

# MAKING COMPLETE STREETS A REALITY:

## A GUIDE TO POLICY DEVELOPMENT





# Guide to Complete Streets Policy Development

**“Complete Streets is a philosophy;  
a way of life. Our goal is to make  
New Jersey a sustainable, livable,  
walkable, rideable community.”**

***James S. Simpson***

*Commissioner  
New Jersey Department of Transportation*

## TABLE OF CONTENTS

Preface .....	1	Updating Local Policies and Procedures....	18
Introduction .....	2	Plan Documents .....	19
Benefits .....	2	Building Complete Streets into the Development Process .....	19
The Cost of Inaction .....	4	Building Institutional Capacity .....	20
Converging Trends .....	5	Forming Partnerships to Advance the Policy .....	20
Developing a Complete Streets Policy .....	6	Initiating Pilot Projects .....	21
1. Purpose and Intent .....	6	Lessons Learned .....	21
2. Definition of Users and Modes .....	7	Appendix A: References .....	22
3. Types of Improvements.....	7	Appendix B: NJDOT Complete Streets Checklist.....	26
4. Design Standards .....	8	Appendix C: Model Complete Streets Policy Template.....	34
5. Exemptions .....	9		
6. Implementation Plan.....	10		
Liability.....	12		
Policy Adoption .....	13		
Policy Adoption: Building Local Support ....	13		
Finding a Local Champion.....	13		
Educating Local Officials and the Public.....	13		
Involving Stakeholders .....	15		
Linking Complete Streets to Ongoing Local Initiatives .....	16		
Is Your Town Ready for Complete Streets? ...	17		
Implementing the Policy .....	18		



## PREFACE

Like most New Jersey residents, when I hear the word “transportation” I take the perspective of a motorist and think of cars and trucks or trains and buses and my daily commute.

After becoming state Commissioner of Transportation, I relocated near Trenton, to one of the most walkable towns in the state, where the freedom from relying on a car for shopping, dining, and entertainment is second to none. From my new perspective as a pedestrian I can see drivers speeding down local streets, showing a lack of regard for pedestrians and bicyclists. And like other parents in my community, I push a stroller with my two young children in it and frequently witness inattentive drivers who ignore crosswalks and do not stop for pedestrians, as the law requires.

In 2010, 141 pedestrians and 13 bicyclists were struck and killed by vehicles on New Jersey roads. In 2011, pedestrian and bicyclist fatalities reached 144 and 17, respectively.

Every day, I see how all of us can make our communities and our state safer for the many non-motorists who share our streets and roads. I see the need for more “Complete Streets” — more and improved sidewalks;

better markings at crosswalks to put motorists on alert; bike paths where needed; and intersection improvements, including countdown pedestrian signals and accessible curb cuts at crosswalks to accommodate those who are mobility-impaired.

That’s why the administration is promoting New Jersey’s award-winning Complete Streets policy, and why the New Jersey Department of Transportation is helping counties and municipalities learn what Complete Streets is all about and how they can benefit by adopting their own policies.

A local Complete Streets policy raises awareness among residents, elected officials and the private sector. When projects are proposed, pedestrian, bicycle and transit accommodations are no longer an afterthought — they become an integral feature of the overall investment plan.

The Christie administration supports Complete Streets through a number of NJDOT programs including our Pedestrian Safety Initiative and Local Aid grant opportunities. Safety experts in the Department are in the process of assessing high-risk areas on state highways and proposing improvements under our Pedestrian and Bicycle Safe Corridor program, and we are developing a new initiative to promote safety along the state’s busy railroad tracks.

The Department of Transportation has developed a Complete Streets video, and we are sponsoring regional training workshops to introduce local and county officials to the benefits of Complete Streets policies and projects. This guide supplements those efforts with practical information on how to create and implement a Complete Streets policy.

I urge local governments to adopt and implement Complete Streets policies and join us in this important effort to engineer safety into New Jersey’s streets and roads. Together, we will save lives.

**James S. Simpson**

*Commissioner*

*New Jersey Department of Transportation  
Op-Ed Column, November 2011*



**Pedestrian Crossing, Princeton, NJ**



# Guide to Complete Streets Policy Development

## INTRODUCTION

Complete Streets are for everyone – they are streets designed for all users, modes, and ability levels, balancing the needs of drivers, pedestrians, bicyclists, transit vehicles, emergency responders, and goods movement. However, adopting a Complete Streets policy does not mean that every street should have sidewalks, bike lanes, and transit. Instead, design is driven by local context and demand; there is no universal, prescriptive design. The needs of local users naturally vary from an urban arterial, to a suburban residential street, to a rural byway, and hence, while the underlying goal of balancing the needs of all users remains, the implementation of a Complete Street should vary accordingly. Complete Streets also do not require additional costs or new funding sources. Simple solutions, such as using paint to restripe a roadway and alter its layout, can be implemented during routine maintenance and repairs. By applying Complete Streets as a core, guiding principle, a robust, multi-modal network with facilities for all users can be established over time.

Complete Streets is a national movement that fundamentally changes how we view our communities and how we design, build, and use our streets. The concept has been

embraced by national organizations such as the American Association of Retired Persons (AARP) and the American Automobile Association (AAA). Nationwide, 315 local and regional jurisdictions, and 26 states, have adopted Complete Streets policies (as of March 2012).

**“...there are times the automobile doesn’t work or when people want a different mode of transportation, and our robust Complete Streets program is making that happen here in NJ.”**

*James S. Simpson  
Commissioner  
New Jersey Department of Transportation*

New Jersey has become a national leader in this transformation, being among the first states in the nation to adopt a Complete Streets policy in December 2009. Based on analysis by the National Complete Streets Coalition, New Jersey Department of Transportation’s (NJDOT) policy remains the strongest Complete Streets policy on record. Under its policy, NJDOT seeks to create and promote “safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options.” In addition to implementing this approach on roadways

under its own jurisdiction, the Department has also emphasized statewide outreach and training initiatives. This is a vital component for statewide advancement of Complete Streets, as over 91% of New Jersey’s roadways are owned by counties and municipalities.<sup>(1)</sup>



**Active Main Street Business District, Somerville, NJ**

Following NJDOT’s lead, 27 municipalities and three counties have adopted Complete Streets policies (as of May 2012).

## Benefits

There are numerous benefits to developing a Complete Streets network, including:

- **Mobility** – Improved mobility for all users, including non-drivers, youth, older citizens, and the mobility challenged.
- **Safety** – Improved safety for all users, including those currently walking, biking, driving, or riding public transit. Studies



*Improved Crossing Safety, Rio Grande, NJ*

have shown that sidewalks greatly reduce the risk of pedestrian crashes, and that cities designed for bicycling improve safety for *all* road users. The safety of vulnerable populations, such as school children and senior citizens, are often the highest priority for local governments adopting Complete Streets policies.<sup>(2)</sup>

- **Equity** – Mobility and access to opportunity should not depend on owning an automobile.
- **Health** – There are a host of health benefits related to increased walking and biking. Complete Streets enable all users, from families with young children to senior citizens, to stay active. The Center for Disease Control supports Complete Streets as a means of preventing obesity.
- **Quality of Life** – Complete Streets support livable, walkable communities. When

people rely less on their automobile to get around, there are more opportunities for residents to interact. The desire to provide community amenities was often one of the top motivating factors for adopting Complete Streets policies among a survey of New Jersey municipalities.<sup>(3)</sup>

- **Economic Vitality** – Complete Streets create the types of places where many people and businesses now seek to locate themselves. This helps communities attract entrepreneurs, active retirees, young professionals, and the businesses and services that cater to them. Improved streetscapes can help revitalize business districts, generate more foot traffic, and attract customers. Lower transportation costs are another economic benefit. Complete Streets provide users with choices, allowing autotrips to be replaced by the inexpensive options of walking, biking, or public transit.



*Urban Complete Street, Jersey City, NJ*



*Suburban Complete Street, West Windsor, NJ*

- **Environmental** – By reducing automobile use, Complete Streets benefits include cleaner air and reduced greenhouse gas emissions. Depending on the context, Complete Streets may also reduce the roadway width or improve landscaping and streetscape, providing opportunities to reduce impervious cover, reduce stormwater runoff, and improve water quality.
- **Local Programs** – Adopting Complete Streets policies assists municipalities applying for NJDOT Local Aid grants, which help advance projects to enhance safety, renew aging infrastructure, and support new transportation opportunities. Having a Complete Streets policy earns 1 point towards the 20 required. Policy adoption can also help New Jersey municipalities achieve Sustainable Jersey certification,



# Guide to Complete Streets Policy Development

which makes municipalities eligible for grants from the Sustainable Jersey Small Grant Program and access to technical assistance. Implementation of a Complete Streets policy earns 20 points towards Sustainable Jersey Certification; a total of 150 points are needed to earn bronze level certification.

## The Cost of Inaction

Just as there are a wide variety of benefits to be gained through Complete Streets, there are stark costs associated with continuing to

design and maintain *incomplete streets*. First and foremost, incomplete streets underserve a large percentage of the population. Research and surveys indicate that approximately one-third (33%) of U.S. residents do not drive, and that a majority of Americans *want* to walk and bike more. In New Jersey, the numbers are similar and many residents do not drive, whether due to age, choice, or disability:

- 23.5% of residents are under age 18<sup>(4)</sup>
- 13.5% of residents are over age 65<sup>(5)</sup>
- 18% of persons over the age of 5 have a

disability<sup>(6)</sup>

- 11.7% of households have no car<sup>(7)</sup>
- 10.5% of workers take transit to work<sup>(8)</sup>
- 3.3% walk to work<sup>(9)</sup>

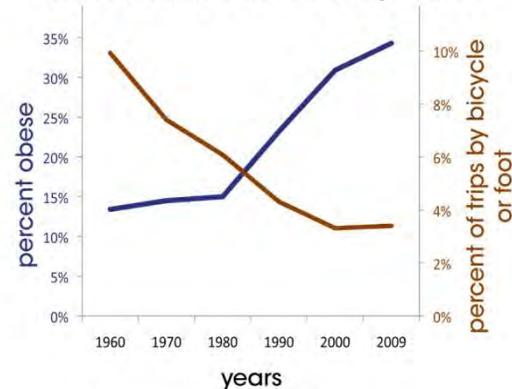


**Incomplete Street, Lacey, NJ**

Incomplete streets have a higher safety risk for all users, particularly for pedestrians, bicyclists, and transit riders. There are costs related to crashes, injuries, and fatalities, both for the victims and the community. In 2011, there were 630 fatal New Jersey motor vehicles crashes, including 144 pedestrians and 17 bicyclists; together these accounted for more than 25% of the total.<sup>(10)</sup>

Incomplete streets are typically more dependent on automobile use, which has several negative implications. Without safe facilities and convenient routes, fewer people are choosing to walk or bike to their

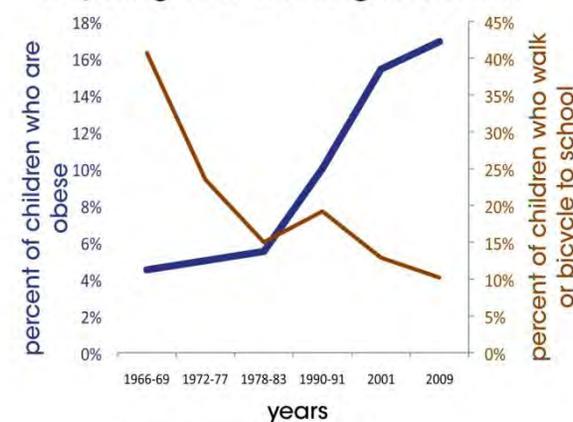
**Change in Bicycling and Walking Rates vs. Adult Obesity Rates**



**Legend:**  
 ■ = % of trips to work by bicycle or foot  
 ■ = % obese

Sources: Ogden and Carroll 2010, Census 1960, 1970, 1980, 1990, 2000, ACS 2009

**Trend in Obese Children vs. Rate of Bicycling and Walking to School**



**Legend:**  
 ■ = % of kids who bicycle or walk to school  
 ■ = % of kids who are obese

Sources: CDC, NHANES, McDonald 2007, Ogden and Carroll 2010, NHTS 2009

**Graphic Source:** Alliance for Biking and Walking. *Bicycling and Walking in the United States, 2012 Benchmarking Report*



destination. This trend can be linked to the rise of health problems associated with inactivity, such as obesity, as shown in the figures on the facing page.<sup>(11)</sup> Automobile reliance, even for short trips, is also associated with higher emissions, which contributes to respiratory disease and environmental costs.

Economically, incomplete streets and continued reliance on automobiles leads to higher fuel costs for travelers. From a community perspective, incomplete streets also results in higher infrastructure costs. With more travelers driving, communities need to provide more parking, which is a higher cost to businesses, consumers, and taxpayers. School busing is another major cost stemming from inadequate or unsafe pedestrian accommodations. Infrastructure built with only one user or mode in mind can be expensive to retrofit in the future – a cost that could be avoided by incorporating *all* modes into the initial design.

## Converging Trends

Many trends point to the timeliness of Complete Streets. It is becoming a mainstream concept at a time when many of its benefits are gaining traction and additional importance, while the costs of incomplete streets are being exacerbated. Many of these trends are leading users to seek alternative

modes of transportation, including sustained high gas prices; the national obesity epidemic and consequent promotion of more active lifestyles; environmental and sustainability concerns associated with greenhouse gas emissions; and a general increased interest in walking, biking, and more livable communities. Complete Streets designs include many low cost improvements that fit today's constrained budgets while also providing more affordable transportation options for users. Businesses and communities are also recognizing that investing in a more attractive, walkable street can help stimulate economic development and revitalize an area.

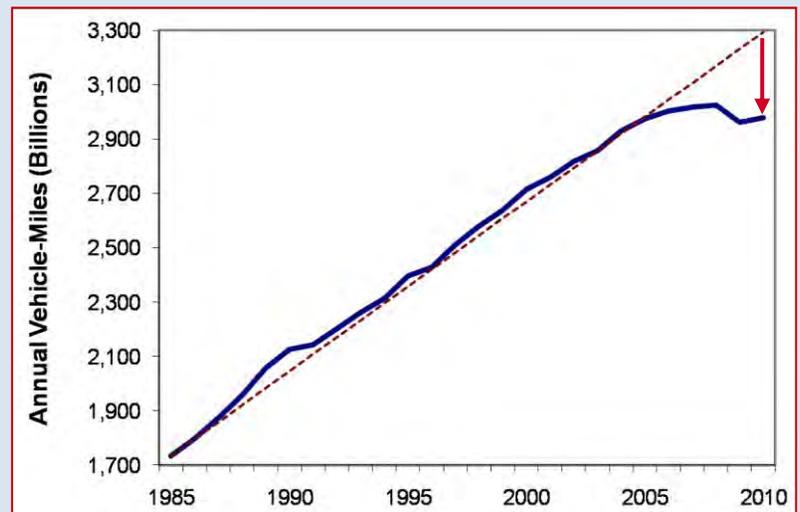
Perhaps the most significant trend to converge with the emergence of Complete Streets is the

slowing of vehicular traffic growth. Nationally, total vehicles miles traveled (VMT) began to plateau in 2004 and dropped in 2007 for the first time since 1980. Per capita driving flattened in 2000 and began declining in 2005. These represent the largest drops in VMT and VMT per capita since World War II. Furthermore, both declines occurred *before* the surge in gas prices and economic recession in 2008.<sup>(12)</sup>

The bottom line is that transportation infrastructure has a long life cycle. If designed only for drivers, the repercussions will be felt by many over a long period of years. With the numerous benefits of Complete Streets and convergence of supporting trends, now is the time to implement Complete Streets.

**Annual Vehicle Miles Traveled (VMT) in the United States began to flatten in 2004 and decreased in 2007, a major departure from the trend of the previous 20 years.**

Data source: FHWA





## DEVELOPING A COMPLETE STREETS POLICY

A Complete Streets policy directs planners and engineers to consistently plan, design, build, operate, and maintain roads with all users and all abilities in mind, and ensures that considering the needs of all users becomes the default way of doing business. A Complete Streets policy charts a new path forward. The intent of the policy is not to retrofit the entire street network at once, but rather to implement Complete Streets as routine construction, reconstruction, and repaving projects are completed.

**“The success of Haven Avenue has led our city engineer and government to implement Complete Streets on any road that is being redeveloped.”**  
*Drew Fasy  
Bike Ocean City*

A Complete Streets policy typically takes the form of a resolution or ordinance. It can be concise and simple; as brief as one page can suffice. However, it must be more than an expression of support; it must define how to turn policy into practice. Building on the National Complete Streets Coalition’s analysis of policies enacted throughout the United

States, we have identified six key ingredients for developing an effective Complete Streets policy:

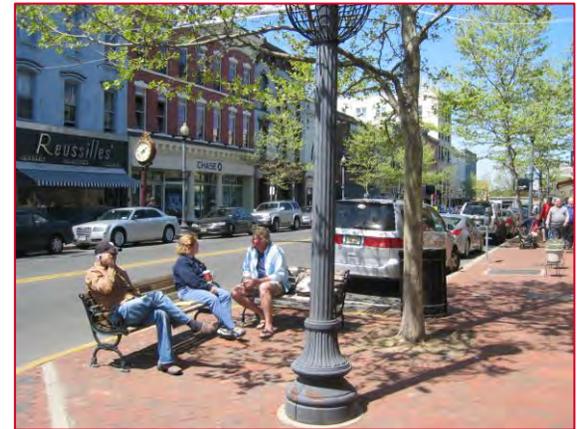
1. Purpose and intent
2. Definition of users and modes
3. Types of improvements
4. Design standards
5. Exemptions
6. Implementation plan

As with Complete Streets practices, each ingredient should be tailored to meet local needs and context. The following sections describe and provide examples of each ingredient of a strong Complete Streets policy.

### 1. Purpose and Intent

Complete Streets policies typically begin with a statement of purpose and intent, describing the goals and vision or desired outcome of the policy. This may take the form of a series of WHEREAS statements, as typically found in resolutions and legislation. These WHEREAS statements provide the basic facts and background that state the case for a course of action, including the reasons and conditions that create the need to implement the Complete Streets policy.

The benefits associated with Complete Streets may be listed to help illustrate the goals and vision, as the City of Hoboken has done:



**Active Downtown Complete Street, Red Bank, NJ**

*“...WHEREAS the full integration of all modes of travel in the design of streets and highways will increase the capacity and efficiency of the road network, reduce traffic congestion by improving mobility options, limit greenhouse gases, improve air quality, and enhance the general quality of life.”*

*-City of Hoboken  
Complete Streets Resolution Language*

Following the purpose (or vision) statement, the intent of the policy must be stated clearly and directly, using strong action words such as BE IT RESOLVED, “must” or “shall.” This example from the Township of Montclair illustrates a vision, similar to NJDOT’s, for an interconnected network serving all users, followed by a strong statement of intent:



*"...WHEREAS, Township Council supports this "complete streets" initiative and wishes to reinforce its commitment to creating a comprehensive, integrated, connected street network that safely accommodates all road users of all abilities and for all trips; now therefore*

*BE IT RESOLVED, that all public street projects, both new construction and reconstruction (excluding maintenance) undertaken by the Township of Montclair shall be designed and constructed as "Complete Streets" whenever feasible to do so ..."*

*-Township of Montclair  
Complete Streets Resolution Language*

To stress the importance of adaptability to local needs, many Complete Streets policies also include a statement to the effect that different contexts require different treatments. A rural Complete Street will often look quite different than an urban Complete Street, and justifiably so. As such, policies adopted by NJDOT, Monmouth County, and the Borough of Red Bank all include a special provision for rural areas that requires paved shoulders or a multi-use path to be included in



**Rural Town Center Complete Street, Oldwick, NJ**

all new construction projects on roadways used by more than 1,000 vehicles per day.

## 2. Definition of Users and Modes

The second key ingredient in a strong Complete Streets policy is a definition of users and modes whose needs are to be considered in the implementation of Complete Streets practices. Complete Streets policies invariably mention pedestrians and bicyclists, but also frequently include transit vehicles and passengers, persons of "all ages and abilities" (i.e., youth, older adults, and persons with disabilities), and motorized vehicles. Depending on local needs, such as land use or economic factors, a municipality may also consider specifically including freight and goods movement, emergency responders, farm vehicles, or equestrians in the definition

of users. The interrelationships between different travel modes are also important. As applicable to the local context, including safe and convenient connections to transit supports transit use and creates a complete, multi-modal network.

The Borough of Point Pleasant includes a thorough list of users in its Complete Streets policy:

*"...the benefits of Complete Streets include improving safety for all citizens, including pedestrians, bicyclists, children, children in carriages, mobility scooters, wheel chairs, older citizens, non-drivers and those that cannot afford a car or choose to live car free..."*

*- Borough of Point Pleasant  
Complete Streets Resolution Language*

## 3. Types of Improvements

The third ingredient of a strong Complete Streets policy identifies the types of improvements the policy will cover. All transportation improvements can be viewed as opportunities for implementing Complete Streets and the best policies take a "cradle-to-grave" approach, applying Complete Streets to all aspects of a street's life cycle.



# Guide to Complete Streets Policy Development



**New Sidewalk Installation, Hamilton, NJ**

In this way, completing the street becomes the default way of doing business, from initial planning and design through to construction, operation, and maintenance. As Complete Streets elements become integrated into all phases of roadway projects, implementation occurs gradually and a robust network of Complete Streets is established incrementally through routine improvements without the need for separate, costly retrofit projects.

Types of improvements may include the following:

- New construction
- Reconstruction
- Rehabilitation
- Resurfacing
- Maintenance
- Operations

- Private development
- Public Private Partnerships (PPP)

The Borough of Netcong's Complete Streets policy provides an example of a comprehensive list of improvement activities:

*"Complete Streets ... should be incorporated into all planning, design, approval, and implementation processes for any construction, reconstruction, or retrofit of streets, bridges, or other portions of the transportation network, including pavement resurfacing, restriping, and signalization operations if the safety and convenience of users can be improved within the scope of the work..."*

*- Borough of Netcong  
Complete Streets Resolution Language*

A Complete Streets policy may also stipulate accommodations for pedestrians and bicyclists

**"Jersey City's goal is to develop a complete transportation network, not just streets. Forty percent of households do not own a car, so sidewalks are a critical element for mobility."**

**Robert Cotter**  
*Director of Planning, Jersey City*

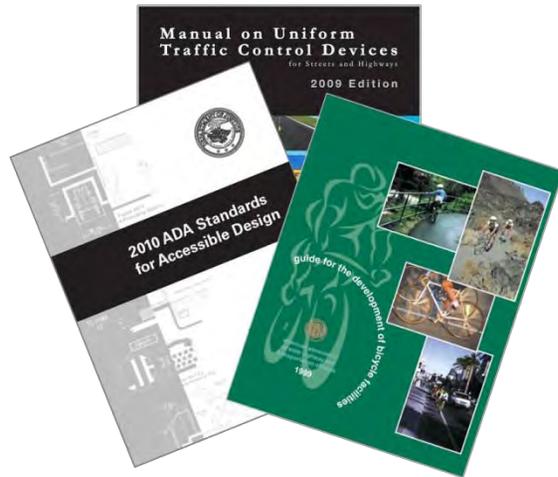


**Pedestrian Accommodations during Construction, Little Ferry, NJ**

during construction. For example, the Borough of Red Bank's and the NJDOT's Completes Street policies both include such a provision and cite NJDOT Policy #705 (Accommodating Pedestrian and Bicycle Traffic during Construction), which describes how bicycle and pedestrian traffic will be addressed during construction.

## 4. Design Standards

The fourth ingredient provided in a strong Complete Streets policy is a reference to design standards that will be followed when implementing the policy. This may simply state that the latest local and national standards and criteria will be used, or it may refer more specifically to individual design standards. Under New Jersey state law, ensuring that improvements conform with accepted standards is one of the necessary



**Example Design Standards**

conditions for providing liability protection. The NJDOT and the Borough of Red Bank policies, for example, both list specific standards that will be used during implementation:

*“Bicycle and pedestrian facilities shall be designed and contracted to the best currently available standards and practices including the New Jersey Roadway Design Manual, the AASHTO Guide for the Development of Bicycle Facilities, AASHTO’s Guide for the Planning, Design and Operation of Pedestrian Facilities, the Manual of Uniform Traffic Control Devices and others as related.”*

*“Improvements shall comply with Title VI Environmental Justice, Americans with Disabilities Act (ADA) and complement the context of the surrounding community.”*

*- Borough of Red Bank  
Complete Streets Resolution Language*

## 5. Exemptions

A critical component of a strong Complete Streets policy is to identify any exemptions to the policy and how they will be approved. This section should clearly define the exemption process so that legitimate needs can be accommodated without unintentionally



**D&R Canal Towpath, Somerset County, NJ**

creating loopholes. It should identify who or what entity is authorized to grant an exemption and require supporting evidence to be submitted to this person or entity. Ideally, this would be a senior-level department head, a committee accountable to the public, or a board of elected officials.

There are several types of legitimate exemptions that are often allowed in Complete Streets policies. As with other aspects of Complete Streets, the needs requiring exemptions may vary based on local context. Common exemptions may be based on:

- **Cost** – Exemptions may be granted where cost is disproportionate to need. A cost exemption may be determined based on a monetary threshold for the cost increase required to implement Complete Streets. The threshold may vary from policy to policy. For example, the NJDOT’s and City of Linwood’s Complete Streets policies allow exemptions if implementing Complete Streets would increase project costs by 20% or more. The municipalities of Bloomfield, Emerson, and Maywood use a lower threshold, allowing exemptions when costs would escalate by 5%.
- **Equivalent facility** – Where a reasonable, equivalent facility is available or planned

as an alternative for a specific user group, an exemption may be warranted. For example, NJDOT allowed an exemption for the Route 22 bridge over Chestnut Street in Union because pedestrians can use an underpass to traverse the intersection.

- Need – If there is evidence documenting the absence of current and future need, an exemption may be appropriate.
- Critical safety issue – Exemptions may be allowed where a critical safety issue requires immediate intervention and the inclusion of Complete Streets would compromise the safety or timing of a project. Examples include high priority rehabilitation projects where a bridge or roadway is at risk of collapse or failure. The NJDOT policy, for example, includes such a safety-related exemption.
- Environmental impact – Exemptions may be necessary in environmentally sensitive areas, such as wetlands, or where restrictions on impervious cover limit or constrain project alternatives.
- Context sensitivity – Some policies may exempt Complete Streets requirements in order to preserve the natural, cultural, or historic character of a roadway. For example, Monmouth County’s policy considers exemptions for roadways

designated as County or State Scenic Roads and Historic or Cultural Byways. Such roadways may not be bicycle compatible due to narrow lane widths and high traffic speeds. However, adding a shoulder to accommodate bicycle use may detract from the historic character of the roadway.



*Historic Farmland Byway, Upper Freehold, NJ*

- User restrictions – A common exemption excludes projects where specific users are prohibited, such as non-motorized users prohibited from limited access highways.

The Borough of Netcong’s Complete Streets policy illustrates a clear designation of high-level authority and the approval process with several typical exemptions:

*“...however, such infrastructure may be excluded, upon written approval made publically available by the Netcong*

*Borough Administrator with input from the Borough Council, where documentation and data indicate that:*

- *Use by non-motorized users is prohibited by law;*
- *The cost would be excessively disproportionate to the need or probable future use over the long term;*
- *Significant adverse environmental impacts outweigh the positive effects of the infrastructure.”*

*-Borough of Netcong*

*Complete Streets Resolution Language*

## 6. Implementation Plan

Finally, a strong Complete Streets policy should include an implementation plan providing guidance on how the policy will be put into practice. The first step of an implementation plan typically calls for reviewing and updating current procedures and standards to ensure that they comply with and support the new policy’s objectives and commitment to developing a network of Complete Streets. Documents requiring review and modification may include design standards or manuals; master plan documents; zoning and subdivision codes; laws and ordinances; and a variety of engineering, planning, maintenance, and operations procedures.



Once existing documents are updated, the implementation plan should also include staff training on the new procedures and standards. Beyond simply providing guidance on revised procedures, the educational component of the implementation plan also helps to ingrain the concept of Complete Streets into the culture of the agency or municipality and to foster a commitment to balancing the needs of all roadway users.



**The New Jersey Department of Transportation is bringing Complete Streets training directly to those who will write, adopt, and implement Complete Streets policies and improvements in New Jersey.**

The Borough of Netcong’s Complete Streets policy provides an example of a detailed implementation plan, including integrating complete streets into ordinances, regulations, zoning, master planning, and educating town officials:

*“BE IT FURTHER RESOLVED that municipal departments and professionals, such as Department of Public Works, municipal planner, engineer, and Zoning Officer, should review and either revise or develop proposed revisions to all appropriate plans, zoning and subdivision codes, laws, procedures, rules, and regulations, including subsequent updates to the Borough of Netcong Master Plan, to integrate, accommodate, and balance the needs of all users in all projects. Information and education will be provided to the municipal planning and zoning (combined) board to enhance understanding and implementation of Complete Streets concepts as part of design and plan review.”*

*-Borough of Netcong  
Complete Streets Resolution Language*

Performance monitoring and reporting can also be integrated into the implementation

plan. Developing and tracking performance metrics can be a useful tool to set tangible goals and measure the progress and success of the policy. Performance metrics could include items such as the percentage of street length with sidewalks, miles of sidewalk or bike lanes installed, counts of pedestrians and bicyclists, number and severity of crashes, or number of street trees planted. Careful crafting of the performance metrics, beyond basic measurements and quantities, helps ensure that the data provide reliable measures of the success of the policy.

As performance measures are monitored, the context of the data should also be considered. This aspect of the monitoring is particularly important for metrics that simply track the installation of new facilities. Examining the context provides feedback on how meaningful the improvements are to users. Installing 500 linear feet of sidewalk near a school, for example, may have a greater impact on users than the same installation on a low-volume rural road.

The Alan M. Voorhees Transportation Center (VTC) is currently preparing a Complete Streets evaluation framework for NJDOT, which may provide guidance on best practices for monitoring the implementation and success of Complete Streets policies.



## LIABILITY

The perception of creating liability by accommodating bicycle and pedestrian activity is a common one and this perception is frequently cited as an impediment to adopting Complete Streets policies and making Complete Streets improvements.

The question is: does the pursuit of safety by implementing Complete Streets plans, design, and construction of improvements expose an agency to liability? The short answer is no – the New Jersey Tort Claims Act, N.J.S.A. 59:1-1 et seq. provides immunity from tort liability. It is critical to note that mode of travel is irrelevant to liability and immunity, so improvements that safely accommodate transit, bicycle and pedestrian travel are not liability-inducing by themselves.

**The mode of travel is irrelevant to liability and immunity; improvements that safely accommodate transit, bicycle and pedestrian travel are not liability-inducing by themselves.**

In order for immunity to attach, a series of conditions must be met. The plan, design or improvement must be:

- Approved by an official body
- Approved by a public employee exercising discretion, and
- Be in conformity with standards previously approved by authorized entity or person.

This immunity is mode-neutral and once attached is perpetual.

The approved standards include both national and New Jersey-specific guidelines such as:

- AASHTO Guide for Planning, Design, and Operation of Bicycle Facilities
- Manual on Uniform Traffic Control Devices (MUTCD)
- ADA Standards for Accessible Design
- NJDOT Roadway Design Manual
- NJDOT Bicycle and Pedestrian Planning and Design Guidelines

### **“59:4-6. Plan or design immunity**

- a. Neither the public entity nor a public employee is liable under this chapter for an injury caused by the plan or design of public property, either in its original construction or any improvement thereto, where such plan or design has been approved in advance of the construction or improvement by the Legislature or the governing body of a public entity or some other body or a public employee exercising discretionary authority to give such approval or where such plan or design is prepared in conformity with standards previously so approved.”**

*New Jersey Tort Claims Act,  
N.J.S.A. 59:1-1 et seq.*



## POLICY ADOPTION

### Policy Adoption: Building Local Support

Drafting a Complete Streets policy is not difficult, but gaining local support for its adoption can be more challenging. Some of the keys to building support are finding a local champion to promote Complete Streets, educating local officials and the public on the benefits of Complete Streets, engaging a broad base of stakeholders from the outset, and linking the Complete Streets effort to other community initiatives.

### Finding a Local Champion

Most communities that adopt Complete Streets policies have had a strong local champion behind the effort. This may be an influential individual, such as an elected official or citizen advocate, or an organization, such as a bicycle club or pedestrian safety advocacy group. Having a mayor as a Complete Streets champion has made the difference in several New Jersey communities including Montclair. In Linwood, the Environmental Commission and the local Green Team were instrumental in promoting Complete Streets. In Lawrence Township, the Sustainable Mobility Task Force initiated the discussion and helped move a resolution forward.

### Educating Local Officials and the Public

Complete Streets is still a new concept for most local officials and the public. As with any new idea involving changes in the community, some people are skeptical, uncertain and even fearful of a Complete Streets policy and its implications. To get off on the right foot, local supporters should make an effort to educate the community and decision-makers about Complete Streets. They need to know just what the new policy will mean and its benefits. Equally important, they need reassurance about what it won't do, such as require sidewalks or bike lanes to be built on every street in the municipality.

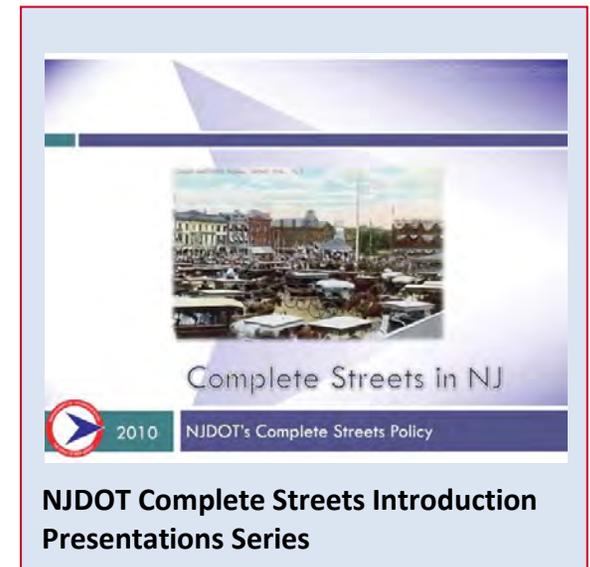
**“Initially we went to the neighborhoods ... looking for their support. They’ve now become our biggest supporters. They’ve now become our poster children for what streets can be when they are complete.”**

***Drew Fasy,***  
*Bike Ocean City*

A public education campaign can be as simple as a letter to the editor of the local newspaper outlining the benefits of Complete Streets (see the Introduction section of this guide for a summary). Visits to local officials to brief them

on the proposed policy are useful in garnering support, as well as identifying potential objections that may need to be overcome.

In 2010, NJDOT prepared a series of presentations to introduce the Complete Streets concept to advocates, stakeholders and decision makers. The presentations were made available in several formats and received a wide distribution. Some local champions used the presentations to begin the process of building support for adoption in their communities. The presentations are currently available [online](#) (see References section).



In a larger city, or in a municipality with little past experience providing bicycle and



## Guide to Complete Streets Policy Development

pedestrian access, a more comprehensive approach may be needed. Strategies could include preparing a fact sheet, a press kit, or a social media campaign. Holding an event such as a community forum, festival, or benefit race can also help to build awareness. The West Windsor Bicycle and Pedestrian Alliance, for example, has a booth at the weekly community farmers' market to generate support and sign up new members. In Linwood, a community survey was used to help develop the local Bicycle/Pedestrian Plan (a precursor to their Complete Streets policy), and a public meeting was held to explain the policy. In Trenton and Essex County,



*West Windsor, NJ*

**Organizations such as the West Windsor Bicycle and Pedestrian Alliance conduct educational workshops for the public.**

advocates built support among a broad coalition of disparate groups around the common interest of a safe, active and healthy community.

Using a “myth-busting” format in educational materials can help to address common misconceptions about Complete Streets:

- Concerns about the cost of the policy can be addressed by stressing the incremental aspect of the policy (to be implemented over time as new projects occur), the low cost of restriping during routine street maintenance projects, and mechanisms for requiring developers to complete the streets as new development occurs;

**“Complete Streets does not have to be expensive and it HAS NOT been expensive here in Hoboken.”**

*Dawn Zimmer  
Mayor, Hoboken*

- Concerns about liability and maintenance of new facilities can be addressed by explaining how New Jersey law provides immunity from liability provisions (see page 12);
- Property owners' concerns that sidewalk installation will affect their lawns, landscaping, and the appearance of their

street may also need to be addressed by explaining that the policy is sensitive to context. For instance, on low speed roads in low density residential areas, sidewalks might not be needed. If they are needed, alternatives are available for design and materials (such as asphalt) to help sidewalks blend into the local context and landscape.

To increase awareness and acceptance of the concept, local presentations can incorporate photographs of sample Complete Streets already present in the community or in nearby communities.

The education campaign should focus on key issues that resonate locally. In New Jersey, pedestrian safety tops the list of issues that have galvanized local support for Complete Streets. Other key issues important to New Jersey policy adopters have included providing transportation alternatives, improving the local quality of life and the business climate by having a walkable downtown, saving money on school busing and parking facilities, and the potential to enlist developers in funding needed improvements.<sup>(13)</sup> Ensuring mobility for those without autos was a factor in Jersey City, while reducing speeding was a consideration in Lawrence Township.



**Implementing a Complete Streets Policy earns 20 points towards Sustainable Jersey Certification, which provides eligibility for grants.**



The ability to get a point towards NJDOT Local Aid grant eligibility and points towards Sustainable Jersey Certification was another selling point for policy adoption in several municipalities.

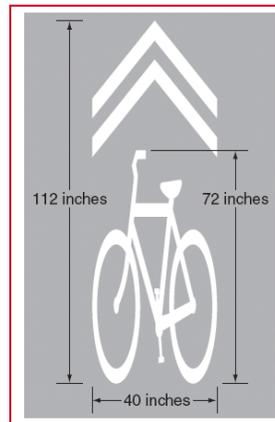
Providing statistics on pedestrian and bicycle crashes or childhood obesity rates can also help open people’s eyes to the cost of continuing with current ways of designing (incomplete) streets. Data on obesity rates can be found at the Center for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)), as well as in resources at the [New Jersey Bicycle and Pedestrian Resource Center](#) and in the [Bicycling and Walking in the United States 2012 Benchmarking Report](#).

### Involving Stakeholders

Another key to building local support is to make sure key stakeholders are aware of the

Complete Streets initiative from the start—including potential opponents. A common mistake is to wait too long before introducing the idea to the Engineering or Public Works Departments, who will be key players in implementing the policy. Advocates should be prepared to demonstrate that both NJDOT and current national standards support Complete Streets, and that policies can be implemented with full consideration of safety requirements, liability concerns, and specific local conditions. Having these conversations early on is critical, so that engineering departments are part of the process.

For example, explaining that the High Intensity Activated crossWALK (HAWK) signal (also known as a pedestrian hybrid beacon) and sharrow symbol are now included in the most recent update of the Manual on Uniform Traffic Control Devices (MUTCD), can help get the municipal engineer to support implementation of these and other Complete Streets improvements.



***Sharrow Marking Standards, MUTCD 2009***



***HAWK Signal in Westfield, NJ***

Other stakeholders that should be informed and if possible, engaged in the Complete Streets initiative include:

- Planning staff and Planning Board
- Elected officials
- Health professionals and advocates
- Business owners, merchants’ groups and downtown development groups
- Developers
- Civic groups
- Religious groups
- Youth organizations
- Parent Teacher Organizations and School Boards
- Older adults and senior advocacy groups
- Persons with disabilities
- Human service organizations
- Public transit providers



# Guide to Complete Streets Policy Development

Briefings to key stakeholders can help promote understanding and generate support. In Monmouth County and Lawrence Township, for instance, presentations were made to the Planning Board prior to adoption of the Complete Streets policy.

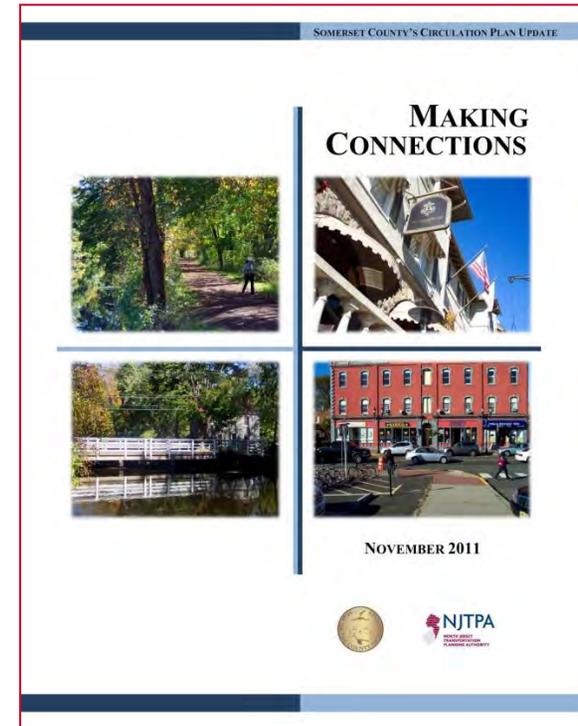


**Project Stakeholder Field Visit, Palisades Park, NJ**

Another simple approach is to invite representatives of these groups to attend a community forum or workshop on Complete Streets. A fact sheet on the initiative can be included in these invitations. Representatives could also be invited to join a Complete Streets coalition or task force. Forming a task force at this point sets the stage for creating an advisory committee that can help implement the policy once it is adopted.

## Linking Complete Streets to Ongoing Local Initiatives

Complete Streets initiatives sometimes arise as part of a master plan or other major effort to promote multi-modal transportation in a community. For example, in Jersey City, a Complete Streets policy was enacted following adoption of a new Circulation Element; in Lawrence Township, the policy followed adoption of a Sustainability Element. In West Windsor, a Bicycle/Pedestrian Facilities Plan was adopted into the Master Plan in 2004 and became a template for subsequent decision-making; a Complete Streets policy was seen as the natural next step. The adoption of Complete Streets policies in Princeton Borough and Princeton Township followed the Princeton Joint Pedestrian and Bicycle Advisory Committee's Recommendations Regarding Shared Lane Markings for Bicycles, which proposed a network of bicycle sharrow routes through both municipalities. In Atlantic City, the policy followed the Casino Reinvestment Development Authority's (CRDA) adoption of a new Master Plan with a bicycle and pedestrian component. In Monmouth County, there had long been an unstated policy to consider all modes of travel, but there was a desire to adopt a formal policy so that these types of projects would become the default way of doing business, integrating Complete Streets into everyday practice at the County.



**Making Connections**  
*Somerset County's Circulation Plan Update*



## IS YOUR TOWN READY FOR COMPLETE STREETS? TAKE THE SELF-ASSESSMENT BELOW AND FIND OUT!

In our community:

- There is local interest in walking and bicycling or significant pedestrian activity
- We have a local champion (individual or organization) to support Complete Streets
- Initial stakeholder outreach shows support for Complete Streets in the community
- Other successful bicycle and pedestrian efforts have been completed or are underway, such as a Bicycle/Pedestrian Plan, Multi-Modal Circulation Element, or pilot projects incorporating bicycle and pedestrian accommodations

Total your check marks to find your readiness score.

**0 – Not ready; consider forming a committee to learn more about Complete Streets and identify organizations in the community that could help. NJDOT can help by providing your group with a presentation and video about Complete Streets.**

**1-2 – Ready to begin a Complete Streets effort, but may need some groundwork first. Review the suggestions in this section of the guide to build a solid foundation for your effort.**

**3-4 – Ready to proceed! Review the guide to help determine the logical next steps—whether drafting a policy resolution for your council’s consideration, forming a task force, or reaching out to local stakeholders and the public.**





# Guide to Complete Streets Policy Development

## IMPLEMENTING THE POLICY

A Complete Streets policy directs professional staff to consistently design with all road users in mind. In this way, Complete Streets becomes the new “default” way of doing business. But how does this work in practice?

**“Adopting and implementing a complete streets policy takes persistence, patience, and creativity. The communities that have done so report rewards ranging from safety improvements to creation of projects of more lasting value.”<sup>(14)</sup>**

***Complete Streets: Best Policy and Implementation Practices***  
*American Planning Association*

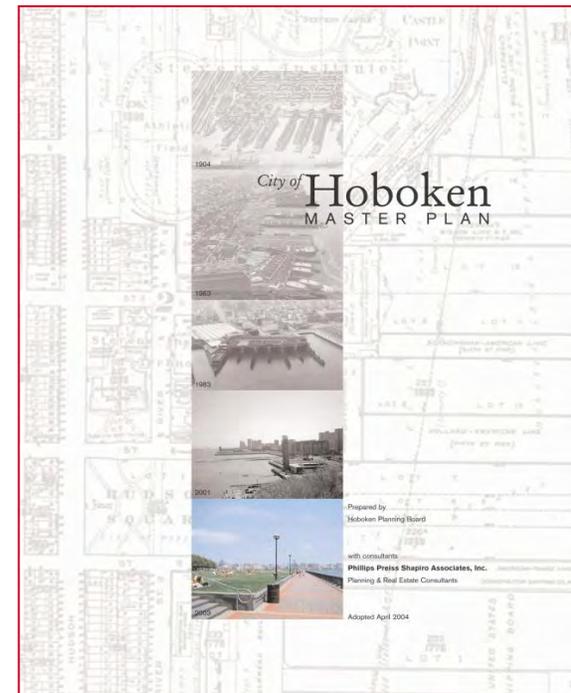
There are four main elements in implementing a Complete Streets policy: 1) updating local policies and procedures to incorporate Complete Streets; 2) building institutional capacity through training, communication, and monitoring; 3) forming partnerships to help advance the policy, and 4) pilot projects that build support and provide experience with the implementation process.

## Updating Local Policies and Procedures

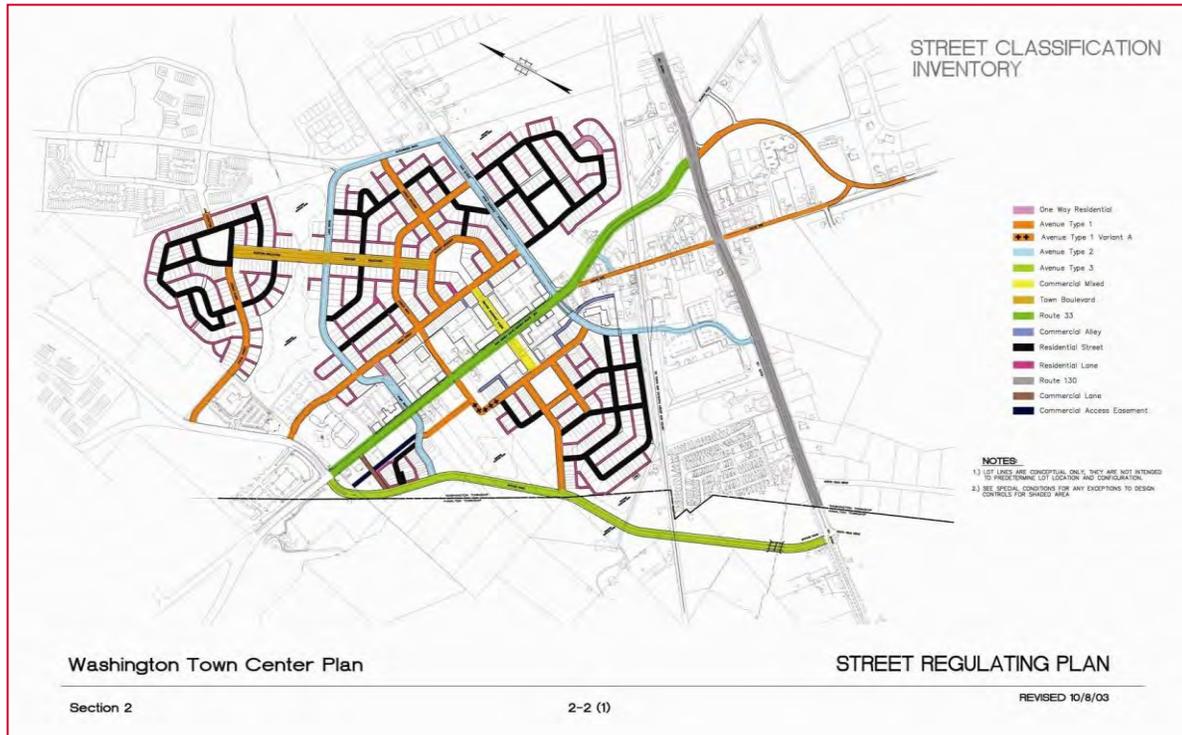
In any community, there are a variety of local policies, procedures, plans and programs that may need to be revised to incorporate the principles of Complete Streets. Examples include:

- Roadway design standards – where necessary, these can be modified to allow for typical sections that include bicycle lanes, adequate shoulders, narrower travel lanes, raised medians, refuge islands and traffic calming features. The standards may also reference allowable mid-block crosswalk treatments, multi-modal intersection treatments, minimum standards for bus stop design, and pedestrian-scale lighting.
- Operating and maintenance practices – such as signal operations, resurfacing, street cleaning and snow removal. Street resurfacing and utility upgrades provide opportunities to add or improve sidewalks, for instance.
- Project scoping process for capital projects – some communities have developed checklists of Complete Streets features to be considered in road construction, reconstruction and rehabilitation projects.

- Capital programming procedures – criteria for project prioritization could be modified to incorporate Complete Streets as a consideration.
- Plan documents – can be updated to include Complete Streets goals, objectives, and strategies.
- Zoning and subdivision regulations – can be updated to spell out new requirements for developers and property owners.
- Review of development proposals and site plans – can be updated to ensure that any Complete Streets requirements are met.



***Master Plan for Hoboken, NJ***



**Street Regulation Plan, Washington Town Center Master Plan, Robbinsville, NJ**

Like the process of building Complete Streets, updating these policies can be done incrementally so that the process is not burdensome. Some municipalities have formed a Complete Streets committee or task force to take on the job of reviewing local policies and procedures to see what needs to be revised. In Lawrence Township, after the Complete Streets policy was adopted, a written policy was developed spelling out how Complete Streets would be implemented.

### Plan Documents

Local planning can be an important tool for putting the Complete Streets policy into effect.

If a municipality has a Circulation Element, it may be the logical place to include the Complete Streets concept and goals for the network. West Windsor plans to update its Circulation Element to include Complete Streets during the next Master Plan revision. Some municipalities have a specific Bicycle and Pedestrian Plan, which would be another place to address Complete Streets.

**“The places that have moved beyond the initial policy statement have usually done so by creating a more detailed transportation plan, design manual, or design standards, often while working to apply complete streets principles to specific projects.”<sup>(15)</sup>**

***Complete Streets: Best Policy and Implementation Practices***  
*American Planning Association*

The Circulation Element or Bicycle and Pedestrian Plan can help identify needs and priorities for Complete Streets retrofit projects that might not occur otherwise. These plans can help ensure that future Complete Streets will link up to form an integrated network. Other types of plans that might be updated to include Complete Streets are redevelopment plans, area or neighborhood plans, or plans for specific corridors.

### Building Complete Streets into the Development Process

Zoning and the development approval processes are also important avenues for implementing Complete Streets, especially in growing communities.



# Guide to Complete Streets Policy Development

- Zoning and subdivision regulations can be modified to require that sidewalks and bikeways be built in accordance with local plans.
- Bicycle parking facilities can be required along with automobile parking.
- Connectivity standards can be included to provide for mobility between neighboring developments. At a minimum, bicycle and pedestrian connectivity can be required.
- Access standards can be enacted to limit driveway interruptions and improve pedestrian and bicycle mobility with continuous, uninterrupted sidewalks and bike lanes.
- Private developers can be required to provide access for bus services and waiting areas for bus passengers.
- Aesthetic standards governing signs, building facades and landscaping can enhance the quality of the walking environment.
- Crime Prevention through Environmental Design (CPTED) standards can help create greater personal security for pedestrians.

Linwood used its policy to encourage a developer to make the Cornerstone Commercial property accessible to bicyclists and pedestrians, with linkages to surrounding facilities.<sup>(16)</sup>

## Building Institutional Capacity

Along with updated policies and procedures, it is important to ensure that the people who will apply those procedures have a thorough understanding of what is required and a commitment to Complete Streets. This may require training staff, briefing elected officials and boards, monitoring the implementation process (including exemptions to the policy), and providing public information on an ongoing basis.

To help fill this educational need, NJDOT sponsored a series of 12 comprehensive Complete Streets workshops for municipal and county staff throughout the state in the spring of 2012, providing support to those who will write, adopt, and implement Complete Street policies and improvements.



*NJDOT Complete Streets Workshop Curriculum*

Some municipalities have found it useful to set up a Complete Streets committee or task force to spearhead the public information campaign, review project designs and monitor exemptions to the policy. Over time, as Complete Streets becomes institutionalized, the committee may not need to be as active. In Linwood, the local Green Team has assumed this role.

## Forming Partnerships to Advance the Policy

Partnerships within the community and with other jurisdictions are also key to creating an integrated network of Complete Streets. Within the community, business associations, private developers and civic groups can be important allies and provide access to additional resources for implementation.

Partnerships with neighboring jurisdictions are also important to ensure continuity across boundaries. Similarly, partnerships between local governments, counties, and NJDOT can help to achieve consistent design treatments for roads operated by different levels of government, including multi-modal treatments for intersections involving more than one jurisdiction. Lawrence and Hopewell Townships, working with Mercer County and NJDOT, corporate sponsors, schools, and many others, formed a unique public-private

partnership to develop a 22-mile long trail that links parks, employment centers, schools and downtown destinations in the two communities. West Windsor has partnered with Mercer County and NJDOT to provide bicycle and pedestrian improvements.

In Ocean City, the NJDOT's Route 52 bridge replacement project is an example of synergy between local and state Complete Streets policies to create a more robust, complete network. The new bridge project features a separated lane for pedestrians and bicyclists, which ties into Ocean City's Haven Avenue bike boulevard, and other pedestrian amenities that complement the city's own

Complete Streets efforts.

## Initiating Pilot Projects

Pilot projects—whether a streetscape improvement, a bicycle route, or filling a gap in the sidewalk network—can help to demonstrate the benefits of Complete Streets, as well as providing experience with the implementation process. Such projects also provide synergy with other local goals, such as economic development, community revitalization, or cost savings. For instance, the City of Pleasantville is looking into the prospect of reducing school busing costs by building a bicycle/pedestrian bridge that would connect local schools.

### Project to Complete Missing Sidewalk in Plainsboro, NJ

Before



After



## LESSONS LEARNED

**Advice from municipalities that have implemented Complete Streets includes the following:**

- 1. Work closely with engineering staff – contact and coordination are essential.**
- 2. Keep the policy flexible to work within constraints, such as limited right of way, cost, and connection with local context.**
- 3. Inform the public about the Complete Streets initiative. Use visual materials to show them what Complete Streets could look like and which streets might be affected.**
- 4. Respond to and address concerns from the public and the local business community; update and revise the policy and implementation plan as needs and conditions change.**



# Guide to Complete Streets Policy Development

## APPENDIX A: REFERENCES

### New Jersey Department of Transportation (NJDOT)

- NJDOT Complete Streets Home Page. <http://www.state.nj.us/transportation/eng/completestreets/>
- NJDOT Complete Streets Presentations. NJDOT. 2010. <http://bprc.rutgers.edu/wordpress/index.php/complete-streets-2/>
- NJDOT Planning and Design Guidelines for Bicycle Compatible Roadways and Bikeways. NJDOT. 1996. <http://www.state.nj.us/transportation/publicat/pdf/BikeComp/introtofac.pdf>
- NJDOT Planning and Design Guidelines for Pedestrian Facilities. NJDOT. 1996. <http://www.state.nj.us/transportation/publicat/pdf/PedComp/pedintro.pdf>
- New Jersey Department of Transportation Division of Local Aid & Economic Development Federal Aid Handbook. Federal Aid Quality Improvement Team, NJDOT. May 2010. <http://www.nj.gov/transportation/business/localaid/documents/FEDERALAIDHANDBOOK.pdf>

### American Association of State Highway and Transportation Officials (AASHTO)

- *Guide for Development of Bicycle Facilities, 4<sup>th</sup> Edition*. AASHTO. 2012. [https://bookstore.transportation.org/collection\\_detail.aspx?ID=116](https://bookstore.transportation.org/collection_detail.aspx?ID=116)
- *Guide for the Planning, Design, and Operation of Pedestrian Facilities, 1<sup>st</sup> Edition*. AASHTO. 2004. [https://bookstore.transportation.org/item\\_details.aspx?id=119](https://bookstore.transportation.org/item_details.aspx?id=119)
- *A Policy on Geometric Design of Highways and Streets, 6<sup>th</sup> Edition*. 2011. [https://bookstore.transportation.org/item\\_details.aspx?id=1917](https://bookstore.transportation.org/item_details.aspx?id=1917)

### Federal Highway Administration (FHWA)

- *Context Sensitive Solutions National Dialog Final Report*. 2010. <http://cssnationaldialog.org/documents/CSS-National-Dialog-Final-Report.pdf>
- *Manual on Uniform Traffic Control Devices*. 2009. <http://mutcd.fhwa.dot.gov/>
- *Designing Sidewalks and Trails for Access, Part II, Best Practices Design Guide*. 2001. <http://www.fhwa.dot.gov/environment/sidewalk2/index.htm>

- *Pedestrian Road Safety Audit Guidelines and Prompt Lists* <http://safety.fhwa.dot.gov/intersection/resources/fhwasa09027/resources/Pedestrian%20Road%20Safety%20Audit%20Guidelines.pdf>
- *Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations*. 2010. <http://www.dot.gov/affairs/2010/bicycle-ped.html>
- *Highway Design Handbook for Older Drivers and Pedestrians* <http://www.fhwa.dot.gov/publications/research/safety/humanfac/01103/index.cfm>
- *USDOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations* [http://www.fhwa.dot.gov/environment/bikeped/policy\\_accom.htm](http://www.fhwa.dot.gov/environment/bikeped/policy_accom.htm)
- *Street Design: Part 1 – Complete Streets* from *Public Roads* magazine. Robin Smith, Sharlene Reed, and Shana Baker. Federal Highway Administration (FHWA). 2010. <http://www.fhwa.dot.gov/publications/publicroads/10julaug/03.cfm>



## Institute of Transportation Engineers (ITE)

- *Complete Streets: We Can Get There from Here* - Authored by John LaPlante and Barbara McCann in the journal of the Institute of Transportation Engineers. May 2008.  
<http://www.completestreets.org/webdocs/resources/cs-ite-may08.pdf>
- *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities: An ITE Recommended Practice*. 2010. Available at [www.ite.org/css](http://www.ite.org/css).
- *Traffic Calming: State of the Practice*. 1999.  
<http://www.ite.org/traffic/tcstate.asp#tcso>

## National Complete Streets Coalition

- Complete Streets Fact Sheets (11 fact sheets + 5 sheets on implementing Complete Streets)  
<http://www.completestreets.org/complete-streets-fundamentals/factsheets/>
- National Complete Streets Coalition Member Compact  
<http://www.completestreets.org/webdocs/cs-coalition-membership.pdf>

## American Planning Association

- *Complete Streets: Best Policy and Implementation Practices*  
<http://www.planning.org/pas/brochure/pdf/report.pdf>
- *Complete Streets: Best Policy and Implementation Best Practices – Chapter 5: Making the Transition*. Ed. Barbara McCann and Suzanne Rynne. Planners Advisory Service Report 559. 2010.  
<http://www.completestreets.org/webdocs/resources/cs-bestpractices-chapter5.pdf>

## ADA Compliance

- ADA-ABA Accessibility Guidelines  
<http://www.access-board.gov/ada-aba/final.cfm#routes>
- *ADA Compliance at Transportation Agencies: A Review of Practices*  
[http://onlinepubs.trb.org/onlinepubs/archives/NotesDocs/2007%28249%29\\_FR.pdf](http://onlinepubs.trb.org/onlinepubs/archives/NotesDocs/2007%28249%29_FR.pdf)
- Department of Justice ADA toolkit  
<http://www.ada.gov/pcatoolkit/toolkitmain.htm>
- FHWA - *DRAFT Accessibility Guidance for Bicycle and Pedestrian Facilities, Recreational Trails, and Transportation Enhancement Activities*

[http://www.fhwa.dot.gov/environment/recreationaltrails/guidance\\_accessibility.htm](http://www.fhwa.dot.gov/environment/recreationaltrails/guidance_accessibility.htm)

- *Accessible Public Rights-of-Way Guidelines*. Washington, D.C.: U.S. Access Board. 1999. Available at [www.access-board.gov/prowac/guide/PROWGuide.htm](http://www.access-board.gov/prowac/guide/PROWGuide.htm). 2005 draft guidelines available at [www.access-board.gov/prowac/draft.htm](http://www.access-board.gov/prowac/draft.htm). See also the Public Rights-of-Way homepage, [www.access-board.gov/prowac](http://www.access-board.gov/prowac), and the sidewalk accessibility videos at [www.access-board.gov/prowac/video/index.htm](http://www.access-board.gov/prowac/video/index.htm).

## Safe Routes to Schools

- NHTSA website  
<http://www.nhtsa.gov/people/injury/ped/bimot/bike/Safe-Routes-2002/index.html>
  - Bikeability checklist  
[http://www.bicyclinginfo.org/pdf/bikeability\\_checklist.pdf](http://www.bicyclinginfo.org/pdf/bikeability_checklist.pdf)
  - Walkability checklist  
[http://katana.hsrrc.unc.edu/cms/downloads/walkability\\_checklist.pdf](http://katana.hsrrc.unc.edu/cms/downloads/walkability_checklist.pdf)
- *SRTS Noteworthy Practices Guide: A Compendium of State SRTS Program Practices*  
<http://www.saferoutesinfo.org/sites/default/files/resources/SRTS%20Noteworthy%20Practices%20Guide%20FINAL.pdf>



# Guide to Complete Streets Policy Development

- Other Federally supported websites:
  - <http://guide.saferoutesinfo.org/>
  - <http://www.walktoschool.org/>
  - <http://www.iwalktoschool.org/>

## Easter Seals

- Bus Stop Toolkit  
<http://www.oregon.gov/ODOT/PT/docs/ada/ada-bus-stop-toolkit-aug2011.pdf>

## Design Resources

- Transportation Research Board (TRB). National Cooperative Highway Research Program (NCHRP). 2008. *Multimodal Level of Service Analysis for Urban Streets*. NCHRP report 616. Available at [http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_rpt\\_616.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_616.pdf).
- Charlotte (N.C.), City of. 2007. *Urban Street Design Guidelines*. Available at <http://charmeck.org/city/charlotte/Transportation/PlansProjects/Pages/Urban%20Street%20Design%20Guidelines.aspx>.
- Association of Pedestrian and Bicycle Professionals and LEJ Graphics. 2002. *Bicycle Parking Guidelines: A Set of Recommendations from the Association of Pedestrian and Bicycle Professionals*. Washington D.C.: Association of Pedestrian and Bicycle Professionals. Available at

[www.apbp.org/resource/resmgr/publications/bicycle\\_parking\\_guidelines.pdf](http://www.apbp.org/resource/resmgr/publications/bicycle_parking_guidelines.pdf)

- *U.S. Traffic Calming Manual*. Reid Ewing and Steven J. Brown. 2009.  
<http://www.planning.org/apastore/Search/Default.aspx?p=3945>
- *NACTO Urban Bikeway Design Guide*. National Association of City Transportation Officials. 2011.  
<http://nacto.org/cities-for-cycling/design-guide/>
- *PBIC Case Study Compendium. Pedestrian and Bicycle Information Center*. 2010.  
[http://drusilla.hsrrc.unc.edu/cms/downloads/pbic\\_case\\_study\\_compendium.pdf](http://drusilla.hsrrc.unc.edu/cms/downloads/pbic_case_study_compendium.pdf)
- *Smart Transportation Guidebook*. PennDOT/NJDOT. 2008.  
<http://www.state.nj.us/transportation/community/mobility/pdf/smarttransportationguidebook2008.pdf>

## Alan M. Voorhees Transportation Center at Rutgers University

- *VTC/BPRC Complete Streets Home Page*.  
<http://bprc.rutgers.edu/wordpress/index.php/complete-streets-2/>
- *Constructing, Maintaining and Financing Sidewalks in New Jersey*. Alan M. Voorhees Transportation Center (VTC) and Charles R. Carmalt, ACIP. 2006.  
[http://bprc.rutgers.edu/wordpress/wp-](http://bprc.rutgers.edu/wordpress/wp-content/uploads/2012/08/Sidewalks_in_New_Jersey_Final_Report.pdf)

[content/uploads/2012/08/Sidewalks\\_in\\_New\\_Jersey\\_Final\\_Report.pdf](http://bprc.rutgers.edu/wordpress/wp-content/uploads/2012/08/Sidewalks_in_New_Jersey_Final_Report.pdf).

- *Funding Pedestrian and Bicycle Planning, Programs and Projects: A Compilation of Funding Sources*. New Jersey Bicycle and Pedestrian Resource Center, VTC. March 2009. [http://bikeped.rutgers.edu/cgi-bin/ImageFolio43/imageFolio.pl?action=view&link=Funding/Documents&image=VTC\\_2009\\_Funding\\_Bicycle\\_Pedestrian\\_Projects\\_NJ.pdf&url=1](http://bikeped.rutgers.edu/cgi-bin/ImageFolio43/imageFolio.pl?action=view&link=Funding/Documents&image=VTC_2009_Funding_Bicycle_Pedestrian_Projects_NJ.pdf&url=1)
- *NJ Complete Streets Summit Summary Report*. 2010.  
<http://bprc.rutgers.edu/wordpress/index.php/2010-complete-streets-summit/#tab-1>
- *New Jersey Complete Streets Policies*. The Alan M. Voorhees Transportation Center, Rutgers University. 2012.  
<http://bprc.rutgers.edu/wordpress/index.php/complete-streets-2/>



## New Jersey Bicycle and Pedestrian Resource Center

The New Jersey Bicycle and Pedestrian Resource Center provides primary research, education, and information about best practices in policy and design in creating a safer and more accessible walking and bicycling environment.

### Contact Information:

New Jersey BPRC Help Desk

Phone: (848) 932-6814

[bikeped@ejb.rutgers.edu](mailto:bikeped@ejb.rutgers.edu)

[www.njbikeped.org](http://www.njbikeped.org)





## APPENDIX B: NJDOT COMPLETE STREETS CHECKLIST

### Background

The New Jersey Department of Transportation's Complete Streets Policy promotes a "comprehensive, integrated, connected multi-modal network by providing connections to bicycling and walking trip generators such as employment, education, residential, recreational and public facilities, as well as retail and transit centers." The policy calls for the establishment of a checklist to address pedestrian, bicyclist and transit accommodations "with the presumption that they shall be included in each project unless supporting documentation against inclusion is provided and found to be justifiable."

### Complete Streets Checklist

The following checklist is an accompaniment to NJDOT's Complete Streets Policy and has been developed to assist Project Managers and designers develop proposed alternatives in adherence to the policy. Being in compliance with the policy means that Project Managers and designers plan for, design, and construct all transportation projects to provide appropriate accommodation for bicyclists, pedestrians, and transit users on New Jersey's roadways, in addition to those provided for

motorists. It includes people of all ages and abilities. The checklist applies to all NJDOT projects that undergo the Capital Project Delivery (CPD) Process and is intended for use on projects during the earliest stages of the Concept Development or Preliminary Engineering Phase so that any pedestrian or bicycle considerations are included in the project budget. The Project Manager is responsible for completing the checklist and must work with the Designer to ensure that the checklist has been completed prior to advancement of a project to Final Design.

### Using the Complete Streets Checklist

The Complete Streets Checklist is a tool to be used by Project Managers and designers throughout Concept Development and Preliminary Engineering to ensure that all developed alternatives reflect compliance with the Policy. When completing the checklist, a brief description is required for each "**Item to be Addressed**" as a means to document that the item has been considered and can include supporting documentation.



## CONCEPT DEVELOPMENT CHECKLIST

### Instructions

For each box checked, please provide a brief description for how the item is addressed, not addressed or not applicable and include documentation to support your answer.

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Existing Bicycle, Pedestrian and Transit Accommodations</i>	Are there accommodations for bicyclists, pedestrians (including ADA compliance) and transit users included on or crossing the current facility? <b>Examples include (but are not limited to):</b> Sidewalks, public seating, bike racks, and transit shelters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Existing Bicycle and Pedestrian Operations</i>	Has the existing bicycle and pedestrian suitability or level of service on the current transportation facility been identified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Have the bicycle and pedestrian conditions within the study area, including pedestrian and/or bicyclist treatments, volumes, important connections and lighting been identified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Do bicyclists/pedestrians regularly use the transportation facility for commuting or recreation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there physical or perceived impediments to bicyclist or pedestrian use of the transportation facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is there a higher than normal incidence of bicyclist/pedestrian crashes within the study area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Have the existing volumes of pedestrian and/or bicyclist crossing activity at intersections including midblock and nighttime crossing been collected/provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



# Guide to Complete Streets Policy Development

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Existing Transit Operations</i>	Are there existing transit facilities within the study area, including bus and train stops/stations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is the transportation facility on a transit route?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is the transportation facility within two miles of “park and ride” or “kiss and go” lots?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there existing or proposed bicycle racks, shelters, or parking available at these lots or transit stations? Are there bike racks on buses that travel along the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Existing Motor Vehicle Operations</i>	Are there existing concerns within the study area, regarding motor vehicle safety, traffic volumes/congestion or access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Existing Truck/Freight Operations</i>	Are there existing concerns within the study area, regarding truck/freight safety, volumes, or access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Existing Access and Mobility</i>	Are there any existing access or mobility considerations, including ADA compliance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Are there any schools, hospitals, senior care facilities, educational buildings, community centers, residences or businesses of persons with disabilities within or proximate to the study area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Land Usage</i>	Have you identified the predominant land uses and densities within the study area, including any historic districts or special zoning districts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is the transportation facility in a high-density land use area that has pedestrian/bicycle/motor vehicle and transit traffic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Major Sites</i>	Have you identified the major sites, destinations, and trip generators within or proximate to the study area, including prominent landmarks, employment centers, recreation, commercial, cultural and civic institutions, and public spaces?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Existing Streetscape</i>	Are there existing street trees, planters, buffer strips, or other environmental enhancements such as drainage swales within the study area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Existing Plans</i>	<p>Are there any comprehensive planning documents that address bicyclist, pedestrian or transit user conditions within or proximate to the study area?</p> <p><b>Examples include (but are not limited to):</b></p> <ul style="list-style-type: none"> <li>• SRTS Travel Plans</li> <li>• Municipal or County Master or Redevelopment Plan</li> <li>• Local, County and Statewide Bicycle and Pedestrian Plans</li> <li>• Sidewalk Inventories</li> <li>• MPO Transportation Plan</li> <li>• NJDOT Designated Transit Village</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## CONCEPT DEVELOPMENT CHECKLIST: PROJECT MANAGER SIGN-OFF

Statement of Compliance	YES	NO	If NO, Please Describe Why (refer to Exemptions Clause)
The Preliminary Preferred Alternative (PPA) accommodates bicyclists and pedestrians as set forth in the New Jersey Department of Transportation's Complete Streets Policy.	<input type="checkbox"/>	<input type="checkbox"/>	



# Guide to Complete Streets Policy Development

## PRELIMINARY ENGINEERING CHECKLIST

### Instructions

For each box checked, please provide a brief description for how the item is addressed, not addressed or not applicable and include documentation to support your answer.

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Bicyclist, Pedestrian, and Transit Accommodations</i>	<p>Does the proposed project design include accommodations for bicyclists?</p> <p><b>Examples include (but are not limited to):</b></p> <p><b>Bicycle facilities:</b> bicycle path; bicycle lane; bicycle route; bicycle boulevard; wide outside lanes or improved shoulders; bicycle actuation at signals (loop detectors and stencil or other means); signs, signals and pavement markings specifically related to bicycle operation on roadways or shared-use facilities; bicycle safe inlet grates</p> <p><b>Bicycle amenities:</b> Call boxes (for trail or bridge projects); drinking fountains (also for trail projects); secure long term bicycle parking (e.g., for commuters and residents); and secure short term bicycle parking.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<p>Does the proposed project design address accommodations for pedestrians?</p> <p><b>Examples include (but are not limited to):</b></p> <p><b>Pedestrian facilities:</b> Sidewalks (preferably on both sides of the street); mid-block crosswalks; striped crosswalks; geometric modifications to reduce crossing distances such as curb extensions (bulb-outs); pedestrian-actuated traffic signals such as High Intensity Activated Crosswalk Beacons, Rapid Rectangular Flashing Beacons; dedicated pedestrian phase; pedestrian signal heads and pushbuttons; pedestrian signs for crossing and wayfinding, lead pedestrian intervals; high visibility crosswalks (e.g., ladder or zebra); pedestrian-level lighting; in-road warning lights; pedestrian safety fencing; pedestrian detection system;</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Bicyclist, Pedestrian, and Transit Accommodations (continued)</i>	pedestrian overpass/underpass; and median safety islands for roadways with (two or more traffic lanes in each direction). <b>Pedestrian amenities:</b> Shade trees; public seating; drinking fountains				
	Have you coordinated with the corresponding transit authority to accommodate transit users in the project design? <b>Transit facilities:</b> Transit shelters, bus turnouts <b>Transit amenities:</b> public seating, signage, maps, schedules, trash and recycling receptacles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Bicyclist and Pedestrian Operations</i>	Does the proposed design consider the desired future bicyclist and walking conditions within the project area including safety, volumes, comfort and convenience of movement, important walking and/or bicycling connections, and the quality of the walking environment and/or availability of bicycle parking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Transit Operations</i>	Does the proposed design address the desired/anticipated future transit conditions within the project area, including bus routes and operations and transit station access support transit usage and users?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Motor Vehicle Operations</i>	Does the proposed design address the desired future motor vehicle conditions within the project area, including volumes, access, important motor vehicle connections, appropriateness of motor vehicle traffic to the particular street (e.g., local versus through traffic) and the reduction of the negative impacts of motor vehicle traffic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



# Guide to Complete Streets Policy Development

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Truck/Freight Operations</i>	Does the proposed design address the desired future truck conditions within the project area, including truck routes, volumes, access, mobility and the reduction of the negative impacts of truck traffic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Access and Mobility</i>	Does the proposed design address accommodations for those with access or mobility challenges such as the disabled, elderly, and children, including ADA compliance? <b>Examples include (but are not limited to):</b> Curb ramps, including detectable warning surface; accessible signal actuation; adequate sidewalk or paved path (length & width or linear feet); acceptable slope and cross-slope (particularly for driveway ramps over sidewalks, over crossings and trails); and adequate green signal crossing time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Land Usage</i>	Is the proposed design compatible with the predominant land uses and densities within the project area, including any historic districts or special zoning districts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Major Sites</i>	Can the proposed design support the major sites, destinations, and trip generators within or proximate to the project area, including prominent landmarks, <i>commercial</i> , cultural and civic institutions, and public spaces?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Streetscape</i>	Does the proposed design include landscaping, street trees, planters, buffer strips, or other environmental enhancements such as drainage swales?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Design Standards or Guidelines</i>	<p>Does the proposed design follow all applicable design standards or guidelines appropriate for bicycle and/or pedestrian facilities?  <b>Examples include (but are not limited to):</b>                      American Association of State Highway and Transportation Officials (AASHTO) - <i>A Policy on Geometric Design of Highway and Streets, Guide for the Development of Bicycle Facilities, Guide for the Planning, Design, and Operation of Pedestrian Facilities; Public Right-of-Way Accessibility Guide (PROWAG); Manual on Uniform Traffic Control Devices (MUTCD); Americans with Disabilities Act Accessibility Guidelines (ADAAG); National Association of City Transportation Officials (NACTO) - Urban Bikeway Design Guide; New Jersey Department of Transportation (NJDOT) - Bicycle Compatible Roadways &amp; Bikeways Planning and Design Guidelines, Pedestrian Planning and Design Guidelines.</i></p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## PRELIMINARY ENGINEERING CHECKLIST: PROJECT MANAGER SIGN-OFF

Statement of Compliance	YES	NO	If NO, Please Describe Why (refer to Exemptions Clause)
The Approved Project Plan (APP) accommodates bicyclists and pedestrians as set forth in the New Jersey Department of Transportation’s Complete Streets Policy.	<input type="checkbox"/>	<input type="checkbox"/>	



## APPENDIX C: MODEL COMPLETE STREETS POLICY TEMPLATE

### Introduction

The New Jersey Department of Transportation's (NJDOT) Complete Streets policy, adopted in December, 2009, has been recognized nationally as the strongest statewide policy in the nation.<sup>(17)</sup> While some of the specifics of the state policy may differ from that of a typical local resolution or ordinance, the NJDOT's policy provides a good example of an effective Complete Streets policy that can be used as a reference at the municipal or county level as well.

The National Policy and Legal Analysis Network to Prevent Childhood Obesity (NPLAN) has developed model Complete Streets policies that can also be used as a template to guide the drafting of new ordinances or resolutions, both at the state and municipal level. The model policies are publicly available and are the product of researching and surveying existing Complete Streets policies across the country.<sup>(18)</sup> They provide a useful starting point for New Jersey municipalities interested in developing their own Complete Streets resolutions.

As of May 2012, 27 municipalities and three counties in New Jersey have adopted their own Complete Streets policies.<sup>(19)</sup> These local examples can also provide valuable guidance to neighboring municipalities that may have similar mixes of roadway users, land uses, or local needs. Building on the experiences of and collaborating with neighbors can help build a Complete Streets network across the state.

The following model policy template organizes excerpts from NJDOT's policy, NPLAN's model municipal resolution, and a mix of New Jersey municipal examples around the six key ingredients of a Complete Streets policy, as defined and described in this Guide and NJDOT's Complete Streets training curriculum:

- 1. Purpose and Intent**
- 2. Definition of Users and Modes**
- 3. Types of Projects**
- 4. Exemptions**
- 5. Implementation Plan**
- 6. Design Standards**

This blend of model policy ingredients is intended for informational purposes only, and does not constitute legal advice. Local context is vital to building a strong Complete Streets policy, and the policy examples should be adapted to meet the unique needs of the enacting municipality.



## Using the Model Complete Streets Policy Template

The template is intended as a guide for developing a Complete Streets policy that is consistent with the jurisdiction's master plan and reflects the unique local context, conditions, and user needs. Examples are provided from various sources, including NJDOT's Complete Streets policy, NPLAN's model policies, and an assortment of New Jersey municipal policies.

### Step 1 – Review the Master Plan

It is critical to ensure that the proposed Complete Streets Policy is consistent with the findings, guidance, and actions set forth in the Master Plan. Begin by reviewing the goals and objectives of the Master Plan, in particular as they relate to land use, safety, mobility, and circulation; relevant portions of the various Master Plan Elements, including Land, Use, Circulation, and Sustainability, should also be examined.

### Step 2 – Understand the Local Context

Understanding context includes both land use and infrastructure considerations. Many municipalities include a variety of land use types, development patterns, and streets classifications. The ingredients of the Complete Streets policy should be tailored to reflect both the unique aspects, and the overall diversity, of land use and the streets system.

### Step 3 – Understand Transportation and Mobility Needs

Consistent with the Circulation Element, the Complete Street policy should address the mobility needs of the municipality and the local business community: those who live, work, and do business here; their demographic makeup; and special needs groups and those with mobility limitations. The Complete Streets policy should also reflect the mobility needs of the municipality, and the makeup and performance of the local transportation system.

### Step 4 – Define Each Ingredient

The policy should be brief and concise, with an appropriate level of detail. Steps 1-3 should provide a clear understanding of what is suitable and applicable based on local goals, needs and context. This template provides examples of the minimum requirements; additional details and specificity may be appropriate when, for example, the context, objectives, roadway users, or exemptions require special consideration or merit.



## Ingredients of the Model Policy

### 1. Purpose and Intent

The *Purpose and Intent* is a concise statement of the goals and vision for the Complete Streets policy; it should be consistent with the municipal Master Plan and reflect the local context. The resolution begins with a preamble, typically a series of WHEREAS clauses, that provide facts supporting the resolution and characterizing the *Purpose* of the resolution. These may define the concept of Complete Streets; cite precedents in other municipalities or jurisdictions; and cite the major transportation, equity, economic, environmental, safety, and/or health benefits of Complete Streets. The following are some select examples that illustrate the variety of information available to articulate the *Purpose and Intent* of a Complete Streets policy. Many of the local examples acknowledge or reference NJDOT's policy as part of the support for their own initiative. Additional examples can be found in the NPLAN's Appendix Findings<sup>(20)</sup> and existing policies in New Jersey.<sup>(21)</sup>

Most Complete Streets policies separate the first ingredient into two sections: the first introduces the purpose, or reason, for adopting the policy; the second is the intent, or how it will be accomplished. NJDOT, for example, first states the **purpose**: *to provide safe access for all users*, and then the **intent**: *to implement a Complete Streets policy through the planning, design, construction, maintenance and operation of new and retrofit transportation facilities*.

#### 1a. Purpose of the Complete Streets Policy

##### *NJDOT Policy Example*

A Complete Street is defined as means to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options.

The benefits of Complete Streets are many and varied:

- Complete Streets improve safety for pedestrians, bicyclists, children, older citizens, non-drivers and the mobility challenged as well as those that cannot afford a car or choose to live car free.
- Provide connections to bicycling and walking trip generators such as employment, education, residential, recreation, retail centers and public facilities.
- Promote healthy lifestyles.
- Create more livable communities.
- Reduce traffic congestion and reliance on carbon fuels thereby reducing greenhouse gas emissions.
- Complete Streets make fiscal sense by incorporating sidewalks, bike lanes, safe crossings and transit amenities into the initial design of a project, thus sparing the expense of retrofits later.



## *NPLAN National Template Examples*

**WHEREAS**, the term “Complete Streets” describes a comprehensive, integrated transportation network with infrastructure and design that allows safe and convenient travel along and across streets for all users, including pedestrians, bicyclists, motor vehicle drivers, public transportation riders and drivers, *[insert other significant local users if desired, e.g. drivers of agricultural vehicles, emergency vehicles, or freight]* and people of all ages and abilities, including children, youth, families, older adults, and individuals with disabilities;

**WHEREAS**, [Municipality / State / Regional body] wishes to encourage walking, bicycling, and public transportation use as safe, convenient, environmentally friendly, and economical modes of transportation that promote health and independence for all people;

**WHEREAS**, streets that are not designed to provide safe transport for all users present a danger to pedestrians, bicyclists, and public transportation riders, particularly children, older adults, and people with disabilities;<sup>(22)</sup> more than 110,000 pedestrians and bicyclists are injured each year on roads in the United States,<sup>(23)</sup> with children and older adults at greatest risk and disproportionately affected;<sup>(24)</sup> many of these injuries and fatalities are preventable, and the severity of these injuries could readily be decreased by implementing Complete Streets approaches;<sup>(25)</sup> and [Municipality / State / Regional body] wishes to ensure greater safety for those traveling its streets;

**WHEREAS**, [Municipality / State / Regional body] recognizes that the careful planning and coordinated development of Complete Streets infrastructure offers long-term cost savings for local and state government, benefits public health, and provides financial benefits to property owners, businesses, and investors, while yielding a safe, convenient, and integrated transportation network for all users;<sup>(26)</sup> in contrast, streets that are not conducive to travel by all impose significant costs on government and individuals, including the cost of obesity, which may amount to \$147 billion in direct medical expenses each year, not including indirect costs;<sup>(27)</sup>

**WHEREAS**, numerous states, counties, cities, and agencies have adopted Complete Streets policies and legislation in order to further the health, safety, welfare, economic vitality, and environmental well-being of their communities;

**WHEREAS**, [Municipality / State / Regional body] acknowledges the benefits and value for the public health and welfare of [reducing vehicle miles traveled and] increasing transportation by walking, bicycling, and public transportation in order to address a wide variety of societal challenges, including pollution, climate change, traffic congestion, social isolation, obesity, physical inactivity, limited recreational opportunities, sprawl, population growth, safety, and excessive expenses;<sup>(28)</sup>



# Guide to Complete Streets Policy Development

## Local NJ Examples

**WHEREAS**, the New Jersey Department of Transportation supports complete streets policies and adopted its own such policy on 3 December, 2009; [*City of Hoboken*]

**WHEREAS**, the New Jersey Department of Transportation's Complete Streets policy states "A Complete Street is defined as means to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options;" [*Township of West Windsor*]

**WHEREAS**, the New Jersey Department of Transportation has established incentives within the Local Aid Program for municipalities and counties to develop a Complete Streets policy; [*Township of Denville*]

**WHEREAS**, the Township of Lawrence is committed to creating a pedestrian and bikeway system that makes walking and cycling a viable alternative to driving and which improves bicyclist and pedestrian safety by creating street corridors that safely accommodate all road users of all abilities and disabilities; [*Township of Lawrence*]

**WHEREAS**, a Complete Streets Policy would advance the City's Sustainable Jersey Resolution, Safe Routes to Schools Program, County Open Space Study, County Rails to Trails Plan and Downtown Parking, Circulation and Landscape Study; [*Township of Vineland*]

**WHEREAS**, Complete Streets are supported by the Institute of Traffic Engineers, the American Planning Association and other transportation, planning and health officials; [*Township of Maplewood*]

## 1b. Intent of the Complete Streets Policy

Following the WHEREAS clauses describing the *Purpose* is the statement of *Intent*, which clearly and strongly defines the policy. NJDOT strongly states where Complete Streets concepts will be applied, and encourages other jurisdictions in New Jersey to follow similar principals. The example from Jersey City is a common format for the statement of *Intent* used in several other municipalities in the state, defining the policy as applicable to all public street projects (with reasonable exemptions defined in subsequent clauses) to accommodate all users. Atlantic City's policy provides a unique example where the statement of *Intent* acknowledges that Complete Streets need to be context sensitive, implemented in different ways throughout the city to accommodate and balance different needs.

## NJDOT Policy Example

The New Jersey Department of Transportation shall implement a Complete Streets policy through the planning, design, construction, maintenance and operation of new and retrofit transportation facilities, enabling safe access and mobility of pedestrians, bicyclists, transit users of all ages and abilities.



This includes all projects funded through the Department’s Capital Program. The Department strongly encourages the adoption of similar policies by regional and local jurisdictions who apply for funding through Local Aid programs.

## *NPLAN National Template Example*

**NOW, THEREFORE, LET IT BE RESOLVED** that [Municipality / Adopting body] hereby recognizes the importance of creating Complete Streets that enable safe travel by all users, including pedestrians, bicyclists, public transportation riders and drivers, [insert other significant local users if desired, e.g. drivers of agricultural vehicles, emergency vehicles, freight, etc.] and people of all ages and abilities, including children, youth, families, older adults, and individuals with disabilities.

## *Local NJ Examples*

**NOW, THEREFORE, LET IT BE RESOLVED**, by the Municipal Council of the city of Jersey City that all public street projects, both new construction and reconstruction (excluding maintenance) undertaken by the city of Jersey City shall be designed and constructed as “Complete Streets” whenever feasible to do so in order to safely accommodate travel by pedestrians, bicyclists, public transit, and motorized vehicles and their passengers, with special priority given to pedestrians safety. [City of Jersey City]

**NOW, THEREFORE**, be it resolved that the City Council of the city of Atlantic City adopts the following Complete Streets Policy:

Purpose: To adopt a Complete Streets Policy that acknowledges and implements the concept that streets should be designed, built and retrofitted for all users: motor vehicles, pedestrians, bicyclists, transit users and people with disabilities. The City recognizes that this policy must be flexible and that all streets are different and user needs must be balanced and fit into the context of the community. Implementation of this policy will integrate the needs of all users into everyday transportation and land use decisions making, and will take place through the following methods: [City of Atlantic City]

## 2. Definition of Users and Modes

The *Definition of Users and Modes* of transportation is an essential element of a Complete Streets policy, and can be included within the WHEREAS clauses that define the concept of Complete Streets and/or within the statement of *Intent*, as shown in the above examples. The discussion of users and travel modes can be as simple as “all ages and abilities” or present a more detailed list based on the unique local population, vehicles (i.e. heavy trucks, farm vehicles, etc.), and mix of local business and industry. For example, rural communities may have different user needs than their more urban and suburban counterparts. Two additional local examples of a detailed *Definition of Users and Modes* are provided below.

## *Local NJ Examples*

**NOW, THEREFORE, LET IT BE RESOLVED** that the Borough of Netcong hereby recognizes the importance of creating Complete Streets that enable safe travel by all users, including pedestrians, bicyclists, public transportation riders and drivers, emergency vehicles, and people of all ages and abilities, including children, youth, families, older adults, and individuals with disabilities. [Borough of Netcong]



# Guide to Complete Streets Policy Development

**WHEREAS**, “Complete Streets” are defined as roadways that enable safe and convenient access for all users, including bicyclists, children, persons with disabilities, motorists, seniors, movers of commercial goods, pedestrians, and users of public transport; [*Borough of Frenchtown*]

## 3. Types of Projects

After defining the *Intent* of the policy, the resolution must define the *Types of Projects* for which Complete Streets shall be enacted. This is a key ingredient. By taking a cradle-to-grave approach and stipulating that the policy is applied to all project phases, Complete Streets becomes a standard component of how the municipality conducts business, from planning, design, and capital programming through construction, maintenance, and operations. This ensures a comprehensive approach that limits the potential for critical roadways and facilities to be overlooked. Transportation facilities, especially bridges, have a long life cycle, so any missed opportunity could mean generations of mobility and/or safety limitation for residents and businesses. NJDOT is particularly strong on this element, having included an expansive listing of projects up front within the statement of intent, as shown above. Within municipal ordinances, it is common to include this element in subsequent clauses, as shown in the NPLAN example below, or within the statement of intent, as in the local New Jersey examples below and the previous *Intent* example.

### NPLAN National Template Example

**BE IT FURTHER RESOLVED** that [Municipality / Adopting body] affirms that Complete Streets infrastructure addressing the needs of all users should be incorporated into all planning, design, approval, and implementation processes for any construction, reconstruction, retrofit, maintenance, alteration, or repair of streets, bridges, or other portions of the transportation network, including pavement resurfacing, restriping, and signalization operations if the safety and convenience of users can be improved within the scope of the work;...

### Local NJ Examples

**WHEREAS**, the Borough Council of the Borough of Raritan, County of Somerset, desires to implement a Complete Streets policy through the planning, design, construction, maintenance and operation of new and retrofit transportation facilities within the public rights-of-way... [*Borough of Raritan*]

**WHEREAS**, it is in the intent of the City, to the extent practicable, to apply the Complete Streets Policy to all road, bridge, and building projects funded through the City’s Capital Program and Federal and State grants. [*City of Vineland*]

## 4. Design Standards

Within the Implementation Plan, a clause should be included that stipulates that the most recent *Design Standards* will be followed in implementing the policy. This may be a general statement that the latest local and national standards will be followed, or explicitly reference specific documents and standards. Adherence to applicable standards is necessary for liability protections and demonstrates that improvements have been planned and designed according to accepted practice and process. In New Jersey, the New Jersey Tort Claims Act, N.J.S.A. 59:1-1 et seq. provides immunity from Tort liability when the conditions for Plan and Design immunity have been met and documented.



## NJDOT Policy Examples

Design bicycle and pedestrian facilities to the best currently available standards and practices including the New Jersey Roadway Design Manual, the AASHTO Guide for the Development of Bicycle Facilities, AASHTO's Guide for the Planning, Design and Operation of Pedestrian Facilities, the Manual of Uniform Traffic Control Devices and others as related.

Improvements must comply with Title VI/Environmental Justice, Americans with Disabilities Act (ADA) and should complement the context of the surrounding community.

## Local NJ Examples

**BE IT FURTHER RESOLVED** that bicycle and pedestrian facilities shall be designed and contracted to the best currently available standards and practices including the New Jersey Roadway Design Manual, the AASHTO Guide for the Development of Bicycle Facilities, AASHTO's Guide for the Planning, Design and Operation of Pedestrian Facilities, the Manual of Uniform Traffic Control Devices and others as related. *[Borough of Red Bank. different or additional standards may be cited as applicable; or a general statement that the "latest local and national design standards and criteria" will be followed may be used in lieu of specific citations.]*

While complete streets principles are context sensitive, it would be appropriate to consider these features during the design, planning, maintenance and operations phases and incorporate changes into some retrofit and reconstruction projects. Departments shall reference New Jersey Roadway Design Manual; the AASHTO Guide for the Development of Bicycle Facilities; AASHTO's Guide for the Planning, Design and Operation of Pedestrian Facilities; the Manual of Uniform Traffic Control Devices; the NACTO Urban Bikeway Design Guide and other design criteria as necessary, striving to balance all needs, when repaving or reconstructing streets. *[City of Trenton]*

## 5. Exemptions

Beyond defining the instances in which the Complete Streets policy must be implemented, the resolution should also clearly define reasonable and legitimate *Exemptions*, define a transparent application and review process, and designate an authority responsible for reviewing and approving exemptions to the Complete Streets policy. This ingredient helps ensure consistent and appropriate granting of exemptions, and that the decision has been documented and based on reliable and accurate information. NJDOT provides a logical list of acceptable exemptions that require thorough review and approval, including sign-off by the Commissioner of Transportation, which demonstrates strong support for Complete Streets within NJDOT at the very highest level of authority in the Department. Examples from New Jersey municipalities illustrate similar, specific exemptions, requiring approval from the municipal engineer or top elected officials, such the town council or mayor.

## NJDOT Policy Example

Exemptions to the Complete Streets policy must be presented for final decision to the Capital Program Screening Committee in writing and documented with supporting data that indicates the reason for the decision and are limited to the following:



# Guide to Complete Streets Policy Development

1. Non-motorized users are prohibited on the roadway.
2. Scarcity of population, travel and attractors, both existing and future, indicate an absence of need for such accommodations.
3. Detrimental environmental or social impacts outweigh the need for these accommodations.
4. Cost of accommodations is excessively disproportionate to cost of project, more than twenty percent (20%) of total cost.
5. The safety or timing of a project is compromised by the inclusion of Complete Streets.

An exemption other than those listed above must be documented with supporting data and must be approved by the Capital Program Committee along with written approval by the Commissioner of Transportation.

## Local NJ Examples

...Bicycle and pedestrian ways shall be established in new construction and reconstruction project unless one or more of the following conditions are met:

- Bicyclists and pedestrians are prohibited by law from using the roadway.
- The cost of accommodations is excessively disproportionate to cost of the project, at more than twenty percent (20%) of total cost.
- Where sparse population, travel or other factors indicate an absence of need as defined by any street with a paved roadway width greater than 28 feet and less than 100 vehicles per day.
- Detrimental environmental or social impacts outweigh the need for these accommodations.
- The safety or timing of a project is comprised by the inclusions of Complete Streets.

Exceptions to this policy are permitted and are contingent upon the presence of specific safety concerns and approval by the City Engineer prior to granting exceptions. *[City of Atlantic City]*

...subject to the following conditions:

- Pedestrian and bicycle facilities shall not be required where they are prohibited by law.
- Public transit facilities shall not be required on streets not serving as transit routes.
- In any project, should the cost of pedestrian, public transit, and/or bicycle facilities cause an increase in project costs in excess of 15%, as determined by engineering estimates, that would have to be funded with local tax dollars, then and in that event, approval by the Borough Council must be obtained for same prior to bidding of the project. *[Princeton Borough]*



## 6. Implementation Plan

The *Implementation Plan* outlines the process for putting the policy into action. An effective *Implementation Plan* seeks to reach all who will plan, design, and implement appropriate transportation facility improvements and networks. It may include a number of elements, such as reviewing existing policies, design standards, procedures, regulations, etc. and revising them as needed to integrate Complete Streets; staff training; performance measures to track progress; or a reporting process to provide policy accountability. This is another opportunity to tailor the Complete Streets policy to local needs, land uses, and context. NJDOT includes an implementation provision for rural roads. Monmouth County and several other municipalities include similar language to accommodate rural areas under their jurisdiction. NJDOT also emphasizes outreach to local and county officials as part of their implementation plan. By codifying this goal, the policy defines explicitly a broad and expansive application of Complete Streets policies among all levels and jurisdictions responsible for the planning, design, construction, operation, and maintenance of transportation facilities. Developing Complete Streets training and incentives through the Local Aid Program helps ensure that Complete Streets becomes standard practice throughout the state. The example from Trenton includes a detailed implementation plan with a reporting schedule, which adds a level of accountability to the policy that assists in quickly putting the policy into practice.

### *NJDOT Policy Examples*

Create a comprehensive, integrated, connected multi-modal network by providing connections to bicycling and walking trip generators such as employment, education, residential, recreational and public facilities, as well as retail and transit centers.

Establish a checklist of pedestrian, bicycle and transit accommodations such as accessible sidewalks curb ramps, crosswalks, countdown pedestrian signals, signs, median refuges, curb extensions, pedestrian scale lighting, bike lanes, shoulders and bus shelters with the presumption that they shall be included in each project unless supporting documentation against inclusion is provided and found to be justifiable.

Additionally, in rural areas, paved shoulders or a multi-use path shall be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. Paved shoulders provide safety and operational advantages for all road users. Shoulder rumble strips are not recommended when used by bicyclists, unless there is a minimum clear path of four feet in which a bicycle may safely operate. If there is evidence of heavy pedestrian usage then sidewalks shall be considered in the project.

Establish a procedure to evaluate resurfacing projects for complete streets inclusion according to length of project, local support, environmental constraints, right-of-way limitations, funding resources and bicycle and/or pedestrian compatibility.

Establish an incentive within the Local Aid Program for municipalities and counties to implement a Complete Streets policy.

Implement training for Engineers and Planners on Bicycle/Pedestrian/Transit policies and integration of non-motorized travel options into transportation systems.



# Guide to Complete Streets Policy Development

Establish Performance Measures to gauge success.

## *NPLAN National Template Examples*

**BE IT FURTHER RESOLVED** that *[insert appropriate agency]* should evaluate how well the streets and transportation network of [Municipality] are serving each category of users, and *[insert appropriate agencies]* should establish performance standards with measurable benchmarks reflecting the ability of users to travel in safety and comfort.

**BE IT FURTHER RESOLVED** that *[insert appropriate agencies, such as Department of Transportation, Department of Public Works, Department of Planning]* should review and either revise or develop proposed revisions to all appropriate plans, zoning and subdivision codes, laws, procedures, rules, regulations, guidelines, programs, templates, and design manuals, including *[insert name of Municipality's comprehensive plan equivalent as well as all other key documents by name]*, to integrate, accommodate, and balance the needs of all users in all projects.

**BE IT FURTHER RESOLVED** that *[insert appropriate agencies, such as Department of Transportation, Department of Public Works, Department of Planning]* should make Complete Streets practices a routine part of everyday operations, should approach every transportation project and program as an opportunity to improve public [and private] streets and the transportation network for all users, and should work in coordination with other departments, agencies, and jurisdictions to achieve Complete Streets.

**BE IT FURTHER RESOLVED** that trainings in how to integrate, accommodate, and balance the needs of all users should be provided for planners, civil and traffic engineers, project managers, plan reviewers, inspectors, and other personnel responsible for the design and construction of streets, bridges, and other portions of the transportation network.

**BE IT FURTHER RESOLVED** that procedures should be established to allow increased public participation in policy decisions and transparency in individual determinations concerning the design and use of streets.

**BE IT FURTHER RESOLVED** that all initial planning and design studies, health impact assessments, environmental reviews, and other project reviews for projects requiring funding or approval by [Municipality] should: (1) evaluate the effect of the proposed project on safe travel by all users, and (2) identify measures to mitigate any adverse impacts on such travel that are identified.

**BE IT FURTHER RESOLVED** that the head of each affected agency or department should report back to the [Adopting body] [annually / within one year of the date of passage of this resolution] regarding: the steps taken to implement this Resolution; additional steps planned; and any desired actions that would need to be taken by [Adopting body] or other agencies or departments to implement the steps taken or planned.

**BE IT FURTHER RESOLVED** that a committee is hereby created, to be composed of *[insert desired committee composition]* and appointed by [the Mayor / President of adopting body / other], to recommend short-term and long-term steps, planning, and policy adoption necessary to create a



comprehensive and integrated transportation network serving the needs of all users; to assess potential obstacles to implementing Complete Streets in [Municipality]; and to suggest revisions to the [insert name of Municipality's comprehensive plan equivalent], zoning code, subdivision code, and other applicable law.

**BE IT FURTHER RESOLVED** that the committee should report on the matters within its purview to the [Adopting body] within one year following the date of passage of this Resolution, and upon receipt of this report the [Adopting body] will hold a hearing to determine further implementation steps.

## Local NJ Examples

To facilitate the implementation of the new policy, the following steps shall be taken:

- A memorandum outlining this new policy will be distributed to all department heads within 90 days of this resolution.
- At least one training session about complete streets will be conducted for appropriate staff within 180 days of this resolution.
- The Train Station Linkage Plan, completed in 2006, shall be revisited, with a specific focus on designating appropriate routes for pedestrians, dedicated bike lanes and preferred bicycle routes (shoulders or shared travel lanes with appropriate signage and/or pavement markings). The City Engineer (or other designee as determined by the Council) shall coordinate this effort in collaboration with the Traffic Analysis and update City Council within 180 days of this resolution.
- Oversight of the new complete streets policy will be handled by the Principal Planner, or other appropriate cabinet officials approved by City Council. [City of Trenton]

**BE IT FURTHER RESOLVED** that municipal departments and professionals, such as Department of Public Works, municipal planner, engineer, and Zoning Officer, should review and either revise or develop proposed revisions to all appropriate plans, zoning and subdivision codes, laws, procedures, rules, and regulations, including subsequent updates to the Borough of Netcong Master Plan, to integrate, accommodate, and balance the needs of all users in all projects. Information and education will be provided to the municipal planning and zoning (combined) board to enhance understanding and implementation of Complete Streets concepts as part of design and plan review. [Borough of Netcong]



# Guide to Complete Streets Policy Development

## Endnotes

- (1) [http://www.state.nj.us/transportation/refdata/roadway/pdf/hpms2008/njprmbj\\_08.pdf](http://www.state.nj.us/transportation/refdata/roadway/pdf/hpms2008/njprmbj_08.pdf)
- (2) Cross-County Connection. *Complete Streets in New Jersey: Lessons Learned*, March 2011.
- (3) Cross-County Connection. *Complete Streets in New Jersey: Lessons Learned*, March 2011.
- (4) 2010 U.S. Census Data.
- (5) 2010 U.S. Census Data.
- (6) 2000 U.S. Census Data.
- (7) American Community Survey, 2007.
- (8) American Community Survey, 2007.
- (9) American Community Survey, 2007.
- (10) 2011 New Jersey State Police Fatal Accident Investigation Unit.
- (11) Alliance for Biking and Walking. *Bicycling and Walking in the United States, 2012 Benchmarking Report*. January 2012, p. 161.
- (12) Robert Puentes and Adie Tomer. Brookings Institute. *The Road...Less Traveled: An Analysis of Vehicle Miles Traveled Trends in the U.S.* December 2008.
- (13) Cross-County Connection. *Complete Streets in New Jersey: Lessons Learned*, March 2011.
- (14) American Planning Association. *Complete Streets: Best Policy and Implementation Practices*, Planning Advisory Service Report Number 559, March 2010, p. 105.
- (15) American Planning Association. *Complete Streets: Best Policy and Implementation Practices*, Planning Advisory Service Report Number 559, March 2010, p. 47.
- (16) Interview with staff from the City of Linwood regarding their experience in the adoption and implementation of a Complete Streets policy.
- (17) National Complete Streets Coalition. *Complete Streets Policy Analysis 2010*.
- (18) <http://www.nplanonline.org/nplan/products/model-complete-streets-laws-and-resolutions>
- (19) <http://policy.rutgers.edu/vtc/bikeped/completestreets/NJ%20CS%20Policy%20Compilation%203-21-12.pdf>
- (20) [http://www.nplanonline.org/sites/phpnet.org/files/nplan/CompleteStreets\\_AppendixA\\_FINAL\\_20100223.pdf](http://www.nplanonline.org/sites/phpnet.org/files/nplan/CompleteStreets_AppendixA_FINAL_20100223.pdf)
- (21) <http://policy.rutgers.edu/vtc/bikeped/completestreets/policies.php>
- (22) King MR, Carnegie JA, Ewing R. "Pedestrian Safety Through a Raised Median and Redesigned Intersections." *Transportation Research Record: Journal of the Transportation Research Board*, 1828: 56-66, 2003.
- (23) NHTSA's National Center for Statistics and Analysis. Traffic Safety Facts 2007 Data. DOT HS 810 993. Washington DC, p. 12.
- (24) Henary BY, Ivarsson J, Crandall JR. "The influence of age on the morbidity and mortality of pedestrian victims." *Traffic Inj Prev.*, 7(2): 182-90, June 2006; Henary BY, Crandall J, Bhalla K, Mock CN, Roudsari BS. "Child and adult pedestrian impact: the influence of vehicle type on injury severity." *Annu Proc Assoc Adv Automot Med*, 47: 105-26, 2003.
- (25) Von Kries R, Kohne C, Böhm O, von Voss H. "Road injuries in school age children: relation to environmental factors amenable to interventions." *Injury Prevention*, 4(2): 103-5, June 1998.
- (26) Commission for Architecture and the Built Environment. *Paved with Gold: The Real Value of Good Street Design*. London: Commission for Architecture and the Built Environment, 2007.



(27) Finklestein E, Trogon J, Cohen J, and Dietz W. "Annual Medical Spending Attributable to Obesity: Payer- and Service-Specific Estimates." *Health Affairs*, 28(5), 2009: w822-w831; see also US Department of Health and Human Services, Centers for Disease Control and Prevention. *Preventing Obesity and Chronic Diseases Through Good Nutrition and Physical Activity*. 2005, p. 1.

(28) Frumkin H, Frank L and Jackson R. *Urban Sprawl and Public Health*. Washington: Island Press, 2004.



For More Information, Contact:  
[Bikeped@dot.state.nj.us](mailto:Bikeped@dot.state.nj.us)