmentally-friendly local transportation planning are:

- Access,
- Sensitivity, and
- Boundaries.

Access:

Provide for pedestrian and bicycle access to beaches, rivers, streams, meadows, and forests.



Access to nature can take many different forms: a woodland path, an urban greenway, a bike trail along the Delaware River, or a scenic lookout area along a major highway. Opportunities can be found in most municipalities to enhance local access and recreational opportunities in natural areas. Walking and bicycling are among the most enjoyable ways to reach and explore the natural areas of a community.

Often, however, the lack of pedestrian access routes or suitable bicycle facilities inhibits the choice of these low-impact travel modes, or makes it necessary to start out by car. By planning for the creation of a strong network of bike paths, multi-use trails, and greenways, a municipality can begin to address these issues while strengthening local mobility for other types of trips as well.

Just as connectivity is important for roadways, walking and cycling routes are enhanced through networks within the community and by being connected to regional systems and other communities. For example, New Jersey is fortunate to be a key link in the East Coast Greenway, a Maine to Florida bicycle “super highway” that forms a north-south backbone and connects with many local and regional trails.

Greenways are corridors of protected open space managed for conservation and recreation purposes that often follows natural land or water features. Greenways often provide the opportunity to bicycle through open space, forested areas, or wildlife preserves. They may incorporate local parks, historic sites, nature centers, or bird-watching areas. Local governments are encouraged to participate in the numerous regional trail projects underway in New Jersey, working with neighboring communities, county governments and other trail sponsors.



The South Mountain Reservation, a remarkable Olmsted-designed nature preserve in densely populated Essex County, is difficult to reach by bicycle; past planning has emphasized auto access.

The Circulation Element can be used to identify a future network of trail facilities, as the City of Bordentown did in a recent update. Improving local connections to established regional greenways and trails, such as the Delaware and Raritan Canal towpath (a part of the East Coast Greenway), is another strategy for expanding local opportunities for natural recreation. Rail-to-trail conversions of abandoned railroad rights of way are another important opportunity. From the perspective of transportation access, it is important that bike trails and greenways connect with routine travel destinations, such as neighborhoods, schools, parks, business centers, shopping areas, and transit stops.



This composite boardwalk provides an environmentally-sensitive, safe, enjoyable place from which residents and visitors can enjoy views of the ocean, dunes, and wildlife at the Jersey Shore.

Access to water is also a fundamental human desire that the transportation system can either help support or impede. Previous eras saw the construction of major roadways along many of the state's rivers and close to the Atlantic shoreline. In many instances, these facilities now form a barrier, inhibiting pedestrian and bicycle access to waterfronts. Many municipalities are currently seeking to reverse these patterns and establish ready access to and along waterfronts. Pedestrian-friendly waterfront redevelopment projects are included in numerous urban revitalization plans around the state. For example, Newark is planning a continuous riverfront park along the Passaic River that will include pedestrian and bicycle connections to nearby neighborhoods and activity centers. At Exchange Place, Jersey City has a series of wide boardwalks that provide views of both urban skylines and the Hudson River.

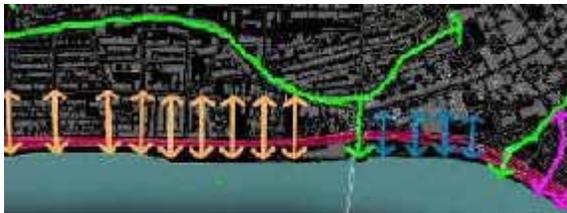


“Higher income groups always have access to nature at beach houses, lake cabins, mountain chalets, on vacations...Parks allow the rest of society that contact as well.”

– Enrique Peñalosa

Route 29 Boulevard Concept for Trenton

The freeway section of Route 29 between the Lower Ferry Bridge and Parkside Avenue serves as a restrictive barrier between the City of Trenton and the Delaware River, a key ecological and recreational resource. NJDOT is working with the City of Trenton on a new concept for the roadway and waterfront that would reduce this barrier effect. A proposed urban boulevard would lower traffic speeds and shift the road’s alignment away from the river, allowing for the creation of a linear waterfront park. The proposed park would provide unprecedented access to the river in this area of the state capital.



Sensitivity:

Design roads, bridges, and other transportation facilities in a harmonious, environmentally sensitive manner, preserving scenic landscapes and natural terrain and protecting water sources.

Environmental sensitivity is another important principle for community transportation facilities. Roads, trails, and other transportation features can be planned and designed to minimize disruption to scenic landscapes and natural habitats. Using development regulations, municipalities can also act to preserve treasured landscapes for the enjoyment of all types of road users.



Scenic vistas, such as this farm view along Route 57 in Warren County, underscore the importance of context-sensitive roadway design as well as conservation-based approaches to local land use planning.

Several county and local governments in New Jersey have scenic roads programs that encourage the identification and preservation of exemplary roadside views. Preservation of a scenic road may entail modified design treatments to maintain the existing appearance following reconstruction. For instance, Monmouth County has adopted design guidelines for the county's scenic roadways. The guidelines allow for reduced roadway width, special guiderail treatments, and other context-sensitive features, as well as providing for the preservation of landmark trees. Tewksbury Township in Hunterdon County also has an extensive scenic roads program. NJDOT administers a State Scenic Byway Program that provides for formal designation of qualifying scenic roads, which then become eligible for special assistance.

A number of techniques are available to limit the visual impacts of new development along scenic roads. Scenic Corridor Overlay zoning ordinances are one approach. Municipalities have used scenic overlays to restrict height and placement of buildings, commercial signs and outdoor advertising, regulate the design of commercial parking lots, require landscape buffers for developments, and protect specific landscape features, such as mature tree stands and hedgerows. Rural Highway Zoning is a related technique that aims to retain the traditional rural appearance of a highway corridor through site planning and use of vernacular architecture.

Air and water quality are also heavily affected by local land use and transportation choices. Low-density, automobile-dependent development generates additional miles of vehicular travel, gasoline consumption, and air pollution when compared to the more sustainable mixed-use, center-based community forms discussed elsewhere in this guide. Auto-oriented development also multiplies the amount of hard, impervious surfaces that can collect oil, solvents, and other contaminants. These contaminants are then washed into streams or other bodies of water. The New Jersey Department of Environmental Protection has developed municipal stormwater guidelines, as well as model ordinances and training programs, to assist communities in managing stormwater and nonpoint source pollution on their local roads.



This scenic view from County Road 513 in Alexandria Township was preserved through conservation zoning. Homes were built on a remote portion of the parcel, with the remaining land preserved as open space.



These photos illustrate two very different landscape treatments along the Rahway River in Essex County. The pedestrian bridge on the right suits the natural context better than the utilitarian design on the left. (Images courtesy of Main Street South Orange, Inc.)

Boundaries:

Plan transportation corridors that help define urban edges, reinforce natural boundaries, and protect fragile wildlife habitats.

Many of New Jersey's major transportation corridors are relatively fixed in place, constrained by existing settlements. However, as faster-growing suburban areas add or improve their local road networks, they have an opportunity to reinforce and strengthen natural features through the careful placement and design of new facilities. Transportation corridors, integrated with compact land uses, can help to define community growth boundaries and reinforce the integrity of natural wildlife habitats, which often form natural corridors of their own. Compact community forms—with defined centers and edges—allow for the creation of protective greenbelts that can support fragile ecosystems. Through regional as well as local planning, these compact towns and villages can be arranged around underlying natural features and connected with relatively low-impact local roads and transit routes.

Where transportation corridors cause unavoidable disruption to wildlife habitats, mitigation measures can be considered. Wildlife underpasses, for example, can be used to connect separated habitats, prevent collisions with animals and enhance wildlife movement.



Brown steel guiderail on Pond Road in Freehold Township blends into the landscape. Image source: Monmouth County, Design Guidelines for Monmouth County's Scenic Roads

State Scenic Byways Program

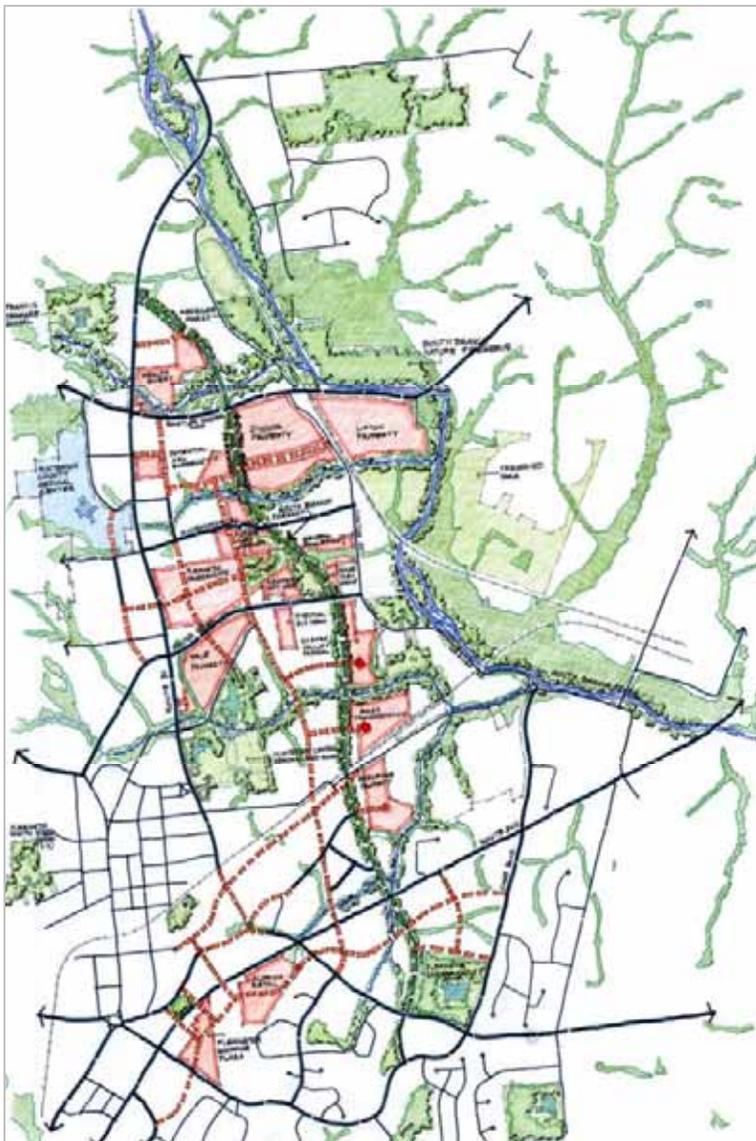
A Scenic Byway is a transportation route with particular scenic, historic, cultural, or recreational qualities. The National Scenic Byways program, administered by the U.S. Department of Transportation, recognizes certain roads as national Scenic Byways or All-American Roads based on their intrinsic qualities. For a corridor to qualify as a scenic byway, it must have one or more of six intrinsic qualities: scenic, natural, historic, cultural, archaeological, and recreational.

New Jersey has a complementary State Scenic Byway Program that was begun in 1996 and is administered by the NJDOT, NJ Department of Environmental Protection, NJ Commerce Office of Travel and Tourism, and NJ Office of Smart Growth. Several corridors have been designated to date, including the Delaware River Scenic Byway (along Route 29 from Trenton to Frenchtown), the Millstone Valley Byway (25 miles between Kingston and Millstone), and the Southern Pinelands Natural Heritage Trail, which meanders through 16 Pinelands municipalities.

Designation as a scenic byway provides numerous benefits to the communities along these corridors. They receive technical assistance, consideration for financial assistance, and help in planning for scenic protection and managed growth from various state agencies. Furthermore, the increased recognition correlates with an increase in tourism for the area. Nature-based tourism, often combined with visits to local farms, antique shops, and other attractions, can play an important role in the economy of towns and villages along a Scenic Byway.



Tuckahoe River viewed from Aetna Road in Corbin City, part of the Southern Pinelands Natural Heritage Trail. Image source: New Jersey Pinelands Commission. Photo by Barry Brady.



NJDOT is working with Hunterdon County and local stakeholders to develop a scaled-down, context-sensitive “South Branch Parkway” near Flemington Borough in place of the bypass originally planned for the area. The two-lane parkway will improve network connectivity near Route 31, while being sensitive to the region’s history and environmental resources. A greenway corridor will help to preserve and celebrate the South Branch River and acres of protected open space that extend for 22 miles.



Environmental mitigation for the NJDOT Nacote Creek Bridge replacement project included creating a nesting habitat for diamondback terrapins. An abandoned roadway segment has also been reclaimed as an upland habitat.

Resources for Natural Environment

America's Byways. Federal Highway Administration. www.byways.org

Biking in New Jersey, NJDOT. <http://www.state.nj.us/transportation/commuter/bike/>

Context Sensitive Solutions Resource Center. www.contextsensitivesolutions.org

Garden State Greenways, New Jersey Conservation Foundation, (interactive mapping tool for coordination among trail planning efforts).

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Rural by Design: Maintaining Small Town Character. Randall Arendt, American Planning Association Planners Book Service, 1994. Scenic America, www.scenic.org

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Chapter 3

Placing People at the Center: Envisioning Change

“It is futile to plan a city’s appearance, or speculate on how to endow it with a pleasing appearance of order, without knowing what sort of innate, functioning order it has.” —Jane Jacobs



Planning jointly for mobility and community form shifts the emphasis of the master plan circulation element from the movement of vehicles, people and goods to a broader concern with the quality of people's experience in a community. Mobility is an important part of that experience, to be sure, but in ways that traditional planning has often neglected.

If local circulation planning is to emphasize the quality of daily life, it must start with some broad questions. Before investigating the condition of roadways and other transportation facilities, planners begin by taking the pulse of community residents and others who spend time in the municipality. They ask some very basic questions:

Are people thriving here the way things are today? If not, why not?

How would we like to live in the future?

How could our transportation system and the physical form of our community work together to produce a more satisfying community life?

What should we expect of private developers to help bring this about?

This chapter suggests methods for elaborating these questions, creating a community dialogue, and achieving answers that help to shape a community vision for change.

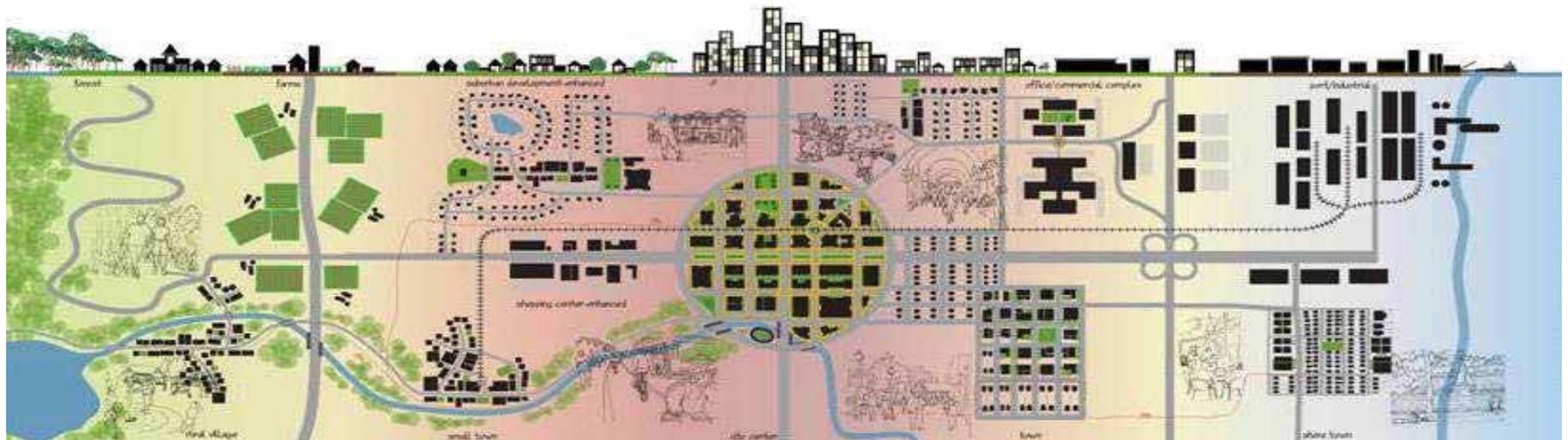
Identifying Place Types with the Activity-Based Transect

As a first step in envisioning change, local leaders need to understand the current forms and activity patterns characteristic of their municipality. New Jersey's communities are built in strikingly different ways. Mixed-use, compact settlements are found at both ends of the urban-rural spectrum—from city centers to rural hamlets. Sprawling developments can also be found both in urban areas and at the edge of farmlands. Many New Jersey communities are located near regional freight corridors, port operations, or other specialized activities that pose challenges to creating community quality and walkability.

A transect is a geographical cross section of a region used to reveal a sequence of environments. It is an old idea, first used in the 1790's by von Humboldt, a naturalist, to describe plant and animal communities over a range of territory. Two core ideas emerge from thinking about communities – whether animal habitat or human settlements: communities exist in a natural range of types and intensities and communities are complex, multi-dimensional places that should not be described or planned in just one dimension. A corollary idea, also from nature, is that communities exist more or less in balance and change slowly over time; i.e., they evolve.

Traditionally, communities have been described as physical places. But, as Chapter 1 describes, *activities* are a critical part of the description. For that reason, we have created an *Activity-Based Transect* to look at communities in both the physical and socio-economic dimensions.

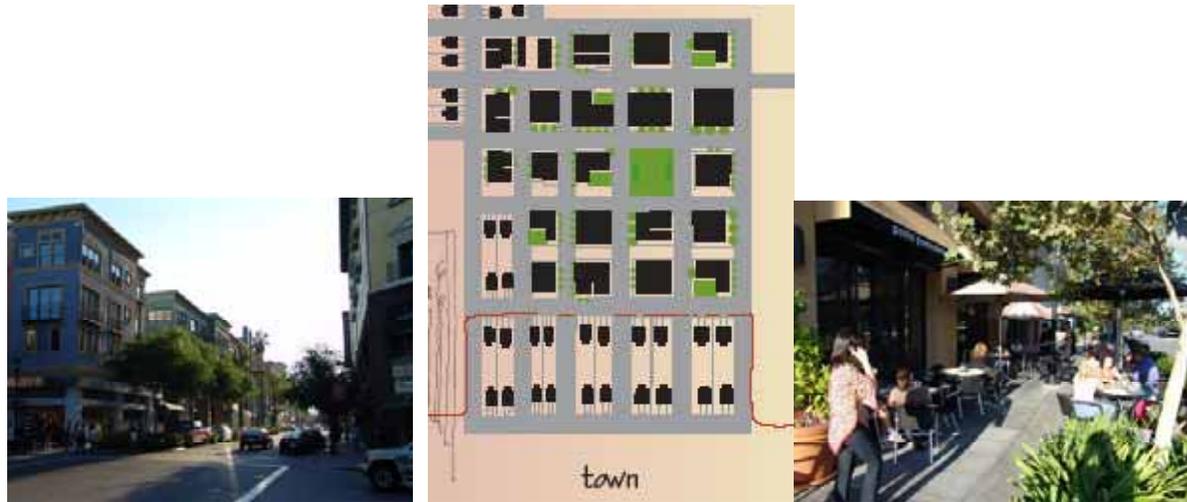
The Activity-Based Transect provided with this guide is intended to be used as a diagnostic tool for understanding community form. The transect diagram is a symbolic representation of the variety that can be found in New Jersey’s community forms. Here, the transect is an idealized “slice” of geography that shows the gradual changes in density and scale as one moves between rural and urban environments. This Activity-Based Transect can be read from left to right as a progression from rural highlands and agricultural areas through towns and suburbs to a central city, then on to the port industry and seaside towns of the New Jersey shore.



The central task in using the transect as a planning tool is to find the main qualities of each place type. Together with the Patterns on the reverse side of the folio, the transect helps planners visualize the types of development appropriate at each scale, how different pieces fit together, and what sort of activities might take place there.

Each of the place types depicted in the Transect presents characteristic planning challenges as well as opportunities. For the “traditional” settlement types with strong centers — cities, towns and villages, for example — typical concerns include a desire

to strengthen and diversify the central business district, improve traffic operations and parking in the core area, and enhance pedestrian facilities. Smaller towns may need to take steps to protect their unique identities against encroachment from nearby suburbanizing areas, while for larger cities economic revitalization is often a primary concern.



In suburban areas without strong centers, typical concerns include traffic congestion, poor pedestrian conditions, disconnection between the component parts of the community, a lack of local identity, insufficient public space, and inadequate local revenues. Planners may seek to overcome some of these deficiencies by creating focal points that can become centers over time, introducing mixed uses through infill development, and establishing pedestrian facilities.



A New Jersey municipality will often include several of the place types. For instance, a traditional grid-based town may be surrounded with scattered suburban development and some remaining active farmland. A city may see suburban forms emerging in its lower density outskirts or industrial districts. It is

not unusual for a municipality to have to contend simultaneously with the characteristic problems of an older center *and* those stemming from full-blown suburban sprawl. For these municipalities, the process of preparing the Circulation Element requires consideration of the distinct needs of each type of place and the ways in which they interact.

Community Assessment with the Seven Patterns

Once a municipality's existing place type, or types, have been identified, the next step is to assess how well they work and how they might be enhanced. The patterns of Mobility and Community Form on the reverse side of the transect diagram and described later in this publication provide a tool for a comprehensive local assessment and visioning process. The patterns can be used in municipalities of any size or type, both to gauge current conditions and generate ideas for change. There are patterns for Circulation, Shopping Streets, Parking, Transit Stops, Neighborhoods, Public Places, and the Natural Environment.



The patterns reflect time-tested community forms including settlements that place living and working areas in close proximity, the arrangement of buildings around central squares or parks that serve as gathering spaces, and buildings interlaced with pedestrian pathways for easy access on foot. They incorporate provisions for automobiles, truck traffic, and parking that are more compatible with these time-tested forms of settlement than those generally found in New Jersey today. Each pattern includes organizing principles that define and support that pattern and the activities it promotes. Each of the principles represents one way of nurturing a vibrant, successful community through a linked approach to mobility and form. Successful examples from New Jersey are depicted throughout.

The patterns and examples are not intended as strict rules, but rather to prompt community dialogue. They encourage attention to the use of public space, the quality of civic life, and the degree of social interaction in the community in the context of planning for local mobility needs. Sample questions to consider include the following:

Where do people like to gather, and what places do they avoid?



Do neighbors have easy opportunities to meet one another?

Are shopping areas inviting?

What is it like to wait for the bus or train in this community? Are transit stops attractive, comfortable places?

How many local needs can be satisfied by walking?

Can residents bicycle to open spaces or waterfronts?

What routine activities contribute to a desirable way of life here? What activities seem to hinder our enjoyment of this community?

We believe that the patterns can be applied in every community, albeit in different ways as the community context indicates. Other patterns may suggest themselves through the community dialogue process.



Getting the Details Right

The pattern principles described in this guide incorporate many smaller-scale environmental features that were once considered too small to be included in a Circulation Element. Many of these fine-grained details are increasingly seen as an important part of a community's overall effort to set its direction. Examples include the quality of bus passenger waiting areas, the placement and legibility of signs, striping and other visual cues for drivers, pedestrian-oriented illumination, bicycle safe drainage grates, and appropriately designed curb ramps for wheelchair users.

Planning for facility maintenance is another critical "detail" which is often overlooked. Planners may find it useful to spell out a program of facility maintenance in the Circulation Element. In addition to a schedule of pavement repairs, the maintenance program should indicate how sidewalks and bike lanes will be kept free of snow, debris, and excess vegetation throughout the year, and how pedestrian access will be provided during construction.

Combining the Transect and the Patterns

The Transect and the Patterns can be used together to inform a community dialogue and visioning process for linking transportation and land use in the master plan. This requires thinking about the form(s) each pattern takes in the municipality today, and whether they suit the fundamental character of the community or the place it is to become. For example, the Transit Stop pattern includes a Comfort principle:

Make each transit stop or station a comfortable, attractive and inviting place to wait for the bus or train; encourage provision of supportive activities and services.

This principle can be adapted to a community of any size. In a rural village, it may mean locating an express bus shelter near a local deli, so that transit passengers have a secure place to wait and can buy a newspaper or beverage if the bus is delayed. In a larger town with commuter rail service, it may mean creating a ground floor retail environment beneath the train station, as in South Orange, drawing people to the station area as a destination in its own right. In the urban core, the focus might shift to providing a commuter-friendly, mixed-use Transit Village with office and hotel space, clearly marked transit connections, inviting waiting areas and retail establishments catering to office employees, families and tourists.



Wide sidewalks support a vibrant street life, whether in small towns (Avon-by-the-Sea, left) or major cities (Jersey City, right). Each pattern principle can be adapted to a range of local circumstances.

A similar range of applications can be found for each of the principles. For the Access to Nature principle in the Natural Environment pattern, a village might create a greenway with an attached park. Residents of a Delaware River town might prefer a bike path with river views. At the shore, this principle could be attained by providing a boardwalk with benches. In the city, it could take the form of a riverwalk or urban greenway system. The patterns are flexible, and they are not intended to prescribe any one style of design or any particular lifestyle, with one exception: they do call for a lifestyle incorporating numerous opportunities for walking.

Looking at the transect and patterns together, it is apparent that each of these patterns can be more fully realized--and more easily achieved--in center-based communities with mixed uses and interconnected street networks, as found in New Jersey's traditional towns, villages, and cities. Moreover, a strong center in itself provides a structure for many of the pattern principles. Center-based, mixed-use community form represents a "mega-pattern" that helps to organize the other patterns.

Just as the patterns tend to take their ideal form in places with strong centers, in places that lack a center and street network, they tend to take a distorted form. For example, a large-lot subdivision may *look* like a neighborhood, but if the neighbors do not actually interact, the Neighborhood pattern has not been attained in any true sense. In the same way, a highway consisting of disconnected shopping centers is a distortion of the Shopping Street pattern. Instead of drawing pedestrian traffic to stroll and shop, a "Shopping Mall Street" may entice people to drive up and down the corridor performing multiple errands, reparking their cars each time and creating unnecessary congestion and air pollution. This problem can sometimes be addressed by creating new connections between shopping centers, opening up parking areas for shared use and improving walkway systems.

Participatory Planning Process

A meaningful assessment of mobility and community form requires extensive community participation, since only those who live in or use the community can fully understand the ways in which it supports or hinders their experience. There are several methods of community participation that are well suited for this purpose, including travel diaries, field-based audits and other observational studies, neighborhood interviews, focus groups, and small group brainstorming meetings. Much of the information collected can be organized through a system of participatory mapping. Since both the planning process and the resulting products rely heavily on graphical representation to convey ideas, the translation from concept to code is relatively easy to understand for most citizens.

Participatory activities should be organized to tap into different sectors of the community and capture both common and divergent experiences. For example, children and seniors, homeowners and renters, African-Americans and Caucasians, established populations and recent immigrants, merchants, transit passengers, bicyclists, wheelchair users and those with limited vision—all may have very different stories to tell about their experience of community mobility. A Circulation Element that incorporates the perspectives of these varied groups will be more effective in achieving sustainable mobility patterns than one focused more narrowly on the needs of the “average” resident.

To begin, planners might ask for 50-100 volunteers to keep a log or diary of their transportation experiences for one week. They should be encouraged to record positive and negative experiences, including the slightest details. Some of these will involve situations or locations where people were stymied in their efforts to move about in public places. The following are samples of the experiences that might be recorded:

This street was intimidating to cross on foot. (I pushed the button, but the “Walk” signal never seemed to appear. I wonder if it’s broken?)

There were no parking spaces anywhere downtown and I circled and circled and finally went home. I’ll try the mall tomorrow instead.

The bus didn’t arrive as scheduled, and there were no seats left when it finally came.

There are too many trucks on our street and they shake the windows when we are trying to sleep.

Traffic was so bad that it took 20 minutes to reach my exit.

Planners should review and synthesize the diary responses, clarify uncertain points with respondents, and record any location-specific issues on a map. This will allow common themes and concerns to be readily identified.

Next, planners can ask residents and others present in the community, such as business owners, to participate in targeted field-based observations or “audits” focusing on various themes or areas of concern. This procedure is now being used in many communities for the specific purpose of gauging pedestrian conditions around schools, but it has general application across the patterns.



Working in small groups, and using one or more of the patterns as a guide, participants would be asked to tour an area of the municipality, recording their impressions about what works well and what does not in a notebook or hand-held tape recorder as well as through photo logs. These tours may be made on foot, by bike or by car; a combination of modes is most effective in revealing the key factors at work. (It can also be especially instructive to tour an area by wheelchair, or board a local bus.) If possible, observations should be made at different times of day. In addition to observing physical conditions and the behavior of other people using the environment, it is important for each participant to record his or her own impressions. Which places feel safe, inviting, and accessible? Which feel unsafe, uninviting, disorienting, or cut off?

Systematic observation generates a wealth of information about the effectiveness of individual places in the community, often providing critical data that would not be available any other way. For example, in one case participants observed a recurrent illegal left turn used as a shortcut at a congested jughandle intersection. Citizens observing the situation gained insight into how the problem could be corrected and an improvement project followed.¹ In another case, a puzzling pattern of pedestrian crashes was traced to residents' frequent practice of carting groceries home along a highway shoulder, suggesting a need for sidewalk construction and potentially, a supermarket home delivery service. Citizens working in groups with mobile phones can also conduct informal studies of neighborhood cut-through traffic patterns or traffic safety issues at local schools.

Observational studies can be combined with informal interviews to gain additional insight. For instance, observation and discussions with local merchants may reveal the main sources of truck double-parking problems and suggest needed locations for loading zones. Pedestrians may be able to explain why they feel safer jaywalking than using a particular intersection. Crossing guards offer detailed knowledge of children's school routes. Bus drivers may be interviewed for their unique insights into the safety issues associated with local bus stops. (In communities with a significant volume of bus riders, on-board observation of activity at each bus stop may also be useful.) Useful historical perspectives can also be gained through interviews

¹ Observing the shortcuts that people take, whether as motorists, truck drivers, pedestrians or bicyclists, often provides a clue to needed improvements such as new network connections, midblock crosswalks and intersection improvements. A worn path by the side of a road is a common indicator of unmet pedestrian needs.

with senior residents. For instance, hearing that an unused park now full of debris was once ideal for strolling can be an inspiration for change.

Once travel diaries and participatory audits are completed, planners may hold small meetings in individual neighborhoods as well as larger public brainstorming sessions to discuss their findings, gain additional perspectives on community assets and problems, and begin a community dialogue to establish a vision for the future. At this point, additional stakeholders can be brought into the process, such as school officials, the local parks department, environmental and historical commissions, neighborhood associations and bicycle clubs. Supplemental focus groups may also be held to garner perspectives that have not been sufficiently represented.

The visioning process often involves consideration of issues at a scale beyond those reflected in the seven patterns, such as pressures or trends arising from the larger region. To help assess regional opportunities and foster coordination across local borders, neighboring communities could be asked to provide a liaison to the process. It is also useful to consult with county transportation officials, the local Transportation Management Association, and the Metropolitan Planning Organization for the appropriate region of the state. Typically this phase will include setting several goals or guiding principles for the plan. This process should be a fluid one that continues throughout the development of the plan.

Data Collection, Analysis and Display

In addition to the rich detail gained from travel diaries, field observations and community discussion, most municipalities will also need some basic quantitative information as a foundation for the decision-making that goes into their Circulation Element. Data collection may include various benchmarks drawn from the pattern principles, as well as traditional indicators of travel demand and supply by mode.

Socioeconomic data and forecasts, including detailed population forecasts by age cohort, provide a life-cycle profile of the community that is important for mobility-friendly planning. A Circulation Element based on the principles of mobility and community form may also reference certain indicators that are typically found in the other elements of a Master Plan, including data on land use and housing trends, employment and economic development, environmental quality, open space, and the supply and usage of local recreational facilities.

Transportation demand data of interest includes traffic volumes, truck volumes, turning movement data, transit and paratransit ridership, pedestrian and bicycle usage, parking volumes by mode (automobile, truck, and bicycle), and parking duration. Supply data may include inventories of local roads, sidewalks, crosswalks, curb ramps, bicycle facilities, transit operations and transit stops, and parking areas. (If there is no public transit service available within the municipality, information should be provided on nearby regional services and access to those services.) Supply data should also include identification of principal truck routes and constraints to truck movement, such as narrow intersections, low-clearance underpasses and low-load bridges, and the location of designated loading zones. Supply inventories may include a number of variables for each of these elements: their dimensions, functional types, capacity and physical condition.

System performance data may also be collected to help gauge conditions for various modes or locations of interest. While such efforts have traditionally focused on motor vehicle level of service analysis, LOS methodologies exist as well for pedestrian, bicycle, and transit service, which are helpful in forming a more complete picture of community mobility. For instance, the New Jersey Department of Transportation maintains an analysis tool for calculating the pedestrian and bicycle suitability of New Jersey roadways. Street connectivity, which is important to the Circulation pattern, may be measured with a Connectivity Index.

Safety data is also of paramount importance in evaluating system performance. Data should be collected on the location of recent motor vehicle, pedestrian and bicycle crashes and the circumstances of those resulting in severe injuries or fatalities. Since roadway speeds have important consequences for the safety and comfort of road users (including pedestrians, bicyclists, bus passengers and senior drivers) vehicle speed data should also be obtained for major roads and those with a history of frequent crashes. Speed profiles are increasingly available from local police departments, due to the popularity of portable speed readout devices. Compliance rates for motorists at pedestrian crosswalks can also be developed.

During the data collection process, it is also important to review relevant plans at the county, regional, and state levels, including county bicycle master plans, the long-range transportation plan prepared by the area Metropolitan Planning Organization, the statewide long-range transportation plan and freight plan prepared by NJDOT, the State Bicycle and Pedestrian Master Plan, and the State Development and Redevelopment Plan. Plans made by neighboring municipalities should also be reviewed for pertinent information.

Once data collection is completed, consideration turns to how to best analyze and display the findings in a meaningful fashion that will inform decision-making. The most useful methods are those that allow the integration of the rich qualitative detail gained through participatory observation with quantitative data for each element of the transportation system. Annotated GIS

maps are often the most useful way to integrate these quantitative and qualitative sources of information. For instance, a corridor map could display traffic volumes, speed data, crash locations, parking turnover rates, crosswalk compliance and adjacent land uses, along with remarks and observations from community members. This would allow for a multifaceted consideration of improvements that would better accommodate-- or change-- key behaviors at each location, in line with community desires for the corridor.

The variety of themes that can be included in community-based mapping are essentially unlimited. As cartographic theorist John O’Looney has observed, maps can incorporate not only the physical attributes of places, but their character and reputation. He notes that in some urban areas, “streets are military boundaries for rival gangs; nondescript landscapes hold important landmarks for neighborhoods. To outsiders, these elements may be undecipherable. Each community has its own ‘hot corner,’ its youth hangouts, its lovers’ lane. Most communities have areas where growth and economic activity occur naturally and other areas where nothing seems to go right. Mapping and understanding the forces underlying these dynamics will be the first step toward remediating community problems.”²

Interactive participatory mapping, in which community residents add comments to a map or mark their own ideas for improvement, is an ideal technique for mobility-friendly community planning. Participatory GIS maps allow for ongoing synthesis and critique of the various ideas and information generated throughout the planning process. Several communities have also experimented with online interactive systems that allow users to add comments and see what others have said about a particular location of concern to them. Collective maps of community assets are also valuable in identifying treasured places that should be preserved or enhanced, such as favorite views along a scenic corridor.

Citizen groups may also request that planners prepare a map on a topic of special concern to them. Community mobility maps can be prepared for people in each phase of the life cycle: one might show the special needs and typical destinations of senior citizens while another would illustrate children’s mobility patterns and issues. A map of wheelchair-accessible sidewalks and crossings can also be helpful in spotting and correcting deficiencies. Communities have also created accessibility contour maps that show the travel time to various types of destinations, such as public transit stops, health care facilities, or libraries, from different parts of a community in order to identify unmet needs or inequities.

² *Beyond Maps: GIS and Decision-Making in Local Government*, John O’Looney, ESRI Inc., 2000



Interactive GIS mapping can help communities envision alternatives, as in this transit station area planning exercise.

Supplemental Technical Studies

If the community assessment and visioning process leaves key questions unanswered, supplemental technical studies may be warranted to support informed transportation decision-making and ensure that the Circulation Element adequately addresses critical issues. The decision to perform technical studies will also depend on the complexity of the issues identified as well as the resources available. Planning assistance may be available from the New Jersey Department of Transportation, NJ Transit, the Office of Smart Growth, county and regional agencies, or private foundations. The following are some of the types of supplemental studies that may be considered:

- Transit needs study
- Senior mobility study
- Teen mobility study
- Safe Routes to School planning study
- Bicycle and pedestrian plan
- Greenway or trails plan
- Community safety audit
- Main Street revitalization plan
- Corridor plan
- Market analysis for corridor redevelopment
- Waterfront access plan
- Scenic roads inventory
- Travel demand forecast
- Traffic impact studies of key development proposals
- Traffic circulation and capacity study
- Intersection study
- Parking study
- Truck routing study
- Urban goods movement study
- Wayfinding plan
- Gateway study
- Traffic Calming study
- Transit Village planning study

Completing the Visioning Process

In order to develop concrete recommendations out of the community's initial ideas and technical findings, it is useful to focus attention on several priority issues and/or locations. Community workshops or charrettes (intensive problem-solving sessions) may be helpful in crafting plans for specific neighborhoods, sites or corridors. Visualization techniques can be used to allow community members to envision what a neighborhood, site, or corridor could look like after applying one or more of the Patterns. However, in keeping with the emphasis this form of planning places on the quality of people's experience, it is

important to couple visually based techniques with consideration of the functional effects of change. For this purpose, it is helpful to arrange a field visit to a peer community that has already made the type of change proposed.

Discussions should include consideration of the regulatory tools and funding needed to accomplish local objectives, including any changes that may be needed in the community's Land Use element, local zoning or subdivision regulations. This stage provides an opportunity to consider form-based codes, design guidelines for new development, and street regulating plans, all relatively uncommon but often effective tools for achieving mobility-friendly community forms.

There are many examples of mobility-friendly community transformations that have occurred or are under discussion in places around New Jersey, often as a result of a local visioning process:

- Reclaiming a community's Main Street – or creating an entirely new one -- for local shopping and civic needs;
- Breathing life into an older commercial highway, as in current plans for Route 130 in Burlington County;
- Creating a Transit Village around an existing rail station, as in Rahway;
- Transforming a barren surface parking lot into a vibrant mixed use development, as in a proposal for downtown Trenton;
- Retrofitting suburban streets that are too wide and uncontrolled to provide for pedestrian mobility and safety;
- Reducing speeding, aggressive driving or cut-through traffic in residential areas or commercial centers;
- Fixing problem intersections and safety “hot spots”;
- Developing bicycle paths;
- Opening up access to a neglected waterfront;
- Creating safe walking routes for schoolchildren;

- Improving downtown parking;
- Managing truck traffic and creating effective delivery zones;
- Improving access to transit stations and stops, and
- Reclaiming and “humanizing” a former industrial area.



Resources for Assessment and Visioning

Choosing Our Community's Future: A Citizen's Guide to Getting the Most Out of New Development. David Goldberg, Smart Growth America, 2006

Designing New Jersey. New Jersey Office of State Planning, 2000.

Getting to Smart Growth: 100 Policies for Implementation. Smart Growth Network, 2003.

Guidebook on Methods to Estimate Non-Motorized Travel: Overview of Methods. W. Schwartz et al., FHWA, July 1999.

A Pattern Language, Christopher Alexander, New York: Oxford University Press, 1977

Pedestrian- and Transit-Friendly Design: A Primer for Smart Growth. International City/County Management Association, EPA, and Smart Growth Network, 1998.

Transportation Planning Resource Guide. Wisconsin Department of Transportation, 2001.
<http://www.dot.wisconsin.gov/localgov/land/resourceguide.htm>

Victoria Transport Policy Institute. British Columbia, Canada. www.vtpi.org

Chapter 4

Putting It All Together

“Planning of the automobile city focuses on saving time. Planning for the accessible city, on the other hand, focuses on time well spent.” Robert Cervero

The previous chapters have described the concepts of the activity based transect and activity patterns, and how they can be used to articulate a community vision that links circulation and the built environment. In this chapter, we will look at some specific tools that can be used to translate that community vision into actual community places. Some of these, such as the master plan circulation and land use elements, are well known tools that get a fresh look. Others, such as the “mobility and community form” element and form based development codes are new ideas or old ideas presented in a new way.

Preparing the Circulation Element

To implement the ideas we have presented here, one need not toss out all that has been done before and start anew. But it is likely that the municipal master plan’s circulation element is fertile ground on which to start. New Jersey’s Municipal Land Use Law (MLUL) creates the framework for local planning and land use regulation throughout the state. The MLUL requires each municipality to prepare a master plan that contains goals and policies to guide land use and transportation decision making. While the law requires preparation of land use and housing elements, the preparation of a circulation element is currently optional. Further, the MLUL provides only limited guidance for the Circulation Element:

... a circulation plan element show[s] the location and types of all facilities for all modes of transportation required for the efficient movement of people and good into, about, and through the municipality, taking into account the functional highway classification system of the Federal Highway Administration and the types, locations, conditions and availability of existing and proposed transportation facilities, including air, water, road, and rail. (MLUL Section 40:55D-28)

Consequently, most master plan circulation elements consist of little more than a listing of major roads, rail lines, and airports, together with a few bland statements that pass responsibility for improving these facilities off to NJDOT, NJ Transit or some other outside entity. A map of showing transportation facilities is usually added. Because transportation facilities rarely change in either location or basic function, the circulation element is infrequently updated.

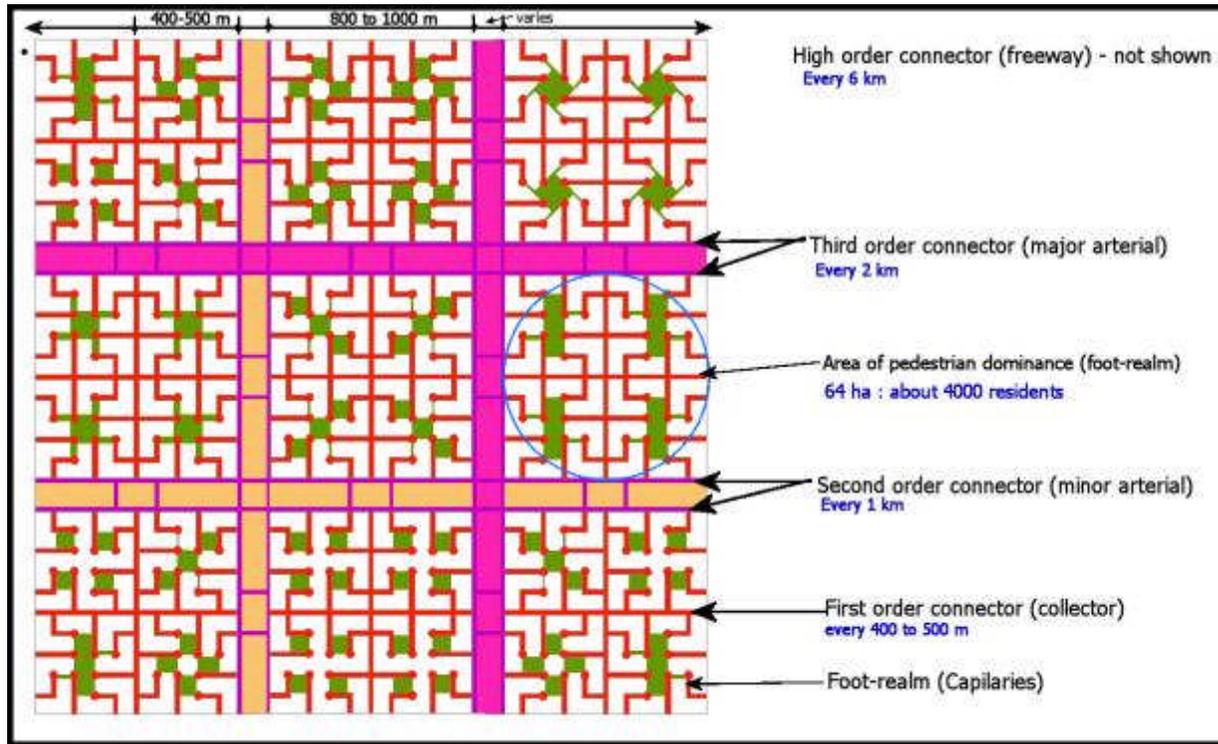
To be useful in today's planning environment, circulation plans need to go beyond the inventory approach and the emphasis on efficiency called for in the MLUL. A study of 24 central New Jersey communities conducted by the DVRPC revealed that the average circulation element is 7 years old (the oldest was 39). One contained a map, but no text. Five included text, but no maps. Six did not address any modes other than auto transportation. Only 3 included consideration of all five principal modes (auto, transit, bicycle, pedestrian, and goods movement) and only 5 included any discussion of land use or zoning. Six of the circulation elements, just one quarter but including two by counties (Somerset and Hunterdon), appear to be comprehensive. While there is some critical thinking going on, much remains to be done to improve both comprehensiveness and linkages to other aspects of community development.



Municipalities have a great deal of flexibility in how they define, prepare, and use the circulation element, but low expectations seem to lead to inadequate results. While the scope of the effort will vary based on local needs and conditions, in general a



complete circulation plan will need to consider the connectivity and capacity of the street system, transit services and access to them, bicycle and pedestrian mobility, goods movement, parking, and coordination of transportation and land use, including the potential for creating mixed-use developments and transit-supportive density around major transit facilities. An assessment of impacts and conditions beyond the municipal boundaries should also be included.



A circulation element is the transportation portion of a municipal Master Plan. It is a comprehensive document that defines goals and priorities for all modes of transportation, and relates these to the overall plan for the development of the community's physical, economic, and social environments.

Incorporating the principles of Mobility and Community Form introduces additional considerations for the circulation element, including the identification of focal points and strategies for creating the pedestrian-friendly environments that promote walking, social interaction and civic

life. Other considerations include examination of the relationship of streets, intersections, transit stops and parking to public spaces and private development. The design details of transportation facilities and their ongoing management and maintenance become more important in this approach as well. Beyond the “broad strokes” of the community vision, municipalities can use the master plan to promote the design of facilities for greater safety, comfort, place quality, and sensitivity to the surrounding context.

Urbanism works when it creates a journey as desirable as the destination. - Paul Goldberger

Benefits of a Comprehensive Circulation Element

Preparing a comprehensive circulation element that encompasses a fuller consideration of the community's overall vision offers several key benefits to municipalities. A comprehensive circulation element can help strengthen the overall Master Plan by explicitly addressing critical linkages between the land use, housing, recreation and open space elements and the community transportation network.

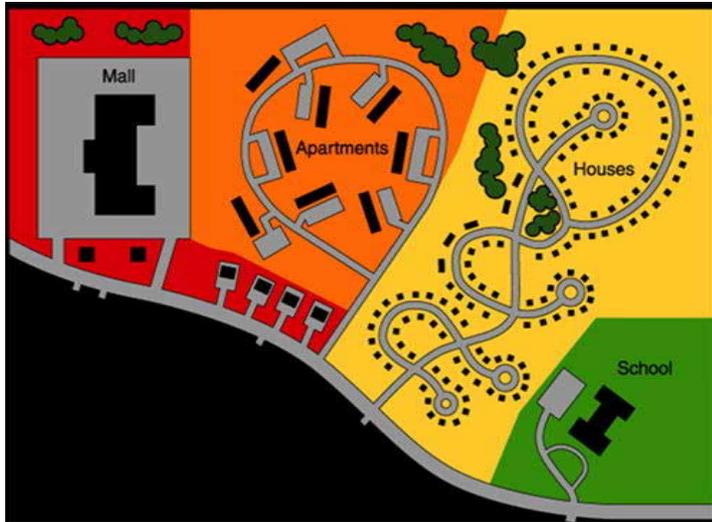
The circulation element provides goals, objectives, and strategies that form the policy basis for enacting local development regulations, such as zoning ordinances and subdivision regulations, which help the municipality achieve greater control over future transportation patterns. Local governments may create street regulating plans that define future road networks and pedestrian pathways, for instance, as well as ordinances requiring interconnected streets and sidewalks, bicycle parking, and loading zones for deliveries. These actions help the municipality communicate with developers and property owners concerning the future development of the municipal street system, pedestrian network and parking facilities. They help ensure that private development works towards rather than against the community's vision.



The process of creating a comprehensive circulation element is also an opportunity to build community consensus on the development of specific sites or transportation projects, including resolution of longstanding community problems. It provides a basis for working effectively with neighboring communities and state and regional authorities to address common transportation issues. Creating a comprehensive circulation element is also an important step in preparing to apply for Plan Endorsement from the State Planning Commission, by demonstrating consistency with the State Development and Redevelopment Plan.

The Land Use Element

The master plan land use element has traditionally been used as the planning basis for application of zoning districts. As such, it generally has a number of goals (ranging from few to many), objectives, may discuss some implementation strategies, and includes a map depicting the type of development (single family residential, medium density residential, downtown, etc.) anticipated for various areas of the municipality.



Here too, the MLUL provides little guidance, except that the land use element is a required element:

A land use plan element (a) taking into account and stating its relationship to the [statement of objectives, principles, assumptions, policies and standards upon which the constituent proposals for the physical, economic and social development of the municipality are based], and other master plan elements provided for in paragraphs (3) through (14) hereof and natural conditions, including, but not necessarily limited to, topography, soil conditions, water supply, drainage, flood plain areas, marshes, and woodlands; (b) showing the **existing and proposed location, extent and intensity of development of land** to be used in the future for varying types of residential, commercial, industrial, agricultural, recreational, educational and other public and private purposes or combination of purposes; and stating the relationship thereof to the existing and any proposed zone plan and zoning ordinance; and (c) showing the existing and proposed location of any airports and the boundaries of any airport safety zones delineated pursuant to the "Air Safety and Zoning Act of 1983," P.L.1983, c.260 (C.6:1-80 et seq.); and (d) including a statement of the standards of population density and development intensity recommended for the municipality. (40:55D-28 (b) (2), emphasis added).

Source: Glatting Jackson

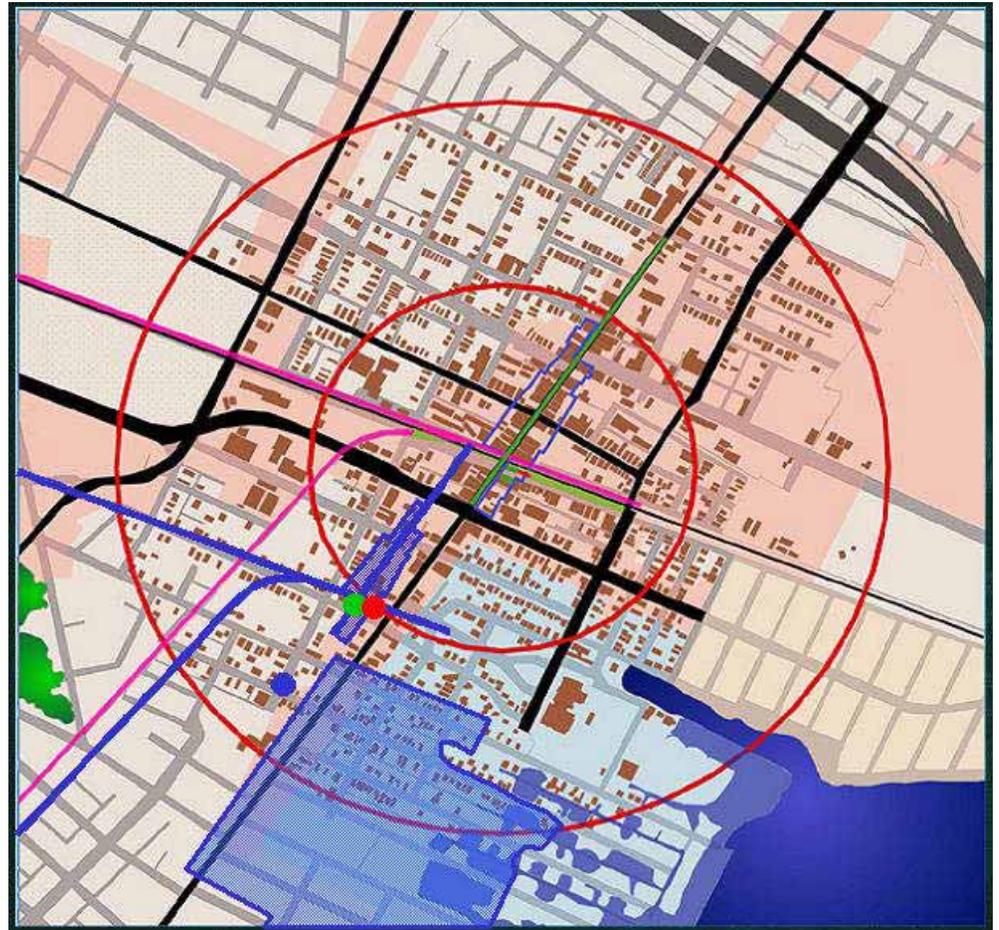
The land use plan, in many cases, is simply a broad brush version of the zoning map, which, in most cases simply reflects the uses already in place at the time the plan or the zoning (whichever came first) was put in place. “Planning” occurs through specific project proposals put forward by developers. If a change of zone is required, a land use plan amendment may also be initiated. Frequently, planning and zoning criteria are too inflexible to achieve project goals, so a redevelopment plan is put in place to override existing codes.

New, greenfield communities, of course, are not typically developed in exactly this way and there is more likely to be some integration between land use, environmental factors, housing and economic development goals, and circulation. But the result is almost always the same: blocks of land designated for specific narrow ranges of uses. Roadways are sized according to established standards (e.g., all arterials are essentially the same), a transit line may be extended, the location of a rail station designated. And that’s that. But that practice leads to the same sort of segregated, accessibility impaired patterns of land use that other communities have.

We can begin to change that by establishing performance goals within the land use plan:

- *all residences shall be within a five minute walk of public transportation.*
- *a residential village shall include 1000 square feet of retail space.*
- *all schools shall be “neighborhood schools”.*

Performance goals go a long way toward making community development predictable, but they still don’t get us to what the community will look like or say much about the range of activities we can expect there. To get at those goals, we need to consider the land use and circulation plans in an entirely new light.



Mobility and Community Form Element

The Mobility and Community Form Element of a municipal master plan replaces both the land use and circulation elements. As the patterns in earlier chapters show, any thinking about land use without transportation or transportation without land use is incomplete. Land development goals and transportation system goals (and their respective implementation strategies) should be joined together in a systematic and balanced approach that respects the public – private partnership required to build a community. Bringing these goals together “under one roof” not only demonstrates the inter-relationships, but emphasizes the partnership.

The Mobility and Community Form Element includes the required and suggested contents of the land use and circulation elements (from the MLUL), so it meets the minimum standards of the law. In this respect, it is perhaps well that the MLUL offers so little guidance and most technical analysis is optional, as it lowers the legal bar that a different way of thinking needs to cross. The MLUL, of course, should be amended to clearly and specifically support integrated analysis and form-based development.

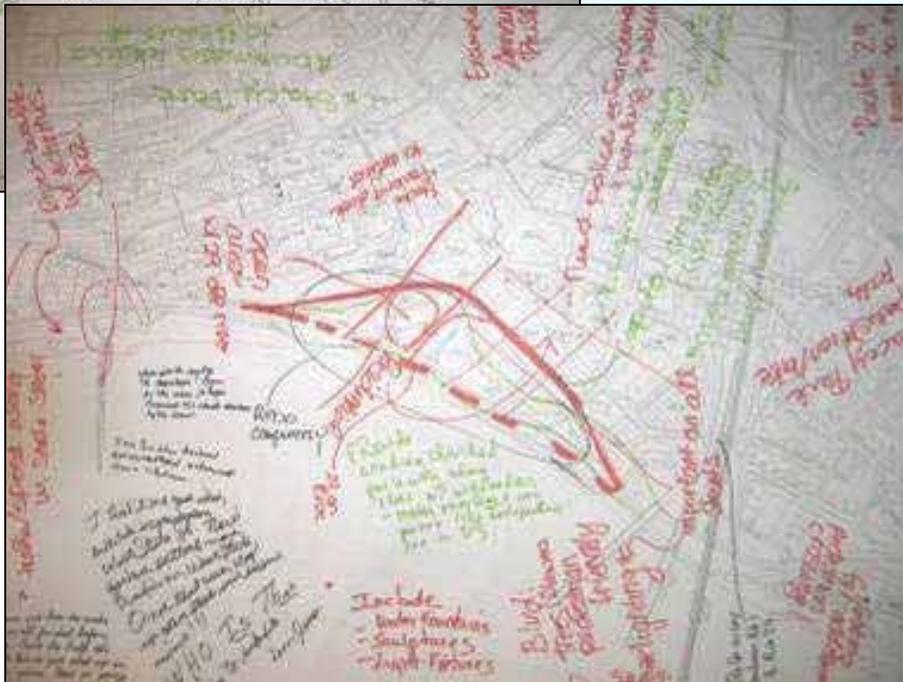
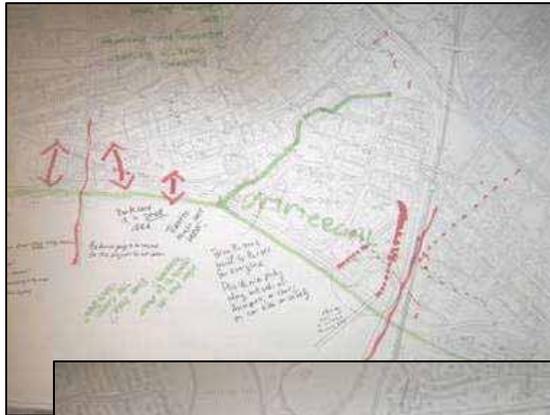
In the meantime, ensure that your local master plan’s Mobility and Community Form Element includes the following:

- **A specific statement that the Mobility and Community Form Element functions as the land use element and the circulation element of the master plan.** The MLUL says that a land use plan element is required, but leaves the form of that element to the municipality. This statement simply ensures that the Mobility and Community Form Element is recognized as meeting the requirement for a land use plan element *and the circulation plan element*.
- **A statement showing the relationship of the Mobility and Community Form Element to the community vision statement, objectives, principles, assumptions, policies and standards on which the physical, economic and social development of the municipality are to be based.** The MLUL requires that the land use plan element be based upon a set of broad community development goals. That requirement flows through to the Mobility and Community Form Element. Clearly, the Mobility and Community Form Element will take consideration of goals, objectives, and strategies to a much greater level of detail than has been the practice in most New Jersey municipalities.
- **A statement showing the relationship of the Mobility and Community Form Element to other master plan elements and natural conditions, including at least topography, soil conditions, water supply, drainage, flood plain areas, marshes, and woodlands.** Natural conditions, land forms, and resources should be the starting point for any discussion of community development, so it is likely that these topics will fit seamlessly into Mobility and Community Form goals and objectives. Because the focus of Mobility and Community Form is relationships, the other optional master plan elements should have the same focus.

- **Maps or diagrams showing the existing and proposed location, extent and intensity of development of land to be used in the future for varying types of residential, commercial, industrial, agricultural, recreational, educational and other public and private purposes or combination of purposes.** The land use plan map may not change much or at all as a *policy map*, but should be recast as a “Community Form Map” that supplements “the proposed location, extent and intensity of development” with notation of sectoral growth expectations, community types (including measures of density and intensity), roadway functions, type and location of civic functions and natural resource considerations. It is the explicit layering of this information that gives Mobility and Community Form its power to see synergies and relationships that might otherwise be lost.
- **A statement showing the relationship of the Mobility and Community Form Element to the existing zoning and any proposed zoning or development ordinance.** Mobility and Community Form recognizes that most communities have been built using traditional Euclidian (sector based) zoning, but proposes a conversion to *form-based development coding*, at least for those parts of the municipality expected to grow or aggressively redevelop. Where use of form-based coding is anticipated, the relationship should be much easier to demonstrate, because of the amount of detail and graphical orientation of the plan itself. But at the same time, use of form-based coding in developed areas, even as an optional mode of developing, is likely to raise a number of questions, so this statement should be explicit and clear about old codes and new codes.
- **Maps or diagrams showing the existing and proposed location of any airports and the boundaries of any airport safety zones delineated pursuant to the Air Safety and Zoning Act of 1983.**
- **A statement of the standards of population density and development intensity recommended for the municipality.** It is expected that this information will be depicted graphically on the Community Form Map and other supporting maps and materials. Additional detail (such as jobs/housing ratios, floor area ratios, anticipated trip making by mode, etc.) should be provided in supplemental text.

The Mobility and Community Form Element includes performance goals and measures for both land uses and transportation. As described above, these goals should be integrated and the relationships clearly depicted.

The Mobility and Community Form Element includes consideration of a full range of applicable transportation options, using a “walk first” approach. “Walk, ride, drive” is the preferred approach to personal mobility. This implies that land uses should be mixed so that everyday needs can be met within a short walking distance of home and/or employment. Where distance, constraints or travel conditions make walking inappropriate, riding public transportation or, alternatively, as a passenger in a car, is preferred to driving alone.



Transportation and land use concepts for Trenton evolved together through the charrette process.

The Mobility and Community Form Element includes a detailed, multi-modal transportation system, including a roadway classification system that is linked to the needs of surrounding land uses. Ideally, discussion of the transportation system should *begin* with making walking the mode of first choice and develop pedestrian mobility systems to the fullest extent possible. Next, and closely linked, is integration of public transportation with land development. This should follow quite naturally if the community is developed around the concept of centers or nodes and their environs. Goods movement must also be considered in this context. Automobile trips have their place, but should be relegated to long distance trips that cannot effectively be made by public transit.

The Mobility and Community Form Element is activity based in that it seeks to encourage specific classes of activities (and discourages or manages others) by influencing the built form of the community. The Mobility and Community Form Element influences community form in several ways. First, focusing on development of multi-use centers increases the range of activities that is available in those places. This is not to say that the range of activities in the environs of centers is decreased, rather, there is a greater differentiation between centers and environs and an emphasis on moving away from single-use lands. Secondly, Form-based coding, the set of regulations that actually govern what gets built, works to manage the range and type of activities in particular places. For example, the coding would be different for a suburban center in an intended growth sector from that of a similar center in an infill growth sector or a controlled growth sector. Third, using a “walk, ride, drive” strategy makes a specific statement about the automobile’s role in the community, helps prioritize activity options and hence brings certain aspects of community form to prominence.

The Mobility and Community Form Element closely manages infrastructure development (transportation, utility services, community facilities) so that it happens in concert with land development. Infrastructure development, especially planning, financing, and engineering of major transportation infrastructure projects, takes years. On the other hand, land development decisions typically happen “right now” because funding and competitive decisions are made in a dynamic market setting. Consequently, there is frustration from planners on both sides about the pace of decision making. Grouping transportation and land development into a single set of goals, objectives and strategies may not speed up infrastructure investment (and is not intended to slow down land development decisions), but can certainly impart some predictability to both. In laying out strategies and timing for transportation infrastructure, it is an easy and natural extension to include utility services and community facilities, both of which should be part of the land development discussion anyway.

Elements of the Street Realm

| Landscaping | Median - wide | Median - narrow | R.O.W. Street Tree | Residential | Screening |
|-------------------|--|--|--|--|---|
| Tree Form | | | | | |
| Tree Names | Zakura "Aler" Chinese Elm Kobura Tree Common Hackberry American Elm (improved varieties) | Ginkgo "Yappa" Red Maple Pyramidal European Hornbeam Columnar Norway Maple Fastigiate American Linden | Frisman Maple Marshall's Seedless Ash Thornless Honeylocust Norway Maple Red Maple | European Linden Turkish Filbert Red Oak Sugar Maple | White Spruce Colorado Spruce Norway Spruce Siberian Spruce Douglas Fir White Fir |
| Tree Form | | | | | |
| Tree Names | White Oak London Plane tree | "Velvet Pine" Columnar Crabapple Columnar Sargent Cherry "Raspber" Calery Pear "Ivory Silk" Japanese Tree Lilac | "Regent" Schwan Tree Goldmann Tree Snowflake Calery Pear Ahn's Mackia | Crabapple Eastern Redbud Flowering Dogwood Kousa Dogwood Winters King Hawthorn | Sanicelery Adonis "Halo Columns" Juniper Eastern Redcedar Pyramidal Juniper |

TOWN OF EAST GREENBUSH ROUTE 9 AND 20 CORRIDOR MASTER PLAN



Definitions

Sensory Street Realm: the space experienced by a motorist, bicyclist or pedestrian

Cartway Realm: the physical space devoted to vehicular and/or bicycle travel

Pedestrian Realm: area where pedestrian travel is a priority

Visual Field: private or public uses abutting the street

Elements of the Cartway Realm

- Vehicular travel lanes
- Medians
- Bicycle Lanes
- Pavement type
- Parking
- Transit stops
- Traffic calming measures
- Pedestrian crossings
- Intersection design
- Gutter

Elements of the Pedestrian Realm

- Curb
- Landscaping
- Streetscaping
- Signs
- Lighting
- Sidewalks
- Transit amenities
- Utility
- Open drainage system

Elements of the Visual Field

- Pedestrian access
- Vehicular access
- Setbacks
- Building massing
- Bicycle facilities
- Open spaces
- Signage
- Landscaping

The Mobility and Community Form Element is strongly graphically oriented, so that non-planners can visualize what the community will look like. A central goal of the Mobility and Community Form process is to make community development decisions accessible to the community. A universal, jargon-free language for doing that is graphics: drawings that depict ideas (especially if done by citizens themselves), photographs that show examples, and so on. This graphical language should be used throughout the planning and coding process so that development decisions grow naturally from it.

The Mobility and Community Form Element establishes the planning policy framework for implementation of a form-based development code that replaces traditional subdivision and zoning codes, including the Residential Site Improvement Standards. Implementing a form-based development code, one that focuses on creating vibrant mixed use *communities* rather than pods of single use lands, is an essential extension of the Mobility and Community Form concepts. A form-based code (see below) (1) establishes community context, (2) envisions community intent for growth, (3) identifies desired community activities and placemaking elements that support those activities, (4) scales the elements to match context and growth expectations, and (5) provides instruction on building scale and form. Where land is already platted, form-based coding can be molded to work with that platting as part of the contextual discussion. Where new lots or streets need to be created, it provides specific guidance.

The Residential Site Improvement Standards (RSIS), a “one size fits all” solution to many community design decisions, reinforces development of single use lands. As such, it reinforces building of single use developments, produces a sprawling development pattern and supports an auto dominated transportation system. For example, the RSIS standards for residential streets with parking – 28 feet – apply whether the street is classified as “low intensity,” “medium intensity,” or “high intensity.” More importantly, minimum parking standards are set for various housing types, without regard to geographic or community context. Fortunately, the RSIS also include a provision for “special area standards”, which can be invoked to establish the context and flexibility necessary for working with form-based coding.

Specifically, the RSIS says (at NJAC 5:21-3.5):

A special area designation may be applied by ordinance by a municipality or group of municipalities to an area or areas of a municipality or municipalities exhibiting or planned to exhibit a distinctive character or environmental feature that the municipality or municipalities by ordinance have identified and expressed a desire to preserve and enhance. Examples of a special area may include:

1. Designated redevelopment areas pursuant to N.J.S.A. 40A:12A-1 et seq.;
2. Designated special improvement districts pursuant to N.J.S.A. 40:56-65 et seq.;
3. Designated historic districts pursuant to N.J.S.A. 40:55D-65.1;

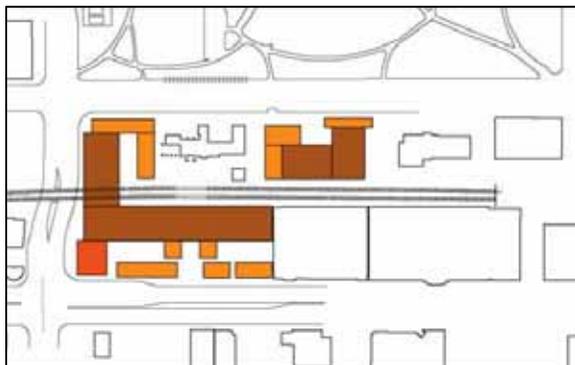
4. Municipalities in the Metropolitan Planning Area (Planning Area 1), and Regional Centers, villages, hamlets, or other Centers identified by the State Development and Redevelopment Plan or designated by the State Planning Commission;
5. Infill areas in urban settings;
6. Planned unit developments and planned unit residential developments, and residential clusters pursuant to N.J.S.A. 40:55D-39;
7. Areas where environmental systems such as watersheds may require special environmental controls;
8. Designated scenic corridors, pursuant to the Intermodal Surface Transportation Efficiency Act or other similar State or local initiatives; and

Rural preservation areas including but not limited to designated Agricultural Development Areas, pursuant to N.J.S.A. 4:1C, and in support of the rural preservation policies of the State Development and Redevelopment Plan.

The Mobility and Community Form Element should provide the policy support for later adoption of an ordinance that declares the area(s) to which form-based coding are to be applied (or are optional) as “special areas” for the purposes of the RSIS. This was successfully done in conjunction with TDR and a village master plan in Chesterfield Township, Burlington County.

The Coding Process

Moving from vision to plan to development regulation can seem daunting. But breaking the process into discrete steps and concentrating on getting each one done the right way can help make it transparent and help build consensus. And, where there is a clear nexus between planning goals, development regulations and what actually gets built can virtually eliminate successful legal challenges.



The coding process begins with looking at successful “place” models from within or outside the community. These can be downtown districts, shopping streets, neighborhood types, individual development projects, streetscapes, plazas, and so on.. The best way to gather and begin to organize these is simply to create a photo library. The photo library can be annotated with notes that describe what is desirable (and undesirable) about the individual places. The photos and notes are then used to create groups of desirable activities and place elements that can be translated into planning goals and objectives. Care should be taken to think through the patterns described earlier in this report, keeping community context in mind.

Considering goals in light of the patterns and context will lead naturally to a hierarchy of development intensities, street types and relationship to other transportation systems and services (e.g., rail stations). Development intensities can be understood through the mix of uses (70% commercial – 30% residential, 80% residential – 20% commercial, etc.), the overall massing of structures (2 story street wall, 4 story street wall) and the roadway width and design (2 lanes with on street parking, 4 lanes with median, etc.). For planning purposes, the function and hierarchy of street types should be understood in a lay nomenclature: main street, shopping street, pedestrian way, garden street, bicycle boulevard, big box lane, alley, etc. Some streets, such as those along a river or lake front, may be entirely unique and require special attention. When developing massing criteria, pay close attention to parking needs, increased intensity around major public transportation nodes and vertical mixing of uses.

Keep in mind that there is no set formula. A 3-story building wall can be used with a two lane street or a four lane street; street level retail can be topped by residential or office space. But the resulting *place* will be considerably different in character. The mix of uses, massing and street type inform a context based frontage code, which essentially places a private realm transect alongside a public realm transect, as illustrated in the example from Hutchinson, Minnesota, on the following page.

In the Hutchinson CBD master plan, each property is color coded with a streetscape type (based on function and hierarchy, as above) and a land use type. To find the types of street frontages allowed (which essentially controls both the allowed uses and the form they take), one first finds the *streetscape type* coded for their property (entry boulevard, garden street, etc.) and then the *land use type* (main street commercial, high density residential, etc.) by reading across the top of the two matrices. The allowed frontages are then read *down* the columns. For example, the streetscape type “Main Street” combined with the land use type “Main Street Commercial” may have a storefront entry (type F-1, i.e., not recessed), but may not use any of the deeply recessed entry types (F-2 through F-6). At the bottom of the chart, separate matrices call out entry spacing, minimum and maximum building heights and vertical mixing of uses. To follow the “Main Street – Main Street Commercial” example, entries are to be spaced 28’ to 40’ apart, in buildings 15’ (one story) to 48’ (three stories) in height, and be comprised of retail or service uses on the ground level, living or office space in upper stories and parking and service used below grade.

FRONTAGE KEY for BUILDINGS

The frontage is the interface between the street and the building.

The frontage is the semi-public private space between the street edge (property line) and the front wall of a building. The City regulates the form, size and quality of frontages by specifying a range of common frontage types for each property. This Frontage Code can be used to find the range of Frontage Types allowed for new development on any given property. Frontage Types are assigned independently to Streetscape Types and land Use Types, which are mapped for each property and each property line. This allows for differing arrangements of the three types in different parts of the city. To use this code, find your property on the Streetscape and Land Use Plans, and then follow the 3 steps below...

STREETSCAPE

- PUBLIC REALM TRANSECT -

| Plan Colors | Entry Boulevards | Crow River Lanes | Big Box Lanes | Garden Streets | Downtown District Streets | Civic Core Plaza Drives | Main Street Alleys | Main Street |
|--|------------------|------------------|---------------|----------------|---------------------------|-------------------------|--------------------|-------------|
| step 1 | | | | | | | | |
| Using the Map and this table, find the Frontages allowed for the Streetscape that your property is in. | | | | | | | | |

LAND USE

- PRIVATE REALM TRANSECT -

| Plan Colors | Main Street Commercial | General Commercial | Transitional Commercial | High Density Residential | Medium Density Residential | Industrial | Parking | Civic/Institutional | Park/Open Space |
|--|------------------------|--------------------|-------------------------|--------------------------|----------------------------|------------|---------|---------------------|-----------------|
| step 2 | | | | | | | | | |
| Find your Land Use Type using the Land Use Map, then use this table to find allowed Frontage Types | | | | | | | | | |

step 3

Find the range of Frontage Type(s) allowed for your property by cross-referencing the common Frontages allowed by both Step 1 and Step 2. Then refer to Frontage Design Guidelines for specific requirements.

step 3

| | | | | | | | | |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Entry (Address) Spacing | 36'-72" | 36'-72" | 36'-72" | 36'-72" | 24'-72" | 24'-48" | 24'-48" | 24'-48" |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|

| | | | | | | | | |
|---------|---------|---------|---------|---------|---------|-----|-------------|-----|
| 15'-40' | 15'-40' | 15'-40' | 15'-75' | 15'-40' | 15'-30' | 0.0 | per project | 0.0 |
|---------|---------|---------|---------|---------|---------|-----|-------------|-----|

VERTICAL USE ZONES

| | | | | | | | | |
|-------------------|--------------------------|---------------------------|----------------------------|---------------------|---------------------|---------|------------------------|---------|
| low office studio | low office studio | low office studio | low gallery | low | office | 0.0 | office gallery service | 0.0 |
| service retail | low office studio retail | low office studio service | low office service gallery | low office studio | office work at/shop | 0.0/0.0 | office gallery service | 0.0/0.0 |
| parking service | parking service | parking service studio | parking service | low parking service | 0.0 | 0.0 | parking service | 0.0 |



Streetscape Plan



Land Use Plan

Source: Hutchinson, Minnesota, Downtown Revitalization Master Plan

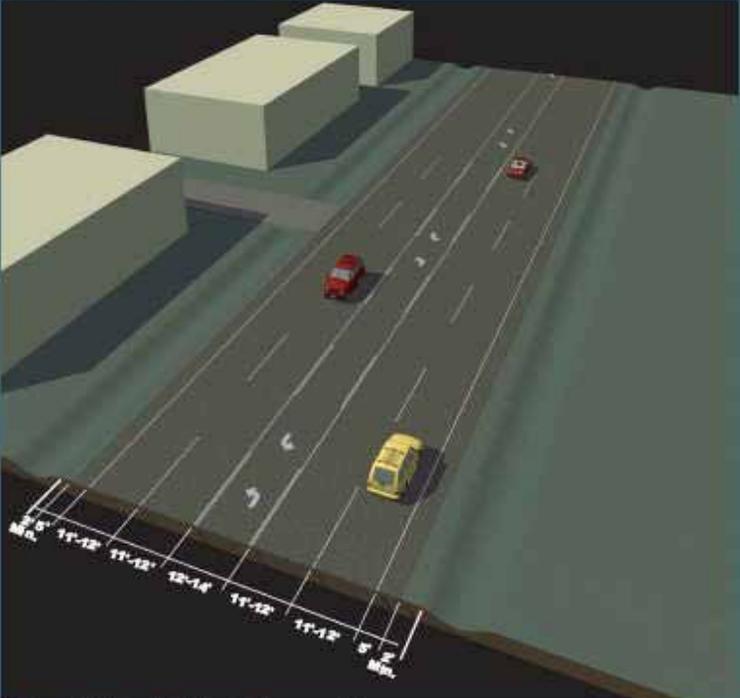
Form Based Development Codes

The development code itself consists of the land use and streetscape maps, the frontage key matrix on the previous page, coupled with another matrix of design guidelines for buildings and a similar matrix for streetscape elements, all adopted by ordinance. Taken together, these directly link master plan goals and objectives to both public and private land development. Note that civic and institutional development is specifically called out in the Hutchinson example.

In Alachua County, Florida (Gainesville area), the form code specifies a number of required street design elements, lists optional elements and sets very specific standards for many of these (following page). Different standards are established for streets of similar function (e.g., arterials) according to their land use context.

CORRIDOR TYPE: ARTERIAL

DESIGN SPEED: 45-55 MPH



Industrial

**LAND USE CLASSIFICATION:
INDUSTRIAL**

| REQUIRED | OPTIONAL | |
|---|--|--|
| <ul style="list-style-type: none"> If transit service is provided <ul style="list-style-type: none"> - Transit stops with benches - Sidewalks | <ul style="list-style-type: none"> Bicycle lanes Curb and gutter Planting Strip Lighting Sidewalks Medians Continuous left turn lane Bus Shelter | |

| DESIGN ELEMENT | MINIMUM Width (feet) | MAXIMUM Width (feet) |
|-----------------------------|----------------------|----------------------|
| • Vehicle lanes | 11 | 12 |
| • Bicycle lane | | |
| - curb and gutter | 4 | 6 |
| - no curb present | 5 | 6 |
| • Median | 12 | 50 |
| • Continuous left turn lane | 12 | 14 |
| • Sidewalk | 6 | 8 |
| • Planting strip | 4 | 8 |
| • ROW width | 50 | 130 |

Continuous left turn with wide outside lane open drainage

Source, this and following page: Alachua County Florida Form Code

CORRIDOR TYPE: ARTERIAL



Urban Activity Center

LAND USE CLASSIFICATION: URBAN ACTIVITY CENTER

REQUIRED

- Curb and gutter
- Street and pedestrian scale lighting
- Shade trees
- Sidewalks
- Transit stops with benches (if service is provided)
- Pedestrian activated crossing signal at signalized intersections
- Bicycle lane or wide outside travel lane

OPTIONAL

- On-street parking
- Planting strip
- Mid block pedestrian crossing
- Raised median
- Continuous left turn lane
- Bus Shelters

DESIGN ELEMENT

MINIMUM Width (feet)

MAXIMUM Width (feet)

| | | |
|--|----|-----|
| • Vehicle lanes (when bicycle lane is present) | 10 | 12 |
| • Outside vehicle lane (no bicycle lane present) | 14 | 14 |
| • Raised median | 4 | 6 |
| - infrequent driveways and intersections | 12 | 30 |
| - short blocks, left turn lanes | 11 | 14 |
| • Continuous left turn lanes | 4 | 5 |
| • Bicycle lane | 7 | 7 |
| • Parking lane | 8 | 10 |
| - with bicycle lane | 4 | 8 |
| - no bicycle lane | 8 | 12 |
| • Planting strip | 6 | 10 |
| • Sidewalk | 8 | 10 |
| - on curb | 6 | 10 |
| - off curb | 80 | 130 |
| • ROW width | | |

DESIGN SPEED: 35 MPH - 45 MPH



Continuous left turn lane/bicycle lane

Note: Where ROW permits, it is always preferred to provide a bicycle lane.

Getting That Main Street Feel

NJDOT conducted a “main streets” study that used the visual preference survey technique, asking citizens to rate images of streets against their own idealized concept of what a main street should be. Not surprisingly, the strongest elements in creating a main street feel were continuous building wall, a relatively narrow roadway width, and on street parking. Conversely, wide streets with “dead frontage space” (e.g., surface parking) ranked low.

Another similar, more comprehensive example is the SmartCode, developed by Andrés Duany. The SmartCode, intended as a model development ordinance, begins with the transect concept, identifies growth and preservation sectors, and then steps down through various levels of plan making to reach building scale plans and specific standards for various elements (parking, street trees, lighting, etc.) An example of the building massing criteria for the urban center zone (T5 on the transect) is shown at the right.

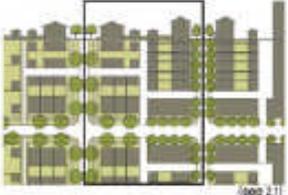
Infrastructure Planning

It can't be stressed strongly enough: land development and infrastructure development operate on different timelines. Even when all of the various permits normally necessary for a complex development are strung together, the approval process normally doesn't take more than a year or two. But a year is the *minimum* time required to plan, design, fund and build even the smallest transportation project. Expensive or complex project can easily consume 5 or more years – and that's if they're not controversial, which is rare.

At the state level, highway construction is largely a thing of the past, although development of rail, light rail, bus, bicycle and pedestrian projects is likely to continue unabated. But that's the central point of this

T5 URBAN CENTER ZONE

SMARTCODE SPECIFICATIONS



(see 2.1)

| 4.5 LOT OCCUPATION | |
|--------------------|--------------------|
| a. Lot Area | 1,500 sq. ft. avg. |
| b. Lot Coverage | 80% max |

| 4.6 BUILDING DISPOSITION | |
|--------------------------|------------|
| a. Edgeward | prohibited |
| b. Sideyard | permitted |
| c. Rearyard | permitted |
| d. Courtyard | permitted |

| 4.7 BUILDING HEIGHT | |
|-----------------------|------------------------|
| a. Principal Building | 4 stories max.; 2 min. |
| b. Outbuilding | 2 stories max. |

| 4.7 BUILDING SETBACK | |
|------------------------|-------------------------|
| a. Front | 5 ft. min.; 12 ft. max. |
| b. Side | 0 ft. min.; 24 ft. max. |
| c. Rear | 3 ft. |
| d. Frontage or Setback | 70% min. |

| OUTBUILDING SETBACK | |
|---------------------|-------------|
| a. Front | 25 ft. min. |
| b. Side | 0 ft. min. |
| c. Rear | 3 ft. min. |

| 4.8 PRIVATE FRONTAGE TYPE (see 2.2) | |
|-------------------------------------|------------|
| a. Concrete Lawn | prohibited |
| b. Pools & Fences | prohibited |
| c. Terrace or L.C. | permitted |
| d. Fences | permitted |
| e. Slope | permitted |
| f. Shopfront & Awning | permitted |
| g. Gallery | permitted |
| h. Arcade | permitted |

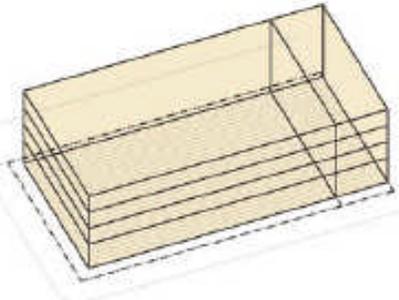
| ENCROACHMENT | |
|----------------------|-----------------------------------|
| a. At Sidg. Frontage | 0 ft. max. (+12 ft. min. average) |
| b. At Sidg. Side | 0 ft. max. |
| c. At Sidg. Rear | 0 ft. |

| 4.9 BUILDING FUNCTION (see 2A.15.2B) | |
|--------------------------------------|----------|
| a. Residential | open use |
| b. Lodging | open use |
| c. Office | open use |
| d. Retail | open use |

GRAPHIC SPECIFICATIONS

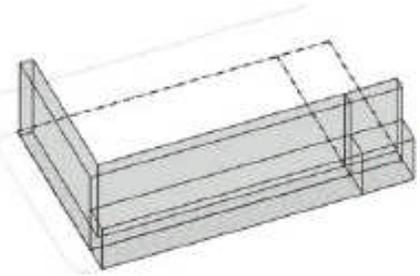
BUILDING HEIGHT

1. Building height shall be measured in number of stories, not including a raised basement, or finished attic. Each story shall not to exceed 14 ft. clear.



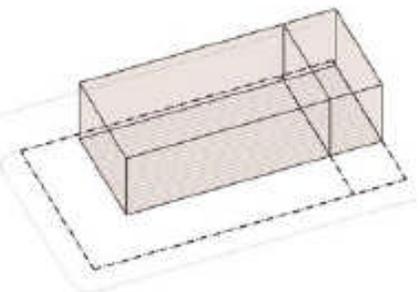
BUILDING PLACEMENT

1. Buildings shall be placed within the areas hatched as shown in the diagram.
2. Buildings shall have facades along frontage lines and elevations along lot lines.
3. The facades and elevations of a building shall be distanced from the frontage and lot lines as shown in the diagram.



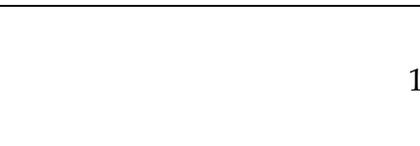
BUILDING ELEMENTS

1. Sloops, bay windows, open porches and balconies may encroach into the setbacks as shown in the diagram.
2. Arcades should overlap the sidewalk as shown in the diagram.



PARKING PLACEMENT

1. Parking spaces shall be provided within the third layer as shown in the diagram.
2. Covered parking shall be provided within the third layer as shown in the diagram.
3. Trash containers shall remain within the third layer as shown in the diagram.



Source: Duany Plater-Zyberk & Company

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publication: that municipalities and developers need to think about different ways of creating mobility and accessibility, without relying on state highways.

Transportation system development at the local level is typically somewhat faster, less complex and certainly less expensive than for larger scale facilities and systems operated and maintained by the state. Financing options are broader and, since federal funding is usually not involved, procedural requirements are usually less strenuous.

Traditionally, capital improvement programming consists of a one-year "capital budget" and a somewhat longer term needs assessment, as called for in the MLUL. Funding for capital improvements is provided through the annual operating budget and is subject to emergent needs, changing priorities, or the whims of elected officials. For these reasons, it is difficult for municipalities to undertake large or complex capital projects that require more than a year to complete unless special funding is set aside (as in general obligation bonds). Land developers can be asked to contribute to or actually build infrastructure immediately adjacent to or impacted by their property, on a fair share basis. But waiting for developer contributions to, say, a roadway or roadway network can stretch construction out over many years.

To help rationalize local development of transportation infrastructure, the New Jersey Legislature enacted the "New Jersey Transportation Development Act of 1989" and the concept of the Transportation Development District (TDD) was created. A TDD is a voluntary local enactment, similar to a business improvement district, which assesses participating property owners for development of transportation improvements. Although the fundamental concept is strong, two shortcomings have prevented more than a handful of TDDs from being implemented. First, the TDD cannot recover the cost of planning and implementing the district itself, so there may be sizeable up front costs borne by the municipality or property owners. Second, the TDD cannot assess for operation or maintenance costs associated with public transportation systems, such as shuttle busses, so there is likely to be an impact on the municipal operating budget. Legislation that would correct both deficiencies was proposed in the late 1990s, but has not yet been enacted.

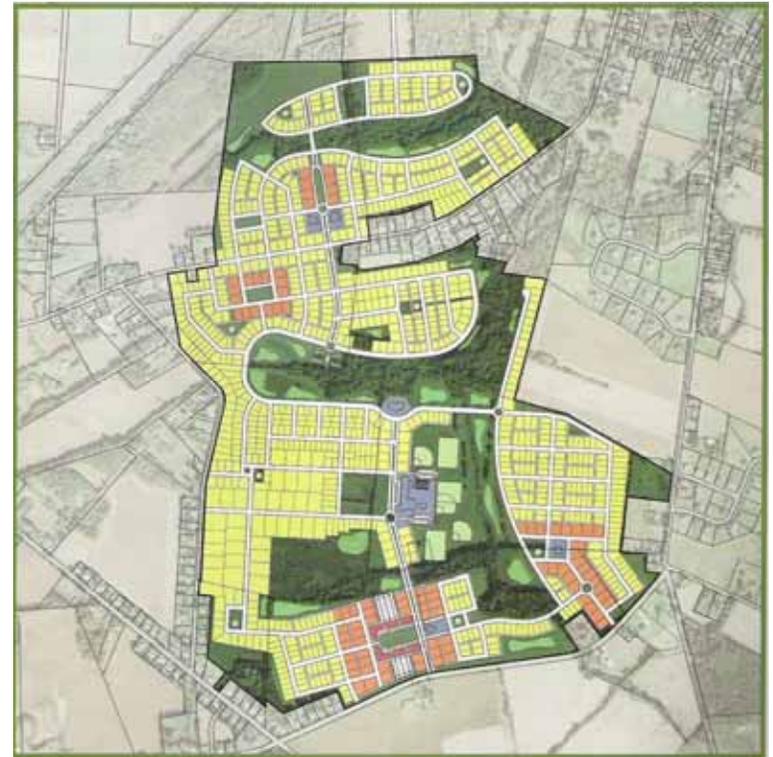
Tax increment financing (TIF) is another approach to directing a greater portion of local tax revenues to particular needs. TIF is usually associated with redevelopment or rehabilitation districts. The TIF is established, by ordinance, for a period of years. At the time it is created, the base tax rate is frozen, creating a "floor" assessment for each property. As properties are redeveloped, rehabilitated or as their values rise because of market conditions, the assessment on the incremental value is calculated separately and captured for use on special improvements called out in the ordinance establishing the district. To finance major capital projects, the municipality may float a bond that pledges the revenues from future increment payments to pay down the

principal and interest. Keep in mind that other users of tax revenues (school districts, counties, utility authorities, etc.) will want to have a say in how much of the increment is diverted to local infrastructure projects.

In Chesterfield, NJ, the municipality decided to cluster development using transfer of development rights (TDR). The idea behind TDR is simple: it uncouples the right to develop land from the land itself. For example, a 30 acre farm with one acre zoning in a “sending area” could sell (transfer) the *right to build* 29 units to another property owner (keeping the farm homestead and the right to farm the land). The new owner can then use those 29 “development credits” in a “receiving area” to build in accordance with the master plan.

This idea has a number of benefits:

- It helps to save farmlands and open space as the “environs” for a community, thus reducing sprawl development.
- In doing so, it offers rural landowners the opportunity to realize profit by selling the development rights to their property.
- It creates an open market for development credits, which does not artificially inflate housing prices.
- It allows clustered development to take place in accordance with a master plan, so the municipality has greater control over what is developed – and when.
- Clustering development can make municipal and other services more efficient. Schools can be built as walk-to neighborhood schools rather than requiring busing. Land uses can be efficiently mixed around a “core” community, thus reducing auto dependency.
- Clustering trip origins and destinations in a smaller area helps make public transportation more viable and increases commute options.
- And the planning and construction of regional infrastructure, such as transportation facilities and utilities, can be closely linked *up front* to land development.
- One master environmental review can be used to cover permits for all of the planned development, thus saving time later in the development process.



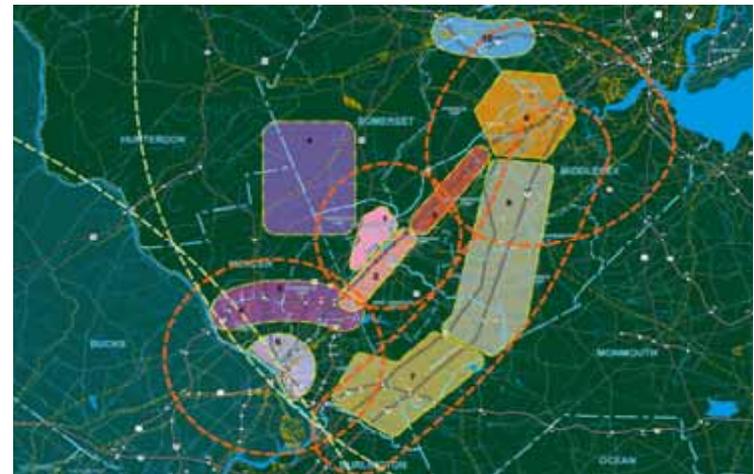
Old York Village in Chesterfield Twp., Burlington County

Regional Context

Every community exists in a context. In fact, there are many dimensions to that context. One of those is the regional transportation network, because every community has both regional trip origins and destinations, as well as through trips. Another dimension is the economy: all communities are part of a regional economy that largely disrespects political boundaries. As the map on the previous page shows, New Jersey is at the core of the Washington – New York – Boston “urban lattice.” The detail map (this page) illustrates discrete market areas within the central part of the state, clearly showing their “extra-municipal” nature.

The point, for both regional transportation and regional economics, is three-fold:

- No community “stands alone” in either transportation or economics. Making transportation and/or economic development decisions without considering extra-municipal implications (and discussing those implications with regional stakeholders) is shortsighted and, ultimately, expensive in terms of lost synergies and in duplication of costs.
- Maintaining the flow of people and commerce across regional networks is critical not just to the local economy, but to regional and state competitiveness as well. It must be understood that regional mobility has local costs. Sometimes these costs appear to be high, but they need to be considered *in the regional context as well as the local context*. Conversely, regional benefits are sometimes difficult to disaggregate to the municipal scale, but need to be recognized nonetheless.
- The municipal transportation system and land development plan need to take both regional transportation needs and regional economic needs (and supporting uses, such as worker housing) into account. For this reason, it is imperative that the function of transportation system elements – especially roadways – be clearly understood, articulated and linked to land development types and intensities.



Source: Michael Gallis & Associates

Resources for Putting It All Together

Statutes and Model Statutes

New Jersey Statutes 40:55D: Municipal Land Use Law

<http://www.policy.rutgers.edu/cgs/PDFrc/NewJerseyMunicipalLandUseLaw12-23-2005v2.pdf>

SmartCode 6.5, A Comprehensive Form-Based Planning Ordinance, Dunay Plater-Zyberk & Company, 2005 www.placemakers.com

Residential Site Improvement Standards: <http://www.state.nj.us/dca/codes/nj-rsis/sc3.shtml>

Policy and Technical Guidance

New Jersey Future in Transportation: <http://www.state.nj.us/transportation/works/njfit/about/>

Chesterfield Twp., Old York Village: <http://www.chesterfieldtwp.com/Smart%20Growth/SmartGrowthPage.htm>

the state's rail transit network, often demands an exceptional degree of coordination between jurisdictions. The same is true of many road and bridge improvement projects. Airport expansions and new freight facilities, such as warehouses and truck terminals, often affect the entire region, as do trends in truck traffic on the state's principal freight corridors.

In preparing the master plan, key partners may include county government, state agencies such as the NJDOT, NJ Transit, the Office of Smart Growth, the appropriate Metropolitan Planning Organization, and special agencies such as the Highlands Commission and Pinelands Commission for municipalities located in these areas. Local Transportation Management Associations are another valuable partner in the planning process.

Partnering with NJDOT

NJDOT is keenly interested in working with municipalities to help bring about greater integration of the state's transportation infrastructure and local land use patterns, and to promote the creation of distinctive, walkable environments. NJDOT offers a variety of planning grants and local aid for capital improvements that can be used toward this purpose. For instance, NJDOT Bicycle and Pedestrian Planning Grants enable municipalities to develop circulation plans for these non-motorized modes. Other programs include support for Safe Routes to Schools, park-and-rides, access management planning, local planning assistance grants, and the Transit Village Initiative, which encourages transit oriented development around transit stations.

In addition to municipal grant programs, NJDOT is currently sponsoring more than a dozen Integrated Land Use and Transportation Studies for state highway corridors across the state. NJDOT is providing the participating municipalities with tools for better integrating local land use and transportation and helping to facilitate communication among neighboring jurisdictions to develop a coordinated approach for each corridor. These projects have generated new partnerships and incorporated numerous innovative features in line with the philosophy of context-sensitive design.



As part of the Route 31 Land Use and Transportation Plan, municipalities and state agencies are working together to develop a Framework Plan for this Hunterdon County area. NJDOT and OSG are providing technical and financial assistance to municipalities like Raritan Township (pictured) to revise their Master Plan and development plans.

For municipalities that have state highways within their borders, NJDOT also offers the opportunity to develop a State Highway Access Management Plan. An Access Management Plan serves as a mutual agreement between the state and the municipality, and may include incentives for developers regarding access improvements. There are currently only two such plans in New Jersey—Stafford Township’s plan for Route 72 and Colt’s Neck’s plan for Route 34—though others are pending. In Stafford Township, the Access Management Plan and the addition of roadway network were used to help control gridlock and aid in traffic flow. In Colt’s Neck, the town wanted to ease congestion and achieve more control over the “look” and “feel” of the highway, and they codified this in the Municipal Master Plan and the Access Management Plan. The procedure for such Access Management Plans is detailed in Chapter 9 of the NJDOT Access Code.

Partnering with NJ Transit

NJ Transit also works closely with municipalities across the state in developing transit services, terminals, parking facilities, and related community enhancement projects. The Transit-Friendly Communities for New Jersey program provides federally supported grants for local improvement projects around transit stations. Under these grants, NJ Transit and its project partners have worked to strengthen downtown investment and improve the areas around train stations, including pedestrian facilities, in eleven municipalities. Since stations are often located at municipal borders, several of these initiatives have spurred collaboration between neighboring municipalities.

NJ Transit is also a potential partner for public-private development projects that include a transit station, known as joint development. By working with NJ Transit, municipalities can help leverage the economic benefits of station area redevelopment and create attractive focal points for other community activities.



Partnering with the Office of Smart Growth



Another state agency with a critical interest in local circulation planning is the Office of Smart Growth (OSG), located in the New Jersey Department of Community Affairs. OSG is responsible for ensuring that local plans are consistent with, and help to implement, the State Development and Redevelopment Plan (SDRP) which guides overall growth and development for New Jersey. OSG welcomes efforts by municipalities to better integrate their land use and transportation planning by examining the relationship between mobility and community form. A number of relevant grant programs are offered, including Smart Future Planning Grants which focus on seven key areas: design guidelines for creating places, downtown and Main Street revitalization, green building, parking, transfer of development rights (TDR), charrettes, and greyfield redevelopment.

One way that municipalities can support state and regional planning goals—and achieve a higher-priority status from funding sources—is through the Plan Endorsement process. Through this effort (which is discussed later in this chapter) municipalities and counties work to ensure that their Master Plans are consistent with the State Development and Redevelopment Plan (SDRP).

Working with Neighboring Communities

Neighboring municipalities are perhaps the most important partners for any master planning effort. Neighboring communities may opt to develop or update their master plans or circulation elements in tandem, thus achieving the synergy of a larger effort, ensuring consistent approaches at the borders, and realizing greater efficiency in the planning process itself. Alternatively, bordering communities may wish to develop a joint master plan for a specific site or area of mutual concern.

Through its corridor planning studies, NJDOT has conducted a number of individual projects aimed at balancing land development and transportation systems, across community boundaries. For example, The Route 1 Regional Growth Strategy is a collaborative effort by state agencies, MPOs, and 15 municipalities in 3 counties to develop a sustainable economic and transportation strategy. This strategy also encourages regional and local access management measures and improved street connectivity between Route 1 and other roadways. Additionally, NJ Transit is working with the team to examine the feasibility of developing a Bus Rapid Transit System for the corridor. If people can choose among different safe and convenient travel modes and paths, including transit, walking, bicycling, and more than one roadway route, the region's roadways will retain their capacity longer.



As part of the Route 9 Integrated Land Use and Transportation Plan in Ocean County, three adjacent municipalities are working together to achieve common goals in support of mixed use growth while improving congestion and safety issues in the area. Berkeley Township is leading the efforts to develop a Town Center. The township worked closely with a developer to convert his original plans for one “big box” site into a mixed use town center. Beachwood and Pine Beach will have their existing grid networks connect into the new center circulation to alleviate congestion on Route 9 and provide alternate routes for local trips. In order to improve a problem intersection in the area and improve the network connectivity, Pine Beach plans to provide an easement of land from a school property for new network connections in the area.

Working with MPOs

Metropolitan Planning Organizations (MPOs) are regional bodies that coordinate transportation planning for multiple counties surrounding a metropolitan center. The MPOs have a critical role in setting long-term and short-term transportation investment priorities for their respective regions, and in developing corridor plans. MPOs also sponsor a variety of transportation improvement projects at the local level, including pedestrian and bicycle safety projects. Each of the MPOs in New Jersey has policies in place to promote a coordinated approach to transportation and land use planning. They are another important resource for local circulation planning and project funding.

In New Jersey, unlike most other states, every county and municipality falls under the jurisdiction of one of the MPOs. Two of the MPOs work solely in the state, while one is a bi-state authority. The MPOs are listed below.

| <i>North Jersey Transportation Planning Authority (NJTPA)</i> | <i>Delaware Valley Regional Planning Commission (DVRPC)</i> | <i>South Jersey Transportation Planning Organization (SJTPO)</i> |
|---|---|--|
| Bergen County | Burlington County | Atlantic County |
| Essex County | Camden County | Cape May County |
| Hudson County | Mercer County | Cumberland County |
| Hunterdon County | Gloucester County | Salem County |
| Middlesex County | + 5 counties in Pennsylvania | |
| Monmouth County | | |
| Morris County | | |
| Ocean County | | |
| Passaic County | | |
| Somerset County | | |
| Union County | | |
| Warren County | | |

Regional Scale Facilities

The seven patterns included in this guide have focused on local transportation facilities and land uses that are common to most municipalities, such as local circulation systems, neighborhoods, shopping streets, and transit stops. Additional specialized or regional scale land uses – and their specialized transportation needs – may also need to be considered in the master plan if they occur or are proposed for construction within the municipality or nearby. Examples include the following uses:

- Campus-style developments, such as universities, hospitals and medical centers, high technology centers, or large-scale religious complexes;
- Hotels and convention centers;
- Stadiums, arenas, and other large-scale performance centers;
- Major museums, entertainment centers, and theme parks;
- Government centers or courthouses;
- Prisons and detention centers;
- Cemeteries;
- Specialized commercial zones, such as auto malls;
- Industrial parks and manufacturing sites;
- Farming, fisheries, and food processing;
- Landfills and waste processing sites;
- Oil refineries;
- Freight facilities, including ports, warehousing, truck terminals, truck stops, and rest areas;
- Airports, including general aviation facilities, and
- Special event sites (including state and county fairs).



Interchange 8A on the New Jersey Turnpike has emerged as a significant center of distribution in New Jersey, with over 50 million square feet of warehouse space.

Freight transportation facilities are of particular significance. New Jersey is one of the leading centers of warehousing in the United States, with over 830 million square feet of industrial property, much consisting of warehousing and distribution centers. Approximately 30 percent of all truck trips in New Jersey are associated with warehousing.

Although the national and global movements of freight are beyond the jurisdiction of a municipality, local governments need to be aware of the demands placed on their towns by truck traffic and warehousing. Designating and signing truck routes that avoid bottleneck locations, such as weight-restricted bridges, underpasses, and narrow intersections, is one important strategy for consideration. Truck exclusion zones can also be used in certain situations to protect residential neighborhoods from heavy truck traffic. However, many roads need to remain open to truck traffic to ensure efficient delivery of goods and supplies to local industries. Truck exclusion can also have unwanted spillover effects on parallel routes.

New Jersey's 36 general aviation airports provide specialized mobility services, such as business and charter travel and medical evacuations, and often generate economic benefits to their host communities. By accommodating smaller aircraft, these airports also help to alleviate overcrowded conditions at major airports. A key local planning consideration for airports is the prevention of noise impacts, through restrictions on the construction of housing, schools, and other noise-sensitive uses in surrounding areas. Facility expansions are another key issue. For instance, municipalities may be asked to approve runway extensions to accommodate new lightweight jets that require longer runways.

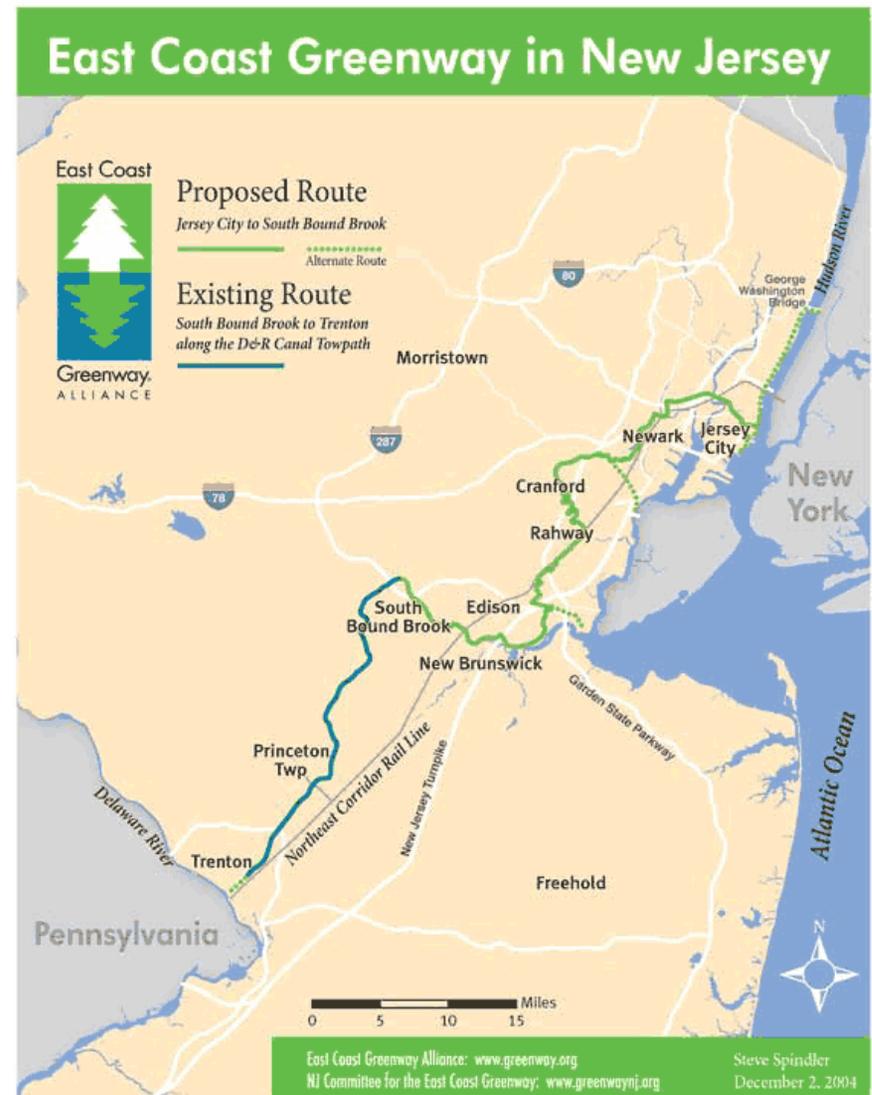


Bus Rapid Transit (BRT) is an emerging technology that combines the service of a light rail system with the flexibility of a bus system. It is less costly to build than traditional rail, since it can be run on a combination of dedicated guideways and regular roads. (Image source: Central New Jersey Route 1 Bus Rapid Transit Alternatives Analysis Study.)

Regional partnerships are also important in promoting major greenway and trail facilities. There are numerous regional trail proposals in various stages of development throughout New Jersey. Examples include the national East Coast Greenway initiative, the Capital-to-Coast Trail, which will run from Trenton to the shore at Manasquan, and the Liberty to Water Gap Trail, a continuous walking route from Liberty State Park in Jersey City to the Delaware Water Gap. Each of these trail projects offers mobility benefits to municipalities located along the routes, as well as opportunities for nearby municipalities to add connector routes.

Planning for large land uses such as hospitals, office parks, religious complexes, and performance centers is inevitably complex, with wide-ranging regional impacts on mobility and community form. However, some of the same principles described in this guide are applicable to large-scale uses as well. For instance, locating such facilities near transit—or planning jointly for the development of transit and large-scale uses—can dramatically reduce traffic impacts. Integrating campus-style uses with nearby neighborhood centers or shopping streets, so that employees can walk to local shops and restaurants, is a great improvement over constructing office parks in isolation. For hospitals and college campuses, incorporating these facilities in mixed-use neighborhoods with transit access also provides more

equitably for the mobility needs of those workers and students without access to personal vehicles. Locating a hotel in a distinctive mixed-use neighborhood provides visitor amenities that cannot easily be matched by hotels located at generic highway interchanges. Parking for large-scale uses can be sensitively designed and pedestrian-friendly as well.



The East Coast Greenway is a proposed 2,600 mile path linking cities from Maine to Florida. The Greenway will provide an urban alternative to the Appalachian Trail. In New Jersey, the proposed route will connect from the D&R Canal Towpath north toward Jersey City. Municipalities along the route have an opportunity to develop local connections to this unique facility.

Plan Endorsement

Plan Endorsement is a voluntary process established at the state level in New Jersey to promote consistency between local master plans and the goals and objectives of the State Development and Redevelopment Plan (SDRP). The Plan Endorsement process is administered by the State Planning Commission with the participation of a variety of state agencies. The process includes opportunities for dialogue with state officials and provides for coordinated, “one-stop” access to technical assistance and funding from state agencies. Municipalities may apply for Plan Endorsement on their own, or neighboring municipalities may work together and seek Plan Endorsement as a group. (Middlesex County, for example, is developing a multi-jurisdictional plan that collects municipalities into groups for planning purposes.)

From a financial standpoint, an endorsed plan entitles a municipality or county to a higher priority for available funding and state agency technical assistance. A variety of state and federally funded programs give “priority points” in the competitive process to municipalities that are a part of the Plan Endorsement process. In addition, preparing a petition for Plan Endorsement is a requirement for those municipalities seeking certification from the Council on Affordable Housing (COAH) under the Third Round COAH rules.

Plan Endorsement also has regulatory benefits. Greater coordination between local governments and state agencies in the development of master plans leads to land use planning that is better integrated with regulatory decision-making at the state level. This results in a more streamlined approvals process from the Department of Environmental Protection (NJDEP) for specific projects that are consistent with the SDRP.



Asbury Park was the first municipality to receive Initial Plan Endorsement from the Office of Smart Growth. Both the famed boardwalk and the downtown streets serve as community gathering places—and both are subjects of concentrated redevelopment efforts. (Image source: City of Asbury Park website)

Plan Endorsement rules are currently undergoing revision, with adoption of revised rules expected in 2007. Currently, there are two levels of Plan Endorsement – Initial and Advanced. Municipalities that have received Initial Plan Endorsement from the State Planning Commission (SPC) can opt to apply for Advanced Plan Endorsement, which automatically results in COAH certification and approval of the petitioner’s open space, habitat conservation, and water resources management plans by NJDEP. To apply for Initial Plan Endorsement, a municipality should attend a Pre-Petition meeting with state agency representatives, prior to submitting a copy of the municipal master plan and related documents to the State Planning Commission.

Each of the participating state agencies has identified several guidelines to be met during the Plan Endorsement process. The New Jersey Department of Transportation and NJ Transit have developed a joint set of expectations for municipalities seeking Initial Plan Endorsement. Municipalities should have in place either an adopted circulation element or a transportation overview and strategy document. The circulation element or strategy document should consider all travel modes, including public transit, bicycle and pedestrian mobility and the movement of freight. Parking and land use should also be addressed. In addition to an inventory of existing facilities, the document should address community goals and objectives for the transportation system, assess the current system and evaluate future needs.

NJDOT also seeks an indication that applicants for Plan Endorsement are working with surrounding communities to solve regional transportation problems. They should be able to demonstrate support for land use patterns conducive to transit, bicycle, and pedestrian travel, including the intent to explore opportunities for Transit-Oriented Development. NJDOT also looks for municipalities to have a comprehensive parking management strategy in place. In addition, NJDOT considers whether local zoning conforms to the NJDOT Access Code, which governs access onto state highways. Municipalities affected by public use airports must also demonstrate that they comply with the Air Safety and Zoning Act of 1983.

Thus, a strong circulation element is an asset when a municipality applies for Plan Endorsement. Likewise, Plan Endorsement promotes effective circulation planning that takes into account mobility and community form. Municipalities that commit themselves to enhancing the circulation elements of their Master Plans and to taking part in the Plan Endorsement process demonstrate their dedication to improving their communities and regional planning throughout New Jersey.

Resources for Stepping Back

Statewide Plans

New Jersey State Development and Redevelopment Plan. New Jersey State Planning Commission, adopted March 1, 2001.
www.nj.gov/osg/plan/index.shtml

Transportation Choices 2025: New Jersey's Long Range Transportation Plan. New Jersey Department of Transportation and New Jersey Transit Corporation, March 2001. <http://www.state.nj.us/transportation/works/njchoices/reports/lrp/lrptoc.pdf>

Policy and Technical Guidance

Complete Guide to Planning in New Jersey (2nd edition, 2003), Edited by Jennifer L. Zorn, NJAPA.

New Jersey FIT: Future in Transportation. New Jersey Department of Transportation.
<http://www.state.nj.us/transportation/works/njfit/>

Plan Endorsement Guidelines (2004), New Jersey Office of Smart Growth, Department of Community Affairs.
<http://www.nj.gov/dca/osg/docs/2004peguidelines.pdf>

State Highway Access Management Code (New Jersey Administrative Code Title 16 Chapter) (2005), New Jersey Department of Transportation.
<http://www.state.nj.us/transportation/eng/documents/NJHAMC/pdf/accesscode.pdf>

State of New Jersey Municipal Land Use Law, 2006 edition.

MPO Plans

Access and Mobility 2030: Regional Transportation Plan for Northern New Jersey. North Jersey Transportation Planning Authority, Inc. (NJTPA), September 2005.

<http://www.njtpa.org/planning/rtp2030/rtp2030.html>

Destination 2030: Future Land Use and Transportation Facilities. Delaware Valley Regional Planning Commission (DVRPC), June 2005. http://www.dvrpc.org/LongRangePlan/2030/LRP_Admin.pdf

2025 Regional Transportation Plan. South Jersey Transportation Planning Organization (SJTPO), June 2001. <http://www.sjtpo.org/>